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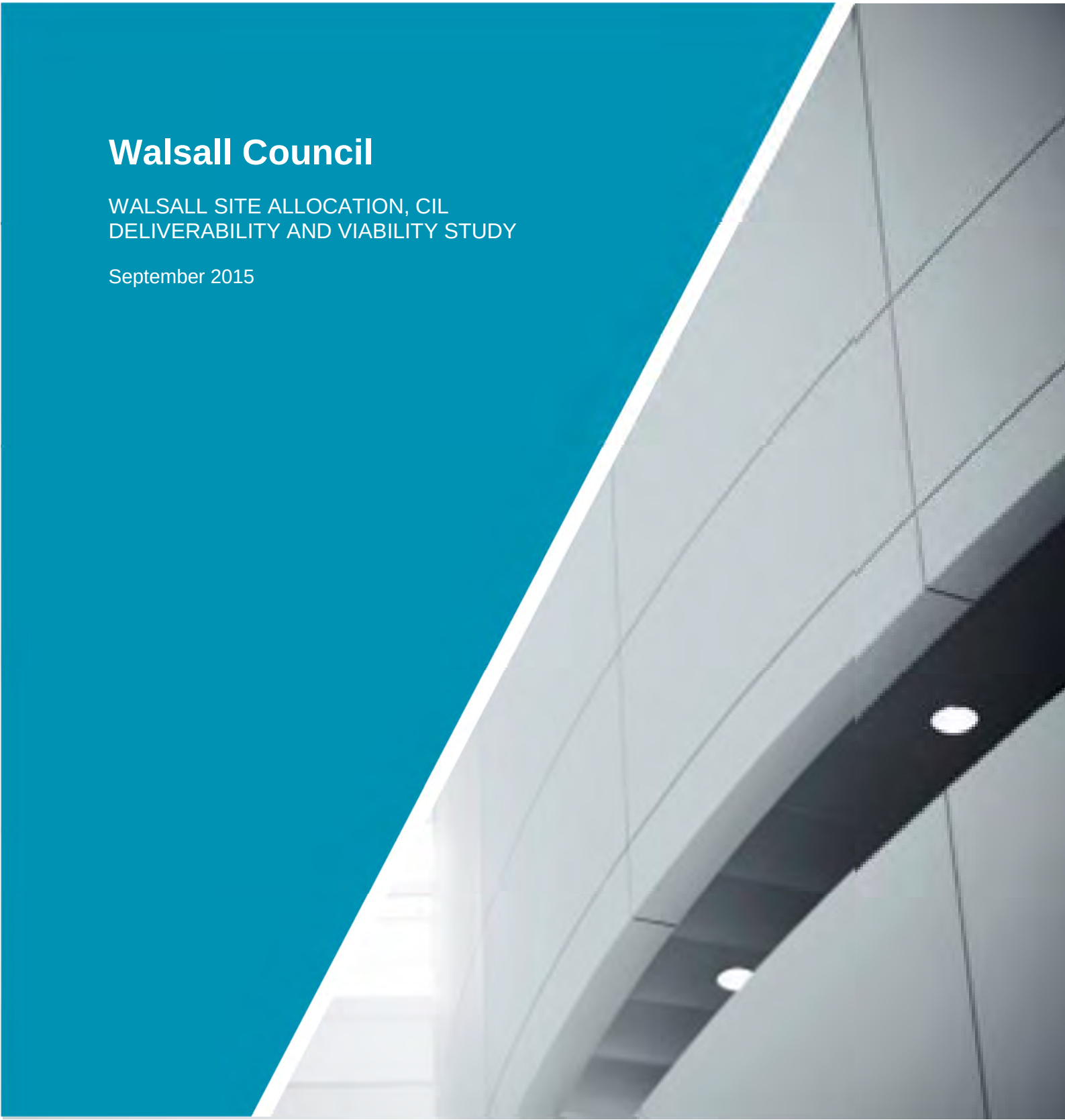
# Walsall Council

## WALSALL SITE ALLOCATION, CIL DELIVERABILITY AND VIABILITY STUDY

September 2015



# Contents

# Executive Summary

## Purpose

DTZ and environmental consultants Wardell Armstrong have been appointed by Walsall Council to examine the viability and deliverability of sites that the Council is proposing to allocate in its Site Allocation Document (SAD) for housing and employment use alongside waste operations across the Borough. These three land uses are closely related so it is important that they are coordinated to ensure consistency in the outcomes.

The study also incorporates a Borough wide CIL viability study to assist the Council in understanding current development viability particularly in relation to the sites being identified for potential allocation and to provide suggested CIL rates within a Preliminary Draft CIL Charging Schedule. This is to ensure that any rates of CIL that are set for the Borough would not make development unviable and to assist in bringing forward the infrastructure required to serve the specific sites.

The SAD is prepared through a three stage process. An Issues and Options Report has been published and was the subject of consultation in the summer of 2013. The Preferred Options Report for the SAD is now being prepared and will be informed by this study. Subject to the outcome of consultation on the Preferred Option, it is proposed that a Publication Document will be prepared in 2015 and submitted for examination.

This combined study is an assessment of the Borough's ability to ensure that the targets set out in the Black Country Core Strategy (BCCS) are met during the timescale to 2026.

It should be noted that a separate commission has also been undertaken by DTZ to consider the viability and deliverability of sites allocated in the Area Action Plan (AAP) for Walsall Town Centre.

## Scope and Structure of this Report

This report has been prepared by DTZ and sub-consultants Wardell Armstrong on behalf of Walsall Council and has four aspects as follows:

- A viability review of 40 housing sites
- A viability review of the 0-5 year and 5-10 year employment land supply
- A viability review of 4 sites for potential waste operations
- A CIL viability study

The viability assessment is based on evidence collected in 2014 which includes consultation with stakeholders in late 2014, which was primarily geared at examining viability for the adoption of a CIL charging schedule. The results of this study will inform policy but do not bind Walsall Council to adopt the results or follow the guidance in relation to specific or individual sites.

The report is presented in four parts as follows:

- Part 1 – Housing Viability and Delivery Study
- Part 2 – Employment Viability and Delivery Study
- Part 3 – Waste Sites Viability and Delivery Study
- Part 4 – CIL Viability Study

## Requirements for SAD Viability Testing

For the purpose of this study, an agreed sample of approximately 40 housing sites has been selected for viability testing.

In respect of employment land, 7 sites have been identified as constituting the 5 year supply and a further 11 sites constituting the 5-10 year supply have been identified for assessment. A further 7 additional sites have also been appraised.

For the waste viability assessment, four sites have been identified as potential waste site allocations, for development of modern, enclosed waste treatment/recovery infrastructure.

The National Planning Policy Framework (NPPF) paragraph 173 states that "pursuing sustainable development requires careful attention to viability and costs in plan making and decision taking". Plans should also be deliverable.

To ensure viability, the costs of any requirements should, when taking account of the normal costs of development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements, provide competitive returns to a willing landowner and willing developer to enable the development to be deliverable.

The National Planning Policy Guidance (NPPG) sets out more detailed advice about how to prepare viability studies in respect of housing and employment land. More information can be found at:

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The proposed Site Allocation Document (SAD) will exclude the five district centres of Willenhall, Darlaston, Bloxwich, Brownhills and Aldridge given the additional complexity this would introduce and the limited resources available. Notwithstanding this, any development in the centres for housing, employment or other uses will contribute to meeting the Borough-wide targets in the BCCS.

It is also proposed that housing sites of less than 0.25 ha or with the potential to accommodate fewer than 10 residential dwellings will not be allocated in the SAD. Such sites will continue to make a contribution to the land supply, but again it is not feasible to carry out the work that would be necessary to examine each site of this size in detail.

## Requirements for CIL Viability Evidence

The regulations governing CIL state that in structuring the CIL charging schedule, local authorities should strike an appropriate balance between the desirability of funding infrastructure and the viability of development and that careful analysis of both development viability and infrastructure needs is required. In respect of development viability, the supporting guidance states:

- Evidence should consider different uses including residential and commercial property classes
- The CIL rates must reasonably relate to the available evidence although should not necessarily exactly mirror it or set it right at the margins of viability
- Charging authorities can set differential CIL rates for different geographical zones in their area and / or uses provided that those zones and uses are created and defined by reference to the economic viability of development within them
- Differential rates must be state aid compliant.

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An initial scoping report was carried out in February 2011 across the Black Country which concluded that CIL might be viable for certain uses including residential, comparison retail and convenience retail however more detailed evidence is required to inform a Preliminary Draft Charging Schedule, which is the subject of this report.

## Housing Viability and Delivery Study

This Housing Viability and Deliverability study uses a sample of sites provided by Walsall Council as a base on which to consider the viability and deliverability of the Housing Site Allocation and Deliverability document being prepared by Walsall Council.

The study is set out as follows:–

- Residential Market Context (for Walsall, setting the wider development context of the SAD sites, and how they might be perceived in the market)
- Site Sampling Methodology and Context (the rationale behind the tested sites)
- Appraisal assumptions (used in the site specific viability testing)
- Appraisal Findings (A presentation an interpretation of the viability testing results)
- Delivery (A consideration of the prospects of the SAD sites being delivered within the Core Strategy period, recommended interventions, and courses of action)

The Study concludes that it is reasonable to suggest that around 80% of the SAD Dwelling Capacity is deliverable over the Core Strategy period (around half of this being deliverable now, and a further half deliverable subject to further market recovery in the secondary areas of the Borough), as follows:

**Our analysis suggests that around 45% of the estimated capacity of the sampled SAD sites is deliverable, in the current market environment.**

- Just under half of this deliverable capacity is on land in private ownership, and can be expected to be delivered by the market; with one exception these sites are in the east of the Borough,
- The other half of this capacity will be delivered in the short to medium term by Walsall Council's Registered Provider partners, or affordable housing specialists.

**Some 35% of the estimated capacity of the sampled SAD sites may be deliverable in the longer term, subject to continued market improvement and renewed market interest by housebuilders:**

- Just under one third of this longer term deliverable capacity is potentially deliverable in the longer term. Whilst the appraisals suggest these sites are ostensibly viable, delivery may be difficult due to active, viable and established uses on site

- Another third of this capacity are at sites that by way of their scale, and location make for inherently attractive development propositions (including key sites in Birchills and Darlaston). Whilst the appraisals suggest these sites are ostensibly viable, development interest is limited particularly due to the cautious approach of national housebuilders to secondary market areas, who are not currently prioritising sites in areas with significant abnormal cost constraints

- The final third of this capacity is at sites which may not be viable in the current market environment, and where development interest is further constrained by one or more additional local issues adversely effecting viability (including location, and size, as well as abnormal costs)

**Some 20% of the SAD dwelling capacity may not be deliverable during the Core Strategy period on the basis of either being:**

- Difficult large sites, facing abnormal development costs, in moderate to weak market areas (accounting for most of the capacity falling within this viability category)

- Difficult small sites in moderate to weak market areas

These include some new sites that have fallen out of employment use, and a significant number of sites that have been vacant for a time span that includes the peak of the last property cycle.

## Employment Viability and Delivery Study

The Employment Viability and Deliverability Study considers the viability and deliverability of the Employment Site Allocation and Deliverability document based upon a list of 7 sites provided by Walsall Council as comprising the 5 year supply, 11 sites identified as opportunities in the 5-10 year supply, and a further 7 additional sites.

This chapter is presented in the following sections:

- Employment Market Context for Walsall

- Appraisal Methodology and Approach

- Appraisal Assumptions (used in the site specific viability testing)

- Assessment of 5 Year Supply (to identify site specific constraints and opportunities)

- Assessment of 5-10 Year Supply

- Assessment of Additional sites

- Appraisal Findings and Delivery (including the scoping of interventions to bring the sites forward in the five year period and prioritisation of the ten year employment land portfolio)

A site by site review of development viability demonstrates that the majority of sites are marginal in terms of viability, with the remaining sites having a negative viability status. This set of results, however, hides a more complex delivery environment, as set out below.

## 0-5 year supply

This category contains sites covering 30.1 hectares. Key delivery messages for this category are as follows:-

- Some 94% (28.44 hectares) of this supply is sites falling within the designated Enterprise Zone. These are sites which are attractive to the market, subject to addressing significant delivery barriers, which the delivery mechanisms available through the Enterprise Zone can assist in overcoming
- The other 6% (1.66 hectares) of this area is contained in two small sites within generally secondary market areas (Aldridge and Pleck). Development in these areas is generally reliant on the expansion or relocation of incumbent local firms making an investment decision, rather than through a developer route.
- It is expected that a majority of sites will be delivered in this manner. Hence, some sites that are considered unviable under the above market assumption based appraisals may be delivered without intervention, except where there is a clear need for gap funding or where sites have an established higher value use.

In addition to dedicating resources towards the Enterprise Zone sites, an immediate priority for Walsall Council should be towards securing the delivery of the high quality sites in close proximity to the Black Country Route, and those just outside the Enterprise Zone.

## 5-10 year supply

This category contains sites covering some 14.99 hectares. Key delivery messages for this category are as follows:-

- Some 66% (9.8 hectares) of this area is contained in prime location sites, one of which is the Enterprise Zone. Many of these sites are alongside or close to the Black Country Route. These are sites which are attractive to the market, subject to the overcoming of significant delivery barriers. For those sites which are not situated within the Enterprise Zone, however, there are no specific delivery mechanisms confirmed (there is a higher risk in delivering this large quantum within the time period due to the long lead in times to delivery suggested by the nature of the delivery constraints, and also taking into consideration that delivery arrangements for these sites have yet to be confirmed and funded).
- Some 33% (around 5 hectares) of this area is contained in sites in generally secondary market areas (Aldridge, Bloxwich, and North Walsall). Take up in these areas is generally reliant on the expansion on incumbent firms. Walsall Council should also consider the risk in delivering the 5 hectares located within the generally secondary market areas of the Borough.

In addition to dedicating resources towards the Enterprise Zone sites, a medium term priority for Walsall Council should be towards securing the delivery of the high quality sites in close proximity to the Black Country Route.

### Additional Opportunities

This category contains sites covering some 52.48 hectares. These sites are extra to the 10 year requirement, in order to provide a greater range in the industrial land portfolio. Should the below sites not be delivered within 10 years this does not pose a significant risk to the strategy. Key delivery messages for this category are as follows:

- Some 10% (8.34 hectares) of this area is contained with one site (Former Gasholder / South of Gasholder) site falling within the designated Enterprise Zone. This site is fundamentally attractive to the market, subject to addressing significant delivery barriers, which the delivery mechanisms available through the Enterprise Zone can assist in overcoming
- The Keyway and Glynweb sites are unlikely to be delivered in the 10 year period. The current retail occupier appears to be staying and on this basis it is recommend that the site is not allocated.
- A large quantum of land (45.89 hectares / 87%) is located within generally prime market locations.

Some 13% (6.59 hectares) of the sites are located within secondary market areas such as Aldridge and Brownhills. Take up in these areas is generally reliant on the expansion on incumbent firms.

## Waste Sites Viability and Delivery Study

The Waste Sites Viability and Delivery Study was commissioned separately from Wardell Armstrong, but was carried out in parallel with the other viability and delivery studies undertaken by DTZ

The four specific sites considered for possible waste use within this chapter were selected from a review of projects identified in the BCCS, planning permissions that were yet to be implemented and responses to the second of two “calls for sites,” which took place during 2013.

The study concludes that in order to ensure sufficient sites are available to accommodate the expected 176,000 tpa of waste arisings the following sites should be allocated for waste use:

- Fryers Road (WP3)
- Former McKechnie’s Site (IN12.14).

Fryers Road has existing planning consent for waste use whilst the former McKechnie’s Site is a vacant industrial site. Both sites are away from immediate sensitive receptors with good access and sufficient space to develop an enclosed waste facility. If developed to their potential these sites would be sufficient to provide the required waste capacity.

Walsall would seem to be an attractive location for new waste infrastructure as it is part of a major urban area where households and businesses are producing significant quantities of waste requiring management. Its central location and accessibility to the M6 will also allow waste operators to attract waste from a wider area. However other boroughs within the West Midlands conurbation will have similar advantages and may be in completion with Walsall to attract investment.[1]

[1] For example, see: The Regional Approach to Landfill Diversion Infrastructure (July 2009), DTZ and SLR Consulting for former Advantage West Midlands, Figures 4.1 – 4.4, and Commercial & Industrial Waste and Economic Research Study: Final Report (November 2010), Scott Wilson for Sandwell MBC

Ultimately the successful development of the sites will depend on a business plan that will ensure the scheme is economically viable given the costs of remediating these brownfield sites and the availability of waste arisings. However a major modern waste facility will involve a large investment, generally several million pounds, to provide impermeable surfacing and sealed drainage, appropriate buildings, waste treatment equipment and appropriate abatement plant (particularly to control odour). Given these costs site remediation will form only a small proportion of the required investment and should not impede development. The availability of waste is likely to be the biggest deciding factor in whether or not sites are delivered.

A number of sites identified lie close to the River Tame and flooding may be an issue. This may be a particular issue for the Cemetery Road site and Aspect 2000 site as it has been identified that part of these sites lies within Flood Zone 3. Flood Zone 3 may be further divided into Zone 3a and Zone 3b. Zone 3b comprises land where water may flow or be stored during times of flood. Before allocating Cemetery Road or Aspect 2000 for waste use it may useful to further investigate the flood risk to ensure that this land is not required as functional flood plain and that development of the site will not exacerbate flooding issues elsewhere.

In terms of remediating sites research by suggests that the majority of sites use engineering solutions, such as installation of capping, or in-situ treatment of soils to achieve remediation. It is not considered that a soils treatment hub is a requisite to achieving development of brownfield sites within the Borough.

## CIL Viability study

## Scope

The Community Infrastructure Levy (CIL) is a discretionary tariff introduced by the 2008 Planning Act which local authorities can charge on each net additional sq. m of development. CIL is the mechanism for securing funding for local infrastructure projects.

DTZ is appointed by Walsall Council to develop the viability evidence base for CIL in Walsall to undertake comprehensive analysis of development viability and to ensure that any rates of CIL that are set for the Borough would not make development unviable.

The National Planning Policy Framework states that local plans should be deliverable and set with an understanding of local economic and market conditions. Viability testing is a useful tool capable of assisting with the development of local plan policies – including CIL.

In accordance with Government Planning Practice Guidance, DTZ's viability model involves the analysis of a selection of hypothetical development schemes. Residential and commercial schemes have been selected to reflect the wide range of circumstances in which development is anticipated to come forward across the Borough of Walsall. We prepared and consulted on the assumptions used in the viability appraisals. The residual site value for each development scheme has then been benchmarked against a site threshold value to determine the "headroom" for CIL.

## Results of Viability Testing

The results of our viability testing demonstrates that at baseline costs for residential development of less than 40 units with a net developable area of 0.3 - 1 hectare, there is headroom for CIL in high and mid value areas, from £442 per sq. m in Value Area 1 to £127 per sq. m in VA 3. However none of the archetypes tested have headroom for CIL in lower value areas in Walsall. The development of apartments has no headroom for CIL

on sites of 0.5 acres in size in current market conditions. Larger residential schemes of 40 units or more have increased headroom for a CIL across all value areas in Walsall from £518 per sq. m in Value Area 1 to £78 per sq. m in Value Area 5.

Increasing residential development build costs by 12.5% per sq. m to account for site abnormals lowers the headroom for CIL across all value areas. However the results show that there is still headroom for CIL in value areas 1, 2 and 3 across all residential archetypes with the exception of high density flatted developments. There is no headroom in Value areas 4 and 5 across all of the residential archetypes tested. For housing schemes of less than 15 units the amount available for CIL ranges from £349 in Value Area 1 to £84 in Value Area 3. For housing schemes of more than 15 units but less than 40 units the amount available for CIL ranges from £270 per sq. m to £49 per sq. m. Housing development greater than 40 units shows headroom for CIL ranging from £379 to £93 per sq. in the high to mid value areas.

The results of the commercial viability testing demonstrate that there is only headroom for CIL on certain types of retail development and on the delivery of care homes (at baseline costs).

Retail warehousing and superstores are able to withstand CIL in all the town centre typologies tested across Walsall to significantly high levels. At baseline costs, the headroom for CIL on retail warehouses ranged from £370 - £682 per sq. m. Increasing build costs to account for site abnormals reduces the CIL headroom, but still generates a CIL headroom range of £283 - £595 per sq. m. At baseline costs, superstores can withstand a CIL tariff of £750 - £997 per sq. m. Increasing build costs to account for abnormals reduces this range to £626 - £874 per sq. m.

At baseline costs, there is headroom to charge CIL on care home developments up to £68 per sq. m, however if an allowance of 12.5% cost uplift is included to account for site abnormals, this results in no headroom being available for CIL.

## Recommended CIL rates

In setting CIL, caution is required to ensure that the rates are not done so at a level that would undermine the delivery of development. DTZ has applied a number of additional benchmarks to inform our recommendations for appropriate CIL rates in Walsall. CIL should be within:

- 5% of total development costs;
- 5% of Gross Development Value, and;
- 10-15% of residual land value

We have adjusted the CIL rates to take into consideration these additional performance benchmarks and recommend the following CIL rates for Walsall:

**Table 1: Recommended CIL rates**

| | Residential (£ per sq. m) | | | Commercial (£ per sq. m) |
|---|---|---|---|---|
| | Below 15 units (Scheme 8) | Above 15 units & below 40 units (Schemes 1 and 3) | Above 40 units (Schemes 4-7) | |
| **Housing developments** | | | | |
| Value Area 1 | £100 | £100 | £100 | |
| Value Area 2 | £75 | £50 | £75 | |
| Value Area 3 | £50 | £25 | £50 | |
| Value Area 4 | £0 | £0 | £0 | |
| Value Area 5 | £0 | £0 | £0 | |
| | | | | |
| **Retail warehousing** | | | | |
| Town Centre | | | | £100 |
| Edge of Town Centre | | | | £100 |
| District Centre | | | | £75 |
| Edge of District Centre | | | | £75 |
| Out of Centre | | | | £100 |
| | | | | |
| **Superstore (over 2000 sq. m)** | | | | |
| Town Centre | | | | £100 |
| Edge of Town Centre | | | | £100 |
| District Centre | | | | £100 |
| Edge of District Centre | | | | £100 |
| Out of Centre | | | | £100 |
| | | | | |
| **All other uses** | | 0 | 0 | 0 |

Subject to the approval of officers and members as required to the proposed charging rates, it is recommended that the Council proceed with the preparation of a Preliminary Draft Charging Schedule taking into consideration the potential to provide an instalments policy and payments in kind to further facilitate the delivery of development across the metropolitan borough of Walsall.

# Introduction

## Purpose

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# Background Information

## Context

Walsall is a metropolitan area situated in the West Midlands with a population of over 270,000 people. It is bisected by the M6 motorway with three other motorways and the heart of the national rail network lying close by. Walsall Borough has an important industrial heritage but one-third of its area is Green Belt.

## The Black Country Core Strategy (BCCS)

Working in partnership with the other three local planning authorities in the sub-region, Walsall Council has adopted the Black Country Core Strategy (BCCS) as the main part of the statutory development plan for its area. The BCCS sets out an ambitious vision for sustainable communities, environmental transformation and economic prosperity, and contains challenging targets for the provision of new homes, new and upgraded employment land, and land for other uses.

The BCCS includes a brownfield first approach, ensuring that previously developed land, particularly where vacant, derelict or underused is prioritised over Greenfield sites.

The adopted BCCS sets out ambitious targets for the provision of housing, employment land and sites for other uses as follows:

### Housing

The BCCS proposes that a minimum of 11,973 net additional homes are to be provided in Walsall over the period 2006 – 2026. 4,465 net new homes had been completed as at April 2014, leaving a remainder of 7,508 homes to be provided by the end of the plan period.

### Employment

Policy EMP1 of the BCCS states that the Black Country has to provide land for a minimum of 75,000 industrial and warehouse jobs by 2026. For Walsall this means providing at least 658 ha of employment land by 2016, reducing to 611 ha by 2026, divided into High Quality and Local Quality employment land. Walsall must also aim to reach, and maintain, a reservoir of readily available employment land and premises defined as land and premises with no major problems, that is on the market and with a planning permission or a willing landowner.

### Waste

The BCCS has identified a need to address qualitative “capacity gaps” in waste infrastructure, and sets targets for the development of new waste capacity in the Black Country up to 2026, for recovery of a wider range of wastes and contaminated soils, for which no infrastructure exists locally and to provide additional facilities for recycling of inert construction, demolition and excavation waste. Policy WM3 of the BCCS identified a number of locations including three sites in Walsall.

## The Site Allocation Document

Although the BCCS provides a strategic framework to identify the general locations where development should take place in Walsall, it does not allocate specific sites hence the Site Allocation Document (SAD) is being prepared for this purpose. Potential sites for allocation in the SAD have been identified from a wide range of sources including:

- Sites with existing/ lapsed planning permission
- Records of vacant previously developed sites and buildings
- Surplus public land and premises
- Surplus land as identified through the Employment Land Review
- Call for Sites – as undertaken as part of the preparation of the original SHLAA in 2010 and subsequently prior to and in consultation on the SAD and AAP Issues and Options Report.

We understand that officers at Walsall Council have carried out an initial assessment of these sites to identify those that either have physical constraints to development or where development would be contrary to the spatial strategy of the BCCS.

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# PART 1 – HOUSING VIABILITY AND DELIVERY STUDY

# 1. Introduction

This Housing Viability and Deliverability study uses a sample of sites provided by Walsall Council as a base on which to consider the viability and deliverability of the Housing Site Allocation and Deliverability document being prepared by Walsall Council.

This chapter is presented in the following sections –

- Residential Market Context (for Walsall, setting the wider development context of the SAD sites, and how they might be perceived in the market)
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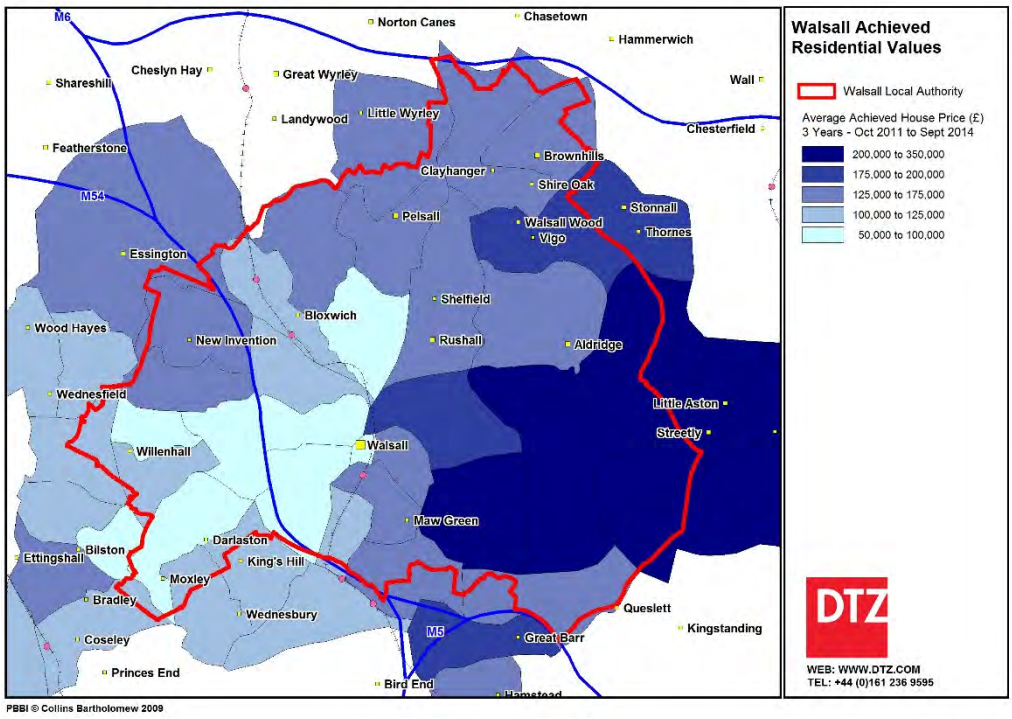
# 2. Residential Market Context

This section considers Walsall within the national housing market context.

Specialist affordable housing providers are currently playing a major role in delivering housing in Walsall, as is the activity of smaller, local developers (the Government is giving encouragement to custom and self-build methods, and its response to the Elphicke Review), but it remains that the perception of the Borough amongst larger residential developers, and the national plc's in particular, will have a key bearing on the success of the BCCS housing targets for the Borough and the delivery of the sites featured in the draft DPD. On this basis, and consistent with best practice guidance, appraisal assumptions are guided by the size and location of the site.

## 2.1. Walsall Overview

The map below is a high level consideration of the housing market in the Borough based on an analysis of Land Registry Data by post code sector.




The prime (in terms of dwelling sales values) area of Walsall is shown in the darkest blue, and broadly includes:

- South East Walsall (the environs of Birmingham Road and Broadway)
- Aldridge (South)
- Streetly

Most of the remaining "prime" area is rural and covered by Green Belt.

The rest of the Borough varies between good and poor secondary (in terms of dwelling sales values).

The good secondary is broadly, but not exclusively, found in the east of the Borough, and includes:

- Aldridge North and Walsall Wood
- Rushall
- Shelfield
- Brownhills, Shire Oak and Clayhanger

Areas of good secondary are also found in certain parts of the west of the Borough:

- New Invention, Lane Head and Reedswood,
- Along the A34 corridor / Bloxwich Road ,and,
- Areas close to the Black Country Route (Which would include parts of south Darlaston and Moxley)

The areas of poor secondary are located in the west of the Borough, and include:

- Caldmore and Pleck in south Walsall
- Inner Birchills to the west
- North and east Darlaston generally
- The "North Walsall" neighbourhoods (including Harden, Goscote, Leamore, Blakenall, and Coalpool) generally characterised by extensive interwar and post war municipal housing developments) , broadly positioned north of Reedswood, south of Bloxwich and west of Pelsall and the Goscote Valley

## 2.2. The National Picture: Implications for Walsall

The slowdown in the residential property market in 2008 and 2009 impacted significantly on the development market with the majority of house-builders placing existing schemes on hold and postponing the commencement of any new development. The combined effect of a decrease in the value of existing land holdings and the cash flow issues presented by lower than expected unit sales meant that many house-builders found themselves in an extremely perilous position.

However, since the beginning of 2011 there has been a marked improvement in conditions and sentiment in the market which is evidenced by the "plc" house builders who have restructured their bank debt, recapitalised through rights issues and recruited new land managers. House builders are now tasked to actively acquire residential development opportunities, subject to securing planning for appropriately designed housing schemes.

The key messages, and what this means for Walsall, are considered below:

| Trend | Implication for Walsall |
|---|---|
| Nationally, the outlook for the next 6 to 12 months is positive with housebuilders interested in acquiring land in established residential locations to build low density family housing. | On this basis, there will continue to be pressure to build traditional 2 storey housing at densities of up to 35dph in popular locations (prime and good secondary) to the east of the Borough |
| For the volume housebuilders scale remains important, with sites of between 150 and 200 dwellings being particularly attractive, | The volume housebuilders tend to consider only sites of over 40 dwellings (of which there are a number in Walsall), though there are other key criteria. |
| Volume housebuilders do, however remain cautious with regard to projected revenues, and especially if the site has significant development abnormal costs | This is a particular concern for Walsall, for whilst there are a number of large scale development sites which might otherwise attract volume housebuilders, many of these are in secondary, or even poor secondary locations, where the "plc" housebuilders are taking a cautious approach for sites with abnormal costs |
| Over the last 12 to 18 months (as of January 2015) land values in strong residential locations have significantly outperformed secondary locations within the West Midlands region. It is evident there is a two tier land market and the gap is widening between the prime residential locations and secondary/tertiary residential locations in terms of land values. | This reflects the above, with keen market interest in the prime locations to the east of the Borough, whilst there is less interest in poor secondary, whilst interest in good secondary is dependent on it being easily serviceable with no abnormals |
| Development sites in high socially economic dependent areas with limited house price growth will continue to underperform due to the slow pace of house sales and the restricted ability of potential owner occupiers to obtain mortgages. It is expected that this current trend will continue for the foreseeable future until lending restrictions have been lifted.<br><br>As such, in poorer residential locations our projections suggest that there will be a continued underperformance over the next 5 years until there is better mortgage availability in the sub-prime market which will fuel the sales demand and values in these areas. | Development in the "poor secondary" locations of the Borough is likely to be sluggish over much of the BCCS period |

| Trend | Implication for Walsall |
|---|---|
| The pace of sales have been supported by the Government's Help to Buy initiative which allows purchasers to acquire new build properties with a 5% deposit with 20% being obtained on an interest free loan for a period of 5 years. The equity loan component of the Help to Buy initiative is having a strong influence on the pace of house sales and consequently delivering a greater volume of houses and higher land values. This element of the initiative will be in place until 2020, when it is anticipated that such support to the housing market will no longer be required. | This trend has helped support development at sites within the "good secondary" areas of the Borough |

In the medium term, there remains need to be mindful that the future performance of land value growth in the region, as is the case nationally, over the next 3 to 5 years will be affected by build cost inflation. The introduction of national housing standards and requirements for increased energy efficiency through the Building Regulations may also add to construction costs.

# 3. Site Sampling Methodology and Context

The SAD aims to allocate sufficient land for housing to ensure that, in conjunction with sites that have already been completed or which are under construction, the housing targets in the BCCS for the period to 2026 are met. Potential sites to allocate have come from a number of sources. These include the following groups.

### 1. Sites that already have planning permission.

These include sites where the planning permission is still valid, although development has not yet commenced, as well as others where the permission has lapsed.

The NPPF states that sites with planning permission should be considered deliverable until the permission expires unless there is clear evidence that the scheme will not be implemented within 5 years. Therefore such sites should not need to be tested for deliverability. Nevertheless, these permissions will expire during the period of the SAD unless they are implemented. The reasons for the delay in the implementation of permissions should be examined and, in a small number of cases, circumstances will have changed since the permission was granted such that it may no longer be appropriate to develop the site for housing, at least in the form envisaged by the permission.

### 2. Other commitments

These comprise the small number of sites allocated in the UDP that do not yet have planning permission, and sites where there is a resolution from the planning committee to grant permission subject to a legal agreement, but this has not been completed. Because of the time that has lapsed since the preparation of the UDP, or the date of the committee resolution, circumstances may have changed such that it may no longer be appropriate to develop the site for housing.

### 3. Potential New Sites

These are sites identified from pre-application discussions and other site knowledge, but which do not yet have planning permission. They include cleared former social housing sites owned by Walsall Housing Group, surplus property owned by the Council, former employment land that is no longer required for this use, and other previously developed land where there is known to be development interest. The latter include sites submitted by landowners in response to the Call for Sites carried out by the Council as part of the preparation of the SAD.

### 4. Broad Locations

These mainly comprise land that is currently in use for employment purposes but which could be considered for release for other uses in accordance with BCCS policy DEL2 if the employment use ceased or relocated. It is not expected that all such land will come forward for redevelopment during the plan period, but the BCCS envisages such land as forming an important part of the housing land supply. In most cases, housing would be the only potential alternative uses, although a small number of sites would not be physically suitable for housing because of air quality, flooding or other reasons, and sites in centres may also be suitable for town centre uses. Broad location housing sites also include out of centre retail and other “town centre” uses that might be suitable for housing if the current use ceased.

### Summary

Taken together, these four sources comprise several hundred sites with a total potential housing capacity well in excess of the number of dwellings needed to meet the BCCS targets. For the purpose of this Study, it was agreed to limit the examination to a maximum of 40 sites that are either of strategic importance to delivery of the SAD or are representative of the types of smaller sites that are proposed for allocation. The selection was based on sites that met the locational criteria of the BCCS, meaning in general terms sites in the Regeneration Corridors, and brownfield sites elsewhere. It was further refined as follows:

(a) All sites with a capacity of 40 or more dwellings each that meet the BCCS criteria have been examined (20 sites). The majority of these large sites are owned by Walsall Housing Group or have been the subject of considerable discussion at planning application or pre-application stage. A large amount of information about viability and deliverability therefore already exists. In the Goscote area there are four similar sites: only one of these is to be examined.

(b) For sites with a capacity of 10 to 39 dwellings each, a selection of at least one site from each of the types of development area referred to in the BCCS, i.e.

*(i) Housing Renewal Areas (see BCCS Housing Key Diagram). In Walsall these comprise Bentley, Blakenall/ Goscote and Brownhills.*

*(ii) Regeneration Corridors 5, 6, 7 and 8*

*(iii) Areas Outside the Growth Network (see BCCS Policy CSP2), using a broad range of geographical locations around the borough*

(c) A sample of 10 “broad location” sites.

(d) A sample of 6 small sites, each with capacity of fewer than 10 dwellings, with one from each local neighbourhood partnership area. These represent areas with different levels of economic prosperity and land values.

Each of the large sites under criteria (a) is named in the report. Because the other types of site are meant to represent a sample, they are referred to anonymously. However, in both cases it should be noted that the assessments of viability and other information in this report have only been carried out for the purpose of the SAD, and are not meant to represent a detailed appraisal of the site. In particular, no detailed site assessment has been carried out into ground conditions or other factors that might affect viability.

In a couple of cases, sites that were originally selected for inclusion in this study have been removed from detailed examination, as development has commenced since the study began. However, they still provide useful case studies of how development has been brought forward.

# 4. Appraisal Assumptions and Approach

## 4.1. Introduction

Central to the assessment of the viability of housing development is the concept of residual land value.[2] Residual land value is the value that can be attributed to land, when the total cost of development, including an allowance for profit is deducted from the sales values of housing built on site.

The calculated residual land value must be equal or above that deemed sufficient to provide a competitive return to a "willing land owner", as set out in Paragraph 173 of the National Planning Policy Framework. With regard to the land value, and the assumption of profit within it, Paragraph 173 of the Framework, specifically states that:

*"To ensure viability, the costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation,* ***provide competitive returns to a willing land owner and willing developer to enable the development to be deliverable****."*

For each site sample archetype (See Section 3, above), a development appraisal has been carried out to calculate a residual land value (including an allowance for a competitive profit return prerequisite for a "willing developer") to determine whether it is above "threshold" land values deemed sufficient to "*provide competitive returns to a willing land owner to enable the development to be deliverable*." Our assumptions as to what constitutes competitive returns for landowners and developers is considered in this section, alongside other assumptions we made.

## 4.2. Threshold Land and Sales Values

Each site was matched with the appropriate market "geographical zone" used for the CIL study, within each specific SAD site fell within, though in certain cases, where good local comparable evidence existed relating to the SAD site, this was used instead of the CIL "geographical zone" price band. (The adjustment was always downwards).

The Threshold Land Value that the site was tested against was then adjusted accordingly. On this basis, additional (Intermediate) threshold land value bands were used, alongside those used in the CIL testing.

Value Area 1 (As used in CIL) - £400,000 / acre,- £240/sqft
Value Area 2 (As used in CIL) - £350,000 / acre - £215/sqft
Value Area 3 (As used in CIL - £300,000 / acre - £195/sqft
Intermediate Rate (SAD specific) - £275,000 / acre - £185/sqft
Value Area 4 (As used in CIL) - £250,000 / acre - £175/sqft
Intermediate Rate (SAD specific) -£237,500 / acre - £170/sqft
Value Area 5 (As used in CIL) - £200,000 / acre - £155/sqft (SAD) and £165/sqft

[2] This valuation approach is applied for property with development or redevelopment potential. This equation is: Completed Development Value less Planning and Construction cost; less on cost and finance costs; less Developers Profit = Residual Land Value.

## 4.3. Build Costs

The following build costs for flats and houses are based on BCIS adjusted taking into account advice from DTZ's regional residential team. The costs include 12% for external works.

We have differentiated between smaller schemes of up to 40 units and larger schemes of over 40 units which may attract lower build costs to account for the fact that residential development may be delivered by smaller, local and regional house builders and larger schemes which are likely to be brought forward from volume house builders who are able to build at lower costs:

| | Build cost (£) | | Plus 12% uplift for external works (£) | |
|---|---|---|---|---|
| | £psm | £psf | £psm | £psf |
| **Schemes less than 40 units** | | | | |
| Houses | 914.93 | 85.00 | 1,024.72 | 95.20 |
| Flats | 1,022.57 | 95.00 | 1,145.28 | 106.40 |
| **Schemes greater than 40 units** | | | | |
| Houses | 807.29 | 75.00 | 904.17 | 84.00 |
| Flats | 968.75 | 90.00 | 1,085.00 | 100.80 |

## 4.4. Phasing Assumptions

The residential development schemes in our development appraisals are phased as detailed below:

| Phasing assumptions | |
|---|---|
| Lead in | 3 months |
| Construction / sales | Sales staggered 6 months after construction start |
| Sales rates | 40 units per annum per outlet |

## 4.5. Other Development Costs

The following development assumptions are used in our viability testing and are based on our knowledge and experience of the residential property market:

| Other development costs | |
|---|---|
| Sensitivity for abnormals | 12.5% uplift on build costs |
| Professional fees (inc planning) | 6% on construction costs |
| Contingencies | 5% on construction costs |
| Marketing, sales agent and legal fees | 3.5% of sales revenue |
| Purchaser's costs | 5.8% on purchase price |
| Finance | 6.5% on negative balance |
| Developer's profit | 17.7% blended rate (20% on market units 6% on affordable units). |

| Section 106 Contributions | |
|---|---|
| Site specific highway improvements | £500 per unit |
| Air quality mitigation measures | |
| Public art | |
| Site specific flood mitigation / resilience measures | |

## 4.6. Development Density

Whilst, for each "geographical zone", the CIL tested a range of development mix archetypes in order to cover all reasonable site scenarios, the SAD considered specific sites, and a view on density/average dwelling size was taken on the basis of the site.

- For sites in price band £240/sqft, average sized dwellings of 1250sqft at a density of 30dph
- For sites in price bands £175/sqft through to £215/sqft, average sized dwellings of 1050sqft at a density of 35dph
- For sites in price band below £175/sqft, average sized dwellings of 975sqft at a density of 37dph.

Note, the average size of the dwellings that has been modelled for the different value areas is based on different assumed mixes of 2, 3, 4 and 5 bedroom homes. In the lowest value areas, house sizes are constrained by relatively low price ceilings that are effective in the area, whilst in the highest value areas there will be much more demand for larger houses, and hence a higher average size of dwelling.

The development densities at which we have tested the sites, are based solely on our market appraisal of each site (rather than the physical character of the site), vary between 30 and 37 dwellings per hectare, and so do not assume the development of any apartments at the sites. The density was applied to our assumed net developable area of the site, which varied between 62% and 100% of the gross area of the site, depending on the size of the site.

## 4.7. Sensitivity Testing for Abnormal Costs

For sites where the Wardell Armstrong Industrial and Mining Legacy Constraints suggested site specific abnormal costs relating to ground conditions (other than those that might be found ordinarily on a relatively clean brownfield site (such as made ground and sub structures), then a12.5% uplift (in addition to the standard brownfield contingency of 5%) assumption on build costs (used in sensitivity testing the CIL site archetypes) was used.

For all other sites only the standard 5% contingency was used in the testing.

A further "in the round" consideration of the development risk relating to abnormal development costs for certain large scale strategic sites was made in Section 5.

## 4.8. Assumptions made for Section 106 Contributions and Other Policy Standards

The approach adopted for the SAD Viability testing was to assume:

I. No more than compliance with Building Regulation standards as regards environmental and energy performance (Part L); no allowance has been made for an uplift in build specification relating to policy standards set out in the BCCS.

II. No additional Section 106 contributions in excess of the £500/dwelling allowance assumed for site specific mitigation measures (e.g. highways, air quality, flood)

III. No on-site affordable housing, and, consistent with (II), no off site contributions

This approach is deliberate. On the basis of our initial consideration of the sites, prior to the site specific modelling, which suggested very little scope for these standards to be implemented, as:

- most sites would be shown as unviable. This would not be a useful approach when trying to understand the varied and complex picture as regards viability and deliverability across the Borough.

- viability assuming these standards could then only be tested by experimenting with notional growth in sales revenues over time, which can set out a misleading picture of the viability situation.

# 5. Appraisal Findings

## 5.1. Overview

The results of the site appraisals were analysed, and grouped into the following categories, based on our interpretation of the appraisal results.

| Grouping | Deliverability Position | Justification |
|---|---|---|
| GROUP 1: | Deliverable by Market and Notable S106 | The high level appraisals for these sites produce a residual land value sufficient for a "willing landowner" to bring the site forward for development; and the residual land value calculation allows for sufficient profit (20% on value) for a "willing developer" |
| GROUP2: | Deliverable by Market but limited or no S106 | As Group 1, but the surplus residual land value over the designated threshold land value is much smaller, meaning lesser prospects for Section 106 |
| GROUP3: | Deliverable by Registered Provider Developer or affordable sector specialist | Site under control of the developer |
| GROUP 4 : | Potentially attractive sites – which may require some degree of intervention | Most of these sites perform reasonably well under the standard "willing developer" / "willing landowner" viability criteria, but other delivery barriers exist |
| GROUP 5 : | Sites attractive in location and scale, but sales values not yet robust enough given scale of abnormals? | As with Group 4, these sites tend to perform reasonably well under standard appraisal criteria, but relatively low sales values in the context of site abnormals may prevent them coming forward in short to medium term |
| GROUP 6 : | Further market improvement required | As with Groups 4 and 5, but further delivery barriers exist |
| GROUP 7 : | Difficult Small sites in moderate to weak market areas | For the most part these sites are showing significant viability deficits, and the nature of the sites and their location makes delivery without intervention unlikely |
| GROUP 8 : | Difficult Large Sites, with abnormals, in moderate to weak market areas | For the most part these sites are showing significant viability deficits, and the nature of the sites and their location makes delivery without intervention unlikely |

Based on an analysis of the housing capacity of the sampled sites, the percentage share of the housing capacity falling into each delivery grouping was analysed.

| Grouping | Deliverability Position | Number of Sites | Approximate % of Sampled Capacity (Rounded) |
|---|---|---|---|
| GROUP 1: | Deliverable by Market and Notable S106 | 4 | c. 45% |
| GROUP2: | Deliverable by Market but limited or noS106 | 9 | |
| GROUP3: | Deliverable by Registered Provider or affordable sector specialist | 4 | |
| GROUP 4 : | Potentially attractive sites – which may require some degree of intervention | 3 | c. 35% |
| GROUP 5 : | Sites attractive in location and scale, but sales values not yet robust enough given scale of abnormals? | 2 | |
| GROUP 6 : | Further market improvement required | 10 | |
| GROUP 7 : | Difficult Small sites in moderate to weak market areas | 10 | c. 20% |
| GROUP 8 : | Difficult Large Sites, with abnormals, in moderate to weak market areas | 4 | |

The Figure shows that just under half of the tested housing capacity is considered deliverable in the current market, and with the majority of these being delivered by a registered provider or affordable housing specialist, across just four sites.

Around one third of the sampled capacity (across around one third of the sampled sites) may be deliverable subject to a continued market recovery, over the BCCS period. Whilst many of these sites are ostensibly viable, albeit marginally, delivery is strongly caveated on the basis that either: -

- land assembly is required in order to progress a market attractive scheme,
- further value growth is required in order to increase market confidence in large sites, in weak market areas, with site specific abnormal costs
- some are difficult, small sites in marginal market areas, that may attract a local developer, but may be considered too high a lending risk.

Around 20% of the sampled capacity is considered, by our analysis, to be undeliverable by the market in the BCCS period. This is generally due to a combination of being located in the weakest market areas together with likely high site specific abnormal costs.

In the next section we a more detailed consideration is made of the sites, by delivery grouping.

## 5.2. Analysis by Delivery Category

Supporting the summary conclusions on viability above, is a more detailed consideration of each of the sample sites, underpinned by an individual, high level development appraisal.

### 5.2.1. Group 1 Sites: Deliverable by the Market and capable of delivering a significant Section 106 contribution

With the exception of Bentley Lane Business Park, these four sites are all concentrated in the generally higher value, eastern side of the Borough.

Construction has now commenced on Site 29.

The key issue regarding this group is its small size;

| Site Ref | Site Name/Site Description if Anonymised | Net acres | Value Area (£/sqft sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | Viability Status |
|---|---|---|---|---|---|---|---|
| Housing Site 31 | Consider for release employment site | 1.36 | £240 | 17 | Poss. | £40,000 | VIABLE |
| Housing Site 27 | Outside Growth Network | 1.66 | £215 | 23 | | £25,000 | VIABLE |
| Housing Site 29 | Outside Growth Network | 1.63 | £195 | 23 | Poss | £5,000 | VIABLE |
| Housing Site 39 | Bentley Lane Business Park | 4.57 | £165 | 68 | Poss | £5,000 | VIABLE |

### 5.2.2. Group 2 Sites: Deliverable by Market but Section 106 contribution may be limited

These sites are generally concentrated in the mid value areas of the Borough, and there may be potential for S106 payments in some circumstances, depending on the size of the site (which will guide market interest to a certain extent) and the magnitude of abnormal development costs.

This group includes the important Servis UK site, which has the capacity for at least 150 dwellings. Given the particularly large size of this site, there may be the potential to push sales values on from those achieved locally which may push up the potential Section 106 contribution.

The group also includes a number of small sites in relatively high value (£185/sqft) areas which might otherwise be considered as a Group 1 sites, but for the possible abnormal costs relating to former coal workings, which, if they exist, would require offsetting against possible Section 106 contributions.

Spread over quite a wide geographic range (if the Servis UK site is considered as Darlaston then the sites are spread over four of the Borough's centres), these sites represent an important set of sites for the Borough.

As with Group 1, the key issue is the small size of this group.

| Site Ref | Site Name/Site Description if Anonymised | Net acres | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | Viability Status |
|---|---|---|---|---|---|---|---|
| Housing Site 23 South West | Outside Growth Network | 2.08 | £185 | 29 | Poss | Nil | VIABLE |
| Housing Site 23 South East | Outside Growth Network | 0.66 | £185 | 9 | Poss | Nil | VIABLE |
| Housing Site 9 | Former Servis UK Site | 10.03 | £170 | 150 | Poss | £5,000 | VIABLE |
| Housing Site 36 | Outside Growth Network | 0.64 | £165 | 10 | | £5,000 | VIABLE |
| Housing Site 21 | Howdles Lane Brownhills | 2.94 | £165 | 44 | | Nil | VIABLE |
| Housing Site 1A | Noose Lane, Willenhall | 1.59 | £160 | 39 | Poss | Nil | Start on Site Imminent |
| Housing Site 13 | Harvestime Bakery Raleigh St | 4.62 | £165 | 69 | Poss | £5,000 | VIABLE |
| Housing Site 37 | Small site outside Growth Network | 0.17 | £175 | 4 | | Nil | VIABLE |
| Housing Site 20 | Daw End School Rushall | 2.92 | £185 | 41 | Poss | Nil | VIABLE |

As a footnote, it is encouraging to note that Site 36 has recently been sold, and a start on site at Noose Lane (Willenhall, Site 1A) is imminent (though with no Section 106 contribution, which accords with our analysis).

### 5.2.3. Group 3 Sites: Deliverable by Registered Provider Developer or affordable housing sector specialist

This group of sites, which we understand are being delivered by either a registered provider developer (such as Walsall Housing Group) of affordable housing sector specialist (such as Marcity / Keir), are very important to the delivery of housing in the Borough in that they represent over half the quantum of housing that we consider deliverable.

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 14 | Mary Elliot School, Brewer St | 3.68 | £165 | 55 | Poss | £5,000 | VIABLE |
| Housing Site 15 | Beechdale School Open Space | 4.57 | £165 | 68 | Poss | £5,000 | VIABLE |
| Housing Site 10 | Silver Street Brownhills | 8.80 | £165 | 197 | Poss | £5,000 | VIABLE |
| Housing Site 8 | Shakespeare Crescent | 25.7 | £160 | 412 | Poss | Nil | VIABLE |

This magnitude of delivery reflects the success of the partnership working between Walsall Council, the Registered Providers in Walsall, particularly Walsall Housing Group (whg), and the Homes & Communities Agency (HCA). This partnership working reflects the importance placed by Walsall Council in its enabling role in seeking to address the acute housing need requirements of the Borough.

### 5.2.4. Group 4 Sites Potentially attractive sites – which may require some degree of intervention to ensure delivery in BCCS period

Whilst representing a small proportion of potential dwellings, this is an important group, as delivering these sites will widen the geographical spread of delivery of significant housing schemes across the Borough, including Walsall Wood, in the east of the Borough.

The sites are generally located in what might be considered mid to upper-mid range market areas of the Borough, and for the most part may be considered, in simplistic terms, viable. These sites, are either occupied by apparently viable employment uses, or surrounded by employment uses, which suggests that there is a risk that they may not come forward during the BCCS period, despite their apparent viability.

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 3 | Walsall Road / Hall Lane, Walsall Wood | 12.63 | £175 | 179 | | £15,000 | VIABLE |
| Housing Site 38 | Consider for release employment site | 1.26 | £175 | 18 | Poss | £5,000 | VIABLE |
| Housing Site 44 | Moat Street Willenhall | 4.50 | £165 | 67 | Poss | £5,000 | VIABLE |

All sites have major delivery concerns, however. For the most part this relates to the blend of existing uses, on site, or neighbouring sites.

- The biggest potential development opportunity is in Walsall Wood (Site 3), which, however, lies in four parts – dissected east west by the Daw End Branch of the Wyrley and Essington Canal, and north/south by the A461 Lichfield Road. Proposals for individual elements of the site have emerged, but in such cases the planning application was either withdrawn or the consent has lapsed. This we suggest reflects a lack of market interest in individual components of the site due to the unattractive environment presented by the neighbouring uses, and a comprehensive approach is required for the "whole" site. The difficulty is that the road frontages generally have active quasi retail uses, including a recent letting to *Screwfix*.

- The Moat Street site is potentially viable, but the issue is that it is different ownerships and in active industrial / quasi industrial use, and also adjoin such uses. Where neighbouring industrial activities continue, these serve to encumber the potential residential amenity of the neighbouring sites, and may limit market interest. At the same time, introducing new residential development can lead to the remaining industry being seen as "bad neighbours" and placed under pressure to relocate or close.

- Site 38 is situated adjacent to in an attractive neighbourhood to the south east of Walsall town centre, and a high quality scheme was developed over the previous decade immediately to the west of the site. We understand that the site owner is working up proposals to develop the site. Notwithstanding this, the site will be a challenging one to develop given the listed status of the current building complex and the constrained access to the site.

### 5.2.5. Group 5 Sites: Sites attractive in location and scale, but due to site abnormal costs, sales values may be insufficient to be attractive to developers over the short to medium term

| Site Ref | Site Name | Net acres | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | Viability Status |
|---|---|---|---|---|---|---|---|
| Housing Site 6 | Former Caparo Works | 13.23 | £165 | 198 | Poss | £5,000 | VIABLE |
| Housing Site 7 | AP Complex Darlaston | 12.48 | £165 | 244 | Poss | £5,000 | VIABLE |

These sites are in lower mid range value areas, and are of a scale, and have frontage that would attract national housebuilders. However, the national housebuilders currently have a cautious approach to secondary market areas, and will not prioritise sites in these areas with significant abnormal cost constraints

Potentially these sites may come forward towards the end of the BCCS period.

### 5.2.6. Group 6 Sites: Difficult sites, may be developable in long term subject to further market recovery

As with the Group 5 sites, these sites tend to be in the lower mid value areas, but market interest is further constrained for a number of reasons

- Their position in predominantly industrial locations. For example, Darlaston Road, Wednesbury (Site 47 North) may only be attractive in the long term after the nearby Servis site is developed

- Their position in a low – low/mid value area, and not being of the scale to create their own environment and lift sales values (Sites 22. 16, 46, 32, 26, 28)

- Site specific abnormal costs

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 47 North | Darlaston Rd Wednesbury | 3.93 | £170 | 59 | Poss | £5,000 | VIABLE |
| Housing Site 22 | Carl Street, Bloxwich Rd | 1.16 | £165 | 17 | Poss | Nil | Not Viable |
| Housing Site 16 | British Lion Forest Lane | 0.77 | £165 | 11 | Poss | Nil | Not Viable |
| Housing Site 42 | Field Street and Pinson Rd, Willenhall | 4.25 | £160 | 64 | Poss | Nil | VIABLE |
| Housing Site 1B | Noose Crescent, Willenhall | 4.32 | £160 | 65 | Poss | Nil | VIABLE |
| Housing Site 46 | Park Lane/Wood Street Darlaston | 1.85 | £160 | 28 | Poss | Nil | Not Viable |
| Housing Site 32 | Housing Renewal Site | 0.77 | £160 | 11 | Poss | Nil | Not Viable |
| Housing Site 26 West Site | Site in Regeneration Corridor | 2.45 | £170 | 37 | Poss | Nil | Not Viable |
| Housing Site 28 | Outside Growth Network | 1.48 | £165 | 23 | Poss | Nil | Not Viable |
| Housing Site 41 | Small; Consider for release in regeneration corridor | 0.62 | £165 | 9 | Poss | Nil | Not Viable |

Potentially these sites may come forward towards the end of the BCCS period[3].

[3] Construction has since commenced on Site 28.

### 5.2.7. Group 7 Sites: Difficult Small sites in moderate to weak market areas; unlikely to be developed during BCCS period

This group contains a mixture of sites, the unifying factor being that they are all small sites, and most are unlikely to be developed during the plan period.

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 47 South | Darlaston Road | 0.17 | £175 | 3 | Poss | Nil | Not Viable |
| Housing Site 5B | South of Goscote Lane Copper Works | 2.13 | £165 | 32 | Poss | Nil | Not Viable |
| Housing Site 5C | South of Goscote Lane Copper Works | 1.11 | £165 | 17 | Poss | Nil | Not Viable |
| Housing Site 2 | Site in Regeneration Corridor | 2.30 | £165 | 34 | Poss | Nil | Not Viable |
| Housing Site 35 | Small Site Outside Growth Network | 0.42 | £160 | 2 | Poss | Nil | Not Viable |
| Housing Site 34 | Small Site in Regeneration Corridor | 0.17 | £160 | 2 | Poss | Nil | Not Viable |
| Housing Site 24 | Housing Renewal Site | 0.62 | £155 | 9 | Poss | Nil | Not Viable |
| Housing Site 45 | Consider for Release Employment Site | 0.94 | £155 | 14 | Poss | Nil | Not Viable |
| Housing Site 11 | Bentley Road North | 1.88 | £165 | 28 | Poss | Nil | Not Viable |
| Housing Site 43 | Small; Consider for release in regeneration corridor | 1.58 | £165 | 24 | Poss | NIL | Not Viable |

Alongside the potential for abnormal costs, the constraint facing most, if not all of them, is that they are located in weak market areas, or immature locations. Their small scale makes them unattractive to major housebuilders, whilst the difficult proposition, or weak market may serve to constrain banks willingness to lend to prospective small developers.

### 5.2.8. Group 8 Sites: Difficult Large Sites, with abnormals, in moderate to weak market areas; unlikely to be developed in BCCS period

Whilst these are all large sites, and on that basis of potential interest to national housebuilders; their fundamental weakness is that they are in all lower quality secondary market areas, and are shown to be unviable. Even if they were ostensibly viable, their lower secondary market status combined with the significant likelihood of development abnormals make them unattractive to developers, particularly the national housebuilders who otherwise might have the financial capability to withstand the challenging development cashflows presented by such difficult sites.

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 17 | Wheel Works Willenhall | 3.34 | £165 | 50 | Poss | Nil | Not Viable |
| Housing Site 19 | Rear of Wilkes Avenue | 3.88 | £165 | 58 | Poss | Nil | Not Viable |
| Housing Site 5A | Goscote Lane Copper Works | 13.62 | £165 | 204 | Poss | Nil | Not Viable |
| Housing Site 12 | Metal Casements Birch St | 6.67 | £165 | 62 | Poss | Nil | Not Viable |

### 5.2.9. Summary

**Our analysis suggests that around 45% of the estimated capacity of the sampled SAD sites is deliverable, in the current market environment.**

- Just under half of this deliverable capacity is on land in private ownership, and can be expected to be delivered by the market; with one exception these sites are in the east of the Borough
- The other half of this capacity will be delivered in the short to medium term by Walsall Council's Registered Provider partners, or affordable housing specialists.

**Some 35% of the estimated capacity of the sampled SAD sites may be deliverable in the longer term, subject to continued market improvement and renewed market interest by housebuilders:**

- Just under one third of this longer term deliverable capacity is potentially deliverable in the longer term. Whilst the appraisals suggest these sites are ostensibly viable, delivery may be difficult due to active, viable and established uses on site

- Another third of this capacity are at sites that by way of their scale, and location make for inherently attractive development propositions (including key sites in Birchills and Darlaston). Whilst the appraisals suggest these sites are ostensibly viable, development interest is limited particularly due to the cautious approach of national housebuilders to secondary market areas, who are not currently prioritising sites in areas with significant abnormal cost constraints

- The final third of this capacity is at sites which may not be viable in the current market environment, and where development interest is further constrained by one or more additional local issues adversely effecting viability (including location, and size, as well as abnormal costs)

**Some 20% of the SAD dwelling capacity may not be deliverable during the BCCS period on the basis of either being:**

- Difficult large sites, facing abnormal development costs, in moderate to weak market areas (accounting for most of the capacity falling within this viability category)

- Difficult small sites in moderate to weak market areas

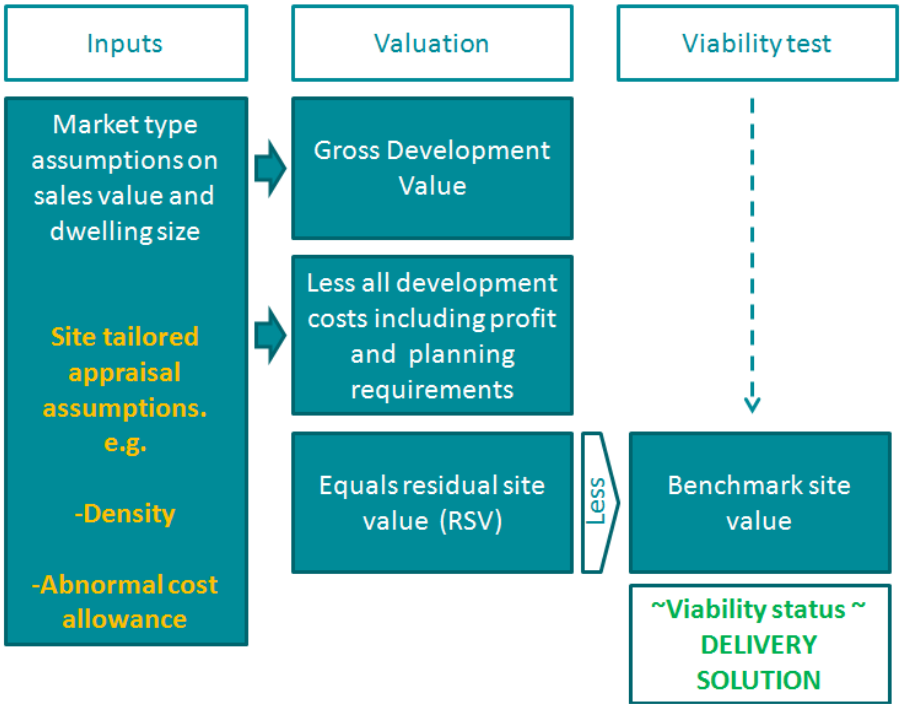
These include some new sites that have fallen out of employment use, and a significant number of sites that have been vacant for a time span that includes the peak of the last property cycle.

**In summary, it is reasonable to suggest that around 80% of the SAD Dwelling Capacity is deliverable over the BCCS period (around half of this being deliverable now, and a further half deliverable subject to further market recovery in the secondary areas of the Borough). The next section considers delivery, with a particular emphasis on the sites that may require public sector assistance to enable delivery.**

# 6. Delivery

## 6.1. Summary Results

The Housing SAD study has considered the viability of the sampled sites based on high level viability appraisals of the potential residential development opportunity on each site (using the assumptions outlined in Section 4). Broadly this approach is based on the approach outlined below.




We have also been mindful, in our interpretation of the viability testing results, of the approach of housebuilders in prioritising sites to acquire, before even the detailed viability is considered. This had the effect of our taking a cautious approach when assessing large sites in secondary market areas showing as potentially viable, but which have significant site abnormal costs, which reflects the current attitudes of the plc housebuilders with the financial resource to invest in these difficult sites. This may change in the future, as the market continues to recover and the major PLCs, in particular reassess their investment strategies, which are currently seek to minimise development risk in the secondary market areas.

On this basis the summary results of the study were as follows.

This Section considers the delivery approach to the SAD sites in order to meet the objectives of the BCCS. The approach to delivery has been considered on the basis of the eight groups into which we sorted the sites.

| Grouping | Deliverability Position | Number of Sites | Approximate % of Sampled Capacity (Rounded) |
|---|---|---|---|
| GROUP 1: | Deliverable by Market and Notable S106 | 4 | c. 45% |
| GROUP2: | Deliverable by Market but limited or noS106 | 9 | |
| GROUP3: | Deliverable by Registered Provider or affordable sector specialist | 4 | |
| GROUP 4 : | Potentially attractive sites – which may require some degree of intervention | 3 | c. 35% |
| GROUP 5 : | Sites attractive in location and scale, but sales values not yet robust enough given scale of abnormals? | 2 | |
| GROUP 6 : | Further market improvement required | 10 | |
| GROUP 7 : | Difficult Small sites in moderate to weak market areas | 10 | c. 20% |
| GROUP 8 : | Difficult Large Sites, with abnormals, in moderate to weak market areas | 4 | |

### 6.1.1. Groups 1, 2 and 3: Sites deliverable in the current market environment

| Grouping | Deliverability Position | Justification |
|---|---|---|
| GROUP 1: | Deliverable by Market and Notable S106 | The high level appraisals for these sites produce a residual land value sufficient for a "willing landowner" to bring the site forward for development; and the residual land value calculation allows for sufficient profit (20% on value) for a "willing developer" |
| GROUP2: | Deliverable by Market but limited or no S106 | As Group 1, but the surplus residual land value over the designated threshold land value is much smaller, meaning lesser prospects for Section 106 |
| GROUP3: | Deliverable by Registered Provider Developer or affordable sector specialist | Site under control of the developer |

These sites have a capacity of around 45% of the SAD dwelling capacity (based on the sample sites), and, based on the information provided, and our understanding of the current market, it is reasonable to assume that they will be developed within the BCCS period.

### 6.1.2. Groups 4,5 and 6: Sites that may not be deliverable in the current market environment, but may be deliverable within the BCCS period subject to further market improvement

| *Grouping* | *Deliverability Position* | *Number of Sites* | *% of sampled capacity* |
|---|---|---|---|
| GROUP 4 : | Potentially attractive sites – which may require some degree of intervention | 3 | 9% |
| GROUP 5 : | Sites attractive in location and scale, but sales values not yet robust enough given scale of abnormals? | 2 | 16% |
| GROUP 6 : | Further market improvement required | 10 | 11% |

These sites have a capacity of around 35% of the SAD dwelling capacity (based on the sample sites), and, based on the information provided, and our understanding of the current market, we do not consider them to be deliverable at present (even though many of the sites are showing as ostensibly viable, based on the viability approach outlined in Section 6.1). This applies to sites in Groups 5 and 6 in particular, which account for around 27% of the SAD dwelling capacity.

Notwithstanding this, given our appreciation of the fundamental qualities of the sites (particularly the Group 5 sites – 16% of sampled capacity), it would not be unreasonable to assume that they may be developed within the BCCS period.

#### 6.1.2.1 Approach to Group 4 sites: Potentially attractive sites which may require some degree of intervention

These are sites in good secondary areas, and for the most part are ostensibly viable, and so might be considered potentially developable during the BCCS period.).

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 3 | Walsall Road / Hall Lane, Walsall Wood | 12.63 | £175 | 179 | | £15,000 | VIABLE |
| Housing Site 38 | Consider for release employment site | 1.26 | £175 | 18 | Poss | £5,000 | VIABLE |
| Housing Site 44 | Moat Street Willenhall | 4.50 | £165 | 67 | Poss | £5,000 | VIABLE |

Caution, however, is required as to the likelihood of these sites coming forward during the BCCS period.

- Housing Site 3: The site is in fragmented physically and by ownership, with much of the Lichfield Road frontage occupied by viable retail uses housed in former industrial premises.
- Housing Site 38: The site is occupied by a complex of listed structure in a Conservation Area. Whilst the site is located in an attractive residential area close to Walsall town centre, and we are led to understand that the owner is exploring the potential for residential development of the site, such a scheme may not be viable without grant intervention.
- Housing Site 44: The site, which is in two parts (north and south of Moat Street), remains in a viable use, with the south side being occupied by the Foundry and HQ of the Wedge Group, the UK's largest hot dip galvanizing organisation, with 14 plants across the UK.

### 6.1.2.2 Approach for Group 5 Sites: Sites attractive in location and scale, but sales values not yet robust enough given scale of abnormals?

These are sites in good secondary areas, which are shown as being fundamentally viable, but have significant development risk in terms of the abnormal development costs – indeed there is the risk that the 12.5% extra over contingency allowance applied in the viability modelling may not be sufficient for these specific sites.

| Site Ref | Site Name | Net acres | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | Viability Status |
|---|---|---|---|---|---|---|---|
| Housing Site 6 | Former Caparo Works | 13.23 | £165 | 198 | Poss | £5,000 | VIABLE |
| Housing Site 7 | AP Complex Darlaston | 12.48 | £165 | 244 | Poss | £5,000 | VIABLE |

Notwithstanding this, given our appreciation of the fundamental qualities of the sites (particularly the Group 5 sites – 15% of sampled capacity), it would not be unreasonable to assume that they may be developed within the BCCS period subject.

In particular, it is encouraging to note that the Black Country Strategic Economic Plan (March 31, 2014; p31) proposes, as a medium term priority (Place 3 - Housing), to establish:

"a local Land Infrastructure Loan Fund to help unlock blocked sites with ground condition problems. Fund repaid upon sale of last house on the development"

This type of intervention would be ideal for large schemes (such as those in Group 5) that may be fundamentally viable, but with significant development (and hence lending) risk attached due high remediation costs early on in the development programme.

### 6.1.2.3 Approach to Group 6 Sites: Difficult sites, may be developable in long term subject to further market recovery

As set out earlier, delivery is seen as long term, and to a degree may be dependent on the success of the Group 4 and 5 sites in establishing the areas as attractive locations for development.

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 47 North | Darlaston Rd Wednesbury | 3.93 | £170 | 59 | Poss | £5,000 | VIABLE |
| Housing Site 22 | Carl Street, Bloxwich Rd | 1.16 | £165 | 17 | Poss | Nil | Not Viable |
| Housing Site 16 | British Lion Forest Lane | 0.77 | £165 | 11 | Poss | Nil | Not Viable |
| Housing Site 42 | Field Street and Pinson Rd, Willenhall | 4.25 | £160 | 64 | Poss | Nil | VIABLE |
| Housing Site 1B | Noose Crescent, Willenhall | 4.32 | £160 | 65 | Poss | Nil | VIABLE |
| Housing Site 46 | Park Lane/Wood Street Darlaston | 1.85 | £160 | 28 | Poss | Nil | Not Viable |
| Housing Site 32 | Housing Renewal Site | 0.77 | £160 | 11 | Poss | -Nil | Not Viable |
| Housing Site 26 West Site | Site in Regeneration Corridor | 2.45 | £170 | 37 | Poss | Nil | Not Viable |
| Housing Site 28 | Outside Growth Network | 1.48 | £165 | 23 | Poss | Nil | Not Viable |
| Housing Site 41 | Small; Consider for release in regeneration corridor | 0.62 | £165 | 9 | Poss | Nil | Not Viable |

On this basis, the delivery proposals for the Group 4 and 5 sites will have a bearing on the future delivery of the Group 6 sites. For example:

- Darlaston: The development of the Servis site may assist the future marketability of the Darlaston Road, Wednesbury (Site 47 North), Wesley Road, Darlaston (Site 32), and Park Lane (Site 46)

Also, and as noted for the Group 5 sites, it is encouraging to note that the Black Country Strategic Economic Plan (March 31, 2014; p31) proposes, as a medium term priority (Place 3 - Housing), to establish:

"a local Land Infrastructure Loan Fund to help unlock blocked sites with ground condition problems. Fund repaid upon sale of last house on the development"

This Land Infrastructure Loan fund may assist in the delivery of sites such as Sites 42 and 1B, which may be ostensibly viable, but will be of lesser application for other large sites that are fundamentally unviable, such as Sites 46 and 32 (We understand that Site 32 is under the ownership of Walsall Housing Group and may thus be developed by them in the same manner of others), which might otherwise be developed subject to further market recovery during the Plan Period.

Potentially these sites may come forward towards the end of the BCCS period.

### 6.1.2.4 Approach to Group 7 and 8 Sites: Difficult, fundamentally unviable sites

Our modelling suggests that these sites are fundamentally unviable in that the calculated residual land value falls below the benchmark threshold land value required for a "willing owner" to bring them forward for development.

Group 7 sites - Difficult Small sites in moderate to weak market areas, are represented below.

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 47 South | Darlaston Road | 0.17 | £175 | 3 | Poss | Nil | Not Viable |
| Housing Site 5B | South of Goscote Lane Copper Works | 2.13 | £165 | 32 | Poss | Nil | Not Viable |
| Housing Site 5C | South of Goscote Lane Copper Works | 1.11 | £165 | 17 | Poss | Nil | Not Viable |
| Housing Site 2 | Site in Regeneration Corridor | 2.30 | £165 | 34 | Poss | Nil | Not Viable |
| Housing Site 35 | Small Site Outside Growth Network | 0.42 | £160 | 2 | Poss | Nil | Not Viable |
| Housing Site 34 | Small Site in Regeneration Corridor | 0.17 | £160 | 2 | Poss | Nil | Not Viable |
| Housing Site 24 | Housing Renewal Site | 0.62 | £155 | 9 | Poss | Nil | Not Viable |
| Housing Site 45 | Consider for Release Employment Site | 0.94 | £155 | 14 | Poss | Nil | Not Viable |
| Housing Site 11 | Bentley Road North | 1.88 | £165 | 28 | Poss | Nil | Not Viable |
| Housing Site 43 | Small; Consider for release in regeneration corridor | 1.58 | £165 | 24 | Poss | NIL | Not Viable |

Group 8 sites - Difficult Large Sites, with abnormals, in moderate to weak market area, are represented, below.

| Site Ref | Site Name | Net Developable (acres) | Value Area (£/sqt sales rate) | Dw. | Abnormal Costs | Approximate (to nearest £5,000) Viability Surplus / Dwelling Available for Infrastructure Contributions, Policy Standards & CIL (Threshold Land Value Less Residual Land Value) | VIABILITY STATUS |
|---|---|---|---|---|---|---|---|
| Housing Site 17 | Wheel Works Willenhall | 3.34 | £165 | 50 | Poss | Nil | Not Viable |
| Housing Site 19 | Rear of Wilkes Avenue | 3.88 | £165 | 58 | Poss | Nil | Not Viable |
| Housing Site 5A | Goscote Lane Copper Works | 13.62 | £165 | 204 | Poss | Nil | Not Viable |
| Housing Site 12 | Metal Casements Birch St | 6.67 | £165 | 62 | Poss | Nil | Not Viable |

It should be borne in mind that the viability appraisals have been carried out at a high level, and just as there is a risk that the viability gap may be understated (with particular regard to site specific abnormal costs), the flat rate 12.5% "extra over" contingency, may in some cases have had the effect of over providing for abnormal remediation costs.

We are also mindful that not all developer have the same profit requirements to that we have assuming in our modelling (20% on Gross Development Value), for whilst this is a reasonable and safe standard market assumption, there are cases, especially amongst certain smaller developers where the profit requirement is less than this.

As such there may be sites listed in the tables above, where interest is being shown by the landowner in bringing development forward (such as Site 13, 17 and 28), which our modelling suggests is unviable

On the basis of the fundamental unviability of these sites, proposed "medium term" (beyond 2020) interventions referenced in the SEP, such as a local Land Infrastructure Loan Fund (LLILF), may not be sufficient to bring forward such sites for development, - the LLILF is only a loan fund to assist development cashflows and reduce lending risk, it does not address schemes where there is a fundamental viability gap.

Notwithstanding this, the SEP references two interventions that may involve grant based "gap funding" as "pipeline" schemes ("Medium Scale Housing Sites programme", and "Gap Funding to Facilitate House Building"), which, in our view will likely prove important for many of the Group 7 and 8 sites. (Indeed, a specific intervention to address the key Goscote Lane Copper Works is also proposed)

### 6.1.2.5 Summary

Section 5, which considered viability, concluded that

- , it was reasonable to suggest that around 80% of the SAD Dwelling Capacity is deliverable over the BCCS period (around half of this being deliverable now (Groups 1 to 3), and a further half deliverable subject to further market recovery in the secondary areas of the Borough – Groups 4 – 6)).

- there were concerns regarding the delivery of around 20% of the SAD Dwelling Capacity (Sites in "viability" Groups 7 and 8)

This section has considered the delivery prospects of the Housing SAD sites, and concludes that there is sufficient evidence to suggest there is a reasonable prospect of their delivery over the BCCS period as follows:

- Groups 1- 3 (Around 45% of capacity, in the short to medium term)
- Groups 4-6 (Around 35% of capacity, in the medium to long term)
- Groups 7-8 (Around 20% of capacity, in the medium to long term subject to the proposed public sector enabling interventions)

| *Grouping* | *Deliverability Position* | *Number of Sites* | *Approximate % of Sampled Capacity (Rounded)* |
|---|---|---|---|
| GROUP 1: | Deliverable by Market and Notable S106 | 4 | c. 45% |
| GROUP2: | Deliverable by Market but limited or noS106 | 9 | |
| GROUP3: | Deliverable by Registered Provider or affordable sector specialist | 4 | |
| GROUP 4 : | Potentially attractive sites – which may require some degree of intervention | 3 | c. 35% |
| GROUP 5 : | Sites attractive in location and scale, but sales values not yet robust enough given scale of abnormals? | 2 | |
| GROUP 6 : | Further market improvement required | 10 | |
| GROUP 7 : | Difficult Small sites in moderate to weak market areas | 10 | c. 20% |
| GROUP 8 : | Difficult Large Sites, with abnormals, in moderate to weak market areas | 4 | |

# PART 2 – EMPLOYMENT VIABILITY AND DELIVERABILITY STUDY

# 1 Introduction

The Employment Viability and Deliverability Study considers the viability and deliverability of the Employment Site Allocation and Deliverability document based upon a list of 7 sites provided by Walsall Council as comprising the 5 year supply and a further 11 sites identified as opportunities in the 5-10 year supply. 7 sites are identified as being additional to the supply.

This chapter is presented in the following sections:

- Employment Market Context for Walsall
- Appraisal Methodology and Approach
- Appraisal Assumptions (used in the site specific viability testing)
- Assessment of 5 Year Supply (to identify site specific constraints and opportunities)
- Assessment of 5-10 Year Supply
- Assessment of additional sites
- Appraisal Findings and Delivery (including the scoping of interventions to bring the sites forward in the five year period and prioritisation of the ten year employment land portfolio)

# 2 Employment Market Context

## 2.1 The National Picture

Total demand for industrial space is expected to improve in the short term, with take-up up across the majority of the UK regions over 2013 (the greatest demand being for box units of 9,290 sq. m and over). Take-up increased across all sized bands in 2013 compared to 2012, and with market fundamentals expected to improve this year and market sentiment strong we expect occupier demand to remain stable or grow. Take up across all property grades in Q3 2014 reached just over 9m sq. ft, up 2.5m sq. ft on Q2 2014 however only 13% of take up came from the manufacturing sector – the lowest proportion since Q4 2010, reflecting the uncertainty in the Eurozone export market.

Improving economic conditions are expected to translate into continuing industrial property demand. Grade A availability fell nearly 10% to 9 million sq. ft across the UK in 2014 and supply is expected to continue on a downward trend, although speculative development is expected to pick-up over the course of 2015, with a number of 'big box' units and smaller multi-let schemes already underway.

Jones Lang LaSalle forecast a relatively modest increase in rents over the period 2014-2017 although growth is expected to be stronger in and around London. The shortage of prime investment stock means that secondary stock is forecast to become favourable to investors, and as a result, the arbitrage between prime and secondary yields to narrow. There is limited stock generally across the UK however with signs of Q4 2014 seasonal increase. Investment in industrial and logistics property was higher in the first half of 2013 than during the whole of 2012.

Demand for multi-let stock from institutional interest has spread across the UK with the greatest demand being for prime logistics space but occupiers have been increasingly focused on shorter lease terms. UK institutions are attracted by improving occupational market characteristics across the UK, demonstrated by the fact that over £1.2bm invested in Q3 2014 – the fifth consecutive quarter of investments over £1bn.

There has been an improvement in pricing across 2014, as well as a diminishing prime/secondary yield gap for regional multi-let and short term logistics compared to prime/ long dated income. In general Q4 2014 has seen strong demand forecast for industrial, with the Q4 increase in supply driven by portfolios, further yield improvement expected for good quality regional stock. The strongest demand is forecast for strong logistics locations and south east or core multi-let locations.

## 2.2 Current and Project Demand Characteristics for Walsall

Most occupiers, particularly of modern manufacturing and distribution businesses have exacting requirements when looking for new sites or relocating their businesses and these would include:

- 24/7 operation without restriction
- Good accessibility to the primary road networks, including motorways
- Limited congestion to allow for risk limiting in just in time delivery
- Absence of residential neighbours who may complain about working practices
- An established business network of customers and suppliers
- A good local environment
- Accessibility to labour
- No historic issues with the site such as ground stability or flooding
- Clean site with no ongoing contamination issues
- Competitive pricing

Any choice of location will be assessed against these criteria, and those that fail to meet most, if not all of them, will often fail to attract occupiers. The first criterion is particularly important because in modern manufacturing, and indeed warehousing, the ability to operate flexibly, without restriction, on a 24 hour basis, 7 days a week is vitally important, as companies have to react to their customers' requirements. Consequently companies will tend to avoid locations which are close to residential areas for fear of becoming a bad neighbour and causing complaints which could seriously jeopardise the performance of the business.

The market for employment properties has suffered through the recessionary years, and there have been a substantial number of buildings available in the market. However, it is clear that those companies who are seeking to relocate to premises are seeking those of good quality, and in good locations. The take up of better quality buildings has been gaining momentum. In Walsall even secondary locations are being taken up due to the shortage of stock.

The accessibility of a site for access to the primary road network to include both A roads and motorway access is particularly important for logistics operators or manufacturing occupiers related to the automotive sector where occupiers are often supplying based on just in time models and therefore there is a need to limit any risk in delays which can incur significant financial penalties. This is of particular relevance in the Midlands given the active automotive sector driven by Jaguar Land Rover. Occupiers will not locate in areas where access including difficult road junctions or narrow highways cause congestion as these have implications not only on delivery but access for staff as well.

In recent years, and as a direct result of the financial impact on the industrial sector, a high proportion of those occupiers that have relocated have taken advantage of discounted rental terms negotiated due to the pressure on landlords to secure occupiers so as to avoid ongoing holding costs, notably empty business rates. This change in market dynamics has seen occupiers able to upscale the quality of accommodation they may previously have occupied and as a result occupiers who may have typically located in poorer locations and in lower quality accommodation have moved to better located sites and newer property with limited impact on their financial performance.

The impact has been that occupiers that have historically been located in poorer areas are now seeking to locate in areas which are able to offer more amenable working environments for staff, which not only includes the actual working hours, but also consideration for access for all. Sites that are close to a labour force but at a reasonable distance from residential areas to avoid possible impacts tend to be attractive to companies. Moreover, those sites which offer better quality accommodation as well as well-maintained working environment are able to attract occupiers over and above those poorer quality sites even if rental levels are at a higher level than competing sites.

Recent changes in legislation relating to environmental and contamination liability has also given rise to a greater level of due diligence required by occupiers, in particular in locations with historic contamination and mining issues. Although there are ways to indemnify against ongoing environmental issues and also insurance policies available, those sites where no historic ground issues or environmental problems remain will inevitably be classed as more competitive as occupiers have limited exposure to potential liability and future cost of occupation. These considerations will be needed in terms of those sites brought forward, especially through the Enterprise Zone.

Despite the recent market activity and deals agreed, the issue of rent as a cost is not necessarily the highest priority for many occupiers. When considering relocation it will form part of the main discussion from a property specific angle; however there are greater costs for main occupiers including plant and machinery, wages and products which have more impact on the day to day business. Therefore, although it is important to be competitive on rent, the other issues considered by an occupier will need to be addressed to ensure any site or building is considered a realistic proposition.

Many of the properties which have transacted throughout the Midlands area have in the main been able to overcome the above considerations, and where not, this may be a reason behind their continued availability.

There is evidence of a gradual move away from isolated and constrained sites towards sites that are close to the motorway network, the Black Country Route (BCR) and the Black Country Spine Road (BCSR), and also into areas where there is a critical mass of industry well away from housing. Evidence of better quality locations being taken up at the expense of less favourable locations include the consolidation of Middletons West Midlands operation at Rose Hill Willenhall, in proximity to the Keyway/BCR, and subsequent and significant further investment at the site by the company. This is in line with the regional trend showing that those good quality buildings /sites that are being let or sold are modern, in the best and most accessible locations, and meet the criteria as set out above.

Another notable trend is that the most significant investments in manufacturing property in recent years in the Borough have been by incumbent firms, such as Aspray at Noose lane/Wednesfield Road, and Promat (Walsall Enterprise Park), and notably these are in locations that we would not necessarily regard as prime. This reflects trends in the wider market and a consistent lack of supply, which has seen a reduction in businesses choosing to relocate. The costs of relocating a business are high, as is the potential business risk of moving and as such, moves are rarely undertaken if the new facility fails to meet the required criteria.

A move is often only made where the risks can be minimised and the new premises meet all of the business' criteria, ensuring the predicted benefits to the business for making the move are gained. It is important to note however that within this consideration to actual rent payable under a lease for many larger occupiers is actually a lower priority compared to the risks of moving including investment in staff, new plant and machinery and property upgrades including dilapidations considerations. It follows that a significant investment by an incumbent firm at its existing site is not necessarily an indicator of the location's overall quality, rather it is the product of a much wider business and operational consideration. The ending of speculative industrial development in 2010, with none since, has further exacerbated the lack of supply in relation to demand.

As with elsewhere in the West Midlands, it is also evident that, overall, warehousing and distribution has been one of the stronger performing sectors with recent major investments such as Asprey (Wednesfield Road), A F Blakemore at Longacres (Willenhall) and Castings (Lichfield Road, Brownhills), alongside investment by the waste management sector, such as expansion of the Envirosol hazardous waste facility at Coppice Side (Brownhills) and G&P Batteries (Darlaston), development of a new materials recycling facility (Triple R Solutions) at the former Masons Woodyard at Longacres (Willenhall), and the development of large materials recycling facility by Interserve at Brickyard Road (Aldridge), and most recently, the relocation of a paper recycling depot to Longacres (Willenhall) early in 2015 by D S Smith, following their takeover of Middleton Recycling.

A number of these warehouse and distribution investments represent incumbent firms investing in their operations, which is a key factor militating against relocation, as discussed above, although there have also been large investments made by new entrants to the market including TK Maxx, Initial CityLink (then Yodel), Robert Wiseman, Amtrak and Norbert Dessangle. It is also notable that three of the most significant investments are both at Longacres near the Keyway, or in reasonable proximity to it (Asprey). This reflects the fact that warehousing and distribution businesses demand the most accessible locations. Conversely, as a bad neighbour use, firms in the waste management sector are much less sensitive to this quality criterion.

In the period up to 2008, many developers carried out speculative employment based developments but since that time, virtually none have come forward. This is due to market uncertainty but also the position of the lending institutions such as banks, who will not lend money for such schemes. In the current market, institutions will only lend against pre-let schemes and inevitably these are the schemes which meet the above criteria and are therefore of the best quality. Hence, there is existing unsatisfied demand for premises and a consistent problem of undersupply of modern and substantial schemes. This has meant that firms have either moved away or have not expanded leading to job opportunities being foregone. A key priority needs to be fulfilling this unsatisfied demand. It is very rare for occupiers of smaller buildings to pre-lease them and they will seek to acquire existing building stock.

In recent months, there have been signs that speculative development is beginning to resume. For example, Phase One of the Bentley Bridge Business Park by Clowes Developments, less than a mile from Wolverhampton City Centre, is now fully let. The next phase of speculative warehouse units on the site are now available to let, and there is a further Design and Build opportunity onsite. In Walsall there is an application for speculative B1/B2/B8 development at the Bull Lane site.

## 2.3 Quality of Stock and Supply Characteristics in Walsall

Overall, the best quality / potentially best quality stock in the Borough is to be found alongside the key road arteries, as reflecting the importance of this attribute to the distribution sector in particular, but also the emerging need for manufacturing firms to be able to serve the “just in time” requirements of their clients.

As such, the key concentrations of prime employment land are to be found in the following:

- In and around the M6 corridor, including James Bridge and Reedswood Way (Junction 10), South Walsall/Bescot (Junction 9)
- In and around the Keyway (A454)
- In around the Black Country Route (A463 / A454), and the Black Country New Road (A41)

The distribution of prime or potentially prime employment land is an important consideration when considering the viability and deliverability of prospective employment site allocations across the Borough. For, whilst it is the case that a certain amount of employment land take up will be by way of incumbent companies seeking to expand (and avoid the significant operational disruptions involved in moving premises), the delivery driver of the majority of employment land required in Walsall, especially the sites around the M6, Black Country Route/New Road/Keyway, is the requirement for prime employment land that meets modern locational requirements (as set out in Section 2.2).

Isolated, and ostensibly prime quality premises, are to be found at various locations across the Borough including Aldridge, Brownhills, the A34 corridor in North Walsall, Walsall Enterprise Park, and North Willenhall. This is not necessarily reflective of the quality of the employment location, but may reflect operational circumstances specific to the occupier (refer to Demand Characteristics, above).

On this basis, we have been very cautious when assessing the viability and deliverability of sites in these areas.

- Aldridge in particular is characterised by the relatively high quality of much of its stock, and indeed recent investment. This, in part relates to the peculiarities of the location. Aldridge was subject to strategic expansion in the 1970s as part of a strategy in the West Midlands of diverting growth from Birmingham (which also saw the expansion of Redditch, albeit on a much larger scale), and this included a major relocation of industries.

In Aldridge, this process was successful in creating a critical mass of light industry in particular in the town, at purpose built premises within modern, purpose built, industrial estates, reasonably well serviced by highways and generally unencumbered by the neighbouring residential uses that constrain so many industrial estate locations in the Black Country that have evolved from outmoded and converted former industrial complexes. The generally good quality commercial environment has allowed incumbent companies to thrive and grow, and indeed allowed for a certain level of inward investment. Notwithstanding this, the prospect of the significant conversion of local quality space to high quality space in the town's industrial estates are constrained by a number of issues including access, and the constrained configuration of site redevelopment opportunities.

- Similar to Aldridge, Brownhills offers some degree of a modern purpose built and configured area, albeit to a much smaller degree, at Maybrook Road, where there has been some recent investment, and which has reasonable, though certainly not perfect, access to the A461 corridor, and this perhaps has some prospect of becoming high quality on the basis of the location of this part of the Borough to the A5 corridor, leading to the M42 and A38. Otherwise the prospect of further prime quality accommodation in Brownhills emerging from existing employment areas are very low.

- There are particular sites along the A34 corridor, where there has been significant investment or remains a significant presence in high quality premises, such as the TK Maxx Distribution headquarters, and the South Staffordshire Water HQ, though this will relate more to strategic and operational considerations rather than the specific generic qualities of the site / location as an employment location. Likewise the investment in Walsall Enterprise Park and Ashmore Lake reflects an astute decision to offer local businesses high quality accommodation quality and reflects the confidence of the landlord in the appeal of their premises to the market.

## 2.4 Transactional Evidence

### 2.4.1 Rental Market

Industrial rents on recent deals show values of around £3.95 psf as illustrated in the table below:

| Address | Date | Unit Size sq. ft | Rent £ pa | Rent £ psf | Occupier | Notes |
|---|---|---|---|---|---|---|
| Unit 3 Bridgeman Street Industrial Estate, Walsall | 01/07/2014 | 1,746 | £85,000 | £4.87 | | Second-hand grade B |
| Unit 3B, Industrial Premises Charles Street, Walsall | 09/06/2014 | 3,100 | £8,500 | £2.74 | | Second-hand grade B |
| Unit 2, Lion Industrial Park, Northgate Way, Walsall | 01/06/2014 | 1,200 | £7,000 | £5.83 | | Second-hand grade B |
| Industrial Facility, Middlemore Lane, Walsall | 01/06/2014 | 10,750 | £32,250 | £3.00 | SavCon Ltd | 3 year lease |
| Industrial Unit, Empire Industrial Park Brickyard Road, Walsall | 01/05/2014 | 1,430 | £7,250 | £5.07 | | Second-hand grade B |
| Unit 5, Vulcan Works Industrial Estate, Thomas Street, Walsall | 01/02/2014 | 2,994 | £5,200 | £1.74 | | Second-hand grade B |
| Unit 1, Industrial Units Pelsall Road, Walsall | 01/02/2014 | 1,466 | £6,500 | £4.43 | | Second-hand grade B |

| | | | | | | |
|---|---|---|---|---|---|---|
| Yard 1, Industrial Units, Pelsall Road, Walsall | 01/02/2014 | 21,780 | £14,300 | £0.66 | | Second-hand grade B |
| Unit 1, Optical Park, Middlemore Lane, Walsall | 27/01/2014 | 4,564 | £20,035 | £4.39 | | Second-hand grade B |
| Unit 5, WS2 Industrial Estate, Bloxwich, Walsall | 17/01/2014 | 10,184 | £38,652 | £3.80 | | Second-hand grade B |
| Unit 7 & 8, Westgate Trading Estate, Aldridge, Walsall | 12/01/2014 | 5,000 | £21,000 | £4.20 | | |
| Unit 17 Maybrook Industrial Estate, Maybrook Road, Walsall | 01/01/2014 | 3,795 | £16,129 | £4.25 | Blastrim Ltd | |
| Unit 1, Anchor Brook Industrial Park, Rossway Business Park, Walsall | 01/01/2014 | 3,049 | £19,819 | £6.50 | | Second-hand grade B |

These values closely accord with Walsall Council monitoring information (Q1 2015, relating to premised being marketed, put forward by the circa 50 agencies that supply the Council's database), and have informed the rates used in the site development appraisals as appropriate.

### 2.4.2 Investment Market

There is little available information on specific industrial property deals in Walsall. However, investment yields on recent deals in the wider Black Country show yields of around 8% as illustrated in the table below:

| Address | Vendor | Purchaser | Date | Unit Size sq. ft | Rent £ pa | Rent £ psf | Q Yield % | Q Price £m |
|---|---|---|---|---|---|---|---|---|
| Anglesey Business Park Hednesford | Lonestar | M7 | Mar-14 | 229,527 | £678,694 | £2.96 | 10.52 | £6.10 |
| Vernon Park Wolverhampton | Hansteen | Colliers Capital | Dec-13 | 86,660 | £449,170 | £5.18 | 7.25 | £5.86 |
| Hams Hall, 170 & Hams Hall 28, Coleshill | IM Properties | L&G | Nov-13 | 198,400 | £.1214m | £6.12 | 7.65 | £15.00 |
| Oxford Street Industrial Estate Wolverhampton | | Dunedin | Jul-13 | 114,912 | £443,370 | £3.85 | 10 | £4.19 |
| Virage Park Cannock | Pritchard Holdin | M7 | Oct-13 | 83,188 | £301,000 | £3.62 | 9.03 | £3.15 |
| Planetary Industrial Estate Wolverhampton | CBRE Investors | | | | £1.468m | | 10.0 | £13.88 |
| Walkmill Lane Cannock | | | | 153,665 | £765,964 | £4.98 | 7.5 | £9.66 |
| Whittan Industrial Ltd Dudley | MARCOL | | | 126,636 | £596,544 | £4.71 | 8.17 | £8.00 |
| Forge Lane Minworth | SWIP | | | 105,000 | £382,200 | £3.64 | 8.0 | £4.50 |
| The Steel Park Wolverhampton | Threadneedle | | | 761,614 | £2.879m | £3.78 | 8.75 | £35.00 |

# 3 Appraisal Methodology and Approach

## 3.1 Approach to Viability

The National Planning Policy Framework (NPPF) sets out an approach for viability testing which essentially draws on the findings and observations of the Harman Report and the RICS guidance document *Financial Viability Testing in Planning* (2012). It is useful in providing some clarity on the basis that in a number of places these two earlier papers contradicted each other, and also in the way it provided a clear checklist reference point of good practice in viability testing, whilst also making a number of useful clarification points, such as the time period from which it is seen as acceptable to allow for cost and value inflation.

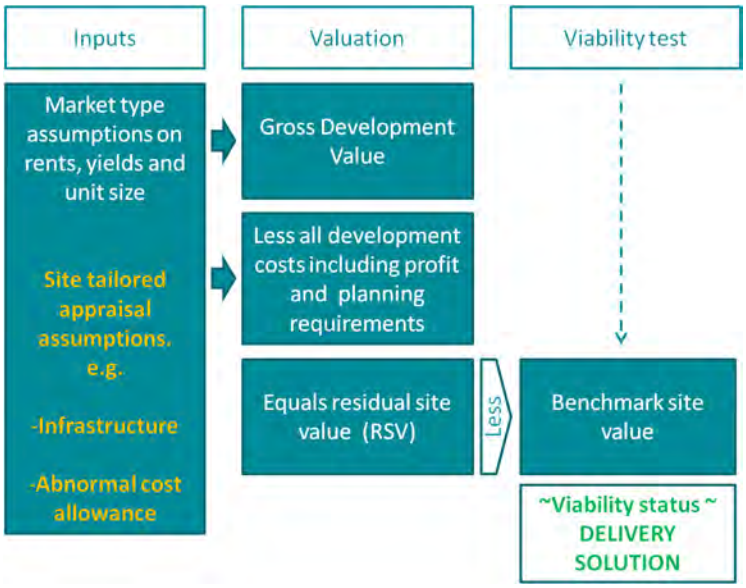
We have used the approach set out in the RICS guidance which describes the following:

*"An objective financial viability test of the ability of a development project to meet its costs including the costs of planning obligations, while ensuring an appropriate site value for the landowner and market risk adjusted return to the developer in delivering the project"* (para 2.1).

Therefore to ensure viability, the costs of any requirement should, when taking account of the normal costs of development, such as requirements for design standards and infrastructure contributions should, when taking account of the normal costs of development and mitigation, provide competitive returns to a willing landowner and willing developer to enable the development to be deliverable.

DTZ's approach involves the analysis of sites based on a range of value and cost assumptions. We have used Argus Developer software to test the economic viability, including sensitivity testing of key variables. The model is as follows:

- Determination of value areas, scheme and viability assumptions
- A residual approach is then carried out subtracting all anticipated development costs from the scheme's Net Development Value to arrive at a residual site value
- A benchmark site value is then applied to determine the viability status




## 3.2 Approach to Benchmark Site Values

### 3.2.1 Guidance

The RICS guidance note on Financial Viability defines the benchmark site value as follows:

"Site Value should equate to the market value subject to the following assumption: that the value has regard to development plan policies and all other material planning considerations and disregards that which is contrary to the development plan."

National Planning Policy Guidance states that land or site values should:

- Reflect emerging policy requirements and planning obligations and, where applicable, any Community Infrastructure Levy charge;
- Provide a competitive return to willing developers and landowners (including equity resulting from those building their own homes; and
- Be informed by comparable, market-based evidence where possible. Where transacted bids are significantly above the market norm, they should not be used as part of this exercise.

### 3.2.2 Market Evidence

To arrive at a suitable set of benchmark values for this exercise we have had regard to recent transactional evidence set out in section 2 as well as DTZ's own intelligence on industrial land values and the feedback from the Stakeholder Consultation event held on the 28th November 2014. The land value modelled for industrial in the CIL section of this report is at £300,000 per acre, reflecting the agreed market value of a Prime Location Large site.

There is relatively little industrial land for sale in Walsall. From discussions with agents and other stakeholders, the general consensus is that employment land for industrial schemes is in the region of £494,200 per hectare (£200,000 per acre).

### 3.2.3 Benchmark Site Values

Based on the market evidence, the following benchmark site values have been adopted:

| Type | Description | Definition | Benchmark Value (£) | |
|---|---|---|---|---|
| | | | Per Ha | Per Acre |
| PLS | Prime Location Small | < 1 acre in established industrial area with good connections to the strategic highway network | £494,200 | £200,000 |
| PMS | Prime Location Medium | 1 – 2.5 acres in established industrial area with good connections to the strategic highway network | £617,750 | £250,000 |
| PLL | Prime Location Large | > 2.5 acres in established industrial area with good connections to the strategic highway network | £741,300 | £300,000 |
| SLS | Secondary Location Small | < 1 acre in mixed/ non-industrial area some distance from the strategic highway network | £370,736 | £150,000 |
| SLM | Secondary Location Medium | 1 – 2.5 acres in mixed/ non-industrial area some distance from the strategic highway network | £432,525 | £175,000 |
| SLL | Secondary Location Large | > 2.5 acres in mixed/ non-industrial area some distance from the strategic highway network | £474,200 | £200,000 |

# 4 Appraisal Assumptions

We have used Argus Developer software to test the economic viability based upon the appraisal assumptions contained in this section. These have been arrived at through the a comprehensive review of the local market, feedback from the CIL consultation and site specific inputs provided by Wardell Armstrong.

## 4.1 Rental Values and Yields

The following value assumptions have been used for the six site typologies:

| Type | Description | Rental Value (£) | | Yield | Rent free |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | % | (months) |
| PLS | Prime Location Small | 61.89 | 5.75 | 6.5 | 6 |
| PLM | Prime Location Medium | 59.20 | 5.50 | 6.5 | 6 |
| PLL | Prime Location Large | 56.51 | 5.25 | 6.5 | 9 |
| SLS | Secondary Location Small | 54.35 | 5.00 | 7.25 | 9 |
| SLM | Secondary Location Medium | 51.63 | 4.75 | 7.25 | 9 |
| SLL | Secondary Location Large | 48.91 | 4.50 | 7.0 | 12 |

## 4.2 Build Costs

The following build costs are based on BCIS (rebased for the West Midlands). An allowance of 15% for external works is included.

| Type | Description | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft |
| PLS | Prime Location Small | 830.00 | 77.11 | 954.50 | 88.68 |
| PLM | Prime Location Medium | 458.00 | 42.55 | 526.70 | 48.93 |
| PLL | Prime Location Large | 426.00 | 39.58 | 489.90 | 45.51 |
| SLS | Secondary Location Small | 830.00 | 77.11 | 954.50 | 88.68 |
| SLM | Secondary Location Medium | 458.00 | 42.55 | 526.70 | 48.93 |
| SLL | Secondary Location Large | 426.00 | 39.58 | 489.90 | 45.51 |

## 4.3 Other Development Costs

The following assumptions have been used in our development appraisals. Some of these costs can only be assessed on a site by site basis and these have been highlighted.

| Other Development Costs | |
|---|---|
| Sensitivity for abnormals (% uplift on build costs) | 15% |
| Land assembly | Site specific* |
| Industrial Mining/ legacy costs | Site specific[4] |
| Site specific S106 costs | £0 |
| CIL contribution | £0 |
| Professional fees as % of construction costs | 10% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 10% |
| Letting legal costs (% of rental value) | 5% |
| Marketing costs (% of rental value) | 3% |
| Investment sale (% of NDV) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balances | 6.5% |
| Developer profit (% on cost) | 15 |

## 4.4 Phasing Assumptions

The following phasing assumptions have been used:

| Phasing assumptions (development delivered in a single phase) | |
|---|---|
| Lead in | 6 months |
| Construction | 12 months |
| Letting | 12 months from start of construction |
| Sale | On practical completion |

[4] The costs of remediation/ground stabilisation are based on Wardell Armstrong's assessment of likely mining and legacy costs and were calculated on a per acre basis. Where the risk of a constraint affecting the site is completely unknown (e.g. unrecorded mineshafts) a cost of £0 is assumed, and this cost risk is reflected in the high level contingency allowance made in the appraisals. For known constraints, Wardell Armstrong identified possible required works and an indicative cost (for comparison purposes only). Wardell Armstrong assessed each site through preliminary desk-based researches, limited to using publicly available information, in conjunction with Wardell Armstrong in-house archives. No site walkovers were conducted as part of the survey.

# 5 Assessment of 5 Year Supply

We have carried out a detailed review of the 7 sites which represent the identified 0-5 year supply of employment land in order to identify the site specific constraints and opportunities they face and therefore determine the appropriate development appraisal assumptions for the viability assessment. This has also drawn upon the Industrial and Mining Legacy Constraints Report prepared by Wardell Armstrong as attached at Appendix 1.

Our findings are presented in a series of proformas summarising the viability and deliverability assessment. Each proforma contains a site map with red line boundary, site description, and details on market attractiveness, opportunities, constraints, and abnormal costs. The viability modelling outputs for each site are also summarised. These can be viewed over the following pages:

The proforma's are attached as Appendix 2a.

# 6 Assessment of 5-10 Year Supply

For the 5-10 Year Supply we have carried out a detailed site review on the same basis as the 5 Year Supply with the only difference being that the viability testing is high level in that it is based on an overall view of market and cost factors, such that we can suggest the prioritisation of the ten year employment land portfolio.

Our findings are presented in a series of proformas summarising the viability and deliverability assessment. The proforma's are attached as Appendix 2b.

# 7 Assessment of Additional Sites

For the Additional Sites we have carried out a detailed site review on the same basis as the 5 Year Supply.

Our findings are presented in a series of proformas summarising the viability and deliverability assessment. The proforma's are attached as Appendix 2c.

# 8 Summary of Appraisal Findings and Delivery

This section sets out the following:

1. Summary of appraisal results for the 25 sites based on the appraisal modelling.

2. Delivery advice based around analysis of BCCS requirements and scoping of interventions to bring forward the sites in the 5 year supply and prioritisation of the 10 year supply, together with additional sites.

## 8.1 Summary of Appraisal Findings

The results demonstrate that the majority of sites are marginal in terms of viability and the remaining sites identified have a negative viability status. It should be noted that these results are based on appraisals carried out using standard, market based assumptions. Notwithstanding this, we understand that a notable quantum of development in Walsall, especially in Brownhills and Aldridge, comes forward on an occupier, rather than developer led, basis. Investment decisions in such cases a dependent on a broader set of business planning criteria meaning that sites that are marginal or unviable according to this exercise are in fact viable and deliverable on this basis.

It is important to note that the appraisal findings are subject to the following exclusions:

- No land assembly costs over and above the benchmark land value.

- No allowance for Section 106 or CIL contributions.

**Table 8.1 – Appraisal Results for 5 Year Supply**

| No | Site | Size (ha) | Size (acres) | Type | Benchmark Site Value (£/acre) | Remediation Cost (£/acre) | Residual Site Value With Abnormals (£/acre) | Residual Site Value Without Abnormals (£/acre) |
|---|---|---|---|---|---|---|---|---|
| 1 | IN 9.4 Vigo Place | 0.86 | 2.12 | PLM | £250,000 | £82,575 | £83,924 | £230,447 |
| 2 | IN 92 Aspect 2000 | 3.34 | 8.25 | PLL | £300,000 | £215,398 | £76,561 | £214,661 |
| 3 | IN 63 Tempus 10 North (Onyx) | 1.74 | 4.29 | PLM | £250,000 | £411,399 | Negative | £230,416 |
| 4 | IN 64 Tempus 10 South (Opal) | 1.72 | 4.25 | PLM | £250,000 | £781,576 | Negative | £235,115 |
| 5 | IN 104 Phoenix 10 | 18.76 | 44 | PLL | £300,000 | £93,802 | £46,831 | £195,174 |
| 6 | IN 105 Parallel 9/10 | 3.31 | 8.17 | PLL | £300,000 | £90,829 | £43,420 | £188,235 |
| 7 | IN 52.2 Walsall Enterprise Park West | 0.80 | 1.98 | SLM | £175,000 | £99,492 | Negative | Negative |

**Table 8.2 - Appraisal Results for 5-10 Year Supply**

| No | Site | Size (ha) | Size (acres) | Type | Benchmark Site Value (£ per acre) | Remediation Cost (£/acre) | Residual Site Value With Abnormals (£/acre) | Residual Site Value Without Abnormals (£/acre) |
|---|---|---|---|---|---|---|---|---|
| 1 | IN7.68 Former PSL International | 1.19 | 2.9 | PLL | £300,000 | £88,340 | £159,977 | £222,372 |
| 2 | IN10.2 Adj Shaylors | 0.75 | 1.85 | PLM | £250,000 | £75,057 | Negative | Negative |
| 3 | IN 9.8 Coppice Lane | 1.04 | 2.56 | SLM | £175,000 | £75,146 | Negative | Negative |
| 4 | IN 12.11 Westgate North / Linley Lodge, Aldridge | 0.75 | 1.85 | SLM | £175,000 | £116,861 | Negative | Negative |
| 5 | IN 5.4 Maybrook(FMR Unalco) Road | 0.61 | 1.5 | SLM | £175,000 | £45,344 | Negative | Negative |
| 6 | IN 317 Millers Close | 0.80 | 1.98 | PLM | £250,000 | £104,467 | £62,735 | £230,694 |
| 7 | IN 5.1 Land North of Maybrook Road | 1.68 | 4.15 | SLM | £175,000 | £55,449 | Negative | Negative |
| 8 | IN 109 Box Pool | 1.67 | 4.12 | PLM | £250,00 | £77,476 | £73,292 | £214,787 |
| 9 | IN 93.2 Axcess 10 East | 1.11 | 2.74 | PLM | £250,000 | £185,405 | £67,126 | £214,661 |
| 10 | IN 120.3 Former Wesson, Bull Lane | 4.96 | 12.26 | PLM | £250,000 | £84,021 | £75,697 | £217,403 |
| 11 | IN 9.3 Merchants Way, Aldridge | 0.43 | 1.06 | SLS | £200,000 | £50,660 | Negative | Negative |

### Table 8.3 – Appraisal Results for Additional Sites

| No | Site | Size (ha) | Size (acres) | Type | Benchmark Site Value (£ per acre) | Remediation Cost (£ per acre) | Residual Site Value With Abnormals (£ per acre) | Residual Site Value Without Abnormals (£ per acre) |
|---|---|---|---|---|---|---|---|---|
| 1 | IN 12.14 Former McKechnie's | 5.94 | 14.67 | SLM | £175,000 | £76,134 | Negative | £142,683 |
| 2 | IN 111, IN 112 James Bridge Gasholders | 8.30 | 20.5 | PLL | £300,000 | £69,878 | £93,482 | £222,894 |
| 3 | IN 122 Moxley Tip | 10.37 | 25.62 | PLL | £300,000 | £78,891 | £87,965 | £231,586 |
| 4 | IN 341 Hughes Road | 8.87 | 21.92 | PLL | £300,000 | £69,766 | £95,394 | £225,380 |
| 5 | IN58 Reedswood Way | 4.07 | 10.1 | PLL | £300,000 | n/a | n/a | £199,617 |
| 6 | IN 315 Casino and Cinema, Bentley Mill Way | 4.58 | 11.3 | PLL | £300,000 | £159,855 | £47,952 | £223,133 |
| 7 | IN 133 Willenhall Sewage Works | 9.70 | 23.96 | PLL | £300,000 | £80,856 | £65,743 | £222,874 |

The implications of these results regarding site delivery is considered in the next section.

## 8.2 Delivery

### 8.2.1 Assessment Approach

A site specific delivery schedule is set out below. The schedule is set out in three parts, part one showing the 0 - 5 year supply sites, part 2 showing sites in the 5 - 10 year supply, and part 3 covering additional sites.

The sites are presented on a geographical basis, showing the following information:

a) Site Identification (Cross referenced with the Employment Land Review)
b) Site Name
c) Size (ha)
d) Delivery Strategy
e) Quality of Site (Cross referenced with site assessments)
f) Delivery Risk over relevant time period
g) Impact of Delivery Risk on the 0-5/5-10 year supply (as applicable)
h) Available public sector delivery mechanism

For ease of interpretation, our assessment of the sites against the delivery risk criteria (f,g, and h) are coded by way of a traffic light system, with red indicating the highest risk, and green the least. An amber coding suggests an intermediate risk, whilst a yellow coding is applied where an assessment of risk is not deemed applicable.

### 8.2.2 Delivery Assessment Summary

### 8.2.3 0-5 year supply

This category contains sites covering 30.1 hectares. Key delivery messages for this category are as follows:-

- Some 94% (28.44 hectares) of this area is contained of sites falling within the designated Enterprise Zone. These are sites which are attractive to the market, subject to addressing significant delivery barriers, which the delivery mechanisms available through the Enterprise Zone can assist in overcoming
- The other 6% (1.66 hectares) of this area is contained in two small sites within generally secondary market areas (Aldridge and Pleck). Development in these areas is generally reliant on the expansion or relocation of incumbent local firms making an investment decision, rather than through a developer route.
- It is expected that a majority of sites will be delivered in this manner. Hence, some sites that are considered unviable under the above market assumption based appraisals may be delivered without intervention, except where there is a clear need for gap funding or where sites have an established higher value use.

In addition to dedicating resources towards the Enterprise Zone sites, an immediate priority for Walsall Council should be towards securing the delivery of the high quality sites in close proximity to the Black Country Route, and those just outside the Enterprise Zone.

### 8.2.4 5-10 year supply

This category contains sites covering some 14.99 hectares. Key delivery messages for this category are as follows:-

- Some 66% (9.8 hectares) of this area is contained in prime location sites, one of which is in the Enterprise Zone. Many of these sites are alongside or close to the Black Country Route. These are sites which are attractive to the market, subject to overcoming significant delivery barriers. For those sites which are not situated within the Enterprise Zone, however, there are no immediate delivery mechanisms confirmed (there is a higher risk in delivering this large quantum within the time period due to the long lead in times to delivery suggested by the nature of the delivery constraints, and also taking into consideration that delivery arrangements for these sites have yet to be confirmed and funded).
- Some 33% (around 5 hectares) of this area is contained in sites in generally secondary market areas (Aldridge, Bloxwich, and North Walsall). Take up in these areas is generally reliant on the expansion on incumbent firms. Walsall Council should also consider the risk in delivering the 5 hectares located within the generally secondary market areas of the Borough.

In addition to dedicating resources towards the Enterprise Zone sites, a medium term priority for Walsall Council should be towards securing the delivery of the high quality sites in close proximity to the Black Country Route.

### 8.2.5 Additional Opportunities

This category contains sites covering some 52.48 hectares. While these sites are extra to the 10 year requirement they are important in order to provide a greater range in the industrial land portfolio and also count towards the high quality BCCS target. Key delivery messages for this category are as follows:

- Some 10% (8.34 hectares) of this area is contained with one site (Former Gasholders / South of Gasholders) site falling within the designated Enterprise Zone. This site is fundamentally attractive to the market, subject to overcoming significant delivery barriers, which the delivery mechanisms available through the Enterprise Zone can assist in overcoming
- A large quantum of land (45.89 hectares / 87%) is located within generally prime market locations.
- Some 13% (5.94 hectares) is located within Aldridge, a secondary market area. Take up in this area is generally reliant on the expansion on incumbent firms but there is emerging development interest in a speculative scheme for this site.

As instructed by the Council we have considered sites that are not part of the industrial supply. These include Moxley Tip, Hughes Road, Willenhall Sewage Works, the Cinema and Casino on Bentley Mill Way, Millers Close and the Keyway Retail Park/Glynweb. All of these are in prime locations and as described above we consider them to be deliverable in the SAD time period except for the Keyway Retail Park/Glynweb which though well located is unlikely to be delivered in the 10 year period due to the main occupier, Tesco, which appears to be well established. On this basis we recommend that this site is not allocated for industry in the SAD.

### 8.2.6 Delivery of non-EZ Sites

For those sites which are not situated within the Enterprise Zone, the following could be used as potential means to support delivery:

**Funding Support**

- Black Country Growth Deal – the Local Growth Fund offers capital grants to support development gap viability. This funding is administered by the Black Country Local Enterprise Partnership which is developing an ongoing pipeline of potential projects for the Local Growth Fund that can accelerate the creation of jobs and boost economic growth. Growing Priority Sectors programme provides grants to end occupiers which can support site acquisition and capital investment. Both grants are subject to State Aid tests.
- Black Country Investment Loan Fund (Employment) – as part of the City Deal the Fund has been established to provide loan funding to landowners to fund the cost of site remediation and servicing of sites for employment uses. The proposed loan arrangements would provide for repayment of loans and associated interest upon site development or disposal with a longstop date of repayment of 10 years. Loan funding may meet 100% of the costs of remediation and servicing works with the loan secured against the remediated site value. The objective is to create a supply of quality employment sites available to meet the requirements of inward investors and indigenous companies for early development and seek to address a key identified constraint of lack of site availability for early development in attracting and retaining employers across the Black Country.
- European Structural and Investment Fund – projects are being developed to support small and medium sized enterprises and promote entrepreneurship in the Black Country.

These funding mechanisms are available throughout the Black Country and can therefore be utilised across the whole borough of Walsall.

**Delivery Support**

- Joint Ventures – the Council could consider the possibility of some form of joint venture to support the delivery of particular sites. This could involve some form of Tax Increment Finance (TIF) model where the Council provides initial financial support for a scheme on the basis that the increased business rate revenue generated can be used to pay for that investment.
- Acquisitions and Compulsory Purchase – the Council works with companies and landowners to match up demand with sites and premises. However, landowners can be known to hold sites back, often because they hope the site can be developed for a use that can command a higher value than industry, notably housing, and this has been a particular issue in Walsall over the years. This acts against regeneration by frustrating investment and job creation. In these cases the Council could consider the possible acquisition or compulsory purchase of sites in circumstances where an unwilling landowner is preventing a site being developed and there is a potential industrial end user.

In a wider context the proposed West Midlands Combined Authority will provide the opportunity for a fresh look at the way in which the constituent LEPs and local authorities each source investment finance for the delivery of major regeneration and development proposals. It will focus on driving co-ordinated investment from both the public and private sectors. A range of investment mechanisms will be devised including the Combined Authority's Collective Investment Vehicle. Other investment mechanisms are also under consideration including one to bring economic benefit from re-using brownfield sites.

These delivery mechanisms will evolve but at this stage they provide an indication of how the public sector can help to deliver and de-risk non-EZ sites if required over the 2016-26 time period.

# Table 8.4 – 0-5 Year Employment Land Supply

| Site ID | Site name | Size (ha) | Viability and Deliverability – Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk on 0-5 year supply | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| **ALDRIDGE SITES** | | | | | | | |
| IN9.4 | Vigo Place | 0.86 | This site is vacant and being marketed.<br><br>Development in the recent past in this part of Aldridge have included the following, with the most significant schemes being occupier led:<br>- Gainsborough Plastics, Brickyard Rd (1999),<br>- new workshops in the Empire Estate (2000 & 2009),<br>- new speculative development to provide units at Merchants Way (2003),<br>- new B1 on Merchants Way (2010),<br>- and extension to Kepston at Coppice Lane (2011), and<br>- new units for Interserve on Brickyard Rd (2012) and,<br>- Langley Industries site (2013).<br><br>The small size of the site makes for a difficult development proposition, although it is flat and has a regular shape.<br><br>The site is the only site contained within Aldridge in the 0-5 year employment land supply. Whilst sites in Aldridge are not generally considered as being of prime quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the assumed rate of take up of Aldridge sites in the five year land supply and the five year land supply (0.172 ha / annum), and on this basis it is reasonable to assume that the sites in the 0-5 year supply are deliverable over the time period. | High | High | Low (When considered in isolation) | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability – Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk on 0-5 year supply | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| **M6 CORRIDOR** | | | | | | | |
| IN63/64 | Tempus 10 Onyx and Tempus 10 Opal | 3.46 | We expect these two sites to be delivered simultaneously and in the next 5 years by the private sector with the support of public sector funding. We expect that land owner to secure a planning consent in 2015 for the creation of development platforms through the treatment and movement of surplus waste materials from one site (Tempus 10 south) to another (Tempus 10 north) to create level platforms upon which future development can take place. There is known demand in the sites and its location in the Black Country Enterprise Zone (BCEZ) close to M6 Junction 10 make the site attractive to owner occupiers. Whilst the sites on paper are unviable it is assumed that they can be delivered with support from public sector grant funding. These funds are available to the land owner to deal with the sites development viability gap arising from the high costs of site remediation and treatment of site abnormals.<br><br>These funds are made available through the sites BCEZ status where the retention of future business rates can be used by the Local Authority to prudentially borrow and then grant aid development viability. This is a national mechanism available across Enterprise Zone sites and is based upon the principles of a Tax Increment Finance (TIF) Model. A Memorandum of Understanding has been entered into by the land owner and the Local Authority setting out milestones for delivery. These being:<br>• Planning permission sought Q2 2015<br>• Completion of earthworks to create development platforms and address planning enforcement matters by Q4 2015<br>• Completion of business case/risk analysis Q2 2016<br>• Completion of Council funding provisions Q1 2017<br>• Commence remediation works and enter into pre-let arrangements with prospective end occupiers | High | Medium | Medium | TO BE DELIVERED THROUGH EZ MECHANISM |

| Site ID | Site name | Size (ha) | Viability and Deliverability – Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk on 0-5 year supply | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | by Q3 2016/17 [note will require pre-lets as developer has no interest to build spec.]<br>• Assumed build out based on pre-lets to commence Q1 2017/18 [note this is commenced not complete as units may be delivered on a phased basis] | | | | |
| IN105 | Parallel 9-10 | 3.31 | We expect the site to be delivered in the next 5 years by the private sector with the support of the public sector funding available through the site's Black Country Enterprise Zone status and the business rate mechanism. Intrusive site investigation works have been completed through a grant funded Enterprise Zone wide programme. These investigations provide a level of detail around the ground condition constraints and begin to inform the remediation requirements/costs. A Memorandum of Understanding has been entered into by the land owner and the Local Authority with provisions set out to achieve the redevelopment of the site for commercial uses. The milestones for delivery are:<br>• Owner to engage in dialogue with the appropriate bodies in relation to remediation and infrastructure works and planning requirements by Q2 2015/16.<br>• Owner to prepare a scheme capable of achieving planning consent and an outline business case by Q2 2015/16.<br>• Completion of Council funding provisions by Q4 2015/16.<br>• Planning permission obtained by 2017<br>• Complete remediation and any infrastructure works by 2019<br>• Assumed build out to commence by 2020 [note this is commenced not complete as units may be delivered on a phased basis] | High | Medium | Medium | TO BE DELIVERED THROUGH EZ MECHANISM |
| IN104 | Phoenix 10 | 18.76 | We expect the site to be delivered in the next 5 years. There is known demand in the site and its location in the Black Country BCEZ close to M6 Junction 10 make it attractive to occupiers. The site can be delivered with | High | Medium | High | TO BE DELIVERED THROUGH EZ MECHANISM |

| Site ID | Site name | Size (ha) | Viability and Deliverability – Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk on 0-5 year supply | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | support from public sector grant funding through the EZ business rates mechanism. Funds are available to deal with the viability gap arising from the high costs of site remediation and treatment of site abnormal. The public sector landowners are in the process of appointing a private sector partner to undertake the remediation and development with funding support. The milestones for delivery are:<br>• Preferred bidder selected by March 2016<br>• Funding support agreed by October 2016<br>• Planning permission obtained by February 2017<br>• Remediation works commence (phase 1) by June 2017<br>• Development commences (phase 1) by 2018<br>• Phase 1 completed by 2019<br>• All phases complete by 2022. | | | | |
| IN92 | Aspect 2000 | 3.34 | We expect the site to be delivered in the next 5 years by the private/public sector with the support of public sector funding available through the sites Black Country Enterprise Zone status and business rates mechanism. The site is currently occupied by F W Thomas, a truck and haulage storage and repair business, without planning or other consents. The Local Authority will support the land owner and business with their relocation requirements to a suitable alternative site. The site could accommodate a large-scale enclosed waste treatment facility and is considered to be particularly suitable for waste management use, as well as for general industrial use (see Part 3, 5.3 and Table 1). Intrusive site investigation works have been completed through a grant funded Enterprise Zone wide programme.<br>These investigations provide a level of detail around the ground condition constraints and begin to inform the remediation requirements/costs, with additional intrusive works required once the site is fully vacated to finalise a remediation strategy. As part of the Darlaston Access | High | Medium | Medium | TO BE DELIVERED THROUGH EZ MECHANISM |

| Site ID | Site name | Size (ha) | Viability and Deliverability – Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk on 0-5 year supply | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | Project, new access will also be constructed to the site by 2016. A Memorandum of Understanding has been entered into by the land owner and the Local Authority with provisions set out to achieve the redevelopment of the site for commercial uses. The initial activities set out in the MoU will determine whether the site will be delivered by the private sector with public sector funding or potentially acquired by the public sector to lead delivery as part of the BCEZ. The milestones for delivery are:<br>• Preferred delivery route will be determined by Q2 2015/16<br>• Completion of legal and financial provisions of the preferred delivery route by Q4 2015/16<br>• Completion of additional survey works and intrusive investigations by Q2 2016/17<br>• Completion of new site access by Q3 2016/17<br>• Planning permission obtained by Q4 2016/17<br>• Commence remediation and utilities work (water connection to site boundary required) by Q1 2017/18<br>• Assumed build out to commence Q1 2018/19<br>• Build out to be completed in phases by Q4 2020/21 | | | | |
| **PLECK** | | | | | | | |
| IN52.2 | Walsall Enterprise Park (West) | 0.80 | The Walsall Enterprise Park has been developed in stages between 1998 and 2009, and this is one of the two vacant parts remaining, after Promat BD occupied the site adjoining it in 2013. The built units have a good rate of occupancy. There is known development interest from a local company who wish to acquire the site for industry. The Council will continue to progress enquiries from expanding local companies in the area in relation to this site. | Low | Medium | Low (When considered in isolation) | Refer to 8.2.6 above |

# Table 8.5 – 5-10 YEAR EMPLOYMENT LAND SUPPLY

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| **M6 CORRIDOR/BENTLEY MILL WAY** | | | | | | | |
| IN317 | Millers Close | 0.80 | Site of marginal viability, but potential high quality<br><br>While on paper this site is currently marginal/unviable for speculative industry, we expect this site to be developed between 2021-26 by a prospective occupier. The site is currently occupied by two restaurants – Chiquito and Cinnamon Court – which would require relocation. Although not an EZ site it is situated within the EZ cluster and the M6 corridor and is expected to benefit from the uplift in this area.<br><br>The milestones are:<br>DSDA Access Project completion 2016<br>Site Allocation to industry 2016.<br>Relocation of existing businesses 2017-19<br>Site preparation 2020<br>Development 2021 | High | Medium | Medium | Refer to 8.2.6 above |
| IN18.2 | Box Pool | 1.67 | This is one of the EZ sites. It is situated within the M6 corridor and is expected to benefit from the general uplift in the area. The site can be delivered with support available through the EZ designation for site investigation works and other potential financial assistance through the EZ business rates mechanism. | High | Medium | Medium | TO BE DELIVERED THROUGH EZ MECHANISM |
| IN93.2 | Axcess 10 East | 1.11 | Site of marginal viability, but potential high quality. This site may be suitable for development with a small enclosed waste facility as an alternative to general industrial development (see Part 3, 5.3 and Table 1).<br><br>Although not an EZ site it is situated within the EZ cluster and the M6 corridor and is expected to benefit from the uplift in this area. | High | Medium | Medium | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| **ALDRIDGE** | | | | | | | |
| IN10.2 | Adj Shaylor's | 0.75 | Development in this part of Aldridge has in the recent past included the following:<br><br>- The Tintagel Way development was provided in 1998 and 2001, and,<br>- the Wharf Approach has been developed in stages between the mid 1990s and 2006, and,<br>- The Aldridge Fields was redeveloped on the former Corby Windows site in 2008.<br><br>Representing the final remaining site on the Wharf Approach development, the plot is small and this may explain the difficulty in marketing. Notwithstanding this, as a serviced development plot (rather than a site that has simply been vacated), it has reasonable to assume the site may be developed over the next 5 to 10 years.<br><br>The site is one of 6 sites in Aldridge / Brownhills, in the 5-10 year employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of high quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the required rate of take up of Aldridge and Brownhills sites in the five to ten year land supply (1.052 ha / annum), and on this basis it is reasonable to assume that the sites in the 5-10 year supply are deliverable over the time period. Three vacant sites of this size have been delivered in Brownhills in recent years, two in 2011 and the other in 2005. | Low | Low | Medium | Refer to 8.2.6 above |
| IN9.8 | Coppice Lane | 1.04 | At the junction of Brickyard Road and Coppice Lane is the former Bace Groundwork premises, recently marketed by GVA. This has a valid planning permission for CD&EW recycling (07/2477/FL/E6) and is therefore identified in the | Low | High | Medium | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | BCCS as a Strategic Waste Site (WSWa1) and Mineral Infrastructure Site (MI1), and although the use was short-lived and the recycling operation is believed to have ceased in 2011, the BCCS seeks to safeguard the site for CD&EW recycling use. Alternative industrial uses would therefore have to be justified as a departure from BCCS policy. However, the site may have potential for development with an alternative small-scale waste management facility (see Part 3, 5.3 and Table 1).<br><br>Development in the recent past in this part of Aldridge have included the following, with the most significant schemes being occupier led:<br><br>- Gainsborough Plastics, Brickyard Rd (1999),<br>- new workshops in the Empire Estate (2000 & 2009),<br>- new speculative development to provide units at Merchants Way (2003),<br>- new B1 on Merchants Way (2010),<br>- and extension to Kepston at Coppice Lane (2011), and<br>- new units for Interserve on Brickyard Rd (2012) and,<br>- Langley Industries site (2013).<br><br>The small size of the site, its irregular configuration and limited frontage make for a difficult development proposition.<br><br>Neighbouring occupiers are Langley Industries and Interserve, and whilst these firms are international, their operations in Aldridge are “local”, and the prospects for expansion into this site would seem remote. It was recently sold and GVA are no longer marketing. | | | | |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | The site is one of 6 sites in Aldridge / Brownhills, in the 5-10 year employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of high quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the required rate of take up of Aldridge and Brownhills sites in the five to ten year land supply (1.052 ha / annum), and on this basis it is reasonable to assume that the sites in the 5-10 year supply are deliverable over the time period. Three vacant sites of this size have been delivered in Brownhills in recent years, two in 2011 and the other in 2005. | | | | |
| IN12.11 | Westgate North/ Linley Lodge | 0.75 | Development in this part of Aldridge has in the recent past included the following:<br><br>- The Tintagel Way development was provided in 1998 and 2001, and,<br>- the Wharf Approach has been developed in stages between the mid-1990s and 2006, and,<br>- The Aldridge Fields was redeveloped on the former Corby Windows site in 2008.<br><br>However, this site is small with poor frontage and therefore lacks the attributes of the Tintagel Way and Wharf Approach developments | Low | High | Medium | Refer to 8.2.6 above |
| IN 9.3 | Merchants Way | 0.43 | Development in the recent past in this part of Aldridge have included the following, with the most significant schemes being occupier led:<br>- Gainsborough Plastics, Brickyard Rd (1999),<br>- new workshops in the Empire Estate (2000 & 2009),<br>- new speculative development to provide units at Merchants Way (2003), | Low | High | Low | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | - new B1 on Merchants Way (2010),<br>- and extension to Kepston at Coppice Lane (2011), and<br>- new units for Interserve on Brickyard Rd (2012) and,<br>- Langley Industries site (2013).<br><br>The small size of the site makes for a difficult development proposition and it is unlikely that it will be developed over the next 5 years. | | | | |
| **BLACK COUNTRY ROUTE / KEYWAY CORRIDOR** | | | | | | | |
| IN78.6 | FMR PSL International | 1.19 | The site is in a good location, though is not being marketed, and is part of the Longacres Industrial estate that was developed in stages over the 1980s and 1990s for Blakemore's. The BCR corridor has seen good rates of development such as Poundland distribution hub (2000) Initial City Link /Yodel (2000) and The Crescent (2012). Smaller units have also been developed close to this site at Midacre (2001), the former Masons Woodyard (2010) and Eastacre (Middleton Paper, 2015).<br><br>This site is not currently being marketed but is in a good location, and a fundamentally attractive development proposition. . It could accommodate a standalone unit, or serve as expansion land for Blakemore's across the road. | High | Low | Low | Deliverable by private sector |
| IN120.3 | FMR Wesson Bull Lane | 4.96 | The former Wesson Ductile site, on Bull Lane is a high quality site with permission to develop for B2. The site has excellent access, and while some remediation is required, it is likely to be developed soon. In addition to general industrial land uses, the site could accommodate a range of waste management uses including more complex processes (see Part 3, 5.3 and Table 1).We expect this site | High | Low | High | Deliverable by Public Sector |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | to be developed in stages over the 2016-26 time period for a number of units to meet local demand<br><br>Timescale:<br>• Planning 2016<br>• Site preparation 2017<br>• Development 2018<br><br>As a fundamentally attractive development proposition, subject to remediation and/or access improvements, Walsall Council could promote the site through the Black Country LEP for inclusion in programme of support aimed at opening up key employment sites located outside the Enterprise Zone. The Council expect the site to be taken up soon as there is clear interest. | | | | |
| **BROWNHILLS** | | | | | | | |
| IN5.4 | Maybrook Rd | 0.61 | Development in the recent past in Brownhills has have included the following, with the most significant schemes being occupier led:<br><br>- Engine Lane (2002),<br>- the Castings/CNC Speedwell complex (2002, 2005, 2011),<br>- Pelsall Road (2011),<br>- Sadler Rd/Lichfield Rd (2011) and, the Heathyards development on Maybrook Road (2011).<br><br>The small size of the site makes for a difficult development proposition. The site is not being marketed and there is a risk of the site not being developed within the next 10 years.<br><br>The site is one of 6 sites in Aldridge / Brownhills, in the 5-10 year employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of high quality, there remains | Low | Not being marketed | Low (When considered in isolation) | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the required rate of take up of Aldridge and Brownhills sites in the five to ten year land supply (1.052 ha / annum), and on this basis it is reasonable to assume that the sites in the five to ten year supply are deliverable over the time period. Three vacant sites of this size have been delivered in Brownhills in recent years, two in 2011 and the other in 2005. | | | | |
| IN5.1 | Land N of Maybrook Rd | 1.68 | Development in the recent past in Brownhills has have included the following, with the most significant schemes being occupier led:<br><br>- Engine Lane (2002),<br>- the Castings/CNC Speedwell complex (2002, 2005, 2011),<br>- Pelsall Road (2011),<br>- Sadler Rd/Lichfield Rd (2011) and, the Heathyards development on Maybrook Road (2011).<br><br>This is a vacant site bounded by Maybrook Road and the canal. It is marketed by Harris Lamb and has been partly developed. This could serve as expansion land for Heathyards, to the south, who own part of it, or for another development.<br><br>The site is one of 6 sites in Aldridge / Brownhills, in the 5-10 year employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of high quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the required rate of take up of Aldridge and Brownhills sites in the five to ten year land supply (1.052 ha / annum), and on this basis it is reasonable to assume that | Low | Low | Medium | Deliverable by private sector |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | the sites in the 5-10year supply are deliverable over the time period. Three vacant sites of this size have been delivered in Brownhills in recent years, two in 2011 and the other in 2005. | | | | |

# Table 8.6 – ADDITIONAL SITES

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| **ALDRIDGE** | | | | | | | |
| IN12.14 | FMR McKechnie's Middlemore Lane | 5.94 | Development in the recent past in this part of Aldridge has included the following, with the most significant schemes being occupier led:<br><br>- Gainsborough Plastics, Brickyard Rd (1999),<br>- new workshops in the Empire Estate (2000 & 2009),<br>- new speculative development to provide units at Merchants Way (2003),<br>- new B1 on Merchants Way (2010),<br>- and extension to Kepston at Coppice Lane (2011), and<br>- new units for Interserve on Brickyard Rd (2012) and,<br>- Langley Industries site (2013).<br><br>The site is of local quality, though of a size that represents a viable development proposition. In addition to general industrial land uses, the site could accommodate a large enclosed waste facility, and is considered to be particularly suitable for waste management use (see Part 3, 5.3 and Table 1). Such is the confidence of the land owner in making their bid for public sector funding (Local Growth Deal) that they will assign the funding to support the delivery of a first phase speculative unit. | Low | Medium | High | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | Timescale:<br>Planning permission 2015<br>Funding Bid Determination 2015/16<br>Demolition & Remediation 2016-17<br>Phased development 2017-18<br><br>This is the only site contained within Aldridge that is contained within the additional supply. Whilst sites in Aldridge are not generally considered as being of high quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum. On this basis it is reasonable to assume that the site is deliverable. | | | | |
| **M6 CORRIDOR/BENTLEY MILL WAY** | | | | | | | |
| IN111/112 | FMR Gasholder/South of Gasholder site | 8.30 | This is an EZ site that would be suitable for phased development in the earlier part of the 2016-2026 time period to provide for known demand. The site is owned by two separate private land owners and is expected to be delivered by the private sector with support of public sector funding through the EZ business rates mechanism. Intrusive site investigation works have been completed through a grant funded EZ wide programme and demolition of the decommissioned gasholder towers has commenced. There is a need for access issues to be tackled and remediation works to be undertaken.<br><br>A Memorandum of Understanding has been entered into by the land owners and the Local Authority with provisions set out to achieve the redevelopment of the site for commercial uses.<br><br>The milestones for delivery as set out in the MoU provisions are: | High | Medium | High | TO BE DELIVERED THROUGH EZ MECHANISM |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | Timescale:<br>Gasholders demolition completed by Q1 2016/17<br>DSDA Access Project completion by Q1 2016-17<br>Marketing of the site for commercial uses to be completed by Q4 2015/16<br>Land acquisition/planning permission 2017-18<br>Remediation/preparation 2018-19<br>Development 2019-21 | | | | |
| IN58 | Reedswood Way | 4.07 | This site has had development interest and is clean and well located. We expect it to be delivered either for a large single occupier or for a combination of smaller units.<br><br>The site could be delivered according to the following timescale:<br>Planning application 2015/16<br>Development 2016/17<br><br>Despite the quality of the development proposition for employment uses, the landowner has not been marketing the site. Nonetheless there is development interest in the site. | High | High | High | Deliverable by the private sector |
| IN315 | Casino & Cinema, Bentley Mill Way | 4.58 | While on paper this site is currently marginal/unviable for speculative industry, we expect this site to be developed between 2021-26 by a prospective occupier if the current use ceases.<br><br>Although not an EZ site itself it situated within the EZ cluster and the M6 corridor and is expected to benefit from the uplift in this area. In addition to general industrial land uses, the site could accommodate a large enclosed waste facility (see Part 3, 5.3 and Table 1). | High | Medium | High | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | The site has been part remediated but its development would involve full remediation. The owner wishes the site to become part of the LDO area under which B1bc, B2 and B8 industry can be developed without the need to obtain planning permission.<br><br>Timescale proposed by Walsall Council:<br>DSDA Access Project completion 2016<br>Sad Allocation 2016<br>Relocation of existing uses: 2017-18<br>Development 2019-20 | | | | |
| **BLACK COUNTRY ROUTE/ KEYWAY CORRIDOR** | | | | | | | |
| IN133 | Willenhall Sewage Works | 9.70 | The site is currently accessed through a residential area. This is a large site alongside the Black Country Route and close to BCR Junction 1. At the moment there is no direct access to the BCR, but Junction 1 was designed to allow for one to be created. The Council has produced a design for the construction of this access and is examining options for funding. With the access in place, given the previous take up along the Black Country Route, this site would be very attractive to industry, though there is housing to the north.<br><br>As a fundamentally attractive development proposition, subject to remediation and/or access improvements, Walsall Council could promote the site through the Black Country LEP for inclusion in programme of support aimed at opening up key employment sites located outside the Enterprise Zone. | High | Fundamentally good site, though requires intervention | High | Refer to 8.2.6 above |
| IN122 | Moxley Tip | 10.37 | This site would be suitable for a large single occupier and is likely to be delivered in the latter part of the 2016-26 time period. | High | Fundamentally good site, though | High | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | It would need to involve an open space/recreation element.<br>Timescale<br>SAD Allocation 2016<br>Funding 2020<br>Highway Access 2021<br>Remediation 2022-23<br>Development 2023-26<br><br>As a fundamentally attractive development proposition, subject to remediation and/or access improvements, Walsall Council could promote the site through the Black Country LEP for inclusion in programme of support aimed at opening up key employment sites located outside the Enterprise Zone. | | requires intervention | | |
| IN341 | Hughes Rd | 8.87 | This land north of Hughes Road is currently open space, with uneven topography, poor ground conditions, and a gas main bisecting it.<br><br>The site is on the boundary with Wolverhampton and there is scope to use adjacent sites on the Wolverhampton side to create a large development opportunity, with access to the BCR via Dale Street<br><br>This site is likely to be delivered in the latter part of the timescale, either for a large standalone occupier or for smaller units to meet local demand in Walsall and Wolverhampton.<br><br>Timescale<br>Hughes Rd SAD Allocation 2016<br>Funding 2019<br>Planning permission 2020<br>Site Assembly 2021-23<br>Phased development 2023-26 | High | Fundamentally good site, though requires intervention | High | Refer to 8.2.6 above |

| Site ID | Site name | Size (ha) | Viability and Deliverability - Overview | Quality of Site | Delivery Risk over time period | Impact of Delivery Risk | Available Delivery Mechanism |
|---|---|---|---|---|---|---|---|
| | | | As a fundamentally attractive development proposition, subject to remediation and/or access improvements, Walsall Council could promote the site through the Black Country LEP for inclusion in programme of support aimed at opening up key employment sites located outside the Enterprise Zone.<br><br>The site suffers from some site assembly problems and other abnormal issues, but the landowners have expressed an interest in developing the site for industry. | | | | |

# PART 3 – WASTE SITES VIABILITY AND DELIVERY STUDY

# 1 Introduction

## 1.1 Background to the Study

The Waste Sites Viability and Delivery Study was commissioned separately from Wardell Armstrong, but was carried out in parallel with the other viability and delivery studies undertaken by DTZ, which are summarised in Parts 1, 2 and 4 of this report.

The four specific sites considered for possible waste use within this chapter were selected from a review of projects identified in the BCCS, planning permissions that were yet to be implemented and responses to the second of two "calls for sites," which took place during 2013.

The chapter also includes a review of the employment sites which were evaluated in Part 2 of this report (Employment Viability and Delivery Study) to assess whether they might be suitable for waste use. The sites were identified from the Council's proposed 5 year employment land supply along with other sites identified by the Council as having the potential for employment use.

Walsall has a long industrial history and much of the Borough lies within coal measures that have been extensively mined. Therefore Wardell Armstrong was also commissioned to address the potential industrial and mining legacies, which may be a constraint to the development of the sites, and to provide indicative costs for remediation. These mining and industrial legacies are considered within this report for those sites identified for possible waste management use with the results of a desk top study being presented within Appendix 3. A second report (Appendix 1) provides detail of the mining and industrial legacy associated with potential housing and employment sites, providing a desk top evaluation of the constraints at each of the housing and employment sites.

As an additional related piece of work Walsall Council advised that a question had been raised regarding whether a lack of soil treatment sites within the Borough was acting as a constraint to the development of brownfield sites.

Finally Wardell Armstrong was commissioned to assess whether there were any significant issues that might affect the "soundness" of the Site Allocation Document and Area Action Plan, recommending any necessary further work.

## 1.2 Approach towards Identification and Evaluation of Waste Site Options

The main focus of the chapter is on identifying and evaluation sites suitable for development with modern, enclosed waste treatment and recovery infrastructure to deliver the indicative waste capacity requirements in the BCCS, landfilling being seen by the Council as mainly a means of restoring former quarry sites. The identification and evaluation of options for waste disposal is therefore being addressed separately as part of the development of options for minerals. The only exception to this it the backfilling of a former railway cutting (North Walsall Cutting, Reedswood) which is currently underway, so there is no need to assess the viability and delivery of this project.

The Council is currently reviewing existing and former quarry sites identified as having the potential for restoration by infilling with inert and or non-hazardous waste, including the two sites identified in the BCCS, in the light of the policy drivers discussed in Section 2, below.

Amec Foster Wheeler have also been commissioned by the Council to carry out a separate minerals study to inform the SAD and Area Action Plan (AAP), which will also inform the Council's decisions on the preferred options for waste disposal. The minerals study is also considering potential options for aggregates recycling, including the potential for this on the Employment and Waste sites considered as part of this Study.

The evaluation of the four waste site options included in this study has therefore focused on the potential for developing modern, enclosed waste treatment and recovery infrastructure which would deliver the aspirations and requirements of the current local plan (see Context section below), rather than the types of lower-grade, open air waste management operations that are currently being carried out on two of them (in one case unlawfully). Walsall Council has provided pro-formas for each of the four proposed waste sites setting out the information that would be required and these have been duly completed and are presented separate to this document (Appendix 3).

This chapter provides a context for the development of waste infrastructure in the area, and detailed consideration of the constraints at the four allocated sites, each coming to a conclusion as to whether the site is viable and deliverable with minimal issues; whether the site is viable and deliverable but with constraints or whether the site is unlikely to be economically viable.

Section 5 of this chapter considers the potential of the other employment sites that make up Walsall's 5 year supply (see Employment Sites Viability and Delivery Study in Part 2 above) to accommodate waste management developments. These employment sites are also identified in the First Stage Site Allocation Document "Issues and Options," which was consulted on between April and June of 2013. Five of these sites are identified as having the potential for development with modern, enclosed waste treatment and recovery operations.

Section 6 considers the requirement for a centralised contaminated soil treatment site within Walsall Council's area and assesses to what extent the absence of such a facility might limit the development of brownfield sites within the Borough, concluding that this is of limited significance.

Finally Section 7 of the report summarises the findings and assesses whether there are any gaps in the available evidence which should be assessed before publication of the final Site Allocation Document.

# 2 Context for Development of Future Waste Sites

## 2.1 Waste Management in the UK – Overview of Current National Policy

The current focus in waste management is to move waste away from the traditional landfill. Waste is coming to be seen as a useful resource and the emphasis is on how best we can reuse and minimise waste or recycle it into useful products (see: Waste Management Plan for England published by Defra in December 2013). Defra's stated intention is that we should work towards a "zero waste" society that is a "society where resources are fully valued, financially and environmentally. It means we reduce, reuse and recycle all we can, and throw things away only as a last resort."(Defra's waste pages gov.uk 2014).

This change is being driven by European legislation with the Landfill Directive 1999 (1999/31/EC) setting targets for the reduction of biodegradable municipal waste (BMW)[5] going to landfill. By 2020 the UK has a target to reduce BMW to landfill to 35% of 1995 levels. In England compliance has been driven through the Landfill Tax (still in effect) and through the Landfill Allowance Trading Scheme (LATS), which set specific landfill reduction targets for each local authority. LATS was discontinued after 2012/13, following a review of national waste policy in 2011, when Defra concluded that it was no longer a necessary driver to meet the national target.

The Waste Framework Directive 2008 (2008/98/EC) establishes the key principles for waste management in England, the most important of which is the **waste hierarchy** (Article 4), shown in Figure 1 below, setting out the priorities for waste treatment. The Waste (England and Wales) Regulations 2011 (as amended),[6] which have transposed the Directive into English legislation, place a requirement on those involved in the production, collection, recovery or disposal of waste to follow the waste hierarchy and to keep records demonstrating that this is the case. Waste planning authorities are also expected to address the hierarchy when preparing local plans (see National Planning Policy (NPP) for Waste (October 2014), paras. 1, 3, Appendix A).

[5] Municipal waste is defined in Article 2 (b) of the Landfill Directive as "...waste from households, as well as other waste which, because of its nature or composition, is similar to waste from household."
[6] The Waste (England and Wales) Regulations 2011 (SI 2011 No. 988), as amended by the 2012 and 2014 Amendment Regulations (SI 2012 No. 1889 and SI 2014 No. 656)


**Figure 1: The Waste Hierarchy with preferred options towards the top (source - SEPA.org.uk)**

Other key principles established by the Waste Framework Directive, relevant to the preparation of local plans, are the principle of protection of human health and the environment (Article 13), which applies to all types of waste management facilities, and the principle of proximity and self-sufficiency (Article 16), which applies to waste disposal facilities and facilities for the recovery of mixed municipal waste from private households only. Waste planning authorities have a duty to apply these principles when considering proposals for waste management development (see Regulations 16 - 20 of the Waste Regulations 2011 (as amended)). Current national planning guidance advises that these principles should be addressed in local plans in the following ways:

1. **Protection of human health and the environment** - local plans should identify suitable sites and areas for waste management development, sites under consideration should be evaluated for suitability against a range of environmental criteria, and the relevant environmental, health and regulatory bodies should be consulted (NPP for Waste, paras. 1, 4 – 7, Appendix B).

2. **Proximity and Self-Sufficiency** - local plans should have regard to this when considering proposals for waste disposal or municipal waste recovery, taking into account the particular requirements for landfill sites, and the need for new municipal waste infrastructure to serve a sufficiently large catchment area to be economic (NPP for Waste, paras. 1, 4 - 6).

   Article 11 of The Waste Framework Directive has also set re-use and recycling targets for all Member States, which commit the UK to achieving a 50% re-use and recycling rate for waste paper, metal, plastic and glass collected from households, and a 70% recycling rate for inert construction and demolition waste by 2020. This commitment is set out in Regulation 11 of the Waste Regulations 2011 (as amended). Discussions are on-going regarding potential new EU recycling targets, with a target of recycling 70% of municipal waste by 2030 being a real possibility.

## 2.2 National Trends in Waste Arisings and Projected Future Waste Infrastructure Requirements

Clearly there is a need to ensure that there are sufficient facilities available to handle expected waste arisings. Defra's "Digest of Waste and Resource Statistics - 2015 edition"[7] suggests that there was a decline in over-all waste arisings between 2004 and 2012. Over this period there was a considerable decrease in commercial and industrial (C&I) waste arisings, which may reflect reduced activity as a result of the economic recession. There was also a reduction in waste arisings from households.

The Defra Waste Digest reports that in England there was a reduction in household waste from 22,131,000 tonnes in 2010 to 21,564,000 tonnes in 2013, a reduction of approximately 2% (see Table 2.2 and Figure 2.3). The Digest also indicates that the total amount of local authority collected waste (LACW) arising in England (which includes waste generated by the authorities themselves and some waste from businesses, as well as waste collected from households) has fallen overall from 28.0 million tonnes in 2000/01 to 25.6 million tonnes in 2013/14, with a noticeable decrease in arising between 2007/2008 and 2012/2013.However, there was an increase between 2012/13 and 2013/14 (see Figure 3.2). The latest government Statistical Data Set ENV18 - Local Authority Collected Waste: Annual Results Tables (November 2014) also shows that the downward trend has not been continuous throughout this period with a drop off of waste arisings between 2007/2008 and 2012/2013 and an increase in 2013/2014(see Local Authority and Regions spreadsheet, Table 1a).

Information on commercial and industrial (C&I) waste is unfortunately not as reliable as that for LACW, as there are currently no arrangements in place for capturing this data. However, estimates of C&I arisings are included in the Defra Waste Digest. This suggests that whilst C&I waste arisings have fallen considerably since 2004 (see Figure 2.1), when just over eighty million tonnes of C&I waste was produced in the UK, recent years have shown a change in this trend. Trend data indicates that between 2009 and 2012 there was an increase in arisings of C&I waste in the UK as a whole, from 44,998,000 tonnes to 47,567,000 tonnes (see Table 2.4).

Information provided in the Defra Waste Digest suggests that apart from a slight peak in 2006, construction and demolition (C&D) waste arisings have stayed fairly stable, with around 100 million tonnes a year being produced in the UK between 2004 and 2012 (see Defra Waste Digest, Figure 2.1). While data on C&D waste is less reliable than that for other waste streams, the available evidence indicates that the construction sector generates significantly more waste than households and other businesses. For example, it is estimated that around 1,573 Kg of construction Information provided in the Defra Waste Digest suggests that apart from waste per capita was generated in the UK in 2012, compared to 432 Kg per capita of household waste, 747 Kg per capita of C&I waste and 388 Kg per capita of "other" waste, which includes waste from the mining and quarrying, and agriculture, forestry and fishing sectors (see Defra Waste Digest, Figure 10.2). However, management of waste from this stream is largely outside the scope of this study, which is focusing on delivery of new enclosed waste recovery infrastructure and capacity for treatment of contaminated soils.

[7] "Digest of Waste and Resource Statistics - 2015 Edition," Defra (Department for Environment Food and Rural Affairs), January 2015.

The latest evidence on waste management demonstrates continued success in diverting waste from landfill, and moving waste up the "waste hierarchy" at a national level. For example, information published by the Environment Agency indicates a significant fall in deposits of waste at permitted landfill sites in England from around 67.889 million tonnes in 2005 to around 41.068 million tonnes in 2013.[8] It should be noted that these figures do not include use of inert waste for land restoration and other disposal of waste onto land. It should also be noted that available landfill capacity has declined over the same period, which is another potential driver towards alternatives, over and above the impact of the Landfill Tax. The Defra Waste Digest reports that as part of this overall decline in the use of landfill, the tonnage of municipal waste sent to landfill is continuing to decrease. In the UK around 25 million tonnes of waste arising from this stream were sent to landfill in 2010 but only around 20 million tonnes were landfilled in 2012 (see Figure 3.4).

The latest waste management data also shows that recycling rates have continued to improve, with the recycling rate for household waste in England reaching 44.2% in 2013 compared to around 41% in 2010 (see Defra Waste Digest, Table 3.7). Statistical Data Set ENV18 - Local Authority Collected Waste: Annual Results Tables (November 2014) indicates that 42.6% of local authority collected waste (LACW) in England in 2013/14 was recycled or composted (see Table 2a). There is some evidence that higher recycling rates are being achieved for C&I waste, for example, the results of a national survey published in 2010 suggested that around 52% of C&I waste arising in 2009 in England was re-used or recycled.[9] Information presented in Eunomia's "Residual Waste Infrastructure Review, Issue 7" published in November 2014 suggests that recycling rates for C&I waste have increased further since then, with recycling rates in the UK estimated to be reaching around 58% for commercial waste and around 61% for industrial waste in 2014 (see 4.1).

With regard to future national trends, the report on "Forecasting waste arisings and treatment capacity" by Defra dated October 2014[10] suggests that between now and 2020, household waste arisings are most likely to stay at current levels or show a gradual decline. Meanwhile they predict an increase in C&I waste arisings, which they consider are most likely to reach 48.9 million tonnes by 2020. However, forecasting future waste arisings is not an exact science as there are many factors to take into account. Other recent research presents conflicting views on future waste growth and the capacity of the UK's waste infrastructure to meet anticipated requirements over the period covered by the BCCS and SAD.

For example, SITA's report "Mind the Gap" (February 2014)[11] suggests that "municipal" (i.e. LACW) and similar C&I waste streams will grow by 10% 2015 – 2025. Using data they have collated on the types and quantities of C&I waste entering their own sites (which they consider give a more accurate picture than other sources currently available), SITA estimate that current residual waste arisings in the UK from the LACW and similar C&I waste streams (i.e. waste left over once the recyclable waste has been removed) are around 32.8 million tonnes (2015). Residual waste arisings are expected to fall slightly to

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[8] Waste Management for England 2013 (December 2014), Environment Agency: Summary and Data Tables, see Data Tables: England - Waste Deposit Trends - Landfill deposits by site type, waste type and sub-region 2000/1 to 2013 ('000 tonnes), and England - Landfill Capacity Trends 1998/99 - 2013 ('000 cubic metres)

[9] Defra Statistical Release (December 2010) – Survey of Commercial and Industrial Waste Arisings 2010 - Final Report, Table 2

[10] Forecasting 2020 waste arisings and treatment capacity: analysis to inform the review of Defra Financial Support for the Hertfordshire County Council Residual Waste Treatment Project (October 2014), Defra (Department for Environment Food and Rural Affairs),

[11] "Mind the Gap: UK Residual Waste Infrastructure Capacity Requirements, 2015 to 2025" SITA (SUEZ Environnement), February 2014, pages 12 - 21.

31.1 million tonnes by 2025. Even taking into account the capacity of existing and planned residual waste treatment and recovery infrastructure, SITA consider there is scope to increase capacity for energy from waste. They have identified a current (2015) "capacity gap" of 17.8 million tonnes in the UK in infrastructure for managing residual waste that currently has to be landfilled because there is no energy from waste plant available to treat it. Taking into account infrastructure projects in the pipeline, and the extent to which "refuse derived fuel" (RDF) is currently being exported,[12] they predict that while the UK is likely to have sufficient AD and recycling capacity by 2025, there will still be a gap of around 5.7 million tonnes for energy recovery.

However, a different conclusion is arrived at in another recent study by Imperial College London (April 2014),[13] which also considered projected waste recovery requirements for municipal waste, taking into account current recycling and landfill diversion targets. This study identified a surplus of incineration capacity for municipal waste in England in 2009/10, although it identified "capacity gaps" in recycling capacity of around 14.3 million tonnes, in AD/ composting capacity of around 1.4 million tonnes, and in other treatment capacity of around 2.2 million tonnes.

Another 2014 report by the Institution of Civil Engineers (ICE)[14] notes that the recent reduction in MSW (by which they mean LACW) sent to landfill has been largely driven by the development of new local authority-led energy from waste projects over the past 10 – 15 years. ICE notes that while there are uncertainties, economic recovery and population growth is likely to result in a reversal of recent trends in reduction of MSW. The ICE report highlights the difficulty of implementing any strategy towards a "circular economy" without better information on C&I waste, for which the available figures are "outdated and often inaccurate." ICE considers that this "not only affects investment in the waste sector but also has negative effects on other sectors, for example by creating uncertainty for EfW and associated combined heat and power operators."

The most recent study by Eunomia (December 2014) referred to above[15] predicts that the UK will have more than enough residual waste treatment capacity in the next few years assuming that new projects in the pipeline come to fruition. They consider that this capacity is likely to be a constraint on recycling, and predict that even if no more energy recovery infrastructure is built, the UK as a whole will only be able to achieve a maximum recycling of rate of 66% by 2030 across household, commercial and industrial waste, and in England it may not be possible to achieve a recycling rate of more than 63%. If the EfW plants operate at full capacity, reducing the quantity of waste available for recycling. It may therefore be a challenge for England to meet any higher recycling rates that may be set by the EU in the future, including the proposal for a 70% municipal waste recycling target currently being consulted on.

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[12] For further information and commentary on the RDF exports, see also: Refuse Derived Fuel Market in England: Call for Evidence (March 2014), Summary of Responses and Defra Response(December 2014), and Digest of Waste and Resource Statistics - 2015 Edition (January 2015), Defra, Table 6.3

[13] Waste Infrastructure Requirements for England (April 2014), Centre for Environmental Policy, Imperial College London, Tables 11 - 13. The capacity requirements considered in the report relate to requirements for recovery of LACW and the fraction of C&I waste arisings that is "municipal" waste.

[14] State of the Nation – Infrastructure 2014 (June 2014), Institution of Civil Engineers (ICE), pages 24 – 25

[15] Residual Waste Infrastructure Review Issue 7 (November 2014), Eunomia, Section 4.1, Figure 4.1 and Appendix A.2.0

Some of the difference in predictions can be explained by differences in the desired end point and whether the aim is to meet EU landfill diversion targets or to embrace the circular economy and provide waste treatment facilities over and above that level so as to recycle or recover as much waste as possible.

Notwithstanding these other views, the government considers that by 2020 England is likely to have sufficient capacity to meet and exceed the landfill diversion targets set under the Landfill Directive.[16] Consequently, the government is no longer funding new local authority-led energy from waste infrastructure projects. A summary of current permitted waste treatment capacity is included in the Defra Waste Digest (see Section 7).

The move from landfill to recycling or recovery of waste and towards a "circular economy" clearly has to be supported by the correct infrastructure. The government's current position – as noted by ICE - is that delivery of such infrastructure will be market-driven.[17] With the Waste Framework Directive requirement for 50% re-use and recycling of municipal waste by 2020, there is a need for sufficient waste sorting and treatment facilities to achieve this. However, the indications are that nationally, there may be sufficient facilities already built or in the pipeline for the recovery or disposal of the residual (non-recyclable) LACW and C&I waste likely to arise over the next 10 – 15 years.

## 2.3 Sub-National Trends - Waste Arisings and Projected Future Waste Infrastructure Requirements in the West Midlands

A 2013 report by Improvement and Efficiency West Midlands (IEWM) gives an overview of the management of local authority collected waste (LACW) in the former region.[18] This shows that the West Midlands authorities have a significant number of energy from waste facilities, and have relied heavily on these to achieve landfill diversion in line with the Landfill Directive target. In 2011/12, the West Midlands recovered value from 75.2% of its LACW through recycling, composting and energy recovery, a higher proportion than any other former region, and higher than the national average for England (60.9%). A significant proportion of this (34.1%) has been achieved through incineration with energy recovery, which is much higher than the national average (19.1%), whereas the recycling and composting rate (41.1%) was similar to the national average (41.8%). However, some authorities in the West Midlands are achieving significantly higher recycling and composting rates. As a result of this, the landfill rate in the West Midlands (24.7%) was the lowest of any former region in England and lower than the national average (37.4%).

The most recent Defra statistical release on LACW[19] shows that 2.711 million tonnes of LACMW were generated in the West Midlands in 2013/14, an increase on the 2.667 million tonnes generated in 2011/12. The overall recovery rate was 77.5% compared to the national average of 66.8%, an increase on the rate achieved in 2011/12.

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[16] Forecasting 2020 Waste Arisings and Treatment Capacity (Revised February 2013 Report, Published October 2013), Defra, see also related Defra reports reviewing Defra financial support for specific residual waste projects in Norfolk (October 2013) and Hertfordshire (October 2014)

[17] National Infrastructure Plan 2014 (December 2014), HM Treasury, Chapter 12: Waste

[18] Delivering Waste Efficiencies in the West Midlands (January 2013), Improvement and Efficiency West Midlands (IEWM), The Challenge (page 6) and Tables 1 and 2

[19] Statistical Data Set ENV18 - Local Authority Collected Waste: Annual Results Tables (November 2014), Tables 1a and 2a

This was achieved largely through an increase in the proportion of waste sent for incineration/ energy recovery, which was 36.0% compared to the national average of 24.2%. This will in part have been a consequence of the new energy from waste plant at Four Ashes in Staffordshire (which receives residual LACW from Walsall) coming on stream at the end of 2013. As this facility was operating for only the first quarter of the monitoring year, it is anticipated that the figures for 2014/15 will show a further increase. The recycling and composting rate in 2013/14 was 41.5% in the West Midlands, slightly below the national average of 42.6%.

As has been noted above, there are unfortunately no arrangements in place for capturing data on C&I waste arisings and management at a national or sub-national level. However, recent research gives an indication of current levels of arisings in the West Midlands, possible future trends, and therefore potential future demand for new waste management infrastructure for managing C&I waste.

For example, research undertaken by the Waste and Resources Action Programme (WRAP) in spring 2010[20] suggested that there was scope for further waste recycling in the West Midlands. They interviewed skip hire and waste transfer station operators and discovered that plastics and food waste were particular problem waste streams, with a will to recycle more but a perceived lack of facilities for treating food wastes and sorting mixed plastics. Their report suggests that considerable quantities of plastic, glass, waste electrical and electronic equipment, food, paper and card and wood were being landfilled rather than being recycled, identifying the following potential gaps for recycling of C&I waste:

| | |
|---|---|
| Plastics | 240,000 Tonnes per year |
| Glass | 90,000 Tonnes per year |
| Food | 300,000 Tonnes per year |
| Paper and Card | 560,000 Tonnes per year |
| Wood | 150,000 Tonnes per year |
| Textiles | 70,000 Tonnes per year |
| Aggregates | 150,000 tonnes per year |

However this data was in part extrapolated from two earlier reports produced in 2008 and 2009 which were themselves reliant on earlier data,[21] and therefore may not be fully accurate. The estimated gaps are also likely to be somewhat out-of-date, given more recent developments identified in the above-mentioned West Midlands IEWM report, and the West Midlands RTAB and ICE reports mentioned below, and Authorities' Monitoring Reports. Furthermore, as the gaps identified relate to the whole of the former region, local plans for the Black Country could only be reasonably expected to provide for a proportion of these requirements.

The last national C&I waste survey, which would not have been available to WRAP when they prepared the above report, estimated that the West Midlands produced around 5.247 million tonnes of C&I waste in 2009.[22]

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[20] West Midlands Commercial and Industrial Waste-Opportunities for Recycling and Recovery (May 2010), Waste and Resources Action Programme (WRAP)

[21] Waste - A Future Resource for Businesses: Developing the evidence base for a targeted market intervention strategy for the West Midlands (2008), SLR Consulting for former Advantage West Midlands, and Study into Commercial and Industrial Waste Arisings (April 2009), ADAS for former East of England Regional Assembly

[22] Commercial and Industrial Waste Survey 2009 Final Report (December 2010), produced by Jacobs for Defra, Tables 19 and 23

This represented a significant decline in arisings since the previous survey, which estimated that C&I arisings in the West Midlands were around 7.265 million tonnes in 2002/03.[23] A breakdown of estimated arisings by sector by tonnage suggests that the metal manufacturing sector was the biggest producer of waste in the West Midlands, producing 22% of total C&I waste arisings, the highest proportion from this sector in any region, followed by the retail and wholesale sector, which produced 17% of total arisings. However, a breakdown of arisings by waste type indicates that only 8% of arisings by tonnage were metallic wastes, compared to mineral wastes (20%), mixed wastes (24%) and non-metallic wastes (19%).

The Imperial College report referred to above considers future waste capacity requirements at sub-national level as well as at a national level. This report estimates that in 2009/10, the former West Midlands region had a surplus of incineration capacity, but around a 1.5 million tonne gap for recycling, a 0.1 million tonne capacity gap for composting/ AD, and a 0.5 million tonne gap for "other" treatment (see Table 13). However, like the WRAP report, these estimates do not take account of new waste infrastructure developed since 2009/10, and when this is factored in some of the gaps identified are likely to have closed.

Other research reports have tended to draw on information from the above sources for estimates of C&I waste arisings and future requirements in the West Midlands. The most recent monitoring report by the West Midlands Technical Resource Advisory Body (RTAB) produced in 2013[24] refers to earlier data sets that indicate a general decline in C&I waste arisings in the West Midlands, and an increase in the proportion of waste recycled, since 1998/99. The RTAB report also draws on Environment Agency data on the annual tonnages of waste deposited at permitted waste facilities in the West Midlands. This shows a significant decrease in deposits of waste at permitted landfill sites and an increase in deposits into waste treatment and transfer sites (excluding incinerators) in the former region between 2000/01 and 2011. The Environment Agency data also suggests that a very high proportion of the waste arising in the West Midlands is managed within the region.

The latest published Environment Agency data for the former West Midlands region[25] shows that deposits into permitted landfill sites have continued to decrease since 2011. Landfill deposits in 2013 were 3,639 million tonnes compared to 4.469 million tonnes in 2011. There was also a further corresponding increase in inputs into permitted treatment and transfer sites in the West Midlands in 2012, which were 9.428 million tonnes compared to 8.611 million tonnes in 2011. However, this trend does not appear to have continued into 2013 when deposits were 9.416 million tonnes, very similar to 2012 levels, which may reflect national trends. The increase in deposits at permitted sites in recent years will have in part been as a result of development of new infrastructure.

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[23] Environment Agency Commercial & Industrial Land Survey 2002/03 – Data Tables for former West Midlands Region (no longer available online)

[24] Waste Planning and Management Trends in the West Midlands 2011/12 (October 2013), West Midlands Resource Technical Resource Advisory Body (RTAB), Figures 1, 2, 3, 4, 12 and 13

[25] Waste Management for England 2013 (December 2014), Environment Agency: Waste Management Information 2013 - Former West Midlands Planning Region – see West Midlands - Waste Deposit Trends - Landfill deposits by site type, waste type and sub-region 2000/1 to 2013 (000s tonnes) and West Midlands - Waste Deposit Trends - Transfer & treatment deposits by site type, waste type and sub-region 2000/1 to 2013 (000s tonnes)

Drawing on data from the West Midlands IEWM and RTAB reports and an earlier (2013) report by Eunomia, the Institution of Civil Engineers (ICE) noted in their 2014 Infrastructure report on the West Midlands that the former region has recently seen significant development of waste processing facilities and technology research.[26] It was reported that in 2014, the West Midlands had over 2.1 million tonnes of residual waste treatment capacity either operating or under construction.

Ultimately the need for additional waste facilities in the West Midlands will depend on how quickly we move towards "Zero Waste" and the "circular economy." The evidence summarised above suggests that the West Midlands is unlikely to require any new energy from waste facilities for managing LACW over the period of the SAD, although local authorities may require additional capacity for recycling, as well as new or improved infrastructure for sorting and segregating waste, to meet Waste Framework Directive requirements for "separate" collection of paper, glass, cans and plastic. However it is likely that there will be a demand for additional waste recycling and recovery facilities for C&I waste. Although increases in Landfill Tax have been reduced in line with inflation, the current rate of £82.60 for non-inert waste remains a considerable incentive for businesses to explore reuse and recycling options.

There is also a need to ensure that waste treatment capacity is accessible and that where a need is identified for local facilities for recycling and recovery, they are delivered in appropriate locations. In particular, Walsall Council report a lack of local facilities for recycling or recovery of green waste and food waste, which may not be easy to accommodate in an urban area because of environmental constraints (see below). However, as advised in paragraphs 4 and 5 of the National Planning Policy for Waste (October 2014), subject to addressing potential environmental constraints, there is scope to accommodate most other types of enclosed waste treatment and transfer infrastructure on industrial land.

## 2.4 Local Policy Requirements – Black Country Core Strategy (BCCS) 2011

In the Black Country, the key requirements of Article 28 of the Waste Framework Directive (requirement for the UK to have in place one or more "waste management plans") have already been addressed through the waste policies in the BCCS (Spatial Objective 9 and Policies WM1 - WM5). The BCCS sets indicative targets for delivery of new waste infrastructure in the Black Country 2006 - 2026, based on an analysis of current waste management capacity and current/ projected waste arisings, and identifies in broad terms the locations where these requirements are expected to be met. The targets set are summarised below.

In February 2011, the Black Country Authorities provided evidence to the Department for Communities and Local Government, demonstrating that this was the case and that other local plans such as the Walsall SAD will deliver any remaining requirements, by identifying more specific locations where waste infrastructure can be delivered. A copy of the letter is appended to the report (Appendix 4).

A key role of the SAD will be to deliver the BCCS requirements in Walsall by identifying suitable locations for new waste infrastructure and by allocating suitable, deliverable sites where appropriate. While there is conflicting evidence on the need for new waste recovery infrastructure in England and in the West Midlands over the long-term (see 2.2 above), the evidence available at the time of this study does not suggest any pressing need for additional provision in Walsall through the SAD, over and above the indicative requirements identified in the BCCS.

[26] State of the Nation Briefing - Infrastructure 2014: West Midlands (June 2014), Institution of Civil Engineers (ICE), Waste and Resource Management (page 2)

Under the BCCS the four Waste Planning Authorities have set targets to further reduce waste to landfill, with an objective of achieving 84% diversion for Local Authority Collected Waste (LACW) by 2020/21 and 75% diversion of commercial and industrial (C&I) waste. Targets for landfill diversion vary across the four Boroughs and the target for Walsall is for 75% of LACW to be diverted from landfill.

There is therefore a need for sufficient waste infrastructure to sort, recycle and recover a high proportion of the LACW and C&I waste expected to arise within Walsall and the wider Black Country. Work carried out to date indicates that there may be over capacity in relation to recycling and recovery of metals and hazardous wastes. There are currently no facilities for generating energy from residual waste in Walsall, although there are council energy from waste plants in Dudley and Wolverhampton, and as noted in Section 2.3 above, the West Midlands in general has significant energy recovery capacity for residual LACW. While there are a few specialist facilities for recovery and recycling of waste timber, paper and card in the Black Country (including two paper recycling facilities in Walsall), there is lack of facilities for recovery of other types of organic wastes, such as food waste and green horticultural/ agricultural wastes, and provision for recovery of value from waste timber is currently very limited.

The over-arching objectives for waste in the Black Country in the BCCS (see Spatial Objective 9 and Policy WM1) are:

- zero waste growth (taking into account development in the plan area);
- net self-sufficiency in waste (i.e. there is capacity within the plan area to treat a quantity of waste equivalent to the tonnages of waste expected to arise);
- movement of waste up the waste hierarchy;
- protection of existing waste infrastructure; and
- an increased variety of waste management sites, allowing a wider range of wastes to be recycled or recovered.

## 2.5 Delivery of BCCS Requirements – Recent Performance

In 2012/13 49.1% of Walsall's local authority collected waste (LACW) was diverted from landfill through recycling, composting and energy recovery, which was lower than the national average (64.0%) and also lower than the average in the West Midlands as a whole (76.3%) and the Black Country average (83.0%) – see also 2.3 and 2.4 above for national and sub-national trends. There is therefore a need to boost recycling and recovery to meet the BCCS indicative 2015/16 target of recycling or recovering 67% of LACW arising in Walsall (See BCCS Appendix 6, Table WM1d). This requirement is now being met by a new long-term contract to treat residual LACW from Walsall at the Veolia "W2R" Energy from Waste plant in Four Ashes in Staffordshire, which started in December 2013. Figures for 2013/14 show that this has already led to an increase in landfill diversion, with 40.7% of Walsall's LACW being reused or recycled and 16.5% recovered for energy, resulting in a total of 57.2% diverted from landfill in 2013/14. A further increase in the rates of energy recovery and overall landfill diversion is anticipated in 2014/15, which was the first complete monitoring year when the Four Ashes facility was in full operation.

Monitoring of C&I waste is more difficult because – as noted in Sections 2.2 and 2.3 above - accurate records regarding waste arisings and their fate are not available so it is necessary to rely on other information to illustrate trends. For monitoring purposes, the Black Country Authorities are therefore using data from the Environment Agency Waste Data Interrogator on the known quantity of waste processed through permitted non-landfill waste management sites. The conclusion drawn from the 2013 Walsall Local Plan Monitoring Report (Authority's Monitoring Report), the latest available at the time of this study, was that high levels of landfill diversion are probably being achieved for C&I waste in the Black Country, and that the BCCS target for the benchmark year of 2010/11 was probably met in Walsall as well as for the Black Country as a whole.

Based on evidence from the Black Country Waste Study (2009), prepared by Atkins, and the Black Country Core Strategy Waste Background Paper (2010), prepared by the Black Country Authorities,[27] the BCCS (dated February 2011) set an indicative target to provide waste recycling or recovery facilities for an additional 1,000,000 tonnes of C&I waste per annum and 303,000 tonnes of "municipal" waste (i.e. LACW) per annum within the Black Country by 2026. This would meet the anticipated future requirements for managing these waste streams, allowing the Black Country Authorities to meet their objective of net self-sufficiency. This means that by 2026 there will be sufficient waste management capacity available within the Authorities' area to manage the tonnage of recoverable waste that arises in the same area over the plan period. It is not expected that all waste arising in the Black Country will necessarily be managed in the Black Country.

The appendices to the BCCS estimate that current total waste arisings in Walsall at the baseline date (end of March 2009) were around 810,000 tonnes a year (based on 2006/07 data). This was predicted to rise to around 1,044,000 tonnes by 2026. Of this waste C&I waste accounted for 380,000 tonnes initially and was predicted to rise to 570,000 tonnes by 2026.

This would mean that within Walsall there was a need to provide for an additional 190,000 tonnes of C&I waste and an additional 234,000 tonnes of waste in total.

## 2.6 Delivery of BCCS Requirements – Current Position

The Walsall Site Allocation Document (SAD) Issues and Options Report, dated April 2013 and the Walsall Local Plan Monitoring Report (Authority's Monitoring Report) for 2013 review progress against the BCCS and provide updated figures.

Given that a typical waste management plant might process between 50,000 and 100,000 tonnes of waste a year it was initially estimated that an additional 10 to 20 sites would be required across the Black Country as a whole by 2026.

The monitoring report shows that there have been some losses and gains in waste treatment capacity in the Black Country Area with a net gain in capacity over the past few years. Also waste arisings do not appear to have risen as quickly as expected. The figures have therefore been revised in the 2013 AMR to require an additional five or six sites for LACW recovery and between five and ten additional sites for treatment of C&I waste across the Black Country Area.

Walsall Council is not currently planning to develop any new LACW facilities, either by themselves or in partnership with another party, but expects that commercial waste contracts for reuse, recycling and composting will meet this need. Under these arrangements Walsall's LACW could (in theory) be re-used, recycled or composted anywhere and will not necessarily be managed in Walsall - indeed the existing contracts are with recycling and composting facilities outside the borough. These contracts are due to end on 31 March 2016, and the arrangements for tendering for new contracts are now being progressed.[28]

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[27] Black Country Core Strategy - Waste Planning Study 2009: Final Version and Appendices (May 2009), Atkins and Black Country Core Strategy – Waste Background Paper 2 and Appendices (February 2010), Black Country Authorities

[28] See Report to Walsall Council Cabinet 17.12.14: "Contracts for treatment, recycling and final disposal of municipal waste"

The need for additional C&I waste capacity in Walsall is calculated to have fallen from 190,000 tonnes to 124,200 tonnes as a result of new development up to 2012/13. Given these figures, there would be a need for two or three additional waste treatment sites in Walsall. However given that the LACW need will also be met by commercial sites it may be that an additional two or more waste management sites are required in addition to this. This estimate is based on Table 70 of 2013 Walsall Local Plan Monitoring Report, which suggests an updated figure of 208,000 tonnes of additional LACW capacity across the Black Country as a whole. If this is divided evenly between the Authorities there would be a requirement for an extra 52,000 tonnes per year capacity in Walsall.

In summary then, in round terms (and assuming that there is no further significant net loss of existing capacity through site closures), in order to meet the requirements identified in the BCCS, the SAD needs to identify four or five sites suitable for waste management use, and capable of delivering around 176,000 tpa of new waste treatment and recovery capacity over the plan period.

## 2.7 Delivery of New Waste Management Infrastructure – Potential Constraints

Waste sites are associated with a number of potential impacts on the environment. These include the potential for contaminants to leach from the waste into surface water or ground water as well as emissions of noise, dust, odour and bio-aerosols to air. An energy from waste facility will also emit combustion products to atmosphere. Because of these issues any waste development must be provided with impermeable surfacing and sealed drainage to protect local groundwater and surface water and may require other pollution control measures to be in place in order to protect local residents and the environment.

In a built up area such as Walsall it is inevitable that there will be human receptors close by, whether these are residential areas or places of work. It will therefore be most appropriate to encourage the development of waste activities that take place inside a building, giving greater scope for the control of any emissions as well as improving the visual appearance of the site.

The BCCS quotes a typical land take of 1.5ha for a waste treatment site. It is likely that it will be necessary to allow sufficient space for:

- access and egress of large vehicles;
- a weighbridge, to allow accurate record keeping of the quantity of waste treated,
- space for unloading and storage of waste;
- space for sorting and other treatment of waste;
- space for outloading of recyclate or other products;
- space for any necessary abatement equipment. For example, the Environment Agency recommends that where odorous wastes are treated the waste reception hall should have an air extraction system vented via appropriate abatement such as a biofilter. This in itself can occupy more than 80m$^2$ depending on the design.

1.5 ha is therefore considered likely to be a minimum where a more complex waste treatment takes place. Sites which carry out more than one process, for example a materials recycling facility associated with an anaerobic digestion or energy from waste plant, may require 4 or 5 ha of land. Sites smaller than 1.5ha may be too restrictive to support a waste use.

Another factor to take into consideration is air quality in Walsall. The M6 passes through the Borough and there are high levels of nitrogen oxides associated with emissions from vehicle exhausts along the M6 corridor. This has caused some breaches of the statutory air quality limit for nitrogen dioxide.

As a result the whole Borough has been designated as an air quality management area (AQMA) for nitrogen dioxide ($NO_2$). When an Energy from Waste facility is permitted the Environment Agency must confirm that the emissions to air will not have any significant impact on air quality. In most cases this can be demonstrated by providing an air quality model to show that emissions from the facility will not cause any breach of the air quality standards at nearby receptors. However if the air quality standard is already being breached only insignificant emissions (less than 1% of the statutory air quality standard) may be permitted, based on the Environment Agency's H1 guidance. Since energy from waste facilities typically emit nitrogen dioxide as a product of combustion this may restrict the potential for energy from waste within the Borough.

# 3 Methodology

## 3.1 Viability and Delivery Assessment – Key Background Information

In assessing each of the sites consideration has been given to the following documents:

- Refuse Derived Fuel – Call for Evidence by Defra (March 2014) Potential Issues for Walsall Council[29];
- Defra's response to the call for evidence, December 2014;
- Walsall Local Plan, currently (January 2015) comprising the adopted BCCS (2011) and the remaining saved policies of the adopted Walsall Unitary Development Plan (2005);
- Walsall Site Allocation Document (SAD) – Issues and Options Report (April 2013);
- Local Plan Monitoring Report 2013 (Authority's Monitoring Report)
- Darlaston Area Local Development Order 2012;
- Individual planning permissions and planning application documents available via the Planning Portal;
- "What's in your Backyard" (Environment Agency website www.environment-agency.gov.uk/wiyby.)

A site visit was made to each of the sites on 16 October 2014, to view the locations, access and any potential constraints. Photographs were taken and these are included within the pro-formas where they are helpful to illustrate the conditions on site.

In each case the site owner and/or developer was contacted to discuss the status of the site and potential plans going forward.

## 3.2 Industrial and Mining Legacy Desk-Top Assessment – Evidence Used

The industrial and mining heritage of each site was derived from the following sources:

- Geological Plans 1:10,000 scale SJ90SE, SO99NE, SP09NE, SK00SW and associated memoirs
- Geological Plan 1:50,000 Sheet 154
- Environment Agency website including aquifer designations, landfill sites, pollution incidents, source protection zones, flooding
- British Geological Survey borehole viewer
- Coal Authority mine entry interactive viewer
- Old-maps (online www.old-maps.co.uk)
- Bing maps – aerial mapping
- Grid Reference Finder website
- Limestone consideration zone plan

[29] This is an internal briefing note provided by the Council and is not a public document.

This was used to inform the likely constraints on site and a standard pricing scheme was used to calculate indicative costs for the remediation of the sites. This is shown in Appendix 1. It should be noted that these costs provide a means by which to compare sites but actual costs of remediation will need to be based on a specific ground investigation which will allow the level of contamination or potential instability due to former mining use to be fully quantified.

# 4 Site Analysis

## 4.1 Bescot Triangle (WP10)

The first of the four sites to be identified by Walsall Council for potential development as a waste facility is Bescot Triangle. The site was identified as a potential option for waste management use via the second SAD call for sites in 2013. The site was put forward by the landowner for a range of uses including waste management.

Currently the southern part of the site is occupied by a construction, demolition and excavation waste processing site which has a valid planning permission dating from 1992, and prior to that the site was part of the former Bescot Sewage Works. The northern part of the site is an area of open space, which has lawful use as a private nature reserve and is designated as a Site of Local Importance for Nature Conservation (SLINC).

The site has a number of constraints including likely contamination caused by former sewage works use, potential for flooding and restricted access.

The completed pro-forma is provided as Appendix 3 to this report, giving a detailed appraisal of the site.

It was concluded that the range of constraints identified would make the site inappropriate for more intensive use as a waste treatment facility and that it may be more suitable for a non-waste use or to continue as largely open land with the current low key waste use.

## 4.2 Cemetery Road (WP11)

Cemetery Road has also been identified as a potential waste site. This site is divided into two parcels of land by Kendricks Road. The larger site (former Junction Works) was until recently occupied by an open air waste transfer station and recycling facility. Like Bescot Triangle this site was identified through the second call for sites being put forward by the owner for a range of uses including waste management.

Most of the operations on the Junction Works site were being carried out without a valid planning permission and the Council has taken enforcement action to remove the unlawful operations from the site.[30] The evaluation of this site has therefore considered whether it could support a higher quality, enclosed, waste treatment facility.

Again constraints included potential contaminated land and flood risk.

It was concluded that this site had the potential to be developed as a modern enclosed waste recycling or waste treatment facility provided that the flood risk could be properly managed. The site is likely to be able accommodate a waste transfer or treatment facility accepting up to 100,000 tonnes per annum.

The completed pro-forma is provided as Appendix 3 to this report.

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[30] On 18 March 2015 the operator was successfully prosecuted by the Council for failing to comply with the enforcement notices, and was fined £50,000. Following this the operator vacated the site, and is now operating from Bescot Triangle South (WP10) which they began to occupy in 2014.

## 4.3 Fryers Road (WP2)

The Fryers Road site has had planning permission for the development of a waste facility since 2007. However the original scheme for a material recycling facility (MRF) and combined heat and power plant (CHP) was not implemented. The site was therefore included in the list of proposed waste infrastructure projects in the BCCS (Policy WM3, Table 17, Site WP3). This was the main reason that Walsall Council identified it as potential Site Option for waste.

In 2013 planning permission was granted for an alternative scheme, comprising mechanical recovery of raw materials from mixed pre-treated waste, processing of the residual waste material to form a refuse derived fuel (RDF) and recovery of energy from the RDF in an on-site gasification plant. The site is currently unoccupied and has been cleared of any above ground structures.

When contacted, the proposed operator (BH Energy Gap (Walsall) Ltd) confirmed their intention to proceed with the approved gasification plant scheme. In February 2015, the operator was announced as one of the successful bidders to the DECC “renewable energy auction” (Contracts for Difference), being awarded a 15-year contract for their proposed gasification plant. It is understood that modifications to the scheme are now proposed, as an EIA Scoping request was made to the Council in May 2015 in relation to these revisions (15/0787/SCOP), however, the information provided indicates that no changes are proposed to the types of operations or to the annual throughput of waste.

Although there may be constraints due to the former use of the site for metal working and an associated industrial landfill it was concluded that the Fryers Road site is generally well suited for a waste use and has good potential for use as a waste recycling or waste treatment facility.

The site is likely to be able to accommodate an enclosed waste transfer and treatment facility accepting well over 100,000 tonnes per annum. The most recent planning permission is for a MRF, RDF production and gasification facility which could process up to 300,000 tonnes of waste a year.

The completed pro-forma is provided as Appendix 3 to this report.

## 4.4 Land at Kendricks Road (WP4)

The Kendricks Road Site is part of a larger employment site identified in the Walsall Employment Land Review (ELR) (2012) (ELR Reference 99: Station Street/ Heath Road). It was identified by the Council as a potential Site Option for waste use because it had had previous planning permission for a small scale timber recovery facility. This planning permission recently expired and there have been no planning applications for alternative uses.

The site has been cleared of above ground structures and is in use for open storage of skips and containers. It is not certain whether this is a lawful planning use for the site.

This site is very small and is unlikely to have the space to house a large scale or complex waste facility. It may be appropriate for a smaller scale specialist waste use which will not involve large scale sorting of waste and utilises only simple waste treatment.

The site will not accommodate large quantities of waste but might support a smaller facility processing just a few thousand tonnes a year.

The completed pro-forma is provided as Appendix 3 to this report.

# 5 Other Potential Sites for Waste Management

## 5.1 Background

In addition to the analysis of the sites specifically identified for potential waste management developments, the Council asked for the study to consider the potential of other employment sites for waste management use. The study has therefore evaluated the potential of the employment sites included in the Study (see Part 2, Employment Viability and Delivery Study, Tables 7.1 – 7.3).

A screening exercise was carried out to assess whether any of these sites might be suitable for waste use.

## 5.2 Assessment of Employment Sites – Overview and Summary of Results

As discussed in Section 2 it is considered that to enable a more complex multi-stage waste treatment to take place sites should be at least 1.5ha in size and may need to be considerably larger. Smaller sites might support a simpler waste operation with only one stage of waste processing. However small sites will be restricted in the scope of waste activities that they might support and may have insufficient space to allow for manoeuvring of large vehicles and associated infrastructure. A number of sites were therefore rejected as unsuitable for waste management where they were less than 1ha in size.

For the remaining sites surrounding land use was assessed. As might be expected in a built up area such as Walsall the majority of the employment sites have sensitive receptors near-by. Many sites had adjacent housing or were immediately adjacent to other sensitive receptors such as hotels, restaurants or schools. Although modern waste sites are required to apply high standards of containment and control the potential for impact on these receptors remains. Odour in particular can be an issue, as even low concentrations of odorous compounds in fugitive emissions from the site have the potential to cause a major impact on those who live near-by. It is therefore preferable to locate waste sites in industrial areas or at sites which have a land buffer between the site and residential areas.

On this basis a further nine sites were discounted on the basis that there were houses or other sensitive receptors within 50m of the boundary. The two exceptions to this were Phoenix 10 and the Former Wesson Site at Bull Lane. Although these sites had housing relatively close to the site they had good transport links, would allow the reuse of brownfield sites, were a good size and had the potential for sensitive development to protect the near-by receptors.

The results of this two stage screening process can be seen in Table 1, below. A number of potential employment sites were discounted for waste use due to their restricted size or proximity of sensitive receptors. Those sites that may be more suitable for waste use are highlighted in blue.

| Table 1: Employment Sites for Potential Waste Use | | | | | | |
|---|---|---|---|---|---|---|
| **Site Ref/ Name** | **Site Size (ha)** | **Size Constraints** | | | **Other Constraints** | |
| | | **Site Size >1.5ha** | **Site Size 1.0 – 1.5ha** | **Site Size < 1.0 ha** | **Adjacent to/ Near Sensitive Receptors** | **Other Physical Constraints** |
| IN104: Phoenix 10 (former James Bridge IMI and tip sites) | 18.00 | ✓ | X | X | ✓ | ✓ (mine entries, soil contamination possible ground gas, access) |
| IN111, IN112: James Bridge Gas Holders | 8.30 | ✓ | X | X | ✓ | ✓ (soil contamination and possible ground gas, flood risk) |
| IN12.11:Westgate North / Linley Lodge | 0.75 | X | X | ✓ | X | ✓ (may be made ground or contamination from adjacent landuse and canal construction) |
| IN12.14: Former McKechnie's (Middlemore Lane) | 5.94 | ✓ | X | X | X | ✓ (Potential contamination from use as engineering works. Possible ground gas as deep made ground identified adjacent to site) |
| IN120.3: Former Wesson, Bull Lane | 4.96 | ✓ | X | X | ✓ | ✓ (mine entries, soil contamination possible ground gas) |
| IN122: Moxley Tip | 10.37 | ✓ | X | X | ✓ | (mine entries, soil contamination possible ground gas) |
| IN133: Willenhall Sewage Works | 9.70 | ✓ | X | X | ✓ | ✓ (recorded mine entries and shallow coal workings, flood risk) |
| IN18.2: Box Pool | 1.67 | ✓ | X | X | ✓ | ✓ (former landfill, flood risk) |

| Table 1: Employment Sites for Potential Waste Use | | | | | | |
|---|---|---|---|---|---|---|
| **Site Ref/ Name** | **Site Size (ha)** | **Size Constraints** | | | **Other Constraints** | |
| | | **Site Size >1.5ha** | **Site Size 1.0 – 1.5ha** | **Site Size < 1.0 ha** | **Adjacent to/ Near Sensitive Receptors** | **Other Physical Constraints** |
| IN18.2: Land Opposite Mary Elliot School | 0.53 | X | X | ✓ | X | ✓ (probable shallow mine workings) |
| IN27.1, IN27.2, IN27.3: Newfield Close[31] | 12.67 | ✓ | X | X | X | ✓ (mine entries, soil contamination possible ground gas) |
| IN311: Keyway Retail Park | 3.59 | ✓ | X | X | X | ✓ (mine entries, soil contamination possible ground gas) |
| IN315: Casino and Cinema, Bentley Mill Way | 4.58 | ✓ | X | X | X | ✓ (mine entries, soil contamination possible ground gas) |
| IN317: Millers Close | 0.80 | X | X | ✓ | X | ✓ (probable mine entries, flood risk) |
| IN343: Green Lane Open Space | 4.13 | ✓ | X | X | ✓ | ✓ (mine entries, soil contamination possible ground gas) |
| IN5.1: Land North of Maybrook Road | 1.68 | ✓ | X | X | ✓ | ✓ (possible made ground/ ground gas from former brickwork use) |
| IN5.4: Maybrook / Lindon Road (Former Unalco) | 0.61 | X | X | ✓ | X | ✓ (possible contamination /ground gas from spoil mounds) |

[31] Following the waste sites viability and delivery study, this site was excluded from the 10-year employment land supply, and is therefore no longer identified in Part 2 of the Study – see Section 5.3 below for further details.

| Table 1: Employment Sites for Potential Waste Use | | | | | | |
|---|---|---|---|---|---|---|
| **Site Ref/ Name** | **Site Size (ha)** | **Size Constraints** | | | **Other Constraints** | |
| | | **Site Size >1.5ha** | **Site Size 1.0 – 1.5ha** | **Site Size < 1.0 ha** | **Adjacent to/ Near Sensitive Receptors** | **Other Physical Constraints** |
| IN52.2: Walsall Enterprise Park West | 0.80 | X | X | ✓ | ✓ | ✓ (possible contamination/ ground gas from deep made ground) |
| IN63: Tempus 10 North (Onyx) | 1.74 | ✓ | X | X | ✓ | ✓ (mine entries, soil contamination possible ground gas, flood risk) |
| IN64: Tempus 10 South (Opal) | 1.72 | ✓ | X | X | ✓ | ✓ (soil contamination possible ground gas, former landfill, flood risk) |
| IN9.3: Merchants Way, Aldridge | 0.43 | X | X | ✓ | X | ✓ (possible contamination/ ground gas from deep made ground) |
| IN9.4: Vigo Place | 0.86 | X | X | ✓ | X | ✓ (possible mine workings. possible contamination associated with historic use for railway sidings) |
| IN9.8: Coppice Lane | 1.04 | X | ✓ | X | X | ✓ (mine entries, possible ground gas, soil contamination) |
| IN92: Aspect 2000 | 3.34 | ✓ | X | X | X | ✓ (mine entries, possible ground gas, soil contamination, flood risk) |
| IN93.2: Axcess 10 East | 1.11 | X | ✓ | X | X | ✓ (probable shallow mining, soil contamination, possible ground gas) |

The screening exercise highlighted nine potential employment sites that may be suitable for waste use. These are discussed in the following paragraphs.

## 5.3 Potentially Suitable Sites

### IN104: Phoenix 10 (former James Bridge IMI and tip sites)

This site has residential receptors to the south on Darlaston Road, to the north east on Woodwards Road and to the east on Woodwards Place. There is also a park to the north of the site. However as the site is some 18ha in size there may be scope for a sensitively designed waste facility, which locates noisy or odorous activities more centrally and away from the sensitive receptors.

The site will benefit from road improvements carried out under the Darlaston Strategic Development Area (DSDA) Access Project and this will improve access to the M6 junction 9, giving the site good transport links.

The other constraints associated with this site relate to its former use, with landfilling having taken place on part of the site and a large number of mine entries being recorded. In addition Walsall Council have highlighted that improvements to the site access are likely to be required.

It is likely that any waste use would only use part of such a large site and therefore there may be further constraints depending on how other parts of the site are developed. A waste facility will be compatible with some industrial uses but other potential commercial or industrial users may be more sensitive to dust and/or odour. In addition the site is likely to be attractive to other industrial or commercial operators and these may well be in competition with and potential waste use.

### IN12.14 Former McKechnie's

Site IN12.14, the former MeKechnie's site at Middlemore Lane/Dumblederry Lane may be suitable for development as a waste site. A large part of this site is occupied by a former engineering works. The site is 5.94 ha and lies on an industrial estate. The nearest housing is over 200m away. The site is therefore of suitable size to allow the development of a waste treatment site accepting more than 100,000 tonnes of waste per annum, it has a history of industrial use and has no nearby residential receptors.

The constraints associated with this site are the possible need to remediate contamination arising from the past use of the site for an engineering and brass works. There is also the potential for unrecorded mining activity.

### IN20.3 Former Wesson, Bull Lane

This is a good sized site (4.96ha) that has potential for a range of waste uses including more complex processes, for example combining materials recovery and energy from waste. The site has good access routes.

There are sensitive receptors close by with a houses to the North east, on Holyhead Road and to the west on Curtin Drive. An area of trees provides some screening for the properties on Curtin Drive. Any waste development would need to be designed to protect these receptors and preferably would be designed to ensure the noisier and more odorous operations were away from these sensitive boundaries.

The site is a former industrial site and borehole evidence suggests that there may be 5m depth of made ground in parts of the site. There are also recorded mine entries. There may be contamination and stability issues to resolve before the site can be developed.

## IN27.1, 27.2 and 27.3 Newfield Close

Sites IN27.1, 27.2 and 27.3 at Newfield Close are a grouping of three sites which together would provide a potential 12.67ha of land for employment use.

The sites lie in an area of industrial and commercial development. There are houses very close to the north boundary of the sites, just beyond the railway line which runs along the northern boundary of the site. However the site is relatively large and is over 300m from north to south. It may therefore be possible to configure any waste development so that waste reception and treatment takes place towards the south of the development area and away from the nearby houses. The site could accommodate more than 100,000 tonnes of waste per annum.

The potential constraints with these sites arise from former industrial use. The land has been used as a pipe works and brick works and therefore has potential for back filled clay pits to be present. Records show there may be a 10m depth of made ground. In addition past mining use is recorded with the potential for shafts and shallow coal workings to be present.

Parts of the sites are currently occupied by warehouses which are used by Lidl for storage and this may restrict availability of the sites.

The Newfield Close sites were originally included in the portfolio of employment sites assessed as part of the Employment Sites Viability and Deliverability Study (see Part 2 of this report) hence they were reviewed as part of the Waste Sites Viability and Deliverability Study. However, they have since been omitted from the employment sites portfolio because they are no longer needed to make up the 10-year employment land supply. Although the sites are partly occupied, the vacant areas are still considered to provide potential opportunities for employment development. The sites are therefore expected to remain part of Walsall's wider employment land portfolio and to be identified in the forthcoming Walsall Employment Land Review.

## IN311 Key Way Retail Park

Site IN311 at Key Way Retail Park has been identified as an excellent location for industry. It has an area of 3.59ha and is located on a spur to the Black Country Route, therefore having good transport links. The surrounding area is used largely for commercial or industrial use. The nearest houses are approximately 90m to the south of the site with the Black Country Route and Walsall Canal lying between. This site may be suitable for a waste use and would be able to accommodate 100,000 tonnes of waste per annum or more. However it is noted that it is currently occupied by Tesco and other retailers. Use of the site would depend on the current occupiers moving on and a planning application for change of use would be required.

Potential constraints relating to this site include the presence of old shafts and deep made ground associated with former mining use. However the site is not in a flood risk area.

Current retail use on site may restrict availability of this site. The attractive location and current use may also attract other high value commercial or industrial users and potential competition may preclude waste use.

## IN315 Casino and Cinema, Bentley Mill Way

Site IN315 at Bentley Mill Way has an area of 4.58ha. It has good transport links being close to Junction 10 of the M6. The site is bounded to the east by the M6 and has commercial or industrial development around it. The closest houses lie on Bentley Mill Lane and Wrexham Avenue, approximately 80m away. The size of the site means that it would be able to accommodate 100,000 tonnes of waste per annum or more. However the site is currently occupied by a cinema and casino. Walsall Council believe that due to development in the town centre these uses may discontinue and should that occur this site could be considered for a waste use.

This site is not in a flood risk area. However remediation may be required as the site has a former mining use and mine entries and shallow mine workings are recorded. Information from the Council is that the site has been partly remediated but instability and ground gas issues still affect the car park area.

Current use of the site may restrict availability for development. In addition the attractive location and current use may also attract other high value commercial or industrial users and potential competition may preclude waste use.

## IN92 Aspect 2000 Bentley Mill Way

Site IN92 lies further to the south along Bentley Mill Way and therefore has good access to the M6 and other transport routes. This site is 3.34ha in size and is currently used for storage and repairs for a truck and haulage business. The site is bounded to the south and west by Walsall Canal and Anson Branch Canal. The closest development comprises warehousing with a cemetery to the south and the nearest houses are 150m to the North West, on Wrexham Avenue. The site has outline permission for B1b and c, B2 and B8 use. B2 use includes general industrial use and is generally considered appropriate for waste uses. This site therefore has the potential to be developed for a waste treatment use and could accommodate more than 100,000 tonnes of waste per annum.

This site also has a former mining use and has the potential to require remediation as a result. The major constraint is likely to be flood risk. The Environment Agency's maps indicated that a large part of the site is in a zone 3 flood risk area.

## IN9.8 Coppice Lane

This site has an area of just over one hectare and may not be able to support a larger more complex waste site. However it is within an industrial area with other waste operations near-by and no sensitive receptors in the immediate vicinity.

It therefore has potential to be developed as a waste transfer station or one stage waste treatment facility, although it should be noted that the site has a valid planning permission for unenclosed CD&EW recycling which was implemented in 2008, and is also identified in the BCCS as a Strategic Site for waste (WSWa1) and a Mineral Infrastructure Site (MI1) to be safeguarded for CD&EW recycling use (see BCCS Policies WM2, MIN1 and Appendices 6 and 7). While the CD&EW recycling operation ceased in 2011 and the site has remained vacant ever since, this is still the site's lawful use, which could be a potential constraint to bringing forward a more intensive use on the site. An alternative enclosed waste management use would not necessarily conflict with Policy WM2 but could be a potential departure from Policy MIN1.

Possible other constraints include recorded mine entries although it appears that these have been grouted and capped. There is the potential for ground gas associated with former spoil heaps on the site or migrating from the adjacent landfill, although this is known to be lined and to have a suitable gas extraction system.

### IN93.2 Axcess 10 East

This site has an area of 1.11ha and may therefore be too small to support a complex waste site. However it is in an industrial area and has planning permission for B2 use. There are no sensitive receptors in the immediate vicinity of the site and it may therefore be suitable for a small scale waste use such as a transfer station or one stage treatment process.

The potential constraints include probable shallow mine workings and possible contamination and/or ground gas associated with recorded made ground at the site.

## 5.4 Conclusions

On the basis of this simple screening exercise it appears that sites IN92: Aspect 2000 and IN12.14: Former McKechnie's may be the most favourable locations for waste use given their size, location and current planning permission for industrial use, although flood risk may be a significant constraint at IN92.

Site IN27.1, 27.2 and 27.3, IN315 and IN311 may be suitable dependent on the plans of the current occupiers and whether it is possible for them to relocate. An application for change of use would be required for sites IN315 and IN311 as these sites currently have retail/leisure use.

Sites IN20.3 and IN104 also appear to be suitable for waste use but have housing close to some of the boundary. Development of these sites would therefore need to be sensitively designed to protect local residents.

Sites IN9.8 and IN93.2 appear to be ideally located in industrial areas. However they may be restricted to the range of waste uses that they might support as they are less than 1.5ha in size, and with IN9.8 there is also a potential conflict with BCCS policy on minerals. However, these sites could support a simple waste use which did not require space for large quantities of equipment to sort or treat the waste.

# 6 Assessment of Need for a Centralised Contaminated Soil Treatment Hub

## 6.1 Background to Assessment

Many of the available sites within Walsall are brownfield sites which have been subject to former industrial use. Although today strict controls are placed on industrial facilities to prevent them causing pollution such controls did not apply historically. Therefore sites which have been subject to industrial use are often contaminated with a range of pollutants, the nature of the contamination depending on the particular use.

This contamination is a constraint to development for a number of reasons. Firstly, disturbing the ground may release the pollutants to groundwater, surface water or atmosphere with a potential negative impact on wildlife or human health. Changes to the porosity of the surface over a former landfill can change the preferential pathways for landfill gas, causing migration towards receptors that has not occurred before. The contaminants may also pose a risk to the end users of the site, particularly where people are likely to come into direct contact with the soil, for example in residential gardens. Pollutants may also damage the building structure of the development itself, for example high sulphate levels are likely to cause damage to concrete.

For all these reasons it is important to remediate sites before development commences, ensuring that sites are cleaned up to a standard compatible with their end use.

## 6.2 Sites Affected by Contamination – Options for Remediation

There are a number of potential options for remediation depending on the exact nature of the contamination. These include:

- contaminated soils may be removed from site and sent to an appropriately permitted contained landfill;
- soils may be treated in-situ, that is whilst still in the ground, to neutralise or stabilise the chemical contaminants;
- soils may be treated ex-situ, that is that they are dug up and treated by washing or another process before being returned to the site. This might happen in a dedicated area on site or off-site at a soils treatment hub or waste treatment site;
- an engineering solution may be developed to prevent contamination leaving the site, or reaching end users; for example an engineered cap, clean cover or a cut off wall/ in ground barrier between the site and a local receptor such as a surface watercourse.

Currently there is no waste site in Walsall permitted to accept contaminated soils for treatment. However there are a number of other options for achieving the remediation of sites, as listed above.

Where treatment of soils is necessary the Environment Agency has issued Standard Rules environmental permits for mobile plant which treats contaminated soils. Such an environmental permit allows the mobile plant operator to deploy their plant at a site for a temporary period before moving on to another site. This allows the site developer to contract with a mobile plant operator who is able to provide the correct treatment for the particular contamination on site before they move on to the next remediation scheme.

These standard rules allow the operation of mobile plant for air sparging, bioremediation, biosparging, bioventing, chemical treatment, soil vapour extraction, soil flushing, soil washing, solidification, stabilisation and thermal treatment along with blending, mixing, screening and size reduction of contaminated soils to facilitate these treatments. For explanation a brief description of these different treatments is provided in Table 2 below. The standard rules allow a wide range of in-situ or ex-situ treatments which can be applied at the site to be remediated.

**Table 2: Contaminated Soil Treatment**

| Treatment | Description |
|---|---|
| Air sparging | Often used with soil vapour extraction. Air is pumped underground to help extract volatile organic compounds (VOCs) adsorbed to the soil. The air encourages these chemicals to evaporate making them easier to extract and treat.[1] |
| Bioremediation | Bioremediation includes a range of treatments where micro-organisms are used to break-down organic contamination, such as pesticides or oil products. Treatment may take place within the ground or where soils are excavated and placed into bio-piles. The use of bio-piles allows the temperature, oxygen levels, moisture content and nutrients to be more closely controlled, optimising treatment. Treatment may involve naturally occurring or specially introduced micro-organisms. |
| Biosparging | During biosparging air and, sometimes, nutrients are pumped into the saturated zone. This encourages the growth and activity of naturally occurring micro-organisms which break down organic contaminants.[1] |
| Bioventing | This treatment involves the addition of air (and if needed nutrients) to the un-saturated zone in order to enhance the activity of naturally occurring micro-organisms to breakdown organic contaminants.[1] |
| Chemical treatment | Chemicals can be injected into the soil to break down or otherwise treat the contaminants. This often involves chemical oxidation of pollutants. It also includes stabilisation and solidification. |
| Soil vapour extraction | This treatment involves drilling extraction wells. A vacuum can then be applied, drawing VOCs from the soil and allowing them to be treated, for example by adsorption in a carbon filter.[1] |
| Soil flushing | Water is injected into the ground, where it picks up the contaminants. It is then pumped out via extraction wells so that the contaminated water can be treated in an above ground water treatment plant. Additives such as acids may be added to the water to aid extraction, depending on the type of contamination.[1] |
| Soil washing | Contaminants tend to be associated with the fine particles in soil. In this treatment soil is excavated and passed through a wash plant where the act of washing and agitation removes contaminants from the surface of larger particles and removes the fine contaminated material. Clean sands and gravels can then be returned to the site.[1] |

| | |
|---|---|
| Solidification | Reagents increase the physical stability of the soil, encapsulating the contaminants and thereby minimising the risk of them travelling into groundwater or surface water.[2] |
| Stabilisation | Reagents are added to the soil to render the contamination chemically stable.[2] |
| Thermal treatment | Covers a range of treatments where heat may be used to destroy contaminants or to encourage the evaporation and removal of contaminants. Very high temperatures can also be used to solidify contaminated soils.[1] |
| USA EPA Contaminated Site Cleanup Information and Technology Fact Sheets<br>Environment Agency "Guidance on the Use of Stabilisation/Solidification for the Treatment of Contaminated Soil." (2004) | |

## 6.3 Contaminated Land Remediation Strategies in the UK – Current Practice

In 2012 CL:AIRE (Contaminated Land: Applications in Real Environments) published a "State of the Market Report" based on a detailed survey carried out among their members.

Figure 2, below, provides the proportional split for different types of waste treatment used in the UK, based on survey results relating to 3,490 remediation projects carried out by CL:AIRE members during 2011.

The different remediation strategies were split down into in-situ techniques, ex-situ techniques, civil engineering based methods and passive methods for protecting a receptor. It is noted that ex-situ techniques require that soils are excavated however the subsequent treatment may be carried out either at the excavation site or off-site at a soils treatment "hub".

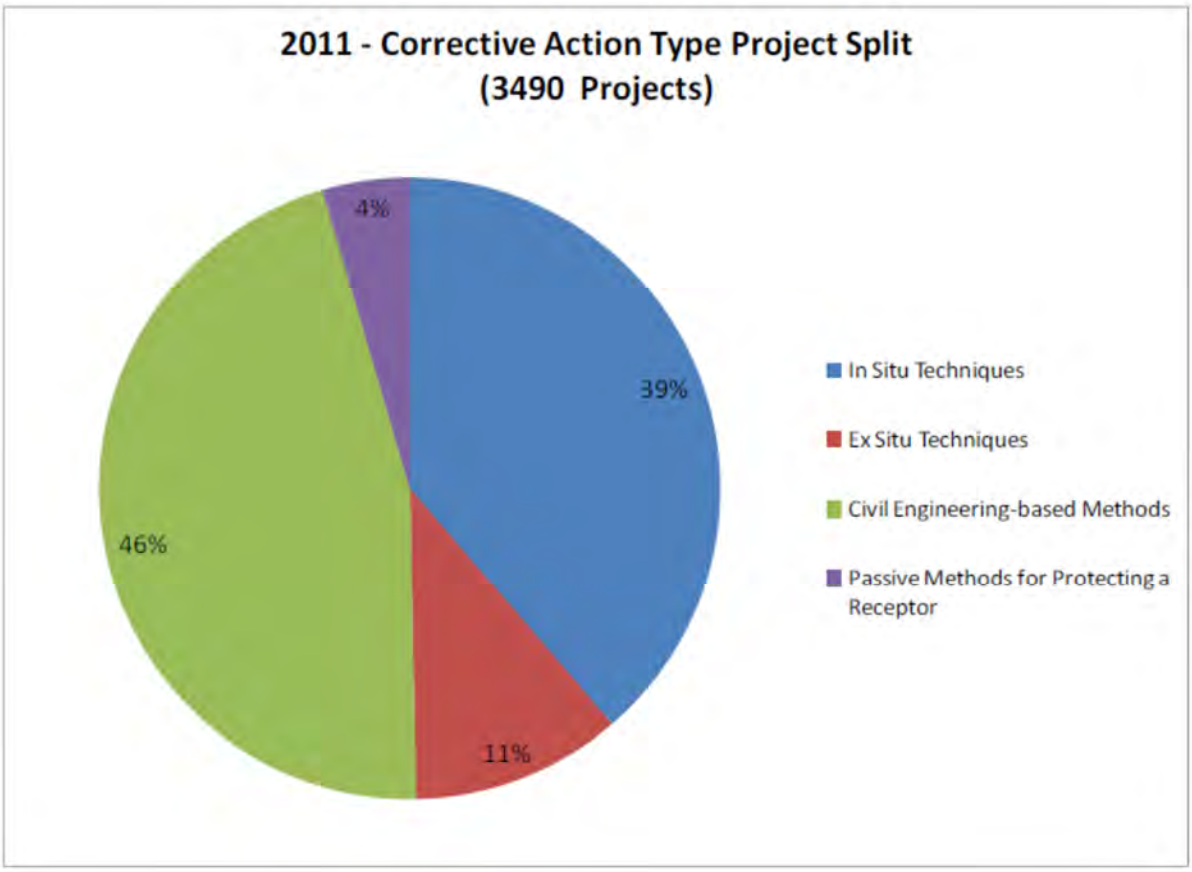


**Figure 2: Remediation strategy adopted at sites in 2011. (CL:AIRE State of the Market Report 2012)**

As can be seen, the majority of sites were remediated using civil engineering solutions or in-situ treatment. Only 11% of projects used ex-situ treatment of soils to achieve remediation. This may be because ex-situ treatment tends to be more expensive than in-situ solutions (CL:AIRE 2012).

Given these statistics it is considered that the lack of soil treatment hubs within the Borough is unlikely to hinder development of brownfield sites. In the majority of cases it appears that the developer will select an alternative means of remediation and that off-site soil treatment is only rarely used. Should the market favour the development of a soils treatment hub this might be developed on any of the sites allocated for waste use as an alternative waste treatment.

# 7 Overall Study Conclusions and Recommendations for Further Work

## 7.1 Overall Study Conclusions

The review of the remaining BCCS requirements in Section 2.6 above indicates that Walsall may need four or five additional waste treatment sites over the next 12 years in order to meet the projected need for recycling and recovery of commercial and industrial wastes arising in the Borough. This is to provide net self-sufficiency against a predicted additional 176,000 tonnes of waste a year, including both C&I waste and LACW, which will be handled by the commercial sector.

The exact number of sites required will depend on the size of developments brought forward by the market. For the purpose of this study it has been assumed that a typical waste site will process between 50,000 and 100,000 tonnes of waste each year. However some very large facilities are able to process 200,000 or 300,000 tonnes of waste. Equally the need might be met by a larger number of smaller sites, perhaps operated by smaller local businesses.

Four sites were identified as having the potential to support a waste use and were considered in depth. Of these it appears that the site at Cemetery Road (WP11) and the site at Fryers Road (WP2) have the best potential for development to provide waste treatment facilities. The site at Kendricks Road (WP4) was considered too small to accommodate a more complex site with the associated buildings, weighbridge, abatement plant etc. The site at Bescot Triangle (WP10) was considered to have too many constraints with restricted access potentially causing a significant issue.

24 sites considered for employment use were also reviewed. Of these it was considered 9 had the potential for waste use as they were of sufficient size and were located in industrial areas with adjacent housing or other highly sensitive receptors either absent or located so that adequate screening and/or stand-off could be provided.

Of these sites IN92 (Aspect 2000) at Bentley Mill Way and IN12.14 (Former McKechnie's) at Middlemore Lane were considered as the most appropriate locations for possible waste use.

Given the need to accommodate an additional 176,000 tonnes of C&I waste over the next 12 years to provide net self-sufficiency it appears that there are adequate potential sites available and that there will be sufficient sites to manage the projected waste arisings, assuming that current outlets remain available. Whilst all of the sites have some constraints and some may be in competition for other uses, not every site will need to be delivered to meet the target allowing a degree of flexibility.

Table 3 below lists the sites from the study that appear to be most suitable for waste use along with the potential constraints in bringing them forward. Each of these sites might support a range of recycling or recovery use, helping to meet the need to move waste up the waste hierarchy.

| Table 3: Potential Sites for New Waste Management Use | | | | |
|---|---|---|---|---|
| **Site** | **SAD Waste Site Ref.** | **SAD Industrial site ref** | **Potential Tonnage** | **Constraints** |
| Fryers Road | WP2 | IN17.2 | Up to 300,000 tpa | Former industrial use |
| Cemetery Road | WP11 | IN98.1<br>IN98.2 | Up to 100,000 tpa | Flood risk, former industrial use |
| Aspect 2000, Bentley Mill Way | n/a | IN92 | More than 100,000 tpa | Flood risk, former industrial use |
| Former McKechnie's Site, Middlemore Lane/ Dumblederry Lane | n/a | IN12.14 | More than 100,000 tpa | Former Industrial use |
| Newfield Close[32] | n/a | IN27.1<br>IN27.2<br>IN27.3 | More than 100,000 tpa | Former industrial use. Current occupation for retail use. |
| Casino/Cinema Bentley Mill Way | n/a | IN315 | More than 100,000 tpa | Former industrial use. Current occupation for leisure use. |
| Keyway Retail Park | n/a | IN311 | More than 100,000 tpa | Former industrial use. Current occupation for retail use. |
| Former Wesson, Bull Lane | n/a | IN120.3 | More than 100,000 tpa | Former industrial use sensitive receptors to some boundaries |
| Coppice Lane | n/a | IN9.8 | Less than 100,000 tpa | Former industrial use, planning permission/ BCCS identification for CD&EW recycling, possible size constraint |
| Axcess 10 East | n/a | IN93.2 | Less than 100,000 tpa | Former industrial use, possible size constraint |
| Phoenix 10 | n/a | IN104 | More than 100,000 tpa | Former industrial use, completion with other possible uses |

[32] Following the completion of the Waste Sites Viability and Deliverability Study the Newfield Close sites were omitted from the portfolio of employment sites included in the wider study. However, the plots that are vacant are still considered to have potential for development with waste management uses, as well as with industrial land uses – see Part 5 above for details.

In simple terms, should the Fryers Road site be delivered this will provide more than the 240,000 tpa waste recovery capacity assumed in BCCS Policy WM3 (see Table 17). It would therefore make a significant contribution towards the Black Country's projected waste treatment needs up to 2026 as identified in Policy WM1 and the additional 60,000 tpa capacity would also contribute towards Walsall's residual capacity requirements, which as noted above are estimated to be around 176,000 tpa in total for LACW and C&I waste combined. The other sites identified above are also considered suitable for enclosed waste recovery facilities and would be able to provide the additional/ alternative treatment capacity needed to meet the remaining BCCS requirements for Walsall.

## 7.2 Recommendations for the SAD

It is recommended that in order to ensure sufficient sites are available to accommodate the expected 176,000 tpa of waste arisings the Council should consider allocating the following sites for waste use if there is no short to medium term prospect of other industrial use:

- Fryers Road (WP3)
- Former McKechnie's Site (IN12.14).

Fryers Road has existing planning consent for waste use whilst the former McKechnie's Site is a vacant industrial site. Both sites are away from immediate sensitive receptors with good access and sufficient space to develop an enclosed waste facility.

If developed to their potential these sites would be sufficient to provide the required waste capacity.

Aspect 2000 is in current use for a haulage and truck repair business and relocation of this activity will need to be considered.

In addition there are potential flooding issues on parts of the Aspect 2000 and Cemetery Road sites which will need to be taken into consideration.

This makes these two site slightly less attractive. However the constraints are not insurmountable and these sites may be identified as being suitable for waste use as well as other industrial uses.

## 7.3 Other General Observations and Possible Requirements for Further Work

Walsall would seem to be an attractive location for new waste infrastructure as it is part of a major urban area where households and businesses are producing significant quantities of waste requiring management. Its central location and accessibility to the M6 will also allow waste operators to attract waste from a wider area. However other boroughs within the West Midlands conurbation will have similar advantages and may be in completion with Walsall to attract investment.[33]

Ultimately the successful development of the sites will depend on a business plan that will ensure the scheme is economically viable given the costs of remediating these brownfield sites and the availability of waste arisings. However a major modern waste facility will involve a large investment, generally several million pounds, to provide impermeable surfacing and sealed drainage, appropriate buildings, waste treatment equipment and appropriate abatement plant (particularly to control odour).

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[33] For example, see: The Regional Approach to Landfill Diversion Infrastructure (July 2009), DTZ and SLR Consulting for former Advantage West Midlands, Figures 4.1 – 4.4, and Commercial & Industrial Waste and Economic Research Study: Final Report (November 2010), Scott Wilson for Sandwell MBC

Given these costs site remediation will form only a small proportion of the required investment and should not impede development. The availability of waste is likely to be the biggest deciding factor in whether or not sites are delivered.

A number of sites identified lie close to the River Tame and flooding may be an issue. This may be a particular issue for the Cemetery Road site and Aspect 2000 site as it has been identified that part of these sites lies within Flood Zone 3. Flood Zone 3 may be further divided into Zone 3a and Zone 3b. Zone 3b comprises land where water may flow or be stored during times of flood. Before allocating Cemetery Road or Aspect 2000 for waste use it may useful to further investigate the flood risk to ensure that this land is not required as functional flood plain and that development of the site will not exacerbate flooding issues elsewhere.

In terms of remediating sites research by CL:AIRE suggests that the majority of sites use engineering solutions, such as installation of capping, or in-situ treatment of soils to achieve remediation. It is not considered that a soils treatment hub is a requisite to achieving development of brownfield sites within the Borough.

# PART 4 – CIL VIABILITY STUDY

# Executive Summary

## Scope

The Community Infrastructure Levy (CIL) is a discretionary tariff introduced by the 2008 Planning Act which local authorities can charge on each net additional sq. m of development. CIL is the mechanism for securing funding for local infrastructure projects.

DTZ is appointed by Walsall Council to develop the viability evidence base for CIL in Walsall to undertake comprehensive analysis of development viability and to ensure that any rates of CIL that are set for the Borough would not make development unviable.

The National Planning Policy Framework states that local plans should be deliverable and set with an understanding of local economic and market conditions. Viability testing is a useful tool capable of assisting with the development of local plan policies – including CIL.

In accordance with Government Planning Practice Guidance, DTZ's viability model involves the analysis of a selection of hypothetical development schemes. Residential and commercial schemes have been selected to reflect the wide range of circumstances in which development is anticipated to come forward across the Borough of Walsall. We prepared and consulted on the assumptions used in the viability appraisals. The residual site value for each development scheme has then been benchmarked against a site threshold value to determine the "headroom" for CIL.

## Results of Viability Testing

The results of our viability testing demonstrates that at baseline costs for residential development of less than 40 units with a net developable area of 0.3 - 1 hectare, there is headroom for CIL in high and mid value areas, from £442 per sq. m in Value Area 1 to £127 per sq. m in VA 3. However none of the archetypes tested have headroom for CIL in lower value areas in Walsall. The development of apartments has no headroom for CIL on sites of 0.5 acres in size in current market conditions. Larger residential schemes of 40 units or more have increased headroom for a CIL across all value areas in Walsall from £518 per sq. m in Value Area 1 to £78 per sq. m in Value Area 5.

Increasing residential development build costs by 12.5% per sq. m to account for site abnormals lowers the headroom for CIL across all value areas. However the results show that there is still headroom for CIL in value areas 1, 2 and 3 across all residential archetypes with the exception of high density flatted developments. There is no headroom in Value areas 4 and 5 across all of the residential archetypes tested. For housing schemes of less than 15 units the amount available for CIL ranges from £349 in Value Area 1 to £84 in Value Area 3. For housing schemes of more than 15 units but less than 40 units the amount available for CIL ranges from £270 per sq. m to £49 per sq. m. Housing development greater than 40 units shows headroom for CIL ranging from £379 to £93 per sq. in the high to mid value areas.

The results of the commercial viability testing demonstrate that there is only headroom for CIL on certain types of retail development and on the delivery of care homes (at baseline costs).

Retail warehousing and superstores are able to withstand CIL in all the town centre typologies tested across Walsall to significantly high levels. At baseline costs, the headroom for CIL on retail warehouses ranged from £370 - £682 per sq. m. Increasing build costs to account for site abnormals reduces the CIL headroom, but still generates a CIL headroom range of £283 - £595 per sq. m. At baseline costs, superstores can withstand a CIL tariff of £750 - £997 per sq. m. Increasing build costs to account for abnormals reduces this range to £626 - £874 per sq. m.

At baseline costs, there is headroom to charge CIL on care home developments up to £68 per sq. m, however if an allowance of 12.5% cost uplift is included to account for site abnormals, this results in no headroom being available for CIL.

## Recommended CIL rates

In setting CIL, caution is required to ensure that the rates are not done so at a level that would undermine the delivery of development. DTZ has applied a number of additional benchmarks to inform our recommendations for appropriate CIL rates in Walsall. CIL should be within:

- 5% of total development costs;
- 5% of Gross Development Value, and;
- 10-15% of residual land value.

We have adjusted the CIL rates to take into consideration these additional performance benchmarks and recommend the following CIL rates for Walsall:

**Table 1: Recommended CIL rates**

| | Residential (£ per sq. m) | | | Commercial (£ per sq. m) |
|---|---|---|---|---|
| | Below 15 units (Scheme 8) | Above 15 units & below 40 units (Schemes 1 and 3) | Above 40 units (Schemes 4-7) | |
| **Housing developments** | | | | |
| Value Area 1 | £100 | £100 | £100 | |
| Value Area 2 | £75 | £50 | £75 | |
| Value Area 3 | £50 | £25 | £50 | |
| Value Area 4 | £0 | £0 | £0 | |
| Value Area 5 | £0 | £0 | £0 | |
| | | | | |
| **Retail warehousing** | | | | |
| Town Centre | | | | £100 |
| Edge of Town Centre | | | | £100 |
| District Centre | | | | £75 |
| Edge of District Centre | | | | £75 |
| Out of Centre | | | | £100 |
| | | | | |
| **Superstore (over 2000 sq. m)** | | | | |
| Town Centre | | | | £100 |
| Edge of Town Centre | | | | £100 |
| District Centre | | | | £100 |
| Edge of District Centre | | | | £100 |
| Out of Centre | | | | £100 |
| | | | | |
| **All other uses** | | 0 | 0 | 0 |

Subject to the approval of officers and members as required to the proposed charging rates, it is recommended that the Council proceed with the preparation of a Preliminary Draft Charging Schedule taking into consideration the potential to provide an instalments policy and payments in kind to further facilitate the delivery of development across the metropolitan borough of Walsall.

# 1 Introduction

DTZ has been appointed by Walsall Council to produce viability evidence in support of the Community Infrastructure Levy (CIL).

CIL is a tariff imposed on development through the planning process to raise funds for local infrastructure projects. Brought into effect by the 2008 Planning Act and subsequent series of Regulations, CIL is discretionary for local authorities who must decide whether or not they wish to adopt CIL. If they do, they must formulate a charging schedule which responds to the individual needs of their areas, taking into account the infrastructure funding needs arising from the delivery of their Local Plan.

A key element of the evidence base informing CIL is an economic viability study. The Government Regulations make it clear that CIL must be supported by robust evidence that the charges proposed would not put at risk the delivery of development of the area. This study therefore addresses the need to assess development viability of the Walsall area and specifically the ability of various development types to withstand a CIL charge.

Our approach has involved five key stages:

- Market and viability evidence collection and review
- Viability methodology and assumptions base
- Consultation with landowner and developer sector
- Viability modelling to identify potential for 'CIL headroom'
- CIL policy development

This report is structured in ten sections. Following this introduction, Section 2 sets out the background to CIL, the regulations governing CIL and recent changes to the regulations. We then explain the approach to viability testing, both in terms of national guidance and the methodology used by DTZ in Section 3. Section 4 details our approach to selecting site value thresholds in Walsall and how we have used fixed site values to determine the headroom for CIL. We then detail the assumptions used in our residential development appraisals and the results of the residential viability testing in Section 5. The viability assumptions and results of our viability testing for the commercial archetypes (retail, office, industrial and other commercial sectors) are presented in Sections 6 – 9. Finally, in Section 10 we detail our recommendations for a CIL charging schedule in Walsall.

# 2 Community Infrastructure Levy

## 2.1 Background

Community Infrastructure Levy (CIL) is a discretionary tariff introduced by the 2008 Planning Act which local authorities in England and Wales can charge on each net additional sq. m of new floor space (above a minimum scheme of 100 sq. m gross internal area). CIL is the mechanism for securing funding for local infrastructure projects. It is discretionary for local authorities however from April 2015 it will replace that part of the existing S106 agreements that are used for pooled developer contributions.

CIL was brought into effect by the 2010 CIL regulations which have been subsequently updated in 2011, 2012, 2013, 2014 and finally in 2015. The updates have been the response to criticism that the levy is too inflexible and have generally sought to make it more practical to implement. The following paragraphs summarise the key elements of CIL.

## 2.2 Liability for CIL

The Levy is generally payable on new development over 100 sq. m. However, there are some kinds of development which do not pay the levy. This includes (but is not exclusive to) development of less than 100 sq. m; houses, flats, residential annexes and residential extensions which are built by "self-builders", vacant buildings brought back into the same use and social housing.

Landowners are ultimately liable to pay the Levy although anyone can take responsibility for paying the levy such as a developer or planning applicant. 'Charging authorities' are district and metropolitan district councils who are responsible for determining the charging levels and collecting the levy.

Liability for payment is generally triggered by the grant of planning permission (although some forms of development not requiring planning permission such as Permitted Development or Local Development Orders are also required to pay the levy). Payment is due at the point of commencement of development although charging authorities are able to establish policies for payment by instalments and also where planning applications are phased each phase can be treated as a separate chargeable development.

## 2.3 Rate Setting

The proposed CIL charging rates must be set out in a Charging Schedule and expressed as pounds per sq. m, applied to the gross internal floor space of the net additional development liable for the levy.

Charging Authorities have autonomy to set their own charging rates however they are required to do so with regard to viability. The regulations state that they should set rates at a level which do not threaten the ability to develop viably the sites and scale of development identified in their Local Plan and should strike an appropriate 'balance' between the desirability of funding infrastructure from the levy and the potential impact on viability.

CIL should be set based on a 'Relevant Plan' and with regard to the infrastructure requirements of the growth proposed within that Plan. Further, Charging Authorities are required to demonstrate that there is a funding gap (between the total anticipated costs of infrastructure and funding sources available) that necessitates CIL.

Differential rates may be set in relation to:

3 Geographical zones within the charging authority's boundaries
4 Types of development; and / or
5 Scales of development.

However, any such differentials must be justified according to viability evidence (and not, for instance, based on assisting planning policy objectives).

## 2.4 Process for Rate Setting

The process for adopting a CIL Charging Schedule is as follows:

6 the charging authority prepares its evidence base in order to determine its draft levy rates and collaborates with neighbouring/overlapping authorities (and other stakeholders)
7 the charging authority prepares a preliminary draft charging schedule and publishes this for consultation
8 consultation process takes place
9 the charging authority prepares and publishes a draft charging schedule
10 period of further representations based on the published draft
11 an independent person (the "examiner") examines the charging schedule in public
12 the examiner's recommendations are published
13 the charging authority considers the examiner's recommendations
14 the charging authority approves the charging schedule

## 2.5 Collecting the Levy

The charging authority calculates the CIL payment that is due and is responsible for ensuring that payment is made. The process is as follows:

15 Planning applicants are required to complete 'Additional CIL Information Form' with their application documents
16 Where development is permitted other than through grant of planning permission, the Charging Authority issues a 'Notice of Chargeable Development'
17 Applicant submits 'Assumption of Liability Form' confirming identify of land or developer assuming liability for payment
18 Collecting Authority submits a 'Liability Notice' to the applicant which sets out the charge due and payment procedure
19 Applicant submits a 'Commencement Notice' confirming when it is expected development will commence
20 Collecting Authority then issues a 'Demand Notice' setting out the payment due dates
21 Collecting Authority must issue receipt to acknowledge payments

The CIL charges will become due for payment from the point at which the chargeable development commences.

A Charging Authority may allow payment instalments but to do so must produce and publish a payment instalments policy. Where planning permissions are phased, each phase can be treated as a separate chargeable development and therefore payment timescales be reflected by the commencement of each phase (as well as instalments within each phase).

## 2.6 Spending the Levy

CIL can be used to fund a wide range of infrastructure including transport, schools, flood defences, health facilities, play areas, parks, recreation and other community facilities. It should be used on new infrastructure and not to remedy pre-existing deficiencies unless those deficiencies will be made more severe by the development.

Charging Authorities are required to allocate at least 15% of the levy to spend on priorities agreed with the local community in areas where the development is taking place. This percentage increases to 25% in instances where communities have produced a Neighbourhood Plan.

Charging Authorities may also pass money to bodies outside their area to deliver infrastructure that will benefit the development of the area. For Walsall, this could enable an arrangement with neighbouring authorities to pool a portion of levy receipts to pay for strategic cross border infrastructure.

## 2.7 CIL and other Planning Obligations

CIL largely replaces that part of S106 agreements that have historically been used for pooling contributions from several developments (e.g. school places). However S106 remains in place for contributions that are considered necessary to make development acceptable in planning terms and restricted to pooling of no more than five contributions towards infrastructure projects, providing they do not contribute towards the same item of infrastructure funded through CIL. In addition, Section 278 agreements will remain in place and will allow local authorities to continue to pool contributions for highway projects.

Charging Authorities must avoid 'double dipping' where multiple contributions are secured from a single development for the same infrastructure item through both CIL and S106/278. They are required to publish a Regulation 123 list to accompany the Charging Schedule making clear what items will be funded by CIL to ensure that no such duplication takes place.

## 2.8 Relief

As stated above there are a number of forms of development that are exempt from paying the Levy including affordable homes and charitable developments. In addition, the Government Regulations allow for exceptional circumstances under which a development that is liable to pay CIL could be exempt from paying the charge. The exceptional circumstances are:

22 A section 106 agreement must exist on the planning permission permitting the chargeable development and
23 The charging authority must consider that paying the full levy would have an unacceptable impact on the development's economic viability and
24 The relief must not constitute a notifiable state aid

The third requirement is the most restricting of the three and in practice is likely to significantly limit the quantity of cases in which exceptional circumstances can be deployed. The local authority is also required to publicise the fact that it is proposing to offer exceptional circumstances relief.

# 3 Viability Methodology

## 3.1 Guidance on Viability Testing of CIL

The National Planning Policy Framework (NPPF) states that local plans should be deliverable and that development sites identified in local plans *"should not be subject to such a scale of obligations and policy burdens that their ability to be developed viably is threatened"*.

Local Plans should be set with an understanding of local economic and market conditions so that they are realistically deliverable. In this regard, viability assessments are useful tools capable of assisting with the development of local plan policies – including CIL.

National Guidance is clear that assessing the viability of local plans does not require the individual testing of every development site. Site typologies may be used to determine area wide viability at a policy level. Viability assessments should therefore reflect the range of different development typologies (both residential and commercial) which are likely to come forward.

At the heart of assessing viability is land or site value. There are various approaches to determining land value which will be outlined in more detail below; however NPPF guidance states that in all cases, land value should reflect emerging policy requirements and planning obligations, provide a competitive return to willing developers and landowners, be informed by comparable, market based evidence.

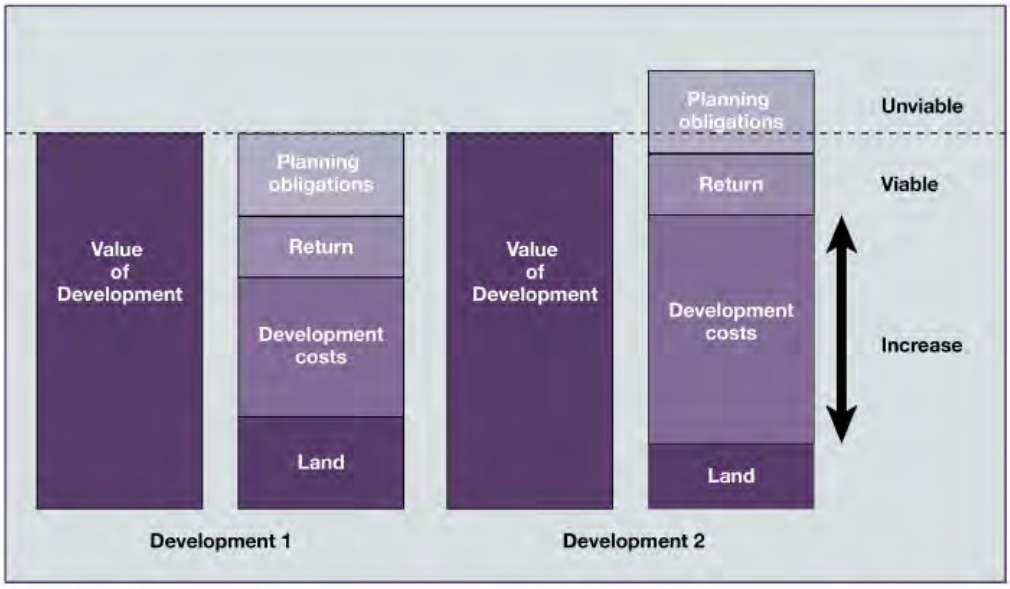
Paragraph 015 Reference ID 10-015-220140306 of the NPPF states that viability should consider *"competitive returns to a willing landowner and willing developer to enable development to be deliverable".* A competitive return is defined as "*the price at which a reasonable landowner would be willing to sell their land for development."* Those options may include the current use value of the land or its value for a realistic alternative use that is in line with the local planning policy.

There are various approaches to undertaking viability testing such as those set out in HCA and BNP Paribas work for PAS. We have used the approach set out in the RICS guidance document *Financial Viability in Planning* (2012):

*"An objective financial viability test of the ability of a development project to meet its costs including the costs of planning obligations, while ensuring an appropriate site value for the land owner and market risk adjusted return to the developer in delivering the project"* (para 2.1)

This is illustrated in figure 3.1 below which compares two developments. Development 1 demonstrates a viable development whereby the land value, development costs, planning obligations and developers return are equal to the value of development. Development 2 has increased development costs which put downward pressure on the land value capable of being achieved and renders the development unviable as the developers return and planning obligations remain constant.

**Figure 3.1: Comparative development viability**




**Source: RICS Financial Viability in Planning Guidance Note (1st Edition, 2012)**

## 3.2 DTZ Viability Methodology

DTZ's viability model involves the analysis of a selection of hypothetical development schemes to reflect the wide range of circumstances in which development is anticipated to come forward across the Borough of Walsall. This includes both residential and commercial developments.

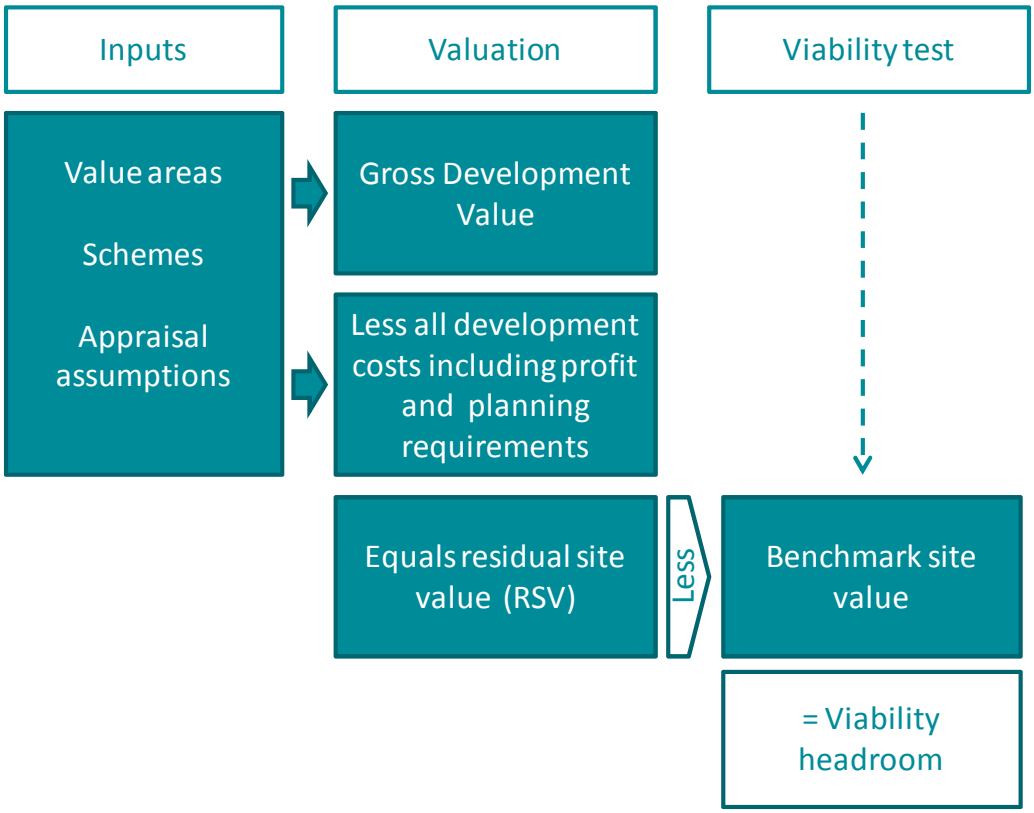
DTZ has developed a spreadsheet based economic viability model that allows a large number of development sites to be tested, including sensitivity testing of key variables.

This approach is used for area wide viability assessment and involves the following key steps:

- Determination of value areas, scheme and viability assumptions
- A residual appraisal is then carried out subtracting all anticipated development costs from the scheme's Net Development Value to arrive at a residual site value
- The residual site value is then benchmarked against a site value threshold to determine the 'headroom' available for CIL/other planning requirements

Figure 3.2 (overleaf) summarises DTZ's approach to area wide viability testing.

**Figure 3.2: DTZ approach to area wide viability testing**




It should be noted that DTZ consulted on the assumptions used to inform the area wide viability testing in November / December 2014 through a workshop and survey of developers and landowner, property and planning agents. A copy of the questionnaire survey is provided at Appendix 5, and a summary of the responses to the survey is provided at Appendix 6.

The consultation was used to test and refine the approach and assumptions behind the viability modelling. The assumptions used in our viability testing are therefore endorsed by those landowners and developers who participated in the consultation.

A list of those invited to participate in the consultation is provided at Appendix 7.

# 4 Approach to Site Value Thresholds

## 4.1 Guidance

The selection of site value thresholds in area wide studies is problematic due to the wide range of hypothetical schemes being tested and the lack of adequate evidence of what minimum level land owners are willing to release their land for.

The RICS guidance note Financial Viability in Planning 2012 defines site value as follows:

"Site Value should equate to the market value subject to the following assumption: that the value has regard to development plan policies and all other material planning considerations and disregards that which is contrary to the development plan."

It also states that when undertaking Local Plan or CIL (area-wide) viability testing, a second assumption needs to be applied to the above:

"*Site Value (as defined above) may need to be further adjusted to reflect the emerging policy / CIL charging level. The level of the adjustment assumes that site delivery would not be prejudiced. Where an adjustment is made, the practitioner should set out their professional opinion underlying the assumptions adopted. These include, as a minimum, comments on the state of the market and delivery targets as at the date of assessment*."

The Local Housing Delivery Group: Viability Testing Local Plans advice for planning practitioners (July 2012), states that viability studies should incorporate a threshold land value based on 'a premium over current use values and credible alternative use values'. It also highlights the limitations of using market values for policy-making viability evidence recognising that historic market values do not take into account the impact of future policy on land prices.

Whilst there appears to be an inconsistency in the recommendations of the two guidance documents, both effectively recommend that site value thresholds for area wide viability studies should be set somewhere between existing use/credible alternative use and market values assuming planning permission without planning obligations.

National Planning Policy Guidance states that land or site value should:

- Reflect emerging policy requirements and planning obligations and, where applicable, any Community Infrastructure Levy charge;
- Provide a competitive return to willing developers and land owners (including equity resulting from those building their own homes); and
- Be informed by comparable, market-based evidence wherever possible. Where transacted bids are significantly above the market norm, they should not be used as part of this exercise.

## 4.2 Evidence of Market Values for Residential Land in Walsall

Recent transactional evidence is limited in Walsall due to limited activity and difficulties accessing relevant data and as a result the evidence is somewhat anecdotal. Discussions with local developers and agents indicates that residential net land values vary from approximately £494,200 per ha (£200,000 per acre) to £988,400 per ha (£400,000 per acre). Retail land values can typically range from between £1.235m per ha (£500,000 per acre) to £2.47m (£1million per acre) although smaller local centre land values are generally significantly less.

Employment land for industrial or office schemes tends to be in the region of £741,330 per hectare (net) (£300,000 per acre) and £494,200 per hectare (net) (£200,000 per acre) respectively.

There is some evidence of a distinction between site values achieved on previously developed brownfield sites and Greenfield land. A CLG Research Paper produced by Turner Morum in 2011 indicated that typical minimum prices for Greenfield land across the country were £370,000 per ha (£150,000 per acre), although this figure is quoted on a gross basis and the report concludes that for typical gross / net ratios, this would equate to £494,200-£741,000 per ha (£200,000 to £300,000 per acre).

## 4.3 Fixed Site Values

The following site value thresholds have been used for benchmarking the headroom for CIL in the model:

**Table 4.1: Residential**

| | £ per ha | £ per acre |
|---|---|---|
| Value area 1 | £988,400 | £400,000 |
| Value area 2 | £864,850 | £350,000 |
| Value area 3 | £741,300 | £300,000 |
| Value area 4 | £617,750 | £250,000 |
| Value area 5 | £494,200 | £200,000 |

**Table 4.2: Commercial**

| | £ per ha | £ per acre |
|---|---|---|
| **Retail** | | |
| Town centre | £1,853,250 | £750,000 |
| Edge of town centre | £1,853,250 | £750,000 |
| District centre | £1,235,500 | £500,000 |
| Edge of District Centre | £1,235,500 | £500,000 |
| Local centre | £617,750 | £250,000 |
| Out of centre | £1,853,250 | £750,000 |
| **Industrial** | | |
| | £741,300 | £300,000 |
| **Office** | | |
| | £494,200 | £200,000 |
| **Other commercial** | | |
| | £494,200 | £200,000 |

## ENSURING A SUITABLE BALANCE – THE VIABILITY BUFFER

Government guidelines state that CIL rates should be reasonable, given the available evidence. However it should be noted that there is no requirement for a proposed CIL rate to exactly mirror the evidence. For example it would not be appropriate to set a charge right at the margins of viability. At Paragraph 019 of the National Planning Policy Guidance (Reference ID: 25-019-20140612), the guidance specifies that *"there is room for some pragmatism. It would be appropriate to ensure that a 'buffer' or margin is included, so that the levy rate is able to support development when economic circumstances adjust".* Case Law indicates that a 25-30% discount from the CIL headroom is suitable viability buffer. Needless to say, a charging authority should be able to explain its approach and rationale to the setting of CIL.

# 5 Residential Viability Testing

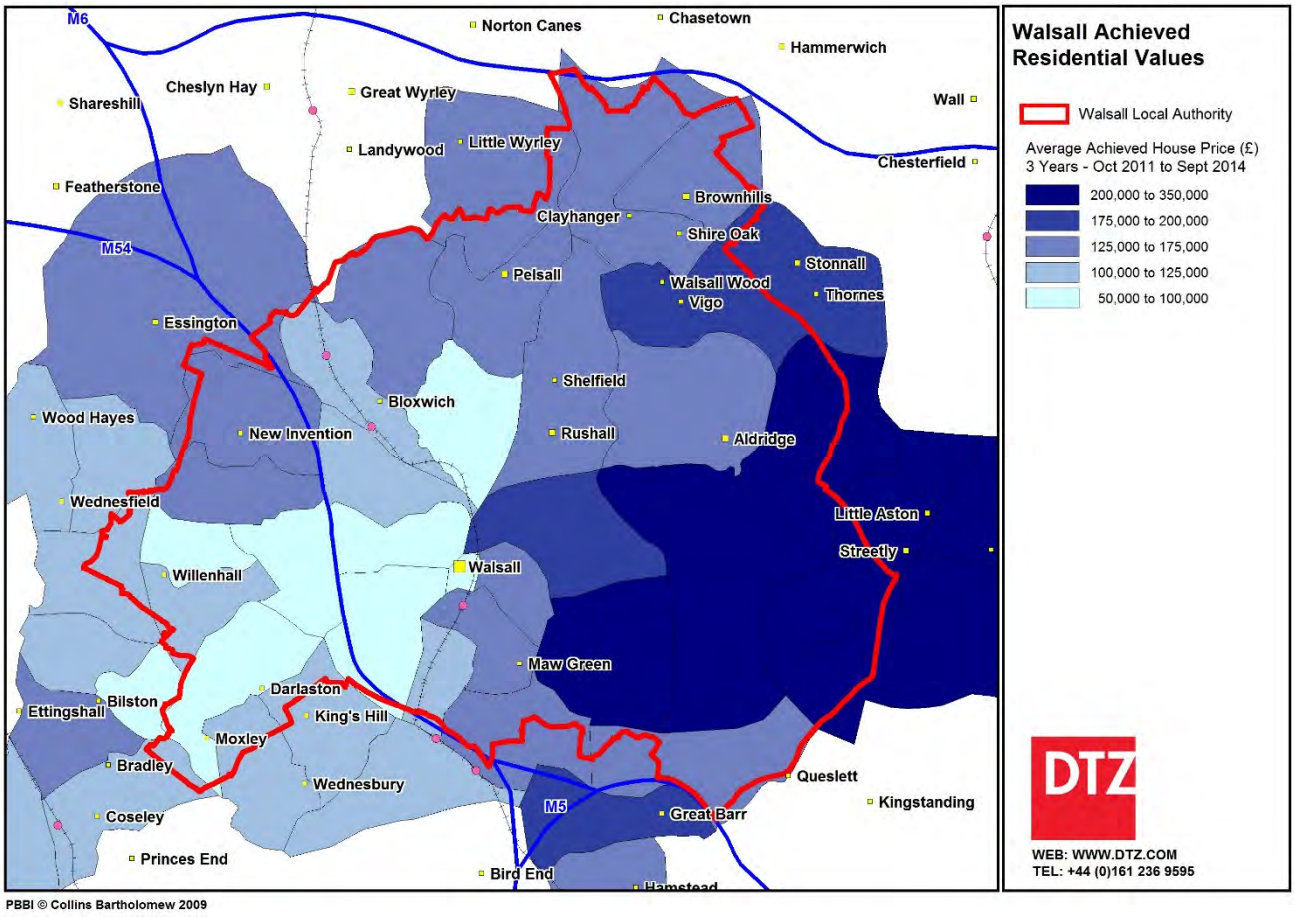
## 5.1 Value Areas and Site Selection

Five differential value bands have been selected as geographical zones for viability testing of CIL on residential development:

- HV1 - £200,000 to £350,000 average house price band
- HV2 - £175,000 to £200,000 average house price band
- HV3 - £125,000 to £175,000 average house price band
- HV4 - £100,000 to £125,000 average house price band
- HV5 - £50,000 to £100,000 average house price band

These zones are based on average achieved house prices as recorded by HM Land Registry for all postcode sectors in Walsall over the three year period October 2011 to September 2014.

**Figure 5.1: Walsall Achieved Residential Values**



## 5.2 Scheme Selection

Based on our experience and our analysis of the development which is most likely to come forward across Walsall, the following eight residential schemes have been developed as identified in Table 5.1 below. It should be noted that during the course of our analysis we developed an additional scheme (Scheme 8) in order to test the development viability of housing developments which have less than 15 units and are therefore not subject to affordable housing provision.

All of the residential schemes are based on an average density of 35 units per hectare (with the exception of Scheme 2 which is a flatted scheme of 1 and 2 bed homes and as such has a development density of 60 units per hectare).

The residential archetypes tested vary in terms of site size, housing mix and have a built floor area ranging from 3,109 sq. m per hectare (13,545 sq. ft per acre) to 3,235 sq. m per hectare (14,903 sq. ft per acre).

**Table 5.1: Residential Archetypes**

| | Developable area | | | | Housing mix % | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Net developable area (Ha) | (acres) | Development density (DPH) | No units | 1 bed flat | 2 bed flat | 2 bed house | 3 bed house | 4 bed house | 5 bed house |
| Scheme 1 | 0.50 | 1.24 | 35 | 18 | 0% | 0% | 20% | 50% | 25% | 5% |
| Scheme 2 | 0.50 | 1.24 | 60 | 30 | 50% | 50% | 0% | 0% | 0% | 0% |
| Scheme 3 | 1.00 | 2.47 | 35 | 35 | 0% | 0% | 20% | 50% | 25% | 5% |
| Scheme 4 | 1.20 | 3.00 | 35 | 42 | 0% | 0% | 20% | 50% | 25% | 5% |
| Scheme 5 | 2.50 | 6.18 | 35 | 88 | 0% | 0% | 20% | 50% | 25% | 5% |
| Scheme 6 | 5.00 | 12.36 | 35 | 175 | 5% | 5% | 20% | 40% | 25% | 5% |
| Scheme 7 | 10 | 24.71 | 35 | 350 | 0% | 0% | 20% | 50% | 25% | 5% |
| Scheme 8 | 0.30 | 0.74 | 35 | 11 | 0% | 0% | 20% | 50% | 25% | 5% |

## 5.3 Unit Sizes

The following unit sizes have been used in each of the seven residential schemes. These are based on our local market knowledge and consultation with local and national house builders:

**Table 5.2: House Size**

| House type | Size (sq m) | Size (Sq ft) |
|---|---|---|
| 1 bed flat | 46 | 500 |
| 2 bed flat | 58 | 625 |
| 2 bed house | 70 | 750 |
| 3 bed house | 88 | 950 |
| 4 bed house | 111 | 1200 |
| 5 bed house | 130 | 1400 |

## 5.4 Sales Values

Blended capital revenues (net of incentives) are used in the development viability model on the basis of £ per sq. m. These revenues are based on our assessment of the current market. The sales revenue assumptions, which are based on new developments recently completed / currently coming forward in the local area are presented in Table 5.3 below:

**Table 5.3: Sales Values**

| | Current net sales values assumptions | |
|---|---|---|
| | £psm | £psf |
| Value band 1 | 2,583 | £240 |
| Value band 2 | 2,314 | £215 |
| Value band 3 | 2,099 | £195 |
| Value band 4 | 1,884 | £175 |
| Value band 5 | 1,776 | £165 |

## 5.5 Build Costs

The following build costs for flats and houses are based on BCIS and adjusted taking into account advice from DTZ's regional residential team in line with what the market is currently delivering in the area. The costs include a 12% uplift for external site works. A higher cost for schemes of less than 40 units has been applied to reflect the higher costs normally encountered by local house builders in contrast the large scale schemes where a combination of economies of scale and volume house builder based delivery generally results in a lower build cost.

**Table 5.4: Residential Build Costs**

| | Build cost (£) | | Plus 12% uplift for external works (£) | |
|---|---|---|---|---|
| | £psm | £psf | £psm | £psf |
| **Schemes less than 40 units** | | | | |
| Houses | 914.93 | 85.00 | 1,024.72 | 95.20 |
| Flats | 1,022.57 | 95.00 | 1,145.28 | 106.40 |
| **Schemes greater than 40 units** | | | | |
| Houses | 807.29 | 75.00 | 904.17 | 84.00 |
| Flats | 968.75 | 90.00 | 1,085.00 | 100.80 |

## 5.6 Phasing Assumptions

The following phasing assumptions for all the residential development schemes have been applied. Sales rates allow for multiple outlets on larger scale sites of 10 ha.

**Table 5.5: Phasing assumptions**

| Phasing assumptions | |
|---|---|
| Lead in | 3 months |
| Construction / sales | Sales staggered 6 months after construction start |
| Sales rates | 40 units per annum per outlet |

## 5.7 Other Development Costs

The following development assumptions are used in our viability testing and are based on our knowledge and experience of the residential property market:

**Table 5.6: Other Development Costs**

| Other development costs | |
|---|---|
| Sensitivity for abnormals | 12.5% uplift on build costs |
| Professional fees (inc planning) | 6% on construction costs |
| Contingencies | 5% on construction costs |
| Marketing, sales agent and legal fees | 3.5% of sales revenue |
| Purchaser's costs | 5.8% on purchase price |
| Finance | 6.5% on negative balance |
| Developer's profit | 17.7% blended rate (20% on market units 6% on affordable units). |

In respect of profit, a blended rate has been applied to reflect the different risk profile of market and affordable homes respectively. The blended rate is 17.7% of total revenue which is based on 20% on revenue for market units and 6% for affordable.

A site specific S106 allowance of £500 per dwelling has been made based on evidence provided by Walsall Council. This is based on the fact that the Council expects on-site S106 requirements to be largely restricted to highways improvements; and the Council's evidence shows previous S106 highways requirements average approximately £500 per unit. Therefore, based on the local evidence of historic S106 contributions over the last 5 years, the Council consider setting the S106 allowance at £500 per unit is appropriate.

**Table 5.7: Section 106 Contributions**

| Section 106 Contributions | |
|---|---|
| Site specific highway improvements | £500 per unit |
| Air quality mitigation measures | |
| Public art | |
| Site specific flood mitigation / resilience measures | |

## 5.8 Policy Standards

For the purposes of CIL viability testing, the following assumptions have been applied relating to the stated policy standards in the Black Country Core Strategy Policy HOU3:

**Table 5.8: Policy Standards**

| Affordable housing | % of all units | Threshold | % of Open Market Value |
|---|---|---|---|
| 25% of new housing developments should be affordable (100% of which affordable rent). Onsite/Offsite contribution payable. | 25% | 15 units + | Affordable Rent - 60% of OMV |

## 5.9 Results

Table 5.9 illustrates the results of the residential development appraisals at baseline costs (i.e. excluding the uplift for abnormal site works) for Schemes 1-3 (above 15 and less than 40 units) and the additional scheme 8 (less than 15 units) in each of the five value areas across Walsall.

The table highlights the amount available for CIL which represents the difference between the residual site value and the site value threshold converted into a sq. m figure based on the floor area that would be liable to pay CIL

Scheme 2 has no headroom for CIL in each of the value areas and as such it is excluded from the average amount available for CIL, as to include it would skew the average results. Scheme 8 is also excluded from the average as it needs to be assessed separately as it does not include affordable housing.

The amount available for CIL for Scheme 8 is therefore shown in Table 5.9 in the box shaded grey.

Where negative residual appraisals are shown the average amount available for CIL has been set to £0.

**Table 5.9: Housing viability results at baseline costs - Schemes of less than 15 units (Scheme 8) and schemes of more than 15 and less than 40 units (Schemes 1 and 3)**

| | Scheme | Value Area | Site Size (ha) | Residual site value | Site value per ha | Benchmark Site Value (£ per ha) | Benchmark actual | Amount available for CIL (all schemes) (per sq m) | Amount available for CIL (excluding schemes 2 and 8 (per sq m) |
|---|---|---|---|---|---|---|---|---|---|
| less than 40 units | 1 | 1 | 0.5 | £1,031,884 | £2,063,767 | £988,400 | £494,200 | £444 | |
| | 2 | 1 | 0.5 | £487,108 | £974,216 | £988,400 | £494,200 | -£6 | |
| | 3 | 1 | 1 | £2,054,546 | £2,054,546 | £988,400 | £988,400 | £440 | |
| | 8 | 1 | 0.3 | £760,301 | £2,534,337 | £988,400 | £296,520 | £478 | |
| | | | | | | | **Average** | **£339** | **£442** |
| | 1 | 2 | 0.5 | £749,734 | £1,499,468 | £864,850 | £432,425 | £262 | |
| | 2 | 2 | 0.5 | £221,644 | £443,288 | £864,850 | £432,425 | -£180 | |
| | 3 | 2 | 1 | £1,492,447 | £1,492,447 | £864,850 | £864,850 | £259 | |
| | 8 | 2 | 0.3 | £576,310 | £1,921,033 | £864,850 | £259,455 | £326 | |
| | | | | | | | **Average** | **£167** | **£261** |
| | 1 | 3 | 0.5 | £524,224 | £1,048,448 | £741,300 | £370,650 | £127 | |
| | 2 | 3 | 0.5 | £10,110 | £20,220 | £741,300 | £370,650 | -£308 | |
| | 3 | 3 | 1 | £1,049,439 | £1,049,439 | £741,300 | £741,300 | £127 | |
| | 8 | 3 | 0.3 | £429,253 | £1,430,843 | £741,300 | £222,390 | £213 | |
| | | | | | | | **Average** | **£40** | **£127** |
| | 1 | 4 | 0.5 | £298,714 | £597,428 | £617,750 | £308,875 | -£8 | |
| | 2 | 4 | 0.5 | -£207,307 | -£414,614 | £617,750 | £308,875 | -£441 | |
| | 3 | 4 | 1 | £603,617 | £603,617 | £617,750 | £617,750 | -£6 | |
| | 8 | 4 | 0.3 | £282,196 | £940,653 | £617,750 | £185,325 | £100 | |
| | | | | | | | **Average** | **£0** | **£0** |
| | 1 | 5 | 0.5 | £185,435 | £370,869 | £494,200 | £247,100 | -£51 | |
| | 2 | 5 | 0.5 | -£316,912 | -£633,824 | £494,200 | £247,100 | -£482 | |
| | 3 | 5 | 1 | £379,669 | £379,669 | £494,200 | £494,200 | -£47 | |
| | 8 | 5 | 0.3 | £208,326 | £694,420 | £494,200 | £148,260 | £62 | |
| | | | | | | | **Average** | **£0** | **£0** |

The results demonstrate that there is headroom for a CIL on residential development for Schemes 1, 3 and 8 in high and mid value areas (1, 2 and 3). These range from £478 in Value Area 1 to £213 in Value Area 3 for schemes of less than 15 units. For schemes of between 15 and 40 units, the amount available for CIL ranges from £442 in Value Area 1 and £127 in Value Area 3.

Table 5.10 illustrates the results of the residential development appraisals at baseline costs for Schemes 4-7 (40 units or more) in each of the five value areas across Walsall. As can be seen, there is increased headroom for a CIL on larger residential development schemes in Value Area 1 (£518 per sq. m) reducing to £78 per sq. m in Value Area 5. This greater headroom than on the small schemes is driven entirely by the lower build cost associated with larger sites.

**Table 5.10: Residential results at baseline costs, schemes of more than 40 units**

| | Scheme | Value Area | Site Size (ha) | Residual site value | Site value per ha | Benchmark Site Value £ per ha | Benchmark actual | Amount available for CIL (per sq m) |
|---|---|---|---|---|---|---|---|---|
| more than 40 units | 4 | 1 | 1.2 | £2,790,741 | £2,325,618 | £988,400 | £1,186,080 | £552 |
| | 5 | 1 | 2.5 | £5,818,704 | £2,327,482 | £988,400 | £2,471,000 | £553 |
| | 6 | 1 | 5 | £10,330,764 | £2,066,153 | £988,400 | £4,942,000 | £463 |
| | 7 | 1 | 10 | £22,105,233 | £2,210,523 | £988,400 | £9,884,000 | £505 |
| | | | | | | | **Average** | **£518** |
| | 4 | 2 | 1.2 | £2,138,723 | £1,782,269 | £864,850 | £1,037,820 | £379 |
| | 5 | 2 | 2.5 | £4,509,379 | £1,803,751 | £864,850 | £2,162,125 | £388 |
| | 6 | 2 | 5 | £7,909,342 | £1,581,868 | £864,850 | £4,324,250 | £308 |
| | 7 | 2 | 10 | £17,066,527 | £1,706,653 | £864,850 | £8,648,500 | £348 |
| | | | | | | | **Average** | **£356** |
| | 4 | 3 | 1.2 | £1,617,404 | £1,347,837 | £741,300 | £889,560 | £250 |
| | 5 | 3 | 2.5 | £3,440,475 | £1,376,190 | £741,300 | £1,853,250 | £262 |
| | 6 | 3 | 5 | £5,959,301 | £1,191,860 | £741,300 | £3,706,500 | £194 |
| | 7 | 3 | 10 | £13,008,278 | £1,300,828 | £741,300 | £7,413,000 | £231 |
| | | | | | | | **Average** | **£234** |
| | 4 | 4 | 1.2 | £1,099,802 | £916,502 | £617,750 | £741,300 | £123 |
| | 5 | 4 | 2.5 | £2,366,052 | £946,421 | £617,750 | £1,544,375 | £136 |
| | 6 | 4 | 5 | £4,016,022 | £803,204 | £617,750 | £3,088,750 | £80 |
| | 7 | 4 | 10 | £8,967,581 | £896,758 | £617,750 | £6,177,500 | £115 |
| | | | | | | | **Average** | **£114** |
| | 4 | 5 | 1.2 | £838,676 | £698,897 | £494,200 | £593,040 | £85 |
| | 5 | 5 | 2.5 | £1,829,128 | £731,651 | £494,200 | £1,235,500 | £98 |
| | 6 | 5 | 5 | £3,032,580 | £606,516 | £494,200 | £2,471,000 | £48 |
| | 7 | 5 | 10 | £6,934,457 | £693,446 | £494,200 | £4,942,000 | £82 |
| | | | | | | | **Average** | **£78** |

Tables 5.11 and 5.12 illustrate the impact of increasing the build costs of residential development by 12.5% to account for site abnormals. As previously stated, the results of residential schemes of less than 15 units are presented alongside schemes of between 15 and 40 units and residential schemes greater than 40 units.

**Table 5.11: Residential results with uplift for abnormals - Schemes of less than 15 units (Scheme 8) and schemes of more than 15 units and less than 40 units (Schemes 1 and 3)**

| | Scheme | Value Area | Site Size (ha) | Residual site value | Site value per ha | Benchmark Site Value £ per ha | Benchmark actual | Headroom | Amount available for CIL (all schemes) (£ per sq m) | Amount available for CIL (excluding schemes 2 and 8) (£ per sq m) |
|---|---|---|---|---|---|---|---|---|---|---|
| less than 40 units | 1 | 1 | 0.5 | £823,237 | £1,646,473 | £988,400 | £494,200 | £329,037 | £272 | |
| | 2 | 1 | 0.5 | £231,279 | £462,558 | £988,400 | £494,200 | -£262,921 | -£225 | |
| | 3 | 1 | 1 | £1,639,056 | £1,639,056 | £988,400 | £988,400 | £650,656 | £269 | |
| | 8 | 1 | 0.3 | £635,113 | £2,117,043 | £988,400 | £296,520 | £338,593 | £349 | |
| | | | | | | | Average | | £166 | £270 |
| | 1 | 2 | 0.5 | £541,087 | £1,082,174 | £864,850 | £432,425 | £108,662 | £90 | |
| | 2 | 2 | 0.5 | -£34,048 | -£68,096 | £864,850 | £432,425 | -£466,473 | -£399 | |
| | 3 | 2 | 1 | £1,084,434 | £1,084,434 | £864,850 | £864,850 | £219,584 | £91 | |
| | 8 | 2 | 0.3 | £451,121 | £1,503,737 | £864,850 | £259,455 | £191,666 | £197 | |
| | | | | | | | Average | | £0 | £90 |
| | 1 | 3 | 0.5 | £315,577 | £631,154 | £741,300 | £370,650 | -£55,073 | -£45 | |
| | 2 | 3 | 0.5 | -£252,262 | -£504,524 | £741,300 | £370,650 | -£622,912 | -£532 | |
| | 3 | 3 | 1 | £638,612 | £638,612 | £741,300 | £741,300 | -£102,688 | -£42 | |
| | 8 | 3 | 0.3 | £304,065 | £1,013,550 | £741,300 | £222,390 | £81,675 | £84 | |
| | | | | | | | Average | | £0 | £49 |
| | 1 | 4 | 0.5 | £90,067 | £180,134 | £617,750 | £308,875 | -£218,808 | -£181 | |
| | 2 | 4 | 0.5 | -£470,456 | -£940,912 | £617,750 | £308,875 | -£779,331 | -£666 | |
| | 3 | 4 | 1 | £190,585 | £190,585 | £617,750 | £617,750 | -£427,165 | -£176 | |
| | 8 | 4 | 0.3 | £157,008 | £523,360 | £617,750 | £185,325 | -£28,317 | -£29 | |
| | | | | | | | Average | | £0 | £0 |
| | 1 | 5 | 0.5 | -£23,602 | -£47,204 | £494,200 | £247,100 | -£270,702 | -£224 | |
| | 2 | 5 | 0.5 | -£580,061 | -£1,160,122 | £494,200 | £247,100 | -£827,161 | -£707 | |
| | 3 | 5 | 1 | -£33,707 | -£33,707 | £494,200 | £494,200 | -£527,907 | -£218 | |
| | 8 | 5 | 0.3 | £83,138 | £277,127 | £494,200 | £148,260 | -£65,122 | -£67 | |
| | | | | | | | Average | | £0 | £0 |

As can be seen from the Tables 5.11 and 5.12, increasing build costs by 12.5% per sq. m to account for site abnormals lowers the headroom for CIL across all value areas.

Table 5.11 demonstrates that Value Area 1 can withstand a CIL tariff of up to £349 per sq. m for housing developments of less than 15 units and £270 per sq. m for housing developments of between 15 and 40 units. Value Area 2 can withstand a CIL tariff of up to £197 per sq. m (housing development of less than 15 units) £90 per sq. m for schemes of more than 15 and less than 40 units).

Value Area 3 can withstand a CIL tariff of £84 per sq. m for housing schemes of less than 15 units and £49 per sq. m for schemes of between 15 and 40 units. There is no headroom for CIL in value areas 4 and 5 across all residential archetypes of schemes of less than 40 units.

As previously stated, the flatted Scheme 2 has been removed from the “Average amount available for CIL” calculation as this development is unviable and the negative result skews the averages.

The table below demonstrates that increasing build costs by 12.5% per sq. m for residential development greater than 40 units, also decreases the headroom for CIL. There is still headroom for CIL in value areas 1, 2 and 3 ranging from £91 to £374 per sq. m; but no headroom in value areas 4 and 5 across all of the residential archetypes.

**Table 5.12: Residential results with uplift for abnormals, schemes of more than 40 units**

| | Scheme | Value Area | Site Size (ha) | Residual site value | Site value per ha | Benchmark Site Value £ per ha | Benchmark actual | Headroom | Amount available for CIL (per sq m) |
|---|---|---|---|---|---|---|---|---|---|
| more than 40 units | 4 | 1 | 1.2 | £2,369,429 | £1,974,524 | £988,400 | £1,186,080 | £1,183,349 | £407 |
| | 5 | 1 | 2.5 | £4,953,934 | £1,981,574 | £988,400 | £2,471,000 | £2,482,934 | £410 |
| | 6 | 1 | 5 | £8,639,738 | £1,727,948 | £988,400 | £4,942,000 | £3,697,738 | £318 |
| | 7 | 1 | 10 | £18,651,906 | £1,865,191 | £988,400 | £9,884,000 | £8,767,906 | £362 |
| | | | | | | | **Average** | | **£374** |
| | 4 | 2 | 1.2 | £1,707,544 | £1,422,953 | £864,850 | £1,037,820 | £669,724 | £230 |
| | 5 | 2 | 2.5 | £3,627,629 | £1,451,052 | £864,850 | £2,162,125 | £1,465,504 | £242 |
| | 6 | 2 | 5 | £6,229,128 | £1,245,826 | £864,850 | £4,324,250 | £1,904,878 | £164 |
| | 7 | 2 | 10 | £13,669,368 | £1,366,937 | £864,850 | £8,648,500 | £5,020,868 | £207 |
| | | | | | | | **Average** | | **£211** |
| | 4 | 3 | 1.2 | £1,191,513 | £992,928 | £741,300 | £889,560 | £301,953 | £104 |
| | 5 | 3 | 2.5 | £2,554,073 | £1,021,629 | £741,300 | £1,853,250 | £700,823 | £116 |
| | 6 | 3 | 5 | £4,308,447 | £861,689 | £741,300 | £3,706,500 | £601,947 | £52 |
| | 7 | 3 | 10 | £9,642,829 | £964,283 | £741,300 | £7,413,000 | £2,229,829 | £92 |
| | | | | | | | **Average** | | **£91** |
| | 4 | 4 | 1.2 | £668,509 | £557,091 | £617,750 | £741,300 | -£72,791 | -£25 |
| | 5 | 4 | 2.5 | £1,487,047 | £594,819 | £617,750 | £1,544,375 | -£57,328 | -£9 |
| | 6 | 4 | 5 | £2,368,625 | £473,725 | £617,750 | £3,088,750 | -£720,125 | -£62 |
| | 7 | 4 | 10 | £5,611,715 | £561,172 | £617,750 | £6,177,500 | -£565,785 | -£23 |
| | | | | | | | **Average** | | **£0** |
| | 4 | 5 | 1.2 | £405,791 | £338,159 | £494,200 | £593,040 | -£187,249 | -£64 |
| | 5 | 5 | 2.5 | £951,558 | £380,623 | £494,200 | £1,235,500 | -£283,942 | -£47 |
| | 6 | 5 | 5 | £1,400,980 | £280,196 | £494,200 | £2,471,000 | -£1,070,020 | -£92 |
| | 7 | 5 | 10 | £3,557,468 | £355,747 | £494,200 | £4,942,000 | -£1,384,532 | -£57 |
| | | | | | | | **Average** | | **£0** |

In summary therefore, the results demonstrate that the ability of development to withstand CIL varies depending on the site size, the location and the level of site development costs encountered. For small sites, the results demonstrate that at baseline costs there is headroom for CIL in high and mid value areas (1, 2 and 3). However none of the archetypes tested have headroom for CIL in lower value areas in Walsall (4 and 5). The development of flats (Scheme 2) has no headroom for CIL in current market conditions. Larger residential schemes of 40 units or more (Schemes 4-7 at baseline costs) have headroom for a CIL across all value areas in Walsall from £521 per sq. m in Value Area 1 to £78 per sq. m in Value Area 5.

Increasing residential development build costs by 12.5% per sq. m to account for site abnormals lowers the headroom for CIL across all value areas, however development in Value Areas 1, 2 and 3 can withstand a CIL levy for housing developments of under 15 units and housing development of between 15 and 40 units. Sites with more than 40 units are similarly affected by an increase in build costs. There is headroom for CIL in value areas 1, 2 and 3 ranging from £91 to £374 per sq. m; but no headroom in value areas 4 and 5 across all of the residential archetypes tested.

# 6 Retail Viability Testing

## 6.1 Scheme Selection

Five hypothetical schemes ('archetypes') have been selected for viability testing based on our experience of the typical retail development likely to come forward across the Walsall administrative area.

Details of the archetypes, floor areas and site coverage are shown in the table below.

**Table 6.1: Retail Archetypes**

| Retail archetypes | | Gross Internal Areas | | Net Internal Areas | | Site area | |
|---|---|---|---|---|---|---|---|
| **1. Town Centre (Walsall)** | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Shopping Centre | 5,000 | 53,820 | 3,500 | 37,674 | 1.25 | 3.09 |
| Scheme 2 | Retail warehousing (bulky goods) | 3,000 | 32,292 | n/a | n/a | 0.75 | 1.85 |
| Scheme 3 | Superstore | 5,000 | 53,820 | n/a | n/a | 2.00 | 4.94 |
| Scheme 4 | Supermarket (Medium) | 1,500 | 16,146 | n/a | n/a | 0.60 | 1.48 |
| Scheme 5 | Convenience store | 400 | 4,306 | n/a | n/a | 0.16 | 0.40 |
| **2. Edge of Town Centre** | | | | | | | |
| Scheme 2 | Retail warehousing (bulky goods) | 3,000 | 32,292 | n/a | n/a | 0.75 | 1.85 |
| Scheme 3 | Superstore | 5,000 | 53,820 | n/a | n/a | 2.00 | 4.94 |
| Scheme 4 | Supermarket (Medium) | 1,500 | 16,146 | n/a | n/a | 0.60 | 1.48 |
| Scheme 5 | Convenience store | 400 | 4,306 | n/a | n/a | 0.16 | 0.40 |
| **3. District Centre (Aldridge, Bloxwich, Brownhills, Darlaston, Willenhall)** | | | | | | | |
| Scheme 1 | Shopping Centre | 5,000 | 53,820 | 3,500 | 37,674 | 1.25 | 3.09 |
| Scheme 2 | Retail warehousing (bulky goods) | 3,000 | 32,292 | n/a | n/a | 0.75 | 1.85 |
| Scheme 3 | Superstore | 5,000 | 53,820 | n/a | n/a | 2.00 | 4.94 |
| Scheme 4 | Supermarket (Medium) | 1,500 | 16,146 | n/a | n/a | 0.60 | 1.48 |
| Scheme 5 | Convenience store | 400 | 4,306 | n/a | n/a | 0.16 | 0.40 |
| **4. Edge of District Centre** | | | | | | | |
| Scheme 2 | Retail warehousing (bulky goods) | 3,000 | 32,292 | n/a | n/a | 0.75 | 1.85 |
| Scheme 3 | Superstore | 5,000 | 53,820 | n/a | n/a | 2.00 | 4.94 |
| Scheme 4 | Supermarket (Medium) | 1,500 | 16,146 | n/a | n/a | 0.60 | 1.48 |
| Scheme 5 | Convenience store | 400 | 4,306 | n/a | n/a | 0.16 | 0.40 |
| **5. Local Centres (eg Caldmore, Pelsall, Streetly, Lazy Hill, Pleck, Leamore, Blakenhall)** | | | | | | | |
| Scheme 5 | Convenience store | 400 | 4,306 | n/a | n/a | 0.16 | 0.40 |
| **6. Out of Centre** | | | | | | | |
| Scheme 2 | Retail warehousing (bulky goods) | 3,000 | 32,292 | n/a | n/a | 0.75 | 1.85 |
| Scheme 3 | Superstore | 5,000 | 53,820 | n/a | n/a | 2.00 | 4.94 |
| Scheme 4 | Supermarket (Medium) | 1,500 | 16,146 | n/a | n/a | 0.60 | 1.48 |
| Scheme 5 | Convenience store | 400 | 4,306 | n/a | n/a | 0.16 | 0.40 |

These archetypes have been tested in the following locations in accordance with the town centre hierarchy set out in the Walsall Unitary Development Plan.

- Town Centre
- Edge of Town Centre
- District Centre
- Edge of District Centres
- Local Centres
- Out of Centre

## 6.2 Retail Sales Values

The table below highlights the variations in rental value and yield dependent on the location of new retail development in Walsall and the occupier incentives used in our appraisals. We have assessed retail transactions in the local area and made adjustments as appropriate to reflect current market conditions and area wide archetypes.

**Table 6.2: Retail Sales Values**

| Retail archetypes | | Rental value (£) | | | |
|---|---|---|---|---|---|
| **1. Town Centre (Walsall)** | | **Sq m** | **Sq ft** | **Yield** | **Rent free (months)** |
| Scheme 1 | Shopping Centre | 215.29 | 20.00 | 8.50% | 18 |
| Scheme 2 | Retail warehousing | 215.29 | 20.00 | 7.50% | 18 |
| Scheme 3 | Superstore | 177.61 | 16.50 | 5.50% | 6 |
| Scheme 4 | Supermarket (Medium) | 150.70 | 14.00 | 5.50% | 6 |
| Scheme 5 | Convenience store | 161.46 | 15.00 | 5.50% | 6 |
| **2. Edge of Town Centre** | | | | | |
| Scheme 2 | Retail warehousing | 215.29 | 20.00 | 7.50% | 18 |
| Scheme 3 | Superstore | 177.61 | 16.50 | 5.50% | 6 |
| Scheme 4 | Supermarket (Medium) | 134.55 | 12.50 | 5.50% | 6 |
| Scheme 5 | Convenience store | 112.00 | 10.40 | 5.50% | 6 |
| **3. District Centre (Aldridge, Bloxwich, Brownhills, Darlaston, Willenhall)** | | | | | |
| Scheme 1 | Shopping Centre | 193.76 | 18.00 | 9.00% | 18 |
| Scheme 2 | Retail warehousing (bulky goods) | 161.46 | 15.00 | 7.50% | 18 |
| Scheme 3 | Superstore | 177.61 | 16.50 | 5.50% | 6 |
| Scheme 4 | Supermarket (Medium) | 134.55 | 12.50 | 5.50% | 6 |
| Scheme 5 | Convenience store | 112.00 | 10.40 | 5.50% | 6 |
| **4. Edge of District Centre** | | | | | |
| Scheme 2 | Retail warehousing (bulky goods) | 161.46 | 15.00 | 7.50% | 18 |
| Scheme 3 | Superstore | 177.61 | 16.50 | 5.50% | 6 |
| Scheme 4 | Supermarket (Medium) | 134.55 | 12.50 | 5.50% | 6 |
| Scheme 5 | Convenience store | 112.00 | 10.40 | 5.50% | 6 |
| **5. Local Centres (eg Caldmore, Pelsall, Darlaston Green, Streetly, Lazy Hill, Pleck, Leamore, Blakenhall)** | | | | | |
| Scheme 5 | Convenience store | 112.00 | 10.40 | 5.50% | 6 |
| **6. Out of Centre** | | | | | |
| Scheme 2 | Retail warehousing (bulky goods) | 215.29 | 20.00 | 7.50% | 18 |
| Scheme 3 | Superstore | 177.61 | 16.50 | 5.50% | 6 |
| Scheme 4 | Supermarket (Medium) | 134.55 | 12.50 | 5.50% | 6 |
| Scheme 5 | Convenience store | 112.00 | 10.40 | 5.50% | 6 |

## 6.3 Development Cost and Phasing Assumptions

The following build costs have been used which are based on BCIS costs (rebased for the West Midlands):

**Table 6.3: Retail Build Costs**

| | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Shopping centre | 852.00 | 79.15 | 979.80 | 91.03 |
| Scheme 2 | Retail warehousing (bulky goods) | 572.00 | 53.14 | 657.80 | 61.11 |
| Scheme 3 | Superstore | 819.00 | 76.09 | 941.85 | 87.50 |
| Scheme 4 | Supermarket (Medium) | 1,311.00 | 121.80 | 1507.65 | 140.07 |
| Scheme 5 | Convenience store | 1,052.00 | 97.73 | 1209.80 | 112.39 |

Retail developments have been phased as shown in the table below which is based on our knowledge of typical requirements for 'standard' schemes in the retail sector.

**Table 6.4: Retail Phasing Assumptions**

| Phasing assumptions | |
|---|---|
| Lead in | 6 months |
| Construction period (retail warehousing and supermarket) | 12 months |
| Construction period (others) | 18 months |
| Sale | On practical completion |

The following industry standard assumptions have also been applied. These costs include a site specific S106 allowance of £30 per sq. m based on a review of retail S106s provided by the Council. Such costs would typically be expected to cover items such as junction/highway/public transport improvements. A higher rate of professional fees of 13% has been allowed for to reflect the additional costs often associated with complex retail development schemes. Similarly, developer's profit of 20% on cost has been applied which is at the upper end of the typical range however is considered sensible given the market and site conditions within Walsall which increase the risk profile of developments.

**Table 6.5: Other Development Costs**

| Other development costs | |
|---|---|
| Sensitivity for abnormals (% uplift in build costs) | 12.5% |
| Site specific S106 costs | £30 per sq m |
| Professional fees as % of construction costs | 13% |
| Contingencies on construction costs | 5% |
| Letting costs (% of rental value) | 10% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 20% |

## 6.4 Retail Results

The table below illustrates the results for retail development in Walsall based on the above development assumptions. It highlights that that there is only headroom for CIL on retail warehousing and superstores, which is able to withstand CIL in all the town centre typologies tested across Walsall to significantly high levels.

**Table 6.6: Retail Results 20% Profit on Cost – baseline costs**

| 20% Profit on cost - baseline costs | | | | | | |
|---|---|---|---|---|---|---|
| Scheme | | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | Headroom for CIL (per sq m) |
| Town Centre | Shopping Centre | 1.25 | £391,597 | £313,277 | £2,316,563 | £0 |
| District Centre | Shopping Centre | 1.25 | -£497,149 | -£397,719 | £1,544,375 | £0 |
| Town Centre | Retail Warehousing | 0.75 | £3,434,638 | £4,579,517 | £1,389,938 | **£682** |
| Edge of Town Centre | Retail Warehousing | 0.75 | £3,434,638 | £4,579,517 | £1,389,938 | **£682** |
| District Centre | Retail Warehousing | 0.75 | £2,035,468 | £2,713,957 | £926,625 | **£370** |
| Edge of District Centre | Retail Warehousing | 0.75 | £2,035,468 | £2,713,957 | £926,625 | **£370** |
| Out of Centre | Retail Warehousing | 0.75 | £3,434,638 | £4,579,517 | £1,389,938 | **£682** |
| Town Centre | Superstore | 2.00 | £7,456,346 | £3,728,173 | £3,706,500 | **£750** |
| Edge of Town Centre | Superstore | 2.00 | £7,456,346 | £3,728,173 | £3,706,500 | **£750** |
| District Centre | Superstore | 2.00 | £7,456,346 | £3,728,173 | £2,471,000 | **£997** |
| Edge of District Centre | Superstore | 2.00 | £7,456,346 | £3,728,173 | £2,471,000 | **£997** |
| Out of Centre | Superstore | 2.00 | £7,456,346 | £3,728,173 | £3,706,500 | **£750** |
| Town Centre | Supermarket (Medium) | 0.60 | £214,677 | £357,794 | £1,111,950 | £0 |
| Edge of Town Centre | Supermarket (Medium) | 0.60 | -£158,012 | -£263,354 | £1,111,950 | £0 |
| District Centre | Supermarket (Medium) | 0.60 | -£57,397 | -£95,662 | £741,300 | £0 |
| Edge of District Centre | Supermarket (Medium) | 0.60 | -£158,012 | -£263,354 | £741,300 | £0 |
| Out of Centre | Supermarket (Medium) | 0.60 | -£250,902 | -£418,169 | £1,111,950 | £0 |
| Town Centre | Convenience store | 0.16 | £236,418 | £1,477,613 | £296,520 | £0 |
| Edge of Town Centre | Convenience store | 0.16 | -£17,307 | -£108,167 | £296,520 | £0 |
| District Centre | Convenience store | 0.16 | £4,487 | £28,042 | £197,680 | £0 |
| Edge of District Centre | Convenience store | 0.16 | -£17,307 | -£108,167 | £197,680 | £0 |
| Local Centre | Convenience store | 0.16 | £4,487 | £28,042 | £98,840 | £0 |
| Out of Centre | Convenience store | 0.16 | -£37,923 | -£237,017 | £296,520 | £0 |

The table below highlights the impact of including an uplift of 12.5% to take into account site abnormals. This lowers the headroom for CIL for retail warehousing and superstores, but there remains capacity for CIL for these retail archetypes.

### Table 6.7: Retail Results 20% Profit on Cost – 12.5% uplift in costs for abnormals

| 20% Profit on cost - 12.5% uplift in build costs for abnormals | | | | | | |
|---|---|---|---|---|---|---|
| Scheme | | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | Headroom for CIL (per sq m) |
| Town Centre | Shopping Centre | 1.25 | -£246,289 | -£197,031 | £2,316,563 | **£0** |
| District Centre | Shopping Centre | 1.25 | -£1,152,240 | -£921,792 | £1,544,375 | **£0** |
| Town Centre | Retail Warehousing | 0.75 | £3,175,715 | £4,234,286 | £1,389,938 | **£595** |
| Edge of Town Centre | Retail Warehousing | 0.75 | £3,175,715 | £4,234,286 | £1,389,938 | **£595** |
| District Centre | Retail Warehousing | 0.75 | £1,775,879 | £2,367,838 | £926,625 | **£283** |
| Edge of District Centre | Retail Warehousing | 0.75 | £1,775,879 | £2,367,838 | £926,625 | **£283** |
| Out of Centre | Retail Warehousing | 0.75 | £3,175,715 | £4,234,286 | £1,389,938 | **£595** |
| Town Centre | Superstore | 2.00 | £6,838,834 | £3,419,417 | £3,706,500 | **£626** |
| Edge of Town Centre | Superstore | 2.00 | £6,838,834 | £3,419,417 | £3,706,500 | **£626** |
| District Centre | Superstore | 2.00 | £6,838,834 | £3,419,417 | £2,471,000 | **£874** |
| Edge of District Centre | Superstore | 2.00 | £6,838,834 | £3,419,417 | £2,471,000 | **£874** |
| Out of Centre | Superstore | 2.00 | £6,838,834 | £3,419,417 | £3,706,500 | **£626** |
| Town Centre | Supermarket (Medium) | 0.60 | -£84,211 | -£140,352 | £1,111,950 | **£0** |
| Edge of Town Centre | Supermarket (Medium) | 0.60 | -£465,659 | -£776,098 | £1,111,950 | **£0** |
| District Centre | Supermarket (Medium) | 0.60 | -£364,046 | -£606,743 | £741,300 | **£0** |
| Edge of District Centre | Supermarket (Medium) | 0.60 | -£465,659 | -£776,098 | £741,300 | **£0** |
| Out of Centre | Supermarket (Medium) | 0.60 | -£557,273 | -£928,789 | £1,111,950 | **£0** |
| Town Centre | Convenience store | 0.16 | £172,886 | £1,080,540 | £296,520 | **£0** |
| Edge of Town Centre | Convenience store | 0.16 | -£82,961 | -£518,503 | £296,520 | **£0** |
| District Centre | Convenience store | 0.16 | -£60,818 | -£380,114 | £197,680 | **£0** |
| Edge of District Centre | Convenience store | 0.16 | -£82,961 | -£518,503 | £197,680 | **£0** |
| Local Centre | Convenience store | 0.16 | -£60,818 | -£380,114 | £98,840 | **£0** |
| Out of Centre | Convenience store | 0.16 | -£103,671 | -£647,942 | £296,520 | **£0** |

These results indicate that certain types of retail development are able to withstand CIL however there are many retail classifications that cannot. The retail sector is typically subject to high level of site abnormal development costs in view of the focus on town and city centre sites and the sensitivity of the results to abnormal site costs is an important factor in interpreting the appropriate level of CIL to charge.

# 7 Office Viability Testing

## 7.1 Scheme Selection

Two hypothetical schemes ('archetypes') have been selected for viability testing of CIL based on the speculative office development that may come forward across Walsall. Details of the archetypes, floor area and site coverage are provided below:

**Table 7.1: Office Scheme Selection**

| | | Floor area (GIA) | | Floor area (NIA) | | Site area | |
|---|---|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Town centre, over two floors | 3,000 | 32,292 | 2,550 | 27,448 | 0.38 | 0.93 |
| Scheme 2 | Out of town, over two floors | 3,000 | 32,292 | 2,550 | 27,448 | 0.38 | 0.93 |

## 7.2 Value Assumptions

The following rental value, investment yield and occupier incentive assumptions have been used based on our experience of local market conditions and comparable evidence which has been adjusted to reflect current market conditions.

**Table 7.2: Office development values**

| | | Rental value (£) | | Yield | Rent free |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | % | (months) |
| Scheme 1 | Town centre, over two floors | 129.17 | 12.00 | 8.75% | 30 |
| Scheme 2 | Out of town, over two floors | 129.17 | 12.00 | 8.75% | 30 |

## 7.3 Build Cost, Development Costs and Phasing Assumptions

The following build costs are based on BCIS (rebased for the West Midlands). An uplift of 15% is included to take into account of external site works.

**Table 7.3: Office Scheme Build Costs**

| | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Town centre, over two floors | 1,571.53 | 146.00 | 1,807.26 | 167.90 |
| Scheme 2 | Out of town, over two floors | 1,291.67 | 120.00 | 1,485.42 | 138.00 |

The following assumptions are also included consistent with all commercial schemes tested in this report:

**Table 7.4: Office Scheme – Other development costs**

| Other development costs | |
|---|---|
| Sensitivity for abnormals (% uplift on build costs) | 12.5% |
| Site specific S106 costs | £0 |
| Professional fees as % of construction costs | 12.5% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 10% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 20% |

The following phasing assumptions have been applied relating to timescales for delivery:

**Table 7.5: Office Scheme Phasing Assumptions**

| Phasing assumptions | |
|---|---|
| Lead in | 6 months |
| Construction period | 12 months |
| Sale | On practical completion |

## 7.4 Office Results

Tables 7.6 and 7.7 highlight the results of office development viability at 15% profit on cost and 20% profit on cost respectively. We have also included an allowance of a 12.5 % uplift in build costs per sq. m for site abnormals.

**Table 7.6: Office development viability results at 15% profit on cost**

| 15% profit on cost | | | | |
|---|---|---|---|---|
| **Scheme** | **Site Size (ha)** | **Site value** | **Site value per ha** | **Sum available for policy standards** |
| Office - town centre over two floors | 0.38 | -£3,450,146 | -£9,079,333 | **£0** |
| Office - out of town over two floors | 0.38 | -£2,397,390 | -£6,308,922 | **£0** |
| | | | | |
| **12.5% uplift in build costs for abnormals** | | | | |
| Office - town centre over two floors | 0.38 | -£4,190,911 | -£11,028,713 | **£0** |
| Office - out of town over two floors | 0.38 | -£3,005,873 | -£7,910,193 | **£0** |

**Table 7.7: Office development viability results at 20% profit on cost**

| 20% profit on cost | | | | |
|---|---|---|---|---|
| **Scheme** | **Site Size (ha)** | **Site value** | **Site value per ha** | **Sum available for policy standards** |
| Office - town centre over two floors | 0.38 | -£3,553,940 | -£9,352,474 | **£0** |
| Office - out of town over two floors | 0.38 | -£2,500,702 | -£6,580,795 | **£0** |
| | | | | |
| **12.5% uplift in build costs for abnormals** | | | | |
| Office - town centre over two floors | 0.38 | -£4,292,619 | -£11,296,367 | **£0** |
| Office - out of town over two floors | 0.38 | -£3,108,475 | -£8,180,198 | **£0** |

The results demonstrate a lack of headroom for CIL and more generally, viability as a whole, for the office sector in Walsall at the current time. Whilst we would expect that there will be circumstances where office schemes can be brought forward as a result of a single major occupier requirement, at the current time the above analysis is considered to accurately represent the challenges facing the office development market locally and therefore conclude that it would not be sensible to introduce CIL on this property typology at the current time.

# 8 Industrial Viability Testing

## 8.1 Scheme Selection

Three hypothetical schemes have been selected for viability testing of CIL based on the type of industrial development that is likely to come forward across the Borough.

The archetypes test small, medium and large industrial / warehouse schemes, ranging from 2,500 sq. m (26,910 sq. ft) to 10,000 sq. m (107,639 sq. ft) and their respective site coverage:

**Table 8.1: Industrial Archetypes**

| | | Floor area (GIA) | | Floor area (NIA) | | Site area | |
|---|---|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Small industrial /warehouse | 2,500 | 26,910 | 2,500 | 26,910 | 0.71 | 1.77 |
| Scheme 2 | Medium industrial / warehouse | 5,000 | 53,820 | 5,000 | 53,820 | 1.43 | 3.53 |
| Scheme 3 | Large industrial /warehouse | 10,000 | 107,639 | 10,000 | 107,639 | 2.86 | 7.06 |

## 8.2 Value and Phasing Assumptions

The following rental values, investment yields and occupier incentives are used in our appraisals which are in line with local market conditions.

**Table 8.2: Industrial Development Value Assumptions**

| | | Rental value (£) | | Yield | Rent free (months) |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | % | |
| Scheme 1 | Small industrial / warehouse | 61.89 | 5.75 | 6.75% | 6 |
| Scheme 2 | Medium industrial / warehouse | 59.20 | 5.50 | 6.75% | 6 |
| Scheme 3 | Large industrial / warehouse | 56.51 | 5.25 | 6.75% | 9 |

The following phasing assumptions have been used for the three industrial schemes which is based on our experience of building these types of industrial units:

**Table 8.3: Industrial Development Value Assumptions**

| Phasing assumptions (development delivered in a single phase) | |
|---|---|
| Lead in | 6 months |
| Construction period | 12 months |
| Sale | On practical completion |

## 8.3 Build Cost and Development Cost Assumptions

The following build costs are based on BCIS (rebased for the West Midlands). An allowance of 15% for external site works is included:

**Table 8.4: Industrial Development Build Costs**

| | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Small industrial / warehouse | 830.00 | 77.11 | 954.50 | 88.68 |
| Scheme 2 | Medium industrial / warehouse | 458.00 | 42.55 | 526.70 | 48.93 |
| Scheme 3 | Large industrial / warehouse | 426.00 | 39.58 | 489.90 | 45.51 |

The following market assumptions are used in our development appraisals which reflect standard market allowances in development appraials:

**Table 8.5: Industrial Development – Other Development Costs**

| Other development costs | |
|---|---|
| Sensitivity for abnormals (% uplift on build costs) | 12.5% |
| Site specific S106 costs | £0 |
| Professional fees as % of construction costs | 10% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 10% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 20% |

It is understood that owner occupier led industrial development would require a different approach to viability testing in terms of yields and profit levels. Our development appraisals assume that industrial units are developed on a speculative basis.

## 8.4 Industrial Results

Tables 8.6 and 8.7 below highlight the results of industrial development viability at 15% profit on cost and 20% profit on cost respectively. We have also included an allowance of a 12.5% uplift in build costs per sq. m for site abnormals. The results demonstrate that there is no headroom for CIL on speculative industrial development in Walsall at the current time.

**Table 8.6: Industrial Development Viability Results**

| 15% profit on cost | | | | | |
|---|---|---|---|---|---|
| **Scheme** | **Site Size (ha)** | **Site value** | **Site value per ha** | **Site value threshold (actual)** | **Sum available for policy standards** |
| Small industrial / warehouse | 0.63 | -£757,025 | -£1,201,628 | £467,019 | **£0** |
| Medium industrial / warehouse | 1.25 | £550,625 | £440,500 | £926,625 | **£0** |
| Large industrial / warehouse | 2.5 | £1,081,834 | £432,734 | £1,853,250 | **£0** |
| | | | | | |
| **12.5% uplift in build costs for abnormals** | | | | | |
| Small industrial / warehouse | 0.63 | -£1,074,045 | -£1,704,834 | £467,019 | **£0** |
| Medium industrial / warehouse | 1.25 | £218,753 | £175,003 | £926,625 | **£0** |
| Large industrial / warehouse | 2.5 | £463,147 | £185,259 | £1,853,250 | **£0** |

| 20% profit on cost | | | | | |
|---|---|---|---|---|---|
| **Scheme** | **Site Size (ha)** | **Site value** | **Site value per ha** | **20% Profit on Cost** | **Sum available for policy standards** |
| Small industrial / warehouse | 0.63 | -£831,136 | -£1,319,264 | £467,019 | **£0** |
| Medium industrial / warehouse | 1.25 | £418,049 | £334,440 | £926,625 | **£0** |
| Large industrial / warehouse | 2.5 | £832,411 | £332,965 | £1,853,250 | **£0** |
| | | | | | |
| **12.5% uplift in build costs for abnormals** | | | | | |
| Small industrial / warehouse | 0.63 | -£1,148,332 | -£1,822,750 | £467,019 | **£0** |
| Medium industrial / warehouse | 1.25 | £86,606 | £69,285 | £926,625 | **£0** |
| Large industrial / warehouse | 2.5 | £217,441 | £86,977 | £1,853,250 | **£0** |

# 9 Other Commercial Sectors Viability Testing

The following other commercial sectors have been tested in order to determine whether they are able to support any level of CIL rates in Walsall.

## 9.1 Scheme Selection

The table below details the floor areas and site area of each archetype.

**Table 9.1: Development Archetypes**

| | | | Floor area (GIA) | | Floor area (NIA) | | Site area | |
|---|---|---|---|---|---|---|---|---|
| | | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Cinema | Leisure park cinema | 6,000 | 64,583 | 6,000 | 64,583 | 1.50 | 3.71 |
| Scheme 2 | Hotel | 60 bed budget | 1,800 | 19,375 | 1,350 | 14,531 | 0.45 | 1.11 |
| Scheme 3 | Restaurant | Leisure park restaurant | 400 | 4,306 | 400 | 4,306 | 0.16 | 0.40 |
| Scheme 4 | Care home | 60 bed care home | 2,586 | 27,835 | 840 | 9,042 | 0.65 | 1.60 |

## 9.2 Value and Phasing Assumptions

We have used rental values and investment yields in line with those achieved in the West Midlands and have made the necessary adjustments to reflect location and development size.

**Table 9.2: Development Values**

| | | | Rental values (£) | | Yield | Incentives |
|---|---|---|---|---|---|---|
| | | | Sq m | Sq ft | % | Months |
| Scheme 1 | Cinema | Leisure park cinema | £129.17 | £12.00 | 7.00% | 6 |
| Scheme 2 | Hotel | 60 bed budget | £161.46 | £15.00 | 6.50% | 6 |
| Scheme 3 | Restaurant | Leisure park restaurant | £161.46 | £15.00 | 6.50% | 12 |
| Scheme 4 | Care home | 60 bed care home | £429.05 | £39.86 | 6.50% | 6 |

The following phasing assumptions have been used which typically reflect build periods in these sectors:

**Table 9.3: Development Phasing Assumptions**

| | | | Phasing assumptions |
|---|---|---|---|
| Scheme 1 | Cinema | Leisure park cinema | 6 months lead in, 12 months build, sell on PC |
| Scheme 2 | Hotel | 60 bed budget | 6 months lead in, 12 months build, sell on PC |
| Scheme 3 | Restaurant | Leisure park restaurant | 6 months lead in, 12 months build, sell on PC |
| Scheme 4 | Care home | 60 bed care home | 6 months lead in, 18 months build, sell on PC |

## 9.3 Build Costs, Other Development Cost Assumptions and Phasing

The following build costs have been applied. These are based on BCIS costs (rebased for the West Midlands) and include an uplift of 15% to take into account external works.

**Table 9.4: Development Build Costs**

| | | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|---|
| | | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Cinema | Leisure park cinema | 1,183.00 | 109.90 | 1360.45 | 126.39 |
| Scheme 2 | Hotel | 60 bed budget | 1,373.00 | 127.56 | 1579.95 | 146.78 |
| Scheme 3 | Restaurant | Leisure park restaurant | 1,661.00 | 154.31 | 1910.15 | 177.46 |
| Scheme 4 | Care home | 60 bed care home | 1,022.00 | 94.95 | 1175.30 | 109.19 |

The following market assumptions are used in our development appraisals:

**Table 9.5: Other Development Costs**

| Other development costs | |
|---|---|
| Sensitivity for abnormals (% uplift on build costs) | 12.5% |
| Site specific S106 costs | £0 |
| Professional fees as % of construction costs | 10% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 10% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 20% |

## 9.4 Other Commercial Sectors Results

Table 9.6 illustrates that there is no headroom for CIL on the development of cinemas in Walsall.

**Table 9.6: Cinema Development Viability Results**

| Baseline Cinema | | | | | |
|---|---|---|---|---|---|
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | CIL headroom (per sq m) |
| Leisure park cinema | 1.5 | -£495,664 | -£330,443 | £741,300 | **£0** |
| | | | | | |
| **12.5% uplift in build costs for abnormals** | | | | | |
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | CIL headroom (per sq m) |
| Leisure park cinema | 1.5 | -£1,556,507 | -£1,037,671 | £741,300 | **£0** |

Table 9.7 illustrates that there is no headroom for CIL on the hotel development typology.

**Table 9.7: Hotel Development Viability Results**

| Baseline Hotel | | | | | |
|---|---|---|---|---|---|
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | CIL headroom (per sq m) |
| 60 bed budget hotel | 0.45 | -£530,281 | -£1,178,402 | £222,390 | **£0** |
| | | | | | |
| **12.5% uplift in build costs for abnormals** | | | | | |
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | |
| 60 bed budget hotel | 0.45 | £901,578 | £2,003,507 | £222,390 | **£0** |

Table 9.8 illustrates that there is no headroom for CIL on the restaurant development typology.

**Table 9.8: Restaurant Development Viability Results**

| Baseline Restaurant | | | | | |
|---|---|---|---|---|---|
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | CIL headroom (per sq m) |
| Leisure park restaurant | 0.16 | -£97,455 | -£609,093 | £296,520 | **£0** |
| | | | | | |
| **12.5% uplift in build costs for abnormals** | | | | | |
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | CIL headroom (per sq m) |
| Leisure park restaurant | 0.16 | -£197,303 | -£1,233,142 | £296,520 | **£0** |

Table 9.9 illustrates that at baseline costs, there is headroom to charge CIL on care home developments, however if an allowance of 12.5% cost uplift is included to account for site abnormals, this results in no headroom being available for CIL. A site value threshold of £988,400 per ha has been applied to this assessment reflecting the higher value residential benchmark which could be considered appropriate to the types of location in which such developments may be brought forward.

**Table 9.9: Care Home Development Viability Results**

| Baseline Care Home | | | | | |
|---|---|---|---|---|---|
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | CIL headroom (per sq m) |
| 60 bed care home | 0.65 | £817,282 | £1,257,356 | £642,460 | **£68** |
| | | | | | |
| **12.5% uplift in build costs for abnormals** | | | | | |
| Scheme | Site Size (ha) | Site value | Site value per ha | Site value threshold (actual) | CIL headroom (per sq m) |
| 60 bed care home | 0.65 | £439,056 | £675,471 | £642,460 | **£0** |

# 10 CIL Charging Recommendations

## 10.1 Maximum CIL Headroom

The evidence presented above demonstrates the diversity of viability across Walsall with only the residential and retail development categories considered generally able to be withstand a Community Infrastructure Levy at the current time. The viability of imposing CIL on residential development is limited to high and mid value areas. The varied results are due to different levels of strength in property markets across the district as reflected in the rent/capital values achievable combined with differences in construction and other development costs for the various property types tested. The impact of site abnormal costs and other planning standards (including affordable housing at 25% and site specific S106 costs) is also a factor that limits the 'headroom' for a CIL tariff.

Table 10.1 summarises the findings, presenting the average CIL headroom for each use and location expressed in terms of £ per sq. m. The 'headroom' is the difference between the residual site value and the benchmark site value for each scheme, divided by the floor area that would be liable for CIL. The figures applied in this table are those which include the allowance for site abnormal development costs as these are considered the most suitable given the predominantly brownfield nature of much of Walsall's development land.

**Table 10.1: Maximum CIL headroom**

| | Residential (£ per sq m) | | | Commercial (£ per sq m) |
|---|---|---|---|---|
| | Below 15 units (Scheme 8) | Above 15 units & below 40 units (Schemes 1 and 3) | Above 40 units (Schemes 4-7) | |
| **Housing developments** | | | | |
| Value Area 1 | £349 | £270 | £374 | |
| Value Area 2 | £197 | £90 | £211 | |
| Value Area 3 | £84 | £49 | £91 | |
| Value Area 4 | £0 | £0 | £0 | |
| Value Area 5 | £0 | £0 | £0 | |
| | | | | |
| **Retail warehousing** | | | | |
| Town Centre | | | | £595 |
| Edge of Town Centre | | | | £595 |
| District Centre | | | | £283 |
| Edge of District Centre | | | | £283 |
| Out of Centre | | | | £595 |
| | | | | |
| **Superstore (over 2000 sq m)** | | | | |
| Town Centre | | | | £626 |
| Edge of Town Centre | | | | £626 |
| District Centre | | | | £874 |
| Edge of District Centre | | | | £874 |
| Out of Centre | | | | £626 |
| | | | | |
| **All other uses** | | 0 | 0 | 0 |

**Definitions**
*Housing developments: Excludes residential care homes and high density flatted schemes*

*Retail units are those within General Permitted Development Rights Use Class Order 1987 (as amended) A1-A5*
*Retail warehousing: The retail warehouse class includes all non-food retail units without restriction to size. Generally their construction shows a much greater visual similarity to warehousing than to that of standard shop units. Retail warehouses usually occupy a single floor, the majority of which is devoted to sales, with some ancillary storage and office use. They may be sited singly or grouped together, most frequently in fringe or out of town locations. The provision of car parking is often extensive - sometimes shared, as is the case at retail parks.*

*Superstores: Superstores/supermarkets are shopping destinations in their own right where weekly food shopping needs are met and which can also include non-food floor space as part of the overall mix of the unit*.

For the avoidance of doubt, the viability modelling has assumed 1,500 sq. m for discount supermarkets and 5,000 sq. m for superstores, which reflects the typical sizes in these development typologies. However the size threshold that is applied to the superstore CIL rate is 2,000 sq. m. This level is considered to be an appropriate benchmark which divides the smaller discount brand formats from the models promoted by the "big 4" operators.

## 10.2 Viability Proofing – Accounting or the "Buffer" Maximum CIL Headroom

Caution is required to ensure that the rates that are set for CIL are not done so at a level that would undermine the delivery of development. CIL is intended to be generally non-negotiable once set and therefore there is a risk that if not set at an appropriate level the effect could be either to depress other planning obligation requirements or in a worst case scenario prevent land from coming forward for development.

It is important to emphasise that the analysis contained in this report is predicated on 'area wide viability' and that broad brush assumptions have had to be made, intended to reflect 'typical' and average circumstances. The development market is in reality heterogeneous and there is potential for wide variation in many of the inputs to a viability appraisal including the price of land, the developer's return and site development costs among other factors.

There is also the potential for variation in both market conditions and construction costs arising from changes to building regulations (including the anticipated Zero Carbon requirement from 2016) which will influence changes in viability headroom for CIL. Although the market is generally on an upswing, local and sector based changes could cause viability to be destabilised on certain types of sites and uses.

Government guidance makes it clear that CIL rates should not be set right at the margins of viability. At Paragraph 019 Reference ID: 25-019-20140612), the guidance specifies that *"there is room for some pragmatism. It would be appropriate to ensure that a 'buffer' or margin is included, so that the levy rate is able to support development when economic circumstances adjust".* Evidence from recent CIL examinations indicates that a minimum discount of 25-30% from the maximum CIL viability is considered reasonable to demonstrate that the 'balance' has been struck.

There is also evidence of CIL rates being benchmarked in terms of a percentage of development costs as a means of sense checking viability. A cautious approach would be to ensure that CIL should not exceed the following benchmarks as a **further** test for safeguarding viability:

- 5% of total development costs
- 5% of Gross Development Value
- 10-15% of residual land value

5% of total development costs is within the parameters of a developer's typical contingency (where applied) and therefore not considered likely to undermine delivery in the majority of cases. At less than 5% of Gross Development Value, it represents a very small portion of the total income of a development project and similarly if CIL represents less than 10-15% of residual site value it is a relatively small portion which is considered is unlikely to prevent land from being brought forward for development.

Therefore, through first assessing the viability of CIL against the site value benchmarks to determine a reasonable 'headroom' and then providing a secondary check through the above performance indicators we consider that CIL can be robustly viability proofed.

Looking at the above percentage benchmarks as they relate to maximum CIL headroom figures, the table below demonstrates that at the maximum headroom most of these benchmarks are exceeded, indicating that they could be placing viability at risk.

**Table 10.2 Maximum CIL Headroom expressed as a percentage of cost, GDV and land value**

| | Maximum CIL headroom | CIL as a percentage of average: | | |
|---|---|---|---|---|
| **Residential** | | Development Costs | GDV | Residual Land value |
| Value Area 1 | £374 | 14.69% | 12.09% | 47.49% |
| Value Area 2 | £211 | 9.24% | 7.60% | 36.73% |
| Value Area 3 | £91 | 4.39% | 3.61% | 22.47% |
| Value Area 4 | £0 | n/a | n/a | n/a |
| Value Area 5 | £0 | n/a | n/a | n/a |
| | | | | |
| **Retail warehousing** | | | | |
| Town Centre | £595 | 27.74% | 23.11% | 56.23% |
| Edge of Town Centre | £595 | 27.74% | 23.11% | 56.23% |
| District Centre | £283 | 17.59% | 14.66% | 47.82% |
| Edge of District Centre | £283 | 17.59% | 14.66% | 47.82% |
| Out of Centre | £595 | 27.74% | 23.11% | 56.23% |
| | | | | |
| **Superstore (over 2000 sq. m)** | | | | |
| Town Centre | £626 | 21.69% | 18.07% | 45.80% |
| Edge of Town Centre | £626 | 21.69% | 18.07% | 45.80% |
| District Centre | £874 | 30.24% | 25.20% | 63.87% |
| Edge of District Centre | £874 | 30.24% | 25.20% | 63.87% |
| Out of Centre | £626 | 21.69% | 18.07% | 45.80% |

## RECOMMENDED CIL RATES

Taking into account this analysis, we have adjusted the CIL rates and re run the above analysis to fit with the additional performance benchmarks. The recommended CIL rates, presented in Table 10.3 overleaf include a range of £0 to £100 per sq. m on housing development depending on location and scheme size, and rates of £75-£100 per sq. m on retail warehousing and superstores.

**10.3: Recommended CIL rates**

| | Residential (£ per sq. m) | | | Commercial (£ per sq. m) |
|---|---|---|---|---|
| | **Below 15 units (Scheme 8)** | **Above 15 units & below 40 units (Schemes 1 and 3)** | **Above 40 units (Schemes 4-7)** | |
| **Housing developments** | | | | |
| Value Area 1 | £100 | £100 | £100 | |
| Value Area 2 | £75 | £50 | £75 | |
| Value Area 3 | £50 | £25 | £50 | |
| Value Area 4 | £0 | £0 | £0 | |
| Value Area 5 | £0 | £0 | £0 | |
| | | | | |
| **Retail warehousing** | | | | |
| Town Centre | | | | £100 |
| Edge of Town Centre | | | | £100 |
| District Centre | | | | £75 |
| Edge of District Centre | | | | £75 |
| Out of Centre | | | | £100 |
| | | | | |
| **Superstore (over 2000 sq. m)** | | | | |
| Town Centre | | | | £100 |
| Edge of Town Centre | | | | £100 |
| District Centre | | | | £100 |
| Edge of District Centre | | | | £100 |
| Out of Centre | | | | £100 |
| | | | | |
| **All other uses** | | 0 | 0 | 0 |

Table 10.4 overleaf displays the proposed CIL rates benchmarked as a percentage of development costs, Gross Development Value and Residual Land Value. It also shows the effective discount that the levels represent from the total headroom figure.

The residential CIL rates are in the range of 2.4% to 4% of total development costs, 2% to 3.5% of GDV and 12.5% to 13% of residual land value. The discount from the total headroom ranges from 46% in Value Area 3 to 74% in Value Area 1. The commercial CIL rates range from 3.5%-4.7% of total development cost, from 2.9% to 3.9% of GDV, and 7.3% to 9.5% of residual land value. They represent a discount from the total headroom figures of 73%-88%.

There is some scope for small variations to the proposed rates in accordance with the stated viability benchmarks and DTZ would welcome dialogue with officers in order to validate the proposed rates. However we are of the view that the recommended rates are sufficiently robust to avoid putting the delivery of development at risk and also to withstand challenge through the examination process.

**Table 10.4 Recommended CIL rates with viability buffer benchmarks**

| | Recommended CIL rates | CIL as a percentage of average: | | | Percentage discount from maximum CIL headroom |
|---|---|---|---|---|---|
| **Residential** | | Total development cost | GDV | Residual Land value | |
| Value Area 1 | £100 | 3.93% | 3.23% | 12.73% | 73.26% |
| Value Area 2 | £75 | 3.29% | 2.70% | 13.14% | 64.45% |
| Value Area 3 | £50 | 2.41% | 1.99% | 12.53% | 45.05% |
| Value Area 4 | £0 | n/a | n/a | n/a | n/a |
| Value Area 5 | £0 | n/a | n/a | n/a | n/a |
| | | | | | |
| **Retail warehousing** | | | | | |
| Town Centre | £100 | 4.66% | 3.88% | 9.45% | 83.20% |
| Edge of Town Centre | £100 | 4.66% | 3.88% | 9.45% | 83.20% |
| District Centre | £75 | 4.66% | 3.88% | 12.67% | 73.50% |
| Edge of District Centre | £75 | 4.66% | 3.88% | 12.67% | 73.50% |
| Out of Centre | £100 | 4.66% | 3.88% | 9.45% | 83.20% |
| | | | | | |
| **Superstore (over 2000 sq. m)** | | | | | |
| Town Centre | £100 | 3.46% | 2.88% | 7.31% | 84.04% |
| Edge of Town Centre | £100 | 3.46% | 2.88% | 7.31% | 84.04% |
| District Centre | £100 | 3.46% | 2.88% | 7.31% | 88.55% |
| Edge of District Centre | £100 | 3.46% | 2.88% | 7.31% | 88.55% |
| Out of Centre | £100 | 3.46% | 2.88% | 7.31% | 84.04% |
| | | | | | |
| All other uses | £0 | n/a | n/a | n/a | n/a |

## 10.3 The Case for A Nominal Charge Rate in Low Value Areas

As illustrated in the viability results set out in this report, there remain a number locations and sectors on which CIL is not considered to be realistically viable in typical circumstances. Therefore it follows that a zero tariff should be set to reflect these results. However, DTZ is aware of some local authorities seeking to set a nominal CIL charge in such locations on the premise that it is unlikely to put delivery at risk. Leeds City Council is one such local authority which has recently had its charging schedule adopted including a nominal rate of £5 per sq. m in locations and for uses which were indicated to be unviable in the supporting viability studies. In view of the very small proportion of development costs, Gross Development Value and Residual Land Value that such a tariff would represent, we believe there is a case that it would be unlikely to put delivery at risk. However, it is not possible to substantiate this in economic viability terms. It is therefore a matter for the Council to consider in terms of balancing the desirability of maximising funding for infrastructure against viability.

## 10.4 CIL Revenue Scenarios

The revenues that could be generated from housing developments across Walsall have been analysed over the Local Plan period. The housing sites are those provided to DTZ by Walsall Council and include sites considered for allocation in the Site Allocation Document and Town Centre Area Action Plan along with other housing sites with existing planning permissions likely to come forward over the plan period.

We have assumed an average size of a property of 84 sq. m, and applied the applicable CIL rates bearing in mind the site size/anticipated yield in respect of dwelling numbers based on the schedule provided to us. This is illustrated in Table 10.5 below.

Tariff A assumes a CIL charging strategy in accordance with Table 10.3 above. Tariff B assumes a CIL strategy in line with Table 10.3 above for Value Areas 1-3 above and the addition of a flat rate of £5 per sq. m for Value Areas 4 and 5.

**Table 10.5 Projected CIL revenues**

| Projected Revenue Proposed CIL Charging Tariff A | Projected Revenue Proposed CIL Charging Tariff B |
|---|---|
| £ 4,486,125 | £ 5,586,315 |

The results show relatively modest levels of CIL revenue however as market conditions improve it may be possible to set higher CIL rates which would generate a higher level of CIL revenue through the Local Plan period.

## 10.5 Collecting the CIL Levy

The CIL Charging Authority is responsible for collecting the levy (with the exception of London Boroughs). Once the charging schedule has been determined, the Council will need to determine how the levy will be payable.

CIL charges become due on commencement of development as defined by Section 56 (4) of the Town and Country Planning Act 1990. Charging Authorities are at liberty to set their own payment terms, including the option of paying CIL in instalments. However, CIL Regulations (69B) specify that the payment terms must be published in an instalments policy which should be available on the Council's website and also at the Councils principal office.

Instalment policies can assist with development viability and delivery by improving the cash flow of a development (as the CIL payment is not paid upfront). NPPG Paragraph: 055 – Reference ID: 25-055-20140612 of the Regulations state *"Willingness to allow an instalments policy can be a material consideration in assessing the viability of proposed levy rates. The authority has the freedom to decide the number of payments, the amount and the time due. The authority may revise or withdraw the policy when appropriate".*

Where a Local Authority has no instalment policy in place, payment is due 60 days after development commences.

There are also provisions in the NPPG at Paragraph: 056 – Reference ID 25-056-20140612 enabling local authorities to accept a planning application which has been subdivided into phases for the purposes of the levy. This will be extremely useful for large scale developments which are likely to be brought forward in a number of phases. The Regulations are helpful in that they allow for detailed and outline permissions to be treated as phased developments of the levy. This will assist with the viability and deliverability of a development as it enables each phase of a development to be separately chargeable for CIL in line with an instalment policy that may be in force.

In order to facilitate the viability and deliverability of development coming forward across Walsall, we recommend that the Council offers the payment of CIL in instalments as a matter of course. This will make it easier for developers to pay the charge as receipts from new development can be used to pay the Levy.

We recommend the following instalments policy for Walsall:

**Table 10.6 Potential instalments policy for Walsall**

| **Instalment Provisions** | | | | | |
|---|---|---|---|---|---|
| **Less than £100,000** | | | **More than £100,000** | | |
| Instalment | Amount Due | Due Date | Instalment | Amount Due | Due Date |
| 1 | 50% | 6 months* | 1 | 25% | 6 months* |
| 2 | 50% | 12 months* | 2 | 25% | 12 months* |
| | | | 3 | 25% | 18 months* |
| | | | 4 | 25% | 24 months* |

* Payable on the anniversary of the commencement of development

## 10.6 Payments In Kind

There may be circumstances where a charging authority or developer has a preference for a payment in kind to be made to satisfy the CIL liability.

NPPG Paragraph: 061 Reference ID: 25-061-20140612 makes provisions for a charging authority to enter into an agreement with a developer to receive land or infrastructure as payment.

Where a charging authority wishes to accept such payments in kind, the conditions of such payments must be set out in detail in a policy document. The document should set out that the local authority will accept infrastructure or land payments and include a list of the type of infrastructure that would be considered acceptable as a payment in kind. This list may include/or comprise the infrastructure requirements identified on the Council's Regulation 123 list.

Where a levy is to be paid as land or infrastructure, a land or infrastructure agreement must be entered into before development commences. This must include the information specified in the CIL (Amendment) Regulations (2014) paragraph 73A.

## 10.7 Monitoring and Review

It should be noted that the property market is heterogeneous and market conditions change over time. The variation or introduction of Government or Local Policy may also impact on the deliverability and viability of development. The Council can monitor CIL through the Local Plan Annual Monitoring Report. In the event of significant changes in circumstances, it is good practice that the Council updates the viability modelling to ensure that the CIL charging schedule is reflective of market conditions.

It should be noted that should the CIL charging tariff be adopted, any subsequent changes to the tariff will require public examination.

## 10.8 Summary

Subject to the approval of officers and members as required to the proposed charging rates, it is recommended that the Council proceed with the preparation of a Preliminary Draft Charging Schedule. It is recommended that the charging zones (for residential development only) are constructed to accord with the value areas set out in this report, but amended to align with fixed boundaries (e.g. roads, rivers) to ensure clarity in boundaries for implementation.

It is recommended that the Council develop a suitably flexible instalments policy to allow for the timing of payments to be aligned with typical cash-flow timescales. However it should be noted that phased payments can also be deployed where a planning application is divided into more than a single phase.

Provision for 'Payments in Kind' may also be deployed through the Charging Schedule which would enable contributions of land and/or infrastructure to be made subject to a number of conditions in accordance with the 2014 updated CIL regulations. These clauses will improve the flexibility with which CIL can be implemented.

# WALSALL SAD AND CIL VIABILITY STUDY APPENDICES

# Appendix 1 - Wardell Armstrong Industrial & Mining Legacy Constraints Report

wardell-armstrong.com

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING, QUARRYING AND MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

**WALSALL COUNCIL**

# Site Allocation, CIL, Deliverability and Viability Study

## Industrial and Mining Legacy Constraints

**September 2015**

your earth our world

wardell armstrong

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|---|---|
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**WALSALL COUNCIL**

# Site Allocation, CIL, Deliverability and Viability Study

## Industrial and Mining Legacy Constraints

**September 2015**

**PREPARED BY:**

| | | |
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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES AND QUARRYING
WASTE RESOURCE MANAGEMENT

**CONTENTS**



**APPENDICES**

## 1. INTRODUCTION

1.1. Wardell Armstrong have been provided details of 44 housing site and 24 Employment sites considered in the SAD feasibility study.

1.2. For each of the housing and employment sites considered Wardell Armstrong were instructed to assess the potential development constraints associated with the former industrial and mining heritage of each site. Broad cost estimates and cost ranges to address potential constraints have been provided for comparative purposes only.

## 2. METHODOLOGY

2.1. The sites included within the assessment have been selected by Walsall Council. Accordingly we have been provided with a 'site information sheet' for each of the housing and employment site which includes a red line boundary and associated information including size, ownership and site characteristics. We have relied on the information provided to us and cannot be held responsible for any inaccuracies in the data. These site information sheets for the housing and employment sites are included within Appendices 2 and 3, respectively.

2.2. The assessment of each site was carried out by preliminary desk based researches, limited to using publicly available information, in conjunction with our in-house archives including geological maps and memoirs. A list of the sources of information is included in Appendix 1.

2.3. From the review of the available information the historical, geological, mining and environmental setting of the site has been identified and a pro forma for each individual site has been produced summarising the findings. A copy of each pro forma for the housing and employment sites are included as Appendix 2 and Appendix 3, respectively and succeed their relative site information sheet.

2.4. No site walkovers or services searches were undertaken as part of this work.

2.5. The historical land use of each site was investigated by reference to a selection of historical maps and historical plans publically available on the internet. The information available provides an indication of some of the previous land uses for the site but does not guarantee a full site history.

2.6. The geological setting for the site has been assessed by reference to published geological sheets, on line geological mapping and borehole logs where available, were viewed on the British Geological Survey website. It should be noted that on each pro forma made ground has only been recorded if it has been documented on the

published information. Given that the majority of the sites have had some previous development/ use it is considered that made ground materials of varying volumes and nature will be present at each site.

2.7. The mining history of each site has been assessed by reference to published geological plans, and by reference to the Coal Authority interactive map and the Walsall Council interactive planning mapping on the internet. This information provides some detail of the recorded mining history of the site however, further researches e.g. a Coal Authority Mining Report will be required to determine details of the known mine workings present and treatment, if any, carried out.

2.8. Reference to the Environment Agency website has been used to assess the general environmental setting of the site.

2.9. Based on desk based researches for the site we have provided an indication of the potential development constraints relating to the former mining and industrial heritage of the site. In addition, where possible, we have provided an indication of the likely site investigation, remediation and reclamation works that may be required prior to the commencement of any redevelopment of the site. Without having specific proposals for redevelopment, it is not possible to provide actual costs. Therefore we have provided a range of possible costs to address the potential constraints identified based on our experience of remediation and reclamation of similar sites in the Black Country. However it should be noted that actual constraints and consequent remediation / reclamation costs would need to be revised following the intrusive investigation works and therefore cost estimates are provided for comparison purposes only between sites.

2.10. The rationale behind the potential costs is provided for the employment and housing sites are included in Table 1 and Table 2 enclosed. As stated above it is stressed that these costs are provided for cost comparison between sites only. The actual costs for the remediation and reclamation required on a site specific basis can only be determined following intrusive site investigation works across each site to confirm the actual ground conditions present.

2.11. As the levels of protection required for end-users in a housing scenario is greater than in an employment setting, the two tables are based on the different proposed land uses, to reflect the difference in the frequency of testing and potential remedial works required.

2.12. In each case an assumption has been made that there has been no previous intrusive investigations carried out at the sites, unless specified otherwise.

2.13. For relative costing purposes, we have assumed that a typical housing development would include 40 dwellings per hectare and each house footprint would be approximately 80 $m^2$.

| Table 1 - Costing Rationale for Waste / Employment Sites | | | |
|---|---|---|---|
| **Item** | **Rationale** | **Cost Allowances** | **Cost Range Per Hectare (unless specified otherwise)** |
| Site Investigation | Based on say 50m grid with centres across proposed development site. Say 12 investigation points per hectare – 7 trial pits per day plus 5 light percussion boreholes per day with no access constraints. If coring required through concrete allow an additional cost of £100 per day (and potentially additional day for larger sites).<br><br>Cable percussion boreholes could also potentially be required dependent on the underlying geology and the findings of detailed desk based researches. | 1 day trial pitting @ £800 / day<br>1 day light percussion @ £1,000 per day<br>Cable Percussive Boreholes say £1000 per borehole (includes mobilisation) | Generally Up to £20,000 per hectare Variable – Site Dependent |
| | Gas and Groundwater installations to be undertaken during LP works. | Gas and Groundwater installations, say 5 to 5m total £600 per hectare | |
| | If site is within Coal Measures and/or within a Limestone Consideration Zone, allow say three rotary openholes to say 30m across site (dependent on geological setting). Need to increase frequency of rotary boreholes if different bedrock geology is identified beneath site in geological mapping i.e. faulting or change in strata. If cored boreholes are required, rotary costs will increase. | Three rotary openholes to 30m @ £3,500<br>Three cored boreholes to 30m @ £12,000 (instead of openholes) | |
| | Assuming past contaminative development, chemical testing of soils to include say 15 to 20 samples per hectare for commonly occurring contaminants including metals, metalloids, PAH, asbestos and banded TPH. Also include say 5 to 10 samples per hectare for TPH-CWG if hydrocarbons present. | Chemical testing of soils say £1,750 to £2,500 | |
| | Water sampling (if required following soils assessment) to include water sampling and chemical testing of say 5 boreholes per hectare. | Groundwater sampling and chemical testing say £1,000 | |
| Analysis of SI Results and Reporting | Production of report to include human health risk assessment based on current guidance, foundation assessment and outline remediation strategy | - | £5,000 to £10,000 per site |
| Mine Shaft / Adit Search | Probe drilling on 1m grid within 10m radius of shaft. Additional allowances may be required for adits. | Say £5,000 per mine shaft | Site Dependent |
| Mine Shaft Treatment | Drill and pressure grout and cap, if required | Say £10,000 per mine shaft | Site Dependent |
| Drilling and Grouting | Drilling and grouting with low to high grout uptake £20 - £40 per $m^2$ build area<br>Drilling and grouting of workings within the Thick Coal Seam with likely high grout uptake £40 - £50 per $m^2$ build area | - | Site Dependent |
| Drilling and Grouting Limestone Workings | Proof drilling and grouting of 'treated' limestone workings say £30 - £40 per $m^2$<br><br>Drilling and grouting of 'untreated' limestone workings say £40- £50per $m^3$ (based on assumption of 80% extraction, 6m height void) | - | £300,000 - £400,000 per hectare<br>£1,920 000 - £2,400 000 per hectare |
| | To include gas membrane and vents within structure (low gas concentrations) | Say £5 per $m^2$ | Dependent on Proposals |

| Table 1 - Costing Rationale for Waste / Employment Sites | | | |
|---|---|---|---|
| **Item** | **Rationale** | **Cost Allowances** | **Cost Range Per Hectare (unless specified otherwise)** |
| Ground Gas Protection Measures | | | |
| | To include gas membrane and vents within structure plus independent verification of installation (high gas concentrations) | Say £8 - £10m$^2$ | Dependent on Proposals |
| Piling | Requirement for deep foundations following ground conditions assessment | - | Dependent as Proposals |
| Demolition | Asbestos Survey | - | Contractor to Cost |
| | Demolition works | - | Contractor to Cost |
| Grubbing Out | If not part of demolition works, clear top 2m of obstructions and backfill (non-engineered) | - | Say £10,000 per hectare |
| Removal of Contaminated Soils | If off-site disposal required – dependent on whether materials are classified as active wastes and densities. To include landfill tax (£80/ tonne) plus cost of transportation. | Say £100 to £200 per m$^3$ | Site Dependent |
| Provision of Clean Cover for Landscaped Areas | Based on provision of say 200mm of clean cover for say 10% of area to include soft landscaped areas @ £20/m$^3$ | Say 200m$^3$ per hectare | Say £4,000 per hectare |
| Groundwater Risk Assessment | If required following soils assessment. To include level 2 groundwater risk assessment, production of remediation strategy and liaison with regulators. | - | £7,500 per site |
| Groundwater Clean-Up | Groundwater clean-up variable. Highly dependent on type and levels on contamination as well aquifer designation and adjacent receptors.<br>$^+$Higher risk/cost if site is over a principal aquifer or within a groundwater protection zone | - | Unable to cost at this time – dependent on SI findings$^+$ |

**NOTE: Costings for comparison purposes only**

| Table 2 - Costing Rationale for Housing Sites | | | |
|---|---|---|---|
| **Item** | **Rationale** | **Cost Allowances** | **Cost Range Per Hectare (unless specified otherwise)** |
| Site Investigation | Based on say 25m grid across proposed development site. Say 14 investigation points per hectare – 8 trial pits and 6 light percussion boreholes per day with no access constraints. If coring required through concrete allow an additional cost of £100 per day (and potentially additional day for larger sites)<br><br>Cable percussion boreholes could also potentially be required dependent on the underlying geology and the findings of detailed desk based researches. | 1 day trial pitting @ £800 / day<br>1 day light percussion @ £1,000 / day<br>Cable Percussive Boreholes say £1000 per borehole (includes mobilisation) | Generally Up to £25,000 per hectare Variable -Site Dependent |
| | Gas and Groundwater installations to be undertaken during LP works. | Gas and Groundwater installations, say 5 to 5m total £600 | |
| | If site is within Coal Measures and/or within a Limestone Consideration Zone, allow say three rotary openholes to say 30m across site (dependent on geological setting). Need to increase frequency of rotary boreholes if different bedrock geology is identified beneath site in geological mapping i.e. faulting or change in strata. If cored boreholes are required, rotary costs will increase. | Three rotary openholes to 30m @ £3,500<br>Three cored boreholes to 30m @ £12,000 (instead of openholes) | |
| | Assuming past contaminative development, chemical testing of soils to include say 20 to 25 samples per hectare for commonly occurring contaminants including metals, metalloids, PAH, asbestos and banded TPH. Also include say 5 to 10 samples per hectare for TPH-CWG if hydrocarbons present. | Chemical testing of soils say £2,250 to £3,000 | |
| | Water sampling (if required following soils assessment) to include water sampling and chemical testing of say 5 boreholes per hectare. | Groundwater sampling and chemical testing say £1,000 | |
| Analysis of SI Results and Reporting | Production of report to include human health risk assessment based on current guidance, foundation assessment and outline remediation strategy | - | £5,000 to £10,000 per site |
| Mine Shaft Search | Probe drilling on 1m grid within 10m radius of shaft | Say £5,000 per mine shaft | Variable – Site Dependent |
| Mine Shaft Treatment | Drill and pressure grout and cap, if required | Say £10,000 per mine shaft | Variable – Site Dependent |
| Drilling and Grouting | Drilling and grouting with low to high grout uptake £20 - £40 per $m^2$ build area<br>Drilling and grouting of workings within the Thick Coal Seam with likely high grout uptake £40 - £50 per $m^2$ build area | - | Site Dependent |
| Drilling and Grouting Limestone Workings | Proof drilling and grouting of 'treated' limestone workings say £30 - £40 per $m^2$<br><br>Drilling and grouting of 'untreated' limestone workings say £40- £50per $m^3$ (based on assumption of 80% extraction, 6m height void) | - | £300,000 - £400,000 per hectare<br>£1,920 000 - £2,400 000 per hectare |
| | To include gas membrane and vents on all plots at say £5 per $m^2$<br>(Amber 1 equivalent) | Say £400 per plot | Say £16,000 per hectare |

| Table 2 - Costing Rationale for Housing Sites | | | |
|---|---|---|---|
| **Item** | **Rationale** | **Cost Allowances** | **Cost Range Per Hectare (unless specified otherwise)** |
| Ground Gas Protection Measures | | | |
| | To include gas membrane and vents on all plots at say £5 per $m^2$ plus independent verification of installation based on 'Amber 2' protection measures based on say £8 - £10 per $m^2$ of building footprint | Say £800 per plot | Say £32,000 per hectare |
| Piling | Based on requirement for deep foundations following ground conditions assessment say 8m – 10m precast concrete pile (extra over from traditional foundations) | Say £6000 per plot | Say £240,000 per hectare |
| Demolition | Asbestos Survey | - | Contractor to Cost |
| | Demolition works | - | Contractor to Cost |
| Grubbing Out | If not part of demolition works, clear top 2m of obstructions and backfill (non engineered) | Includes contractor costs and equipment hire | Say £10,000 per hectare |
| Provision of Clean Cover for Garden and Landscaped Areas | Based on provision of say 600mm of clean cover for say 40% of area to include all garden and soft landscaped areas @ £20/$m^3$ | - | £48,000 per hectare |
| Removal of Contaminated Soils | If off-site disposal required – dependent on whether materials are classified as hazardous wastes. To include landfill tax (say £80 per tonne) plus cost of transportation. | Based on a cost of say £100 to £200 per $m^3$ | Site Dependent |
| Groundwater Risk Assessment | If required following soils assessment. To include level 2 groundwater risk assessment, production of remediation strategy and liaison with regulators. | - | £7,500 per site |
| Groundwater Clean-Up | Groundwater clean-up variable. Highly dependent on type and levels on contamination as well aquifer designation and adjacent receptors.<br>[+]Higher risk/cost if site is over a principal aquifer or within a groundwater protection zone | - | Unable to cost at this time – dependent on SI findings[+] |

**NOTE: Costings for comparison purposes only**

Assumptions:

- Typical housing development based on average of 40 dwellings per hectare
- Each house footprint equivalent to approximately 80 $m^2$

## 3. SUMMARY

3.1. Pro-forma's have been completed for each housing and employment site and are included in Appendix 2 and Appendix 3 respectively.

3.2. From the assessment of the each of the sites it is concluded that all of the sites are located on brownfield sites. It is probable that made ground materials are present within each of the site areas in variable amounts. Therefore there is potential risk of soil and / or groundwater contamination, possible issues with instability or lack of geotechnical strength and the potential presence of ground gas associated with the made ground materials present.

3.3. The preliminary assessment for each site has identified that the geological, mining and historical settings across Walsall is complex and widely variable. The assessment provides an indication of the geological, mining, historical and environmental setting of each individual site and provides an indication of the potential constraints that may be encountered during the redevelopment of the sites. Where possible an indication of the potential costs of the reclamation and remediation that would be required for redevelopment has been provided. Given the widely variable ground conditions indicated the costs that have been provided can only be used as an indication of the potential costs involved for the remediation and reclamation of the sites. The actual remediation and reclamation required at each specific site and the associated costs should be confirmed following more detailed researches and further site investigation and assessment.

**APPENDICES**

**APPENDIX 1**

**List of Information Sources**

# Sources of Information

- Geological Plans 1:10,000 scale SJ90SE, SO99NE, SP09NE, SP09NW, SK00SE, SK00SW and associated memoirs

- Geological Plan 1:50,000 Sheet 154

- Ordnance survey 1:10,000 maps (SJ90SE, SO99NE, SP09NE, SP09NW, SK00SE, SK00SW)

- Environment Agency website including aquifer designations, landfill sites, pollution incidents, source protection zones, flooding - http://maps.environment-agency.gov.uk

- British Geological Survey interactive mapping and online borehole records http://mapapps.bgs.ac.uk/geologyofbritain

- The Coal Authority interactive mapping viewer - http://mapapps2.bgs.ac.uk/coalauthority/home.html

- National Library of Scotland online mapping - Staffs LVII SE, LVII SW, Staffs LXIII NE, Staffs LXIII NW, Staffs LXIII SE, Staffs LXIII SW (1842 – 1952) http://maps.nls.uk/geo/find/#zoom=5&lat=55.42267&lon=-3&layers=7

- Bing maps – aerial mapping - http://www.bing.com/maps

- Grid Reference Finder website - http://www.gridreferencefinder.com

- Walsall Council - Planning Interactive Map - Limestone consideration Zones - https://stratus.pbondemand.eu/connect/walsall/?mapcfg=Limestone

**APPENDIX 2**

**Site Information Sheets and Detailed Pro-Formas for Housing Sites**

Summary of Potential Industrial and Mining Legacy Issues
Housing Sites 1A & 1B

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.78 hectares – Site 1A<br>1.75 hectares – Site 1B<br>Combined Site – 2.53 hectares | | | |
| Historic Uses: | • Land associated with former Colliery<br>• 'Old' Shafts<br>• Spoil mounds<br>• Spring Cottage<br>• School<br>• Scrapyard | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | • Pennine Lower Coal Measures – Sandstone<br>• Pennine Lower Coal Measures – Mudstone, siltstone and sandstone | | |
| | Outcrops: | New Mine Coal<br>Possibly Vanderbeckei (Stinking) Marine Band and Stinking Coal in SE corner | | |
| | Made ground: | Present in NE | | |
| | Faults: | Two within site boundary | | |
| BGS Borehole Records: | None on site. Nearby logs indicate New Mine Coal bands between 34.7m and 39m – some broken with poor flush returns. Nearby shaft record indicates nine coal seams to a depth of approx. 88m bgl (no seam thickness provided).<br>Deep made ground – up to 4.5m recorded to north of site. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | One – no treatment details |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | Yes (accepted household waste 1948 – 1983) | | |
| | Within 250m: | One –Sewage Works (industrial and liquids/sludge, last accepted waste 1983). | | |
| Pollution Incidents on Site: | None | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | Flood Zone 2 and 3 recorded in NE | | | |
| Additional Notes: | Former scrapyard - 'good' compliance rating | | | |

<u>Possible Constraints Relating to Past Mining and Industrial Heritage</u>

- Made ground recorded on geological mapping (off-site boreholes indicate deep made ground)
- Complex geology - faulting
- Ground gases (landfill, made ground)

Summary of Potential Industrial and Mining Legacy Issues
Housing Sites 1A & 1B

- Shallow coal mining issues
- Recorded mine shaft, no treatment details
- Possible unrecorded mineshafts
- Soil contamination – landfill, colliery spoil, scrapyard
- Shallow groundwater – within area known to flood
- Groundwater contamination
- Oversized obstructions within fill area
- Presence of highwall associated with landfill

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £23,000 to £47,000 |
| Highwall of landfill | Additional geotechnical investigation | £30,000 to £100,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £162,000 to £324,000 |
| Recorded mine shaft | Treatment to include drilling and pressure grouting and capping | £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | Say £10,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £82,000 |
| In-situ substructures | Grubbing out and backfilling | £26,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £122,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available. Assumes investigations would be undertaken across sites 1A and 1B as one phase of works otherwise additional mobilisation costs would be incurred.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 2

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.93 hectares | | | |
| Historic Uses: | • Land associated with former brick works and clay pit including spoil mounds | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Lower Coal Measures Formation | | |
| | Outcrops: | None within site boundary. Fireclay outcrop adjacent to east of site, New Mine west of site. | | |
| | Made ground: | None recorded | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | Relatively deep made ground recorded (1.8m to 2.3m).<br>Thin coal seams recorded to east of site at shallow depth. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓? | | Several mine shafts within vicinity, further research required to check precise locations |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | CA website indicates outcrop within site, geology mapping indicates outcrop to east of site |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | Two (one adjacent) | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Adjacent landfill accepted commercial and household wastes. Gas control measures included. | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 2

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified locally
- Ground gases (made ground and adjacent landfill)
- Shallow coal mining issues
- Recorded mine shafts within vicinity (may be on site), some without treatment details
- Possible unrecorded mineshafts
- Soil contamination – former spoil mounds
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £8,000 to £24,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £60,000 to £120,000 |
| Recorded mine shafts (further researches required to ascertain precise locations) | Treatment to include drilling and pressure grouting and capping | £15,000 per shaft |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated | £30,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ substructures | Grubbing out and backfilling | £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £45,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 3

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 5.11 hectares (7 parcels combined) | | | |
| Historic Uses: | • Residential<br>• Chapel<br>• Inn<br>• Unspecified Works Buildings<br>• Warehouses | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Alveley Member – Sandstone<br>Alveley Member- Mudstone and Sandstone<br>(earlier BGS mapping shows site underlain by 'Etruria Marl') | | |
| | Outcrops: | None recorded | | |
| | Made ground: | None recorded | | |
| | Faults: | Line of compression in Shallow Coal indicated through site | | |
| BGS Borehole Records: | Some boreholes associated with nearby bridge. Up to 1.5m of fill recorded including ash and coal. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | | ✓ | |
| | Surface Coal Resource Area | | ✓ | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | Four: (inert and non-hazardous landfill). | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | • Washout or barren ground in Yard indicated in north of site<br>• Line of compression recorded in shallow coal in centre of site<br>• Various landowners<br>• Canal adjacent to site<br>• Spot height of Shallow Coal given in south of site at approx. 460m bgl. | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 3

Possible Constraints Relating to Past Mining and Industrial Heritage

- Ground gases (former development suggests made ground likely)
- Evidence of deep coal seams
- Soil contamination – former works
- Groundwater contamination (and possible effects on adjacent canal)
- Sub-structures from previous land uses

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £50,000 to £65,000 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £165,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ substructures | Grubbing out and backfilling | Say £50,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| Demolition | Demolition works and asbestos survey | Contractor to Cost |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £245,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

There is no housing site 4

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 5

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 5A – 8.82 hectares<br>5B – 0.86 hectares<br>5C – 0.45 hectares | | | |
| Historic Uses: | • Leather works<br>• Copper refiners (tanks indicated)<br>• Former pond | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | None on site<br>Conjectured Yard outcrop to east of site | | |
| | Made ground: | None recorded | | |
| | Faults: | Possible fault indicated on BGS website (not on geological plan) | | |
| BGS Borehole Records: | None within site | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | Six entries, no treatment details |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | Area indicated adjacent to site |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | One | | |
| Pollution Incidents on Site: | None<br>Note: one incident adjacent to site (significant impact on land) | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Canal adjacent to site<br>Sewage Farm lies approx. 200m south east of site | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 5

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground – past development
- Ground gases (made ground and adjacent landfill)
- Shallow coal mining issues
- Recorded mine shafts, no treatment details
- Possible unrecorded mineshafts
- Soil contamination – former copper works and significant impact to land adjacent to site
- Groundwater contamination (and possible effects on adjacent canal)
- Building sub-structures / relic services likely

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £90,000 to £130,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £648,000 to £1,297,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £90,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £325,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| Demolition | Demolition and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £100,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £487,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 6

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 6.49 hectares | | | | |
| Current Land Use: | Vacant land | | | | |
| Historic Uses: | • Brick yard<br>• Iron foundries<br>• Chain and buckle works<br>• Canal basin<br>• Spoil mounds<br>• Allotments | | | | |
| Recorded Geology: | Superficial: | Glacial Till – north<br>Glaciofluvial deposits - south | | | |
| | Bedrock: | Pennine Lower Coal Measures<br>Pennine Middle Coal Measures – NE corner | | | |
| | Outcrops: | Bottom Coal within northern / central area<br>Heathen Coal within NE corner | | | |
| | Made ground: | Recorded in NW corner | | | |
| | Faults: | Southern Bentley Fault in NE corner – downthrown to north | | | |
| BGS Borehole Records: | None available within site boundary | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | | 2 within site boundary, multiple shafts near boundary |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | Recorded adjacent to site |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | ✓ | | |
| Opencast Mining: | Recorded in NE of site | | | | |
| Limestone Mining: | SE corner of site (approx. 0.3 hectares) within limestone consideration zone – Council records indicate mine is untreated.<br>Two shafts to south of site indicate limestone mining. | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | Two | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Canal lies adjacent to east of site<br>Concrete floor slabs to former structures remain in-situ | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 6

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground likely – former opencast operations locally indicate backfill
- Ground gases (former development, backfilled areas and nearby landfill)
- Shallow coal mining issues
- Within area impacted by (Limestone) Mine
- Recorded mine shafts (treatment indicated to those on site although others nearby have no treatment details)
- Possible unrecorded mineshafts
- Soil contamination – former works, former canal basin (backfilled)
- Groundwater contamination (and possible effects on adjacent canal)
- Oversized obstructions within fill area
- Former works floor slabs and sub-structures remain in-situ

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £35,000 to £50,000 |
| Further investigation in relation to limestone workings | Rotary borehole investigation | £12,000 to £25,000 |
| Treatment of Limestone workings | Bulk fill operations assumed if 0.3 hectares site mined and not treated - further investigation / researches required^ | Say £570,000 to £720,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £415,000 to £831,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping – further researches required to ascertain if shafts near boundary are within influencing distance | £30,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes (assume deep made ground) | £210,000 |
| In-situ floor slabs and substructures | Breaking floor slab<br>Grubbing out and backfilling | £65,000 £100,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £320,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

^ Untreated limestone mines can have significant voids therefore costs could be prohibitive. Further works required to ascertain depth and lateral extent of voids.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 7

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 8.08Ha | | | | |
| Historic Uses: | • Old pits/ponds<br>• Old Shaft in north of site<br>• Brick works<br>• Pottery Works<br>• Works | | | | |
| Recorded Geology: | Superficial: | Glacial lacustrine deposits and glacial till | | | |
| | Bedrock: | Pennine Lower Coal Measures<br>Pennine Middle Coal Measures – eastern and western edges | | | |
| | Outcrops: | Heathen Coal and Stinking Coal in the NE corner<br>Stinking Coal within NE corner | | | |
| | Made ground: | Yes – northern and southern sections of the site (loam and sand worked) | | | |
| | Faults: | Fault in centre of site trending east-west – downthrown to north | | | |
| BGS Borehole Records: | Numerous borehole logs within the site, typically 10-30m deep. Selected deeper holes reviewed. Up to 13.1m of made ground comprising foundry sand, clinker, slag and pottery moulds. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | | 1 on site (no treatment details), several shafts outside site near site boundary |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | Recorded adjacent to site |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | ✓ | | |
| Opencast Mining: | None recorded within area | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | | |
| Landfill Sites: | On Site: | One | | | |
| | Within 250m: | Four | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | Flood zone 2 and 3 shown in SW of site | | | | |
| Additional Notes: | Canal lies adjacent to west of site | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 7

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground likely – former opencast operations locally indicate backfill
- Ground gases (former development, backfilled areas and on site historical landfill)
- Shallow coal mining issues
- Recorded mine shaft on site (no treatment details)
- Possible unrecorded mineshafts
- Soil contamination – former works, former clay pits/ ponds (backfilled), historical landfill
- Groundwater contamination (and possible effects on adjacent canal)
- Possible buried obstructions - Former works floor slabs and sub-structures
- Made ground and buried obstructions - Current landuse

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £78,700 – £105,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £518,000 – £1,035 000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £258,500 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £80,000 |
| Soil contamination | Human health risk assessment | £10,000 |
| | Provision of clean cover for garden and landscaped areas | £390,000 |
| | Possible removal of contaminated soils | Quantity Unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 8

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 10.04ha | | | |
| Current Land Use: | Open scrubland | | | |
| Historic Uses: | • Tramway and wharf in northern section of the southern parcel of land<br>• Old shafts (two) in southern section of the southern parcel of land<br>• Residential housing from 1930's until around 2005 | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Lower Coal Measures with Yard Rock (sandstone) present in the south eastern corner of the site | | |
| | Outcrops: | Yard Coal conjectured to outcrop within the central section of the site | | |
| | Made ground: | None recorded | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | None within site or adjacent to the site | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | Two entries, no treatment details |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | Area indicates adjacent to site |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | None recorded | | |
| Pollution Incidents on Site: | None | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Canal adjacent to site | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 8

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground – past development
- Ground gases (made ground)
- Shallow coal mining issues
- Recorded mine shafts, no treatment details
- Possible unrecorded mineshafts
- Soil contamination (made ground)
- Groundwater contamination (and possible effects on adjacent canal)
- Building sub-structures / relic services likely

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £44,000 to £60,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £643 000 – £1,286,000 |
| Recorded mine shafts | Treatment to include locating, drilling and pressure grouting and capping | £30,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £160,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ substructures | Grubbing out and backfilling dependent on finding during SI | £50,000 to £100,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible provision of clean cover for landscape and garden areas dependent on findings from site investigation. Based on 600mm of clean cover for say 40% site area to include gardens and landscaped areas. SI findings to confirm requirements. | £480,000 |
| | Possible removal of contaminated soils | Quantity unknown |
| Groundwater contamination | If deemed necessary following findings from SI works - Groundwater risk assessment | £7,500 |
| | If deemed necessary following findings from SI works - Groundwater clean-up | Dependent of SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 9

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 4.06 hectares | | | | |
| Historic Uses: | • 'Old shafts' (N&W)<br>• Spoil heap (W)<br>• Iron foundry (SW)<br>• Residential housing (S & SW)<br>• Iron & Brass foundry | | | | |
| Recorded Geology: | Superficial: | Glacial Till | | | |
| | Bedrock: | Thick Coal | | | |
| | Outcrops: | Thick Coal (recorded to have been worked at surface within vicinity) | | | |
| | Made ground: | Recorded across site | | | |
| | Faults: | One unnamed within south of site<br>One unnamed to N of site, downthrown to north | | | |
| BGS Borehole Records: | Indicate deep made ground across site (7m in SW to 12.35m in N).<br>Broken Coal, voids and possible workings recorded at various depths between 8m to 20m. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | | Multiple – nine entries within site, 2 treated? Many within vicinity. |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | None recorded | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | One | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Surrounding contaminative land uses include garage metal plating works | | | | |

<u>Possible Constraints Relating to Past Mining and Industrial Heritage</u>

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 9

- Deep made ground identified
- Ground gases (made ground)
- Shallow coal mining issues - broken coal, voids and 'possible workings' identified
- Recorded mine shafts, some without treatment details
- Possible unrecorded mineshafts
- Soil contamination – former metal works, colliery spoil
- Groundwater contamination
- Oversized obstructions within fill area

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £36,000 to £52,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI). Thick Coal recorded locally. | £520,000 to £650,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £135,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £130,000 |
| In-situ substructures | Grubbing out and backfilling | £41,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £195,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 10

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 3.56Ha | | | |
| Historic Uses: | • **Gas works**<br>• Fields<br>• Residential buildings<br>• Market stall area | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits | | |
| | Bedrock: | Etruria Formation | | |
| | Outcrops: | None | | |
| | Made ground: | None Recorded | | |
| | Faults: | A north south trending fault runs through central section of the site, down throwing to the east. | | |
| BGS Borehole Records: | No boreholes within the site. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | | ✓ | |
| | Surface Coal Resource Area | | ✓ | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded within immediate site area. | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | 1 Landfill – Received inert, industrial and commercial waste. | | |
| Pollution Incidents on Site: | None recorded on site or near to the site | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | - | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 10

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site.
- Soil contamination – from made ground particularly associated with the former gas works.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, gas monitoring, chemical testing (soils and groundwater). | £30,500 – £33,500 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £56,000 – £112,000 |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £30,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £10,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas | £144,000 if required |
| | Probable treatment/ removal of contaminated soils **(Gas Works)** | Quantity Unknown **Possible HIGH risk/cost** |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up **(Former Gas Works)** | Dependent on SI findings **Possible HIGH risk/cost** |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 11

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.76 hectares | | | |
| Current Land Use: | Vacant | | | |
| Historic Uses: | • Part of former Colliery including mineral rail tracks<br>• Former pond (W) and other localised depressions | | | |
| Recorded Geology: | Superficial: | Glaciofluvial Deposits<br>Lies within Proto-Tame Channel | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | Possibly New Mine and Fireclay Coal in NW corner<br>Bottom Coal to NE of site | | |
| | Made ground: | Made ground recorded across site except NW corner<br>Infilled lake noted in far west of site | | |
| | Faults: | Fault within central region of site (E/W) | | |
| BGS Borehole Records: | Numerous logs – selected deeper logs reviewed. Records indicate deep made ground (up to 6.5m of fill including concrete, clinker, wood, slag, asbestos and coal).<br>Coal band indicated 31.8 to 32.5m.<br>Shaft records record coal 2.74m thick at 18.29m and 2.74m thick at 21.03m bgl. | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | Precise locations difficult to determine. None appear to be within site boundary but many within vicinity – further research required. |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | ✓ | | |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | None recorded | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | One (approx. 100m NW) | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | Partly within Flood Zone 2 | | | | |
| Additional Notes: | Several potential contaminative land uses noted within vicinity of site: former brickworks adjacent to east of site, former canal to north of site with basin (infilled), sewage farm to SE, sub-station adjacent to east of site (still present).<br>'Old Shaft' indicated to SW of site.<br>River Tame lies approx. 80m south of site | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 11

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified
- Ground gases (made ground)
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – made ground (including suspected asbestos sheeting), adjacent contaminative land uses e.g. sub-station
- Shallow groundwater – within area known to flood
- Groundwater contamination (and possible effects on nearby river)
- Oversized obstructions within fill area (rubble recorded)

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £13,000 to £24,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £49,000 to £98,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £25,000 |
| In-situ substructures | Grubbing out and backfilling | £5,000 to £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £37,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 12

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 2.7Ha | | | | |
| Historic Uses: | • Tube works<br>• Brick works<br>• Backfilled pits | | | | |
| Recorded Geology: | Superficial: | Glacial Fluvial Deposits | | | |
| | Bedrock: | Pennine Lower Coal Measures | | | |
| | Outcrops: | Mealy Grey Coal outcrops in the northern section of the site, and the Blue Flats Ironstone outcrops along the south eastern boundary of the site. | | | |
| | Made ground: | Worked ground and made ground recorded across the majority of the site area. | | | |
| | Faults: | Fault trending east/west down throwing to the north is located approx. 300m to the north of the site. | | | |
| BGS Borehole Records: | A BGS borehole within the site, records 3.1m of made ground comprising ash bricks and fill, underlain by clays and interbedded shale, mudstone and sandstone. Borehole/shaft records immediately to the north of the site, record the Lower Wenlock Limestone base at 137.2m in the drawing shaft, the base of the Upper Wenlock Limestone at 82.3m in No.2 shaft and the top of the Lower Wenlock Limestone at 63.6m in No.3 shaft. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | Two shafts recorded adjacent to the northern boundary of the site, to 82.3m and 137.2m depth. |
| | Development High Risk Area | | ✓ | | Just within area |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | ✓ | | Mealy Grey Coal in the site and the Blue Flats Ironstone outcrops along south eastern boundary of the site. |
| Opencast Mining: | None recorded within area | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is within a Limestone consideration zone and the limestone mine is recorded as untreated. | | | | |
| Landfill Sites: | On Site: | None Recorded | | | |
| | Within 250m: | None Recorded | | | |
| Pollution Incidents on Site: | None recorded on site. | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Walsall Canal directly to the west if the site | | | | |

<u>Possible Constraints Relating to Past Mining and Industrial Heritage</u>

- Made ground likely – from backfilled pits
- Ground gases from made ground on site.
- Potential shallow coal mining issues

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 12

- Untreated limestone workings recorded beneath the site
- Two recorded mineshafts directly adjacent to the northern boundary of the site
- Possible unrecorded mineshafts
- Soil contamination – from made ground.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £34,650- £62,400 |
| Treatment of recorded limestone workings | Drill and grout investigation beneath site (dependent on findings of initial SI). Initial estimate cost based on assumption of 80% extraction, 6m height void over say two thirds of site. Cost to include treatment of nominal coal seams, if present. **Confirmation of extent of workings present from SI and additional desk based researches essential to determine actual likely costs**. | £3,456,000 – £4,320,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) over say remaining one third of site outside of limestone consideration area. | £58,000 to £116,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Recorded mine shaft | Treatment to include identification probe drilling, drilling, pressure grouting and capping | £30,000 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £86,500 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £20,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £7,500 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £129, 500 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 13

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 1.87Ha | | | |
| Historic Uses: | • Numerous former buildings, use unknown<br>• Former Bakery | | | |
| Recorded Geology: | Superficial: | Glacial Fluvial and Glacial Till Deposits | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | Conjectured outcrop of the Mealy Grey Coal within the central section of the site | | |
| | Made ground: | None Recorded | | |
| | Faults: | None near to site | | |
| BGS Borehole Records: | No boreholes within the site. Nearest borehole approx. 400m to north of the site records recording approx. 9m superficial sands and gravel and boulder clay overlying interbedded siltstones, mudstones, sandstones and ironstone. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | ✓ | | The western section of the site |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | The western section of the site |
| | Coal Outcrops | ✓ | | Conjectured outcrop of the Mealy Grey Coal within the central section of the site |
| Opencast Mining: | None recorded within area | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | None Recorded | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | - | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 13

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site.
- Potential shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – from made ground. Use of former buildings prior to former bakery unknown.
- Possible groundwater contamination
- Demolition and site clearance required
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £20,000 – £30,000 |
| Possible workings within coal seams/ironstone | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case - deeper drilling with high grout uptake | £120,000 – £240,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £61,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £20,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £10,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £91,000 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 14

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 1.49Ha | | | | |
| Historic Uses: | • Residential housing along the southern boundary of the site. | | | | |
| Recorded Geology: | Superficial: | River Terrace Deposits | | | |
| | Bedrock: | Pennine Lower Coal Measures | | | |
| | Outcrops: | Conjectured outcrop of the Bottom Coal approximately 50m to the west of the site. | | | |
| | Made ground: | Worked ground recorded in the southern section of the site. Recorded to be reworked sands and gravels | | | |
| | Faults: | Fault which trends east/west down throwing to the north is located in the southern section of the site. | | | |
| BGS Borehole Records: | No boreholes within the site. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | | ✓ | The Bottom Coal seam recorded to outcrop to the west of the site |
| Opencast Mining: | None recorded within area. Sand and gravel pits recorded surrounding the site area, and in part within the southern section of the site. | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | | |
| Landfill Sites: | On Site: | None Recorded | | | |
| | Within 250m: | Two landfills within 250m of the site boundary. | | | |
| Pollution Incidents on Site: | None recorded on site. | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | - | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 14

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Possible former pit in southern part of the site.
- Ground gases from made ground on site. Also two landfills within 250m of site boundary
- Potential shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – from made ground.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £18,500 – £31,500 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case | £96,000 – £191,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Recorded Mine shaft | Treatment to include identification probe drilling, drilling, pressure grouting and capping | £15,000 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £48,000 |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £15,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £7,500 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £72,000 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 15

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 1.85ha | | | |
| Historic Uses: | • Former pits<br>• Former single railway through the central section of the site<br>• Former school | | | |
| Recorded Geology: | Superficial: | None recorded | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | Conjectured outcrop of the Old Park Coal in the south eastern corner of the site. Wryley Bottom conjectured to outcrop approx. 100m to the west of the site. | | |
| | Made ground: | Across site – Made ground – mainly colliery spoil | | |
| | Faults: | East west trending fault to the south of the site down throwing to the south. | | |
| BGS Borehole Records: | No boreholes within the site or the immediate area. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | Numerous shafts near to the site |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | Directly adjacent to the south of the site. |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | Conjectured outcrop of the Old Park Coal in the south eastern corner of the site. |
| Opencast Mining: | None recorded on site but possible due to surface mining recorded to the south of the site | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | None Recorded | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Canal adjacent to the site to the east. | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 15

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground possible – from infilling of former pits, extent unknown
- Ground gases from made ground on site
- Potential shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – from made ground
- Possible groundwater contamination
- Possible buried obstructions - Former school floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £17,700 – £28,500 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case - deeper drilling with high grout uptake | £119,000 –£237,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £59,200 |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £20,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £7,500 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £88,800 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 16

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.31ha | | | |
| Historic Uses: | • Works buildings | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | Conjectured outcrop of the Yard Coal 100m to the west of the site. Bottom Coal is conjectured to outcrop 50m to the east of the site. | | |
| | Made ground: | None Recorded | | |
| | Faults: | East west trending fault to the south of the site down throwing to the south. | | |
| BGS Borehole Records: | No boreholes within the site or the immediate area. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | 2 shafts approx. 150m to the north and south of the site. |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | | ✓ | Yard Coal conjectured to outcrop 100m to the west of the site boundary and the Bottom Coal conjectured to outcrop 50m to the east of the site. |
| Opencast Mining: | None recorded within area | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | None Recorded | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Canal adjacent to the site to the west and a railway to the south | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 16

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site.
- Potential shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – from made ground.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £5,750 – £14,500 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case - deeper drilling with high grout uptake | £20,000 – £40,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £10,500 |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £5,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £16,000 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 17

<table>
<tr><th>Item</th><th colspan="5">Comments</th></tr>
<tr><td>Site Size:</td><td colspan="5">1.35 hectares</td></tr>
<tr><td>Historic Uses:</td><td colspan="5">• ‘Old shafts’<br>• Iron foundry<br>• Multiple works and foundries</td></tr>
<tr><td rowspan="5">Recorded Geology:</td><td>Superficial:</td><td colspan="4">Mainly Glaciofluvial Deposits<br>Alluvium in east and Glacial Till in north</td></tr>
<tr><td>Bedrock:</td><td colspan="4">Pennine Lower Coal Measures - Sandstone</td></tr>
<tr><td>Outcrops:</td><td colspan="4">None recorded</td></tr>
<tr><td>Made ground:</td><td colspan="4">None recorded within site boundary</td></tr>
<tr><td>Faults:</td><td colspan="4">None recorded</td></tr>
<tr><td>BGS Borehole Records:</td><td colspan="5">Shaft record south of site indicates New Mine Coal 2.87m thick at 11.5m, Fireclay Coal 1.22m thick at 22.52m, Bottom Coal 2.19m thick at 34.62m and 1m thick at 45.6m.</td></tr>
<tr><td rowspan="9">Coal Mining:</td><td colspan="2">Item:</td><td>Yes</td><td>None Recorded</td><td>Comments</td></tr>
<tr><td colspan="2">Mine Entries</td><td>✓</td><td></td><td>Possibly one, no treatment details</td></tr>
<tr><td colspan="2">Development High Risk Area</td><td>✓</td><td></td><td></td></tr>
<tr><td colspan="2">Surface Coal Resource Area</td><td>✓</td><td></td><td></td></tr>
<tr><td colspan="2">Surface Mining</td><td></td><td>✓</td><td></td></tr>
<tr><td colspan="2">Past Shallow Coal Mine Workings</td><td>✓</td><td></td><td></td></tr>
<tr><td colspan="2">Probable Shallow Coal Mine Workings</td><td>✓</td><td></td><td></td></tr>
<tr><td colspan="2">Coal Outcrops</td><td></td><td>✓</td><td></td></tr>
<tr><td>Opencast Mining:</td><td colspan="5">None recorded</td></tr>
<tr><td>Limestone Mining:</td><td colspan="5">None recorded</td></tr>
<tr><td rowspan="2">Landfill Sites:</td><td>On Site:</td><td colspan="4">None recorded</td></tr>
<tr><td>Within 250m:</td><td colspan="4">One - accepted commercial and household waste. Includes gas control measures.</td></tr>
<tr><td>Pollution Incidents on Site:</td><td colspan="5">None recorded</td></tr>
<tr><td>Aquifer Designation (Superficial Deposits):</td><td colspan="5">Secondary A</td></tr>
<tr><td>Aquifer Designation (Bedrock):</td><td colspan="5">Secondary A</td></tr>
<tr><td>Source Protection Zones:</td><td colspan="5">None recorded</td></tr>
<tr><td>Flood Risk:</td><td colspan="5">None recorded</td></tr>
<tr><td>Additional Notes:</td><td colspan="5">Geological memoir includes shallow coal within two shafts (approx. 50m SW and 90m SE of site, respectively).<br>• New Mine (2 leaves) 2.5m thick at 10m<br>• Fireclay Coal 1.2m and 1.37m at 28.5m</td></tr>
</table>

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 17

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified locally
- Ground gases (made ground and nearby landfill)
- Shallow coal mining issues
- Recorded mine shaft, no treatment details
- Possible unrecorded mineshafts
- Soil contamination – former works
- Groundwater contamination
- Underground sub-structures – current and former development

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £15,000 to £26,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £87,000 to £173,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £44,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ substructures | Grubbing out and backfilling | £14,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £65,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

There is no housing site 18

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 19

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 1.57 hectares | | | |
| Historic Uses: | • Series of spoil mounds and depressions shown in historical plans | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Lower Coal Measures Formation | | |
| | Outcrops: | Fireclay Coal recorded to outcrop in south of site | | |
| | Made ground: | Recorded to overlie the majority of the site with the exception of NW corner | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | Borehole logs within the vicinity of the site indicate shallow coal (approx. 0.3m thick at 8m). Ironstone also recorded (approx. 10.2m to 10.35m). | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | Numerous shafts indicated, further researches required |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | ✓ | | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | One outcrop recorded |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | Two:<br>Landfill site 1- Accepted commercial and household wastes. Gas control measures included. Last received waste 1977.<br>Landfill Site 2 - operated between 1976 and 1977 and accepted inert, industrial, commercial, household and special wastes. Gas control measures included. | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Further researches required with regards to mine entries – unable to determine number of shafts from CA website, likely to be greater than 10 all appear to be untreated | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 19

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground identified on geological mapping
- Ground gases (made ground and nearby landfill)
- Shallow coal / ironstone mining issues
- Recorded mine shafts without treatment details
- Possible unrecorded mineshafts
- Soil contamination – former spoil mounds
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £15,000 to £30,000 |
| Possible workings within coal / ironstone seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £101,000 to £202,000 |
| Recorded mine shafts (further researches required to ascertain precise locations) | Treatment to include drilling and pressure grouting and capping | £15,000 per shaft Say £150,000+ |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Demolition and site clearance | One structure present, site generally clear of previous development | Contractor to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated | £60,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £89,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 20

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 1.18Ha | | | | |
| Historic Uses: | • Open Fields<br>• School | | | | |
| Recorded Geology: | Superficial: | None Recorded | | | |
| | Bedrock: | Pennine Lower Coal Measures | | | |
| | Outcrops: | None recorded on or near the site. | | | |
| | Made ground: | None Recorded | | | |
| | Faults: | None recorded within 500m of the site | | | |
| BGS Borehole Records: | No boreholes within the site. Nearest borehole approx. 20m to east of the site records approx 3.5m drift, Lower Coal Measures mudstones and siltstone to approx. 8.5m, Upper Wenlock Limestone at around 18.5m and Nodular beds at approx 34.50m | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | Nearest recorded shafts are shown approx.400m to south and east of the site. |
| | Development High Risk Area | | | ✓ | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | | ✓ | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded within area | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. A Limestone Mine consideration zone is shown 110m to the east of the site which is recorded as untreated. | | | | |
| Landfill Sites: | On Site: | None Recorded | | | |
| | Within 250m: | None (nearest landfill 360m NE of site) | | | |
| Pollution Incidents on Site: | None recorded on site. | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Old Ironstone workings shown on published geological map beneath the site. | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 20

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site.
- Potential shallow ironstone mining issues
- Possible unrecorded mineshafts
- Soil contamination – from made ground
- Possible groundwater contamination
- Possible buried obstructions - Former school floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, gas monitoring, chemical testing (soils and groundwater). | £9,500 – £10,400 |
| Possible workings within Ironstone | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case - deeper drilling with high grout uptake | £76,000 – £151,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £19,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £5,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £56,500 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 21

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 1.19Ha | | | |
| Historic Uses: | • Gravel Pit/Sand Pit<br>• A few small unnamed building in the south west corner<br>• A couple of wells shown in the north of the site. | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits (part of the site only) | | |
| | Bedrock: | Kidderminster Formation | | |
| | Outcrops: | N/A | | |
| | Made ground: | None Recorded | | |
| | Faults: | Fault approx. 450m to the west of the site. | | |
| BGS Borehole Records: | Exploratory Holes on site (TP's)- but confidential | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | | ✓ | |
| | Surface Coal Resource Area | | ✓ | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded within area | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | One to the north of the site (approx. 60m). Accepted inert, industrial and household waste. | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Principal | | | |
| Source Protection Zones: | Total Catchment - Zone 3 | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Canal adjacent to northern site boundary | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 21

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground likely – from former gravel pits, extent unknown
- Ground gases from made ground on site. Also landfill within 250m of site boundary
- Two wells recorded on site on historical plans.
- Soil contamination – from made ground backfilled pits, and current land use (storage of vehicles and industrial unit.
- Possible groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £8,500 – £11,500 |
| Wells on historical plans | Treatment to include identification probe drilling, drilling, pressure grouting and capping | £20,000 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £38,400 |
| Piling | Extra over cost to traditional foundations dependent on SI findings | £288,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Existing buildings | Demolition works and asbestos survey | Contractor to cost |
| Soil contamination | Human health risk assessment | £10,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £57,600 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | 7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 22

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.47Ha | | | |
| Historic Uses: | • Sand pit<br>• Old shaft directly to the west of the site.<br>• Pond in central section of site on western side<br>• Large unnamed rectangular building in south eastern section of site<br>• Two large buildings referred to as works in the central section of the site with a few smaller buildings in the northern section of the site | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | Conjectured outcrop of the Yard Coal directly to the east of the site. Bottom Coal (13ft 6in recorded thickness) thought to be approx present 50m beneath the site. | | |
| | Made ground: | None Recorded | | |
| | Faults: | East west trending fault to the south of the site down throwing to the south. | | |
| BGS Borehole Records: | No boreholes within the site. Nearest borehole approx. 100m to south of the site records approx 6.5m made ground overlying interbedded mudstone, siltstone, and coal. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | Shaft recorded adjacent to the western boundary of the site. 150ft to the Bottom Coal and 255ft to the Blue Flats. A shaft is also shown approx. 20m to the north and to the west of the site. |
| | Development High Risk Area | ✓ | | Just within area |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | Yard Coal conjectured to outcrop within the site boundary |
| Opencast Mining: | None recorded within area | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | One to the south of the site (approx. 70m) North Walsall Depot. No information on types of waste accepted. | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 22

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site. Also landfill within 250m of site boundary
- Potential shallow coal mining issues
- Recorded mineshaft directly adjacent to western boundary of the site
- Possible unrecorded mineshafts
- Soil contamination – from made ground. Use of former buildings prior to former public house unknown.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £7,500 – £17,200 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case - deeper drilling with high grout uptake | £30,000 –£60,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Recorded Mine shaft | Treatment to include identification probe drilling, drilling, pressure grouting and capping | £15,000 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £16,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £5,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £24,000 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 23

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 2 parcels of land (total = 1.1091 hectares)<br>SW – 0.8402 hectares<br>NE – 0.2689 hectares | | | |
| Historic Uses: | • Bowling green & tennis court<br>• Works in SW | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Lower Coal Measures – SW<br>Pennine Middle Coal Measures - NE | | |
| | Outcrops: | None recorded | | |
| | Made ground: | None recorded | | |
| | Faults: | Fault in Shallow Coal within central section (not part of development)<br>Surface position of Southern Bentley Fault shown within central section (not part of development) | | |
| BGS Borehole Records: | None available | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | Exact locations difficult to determine. Possibly 4 (3 of which treated). |
| | Development High Risk Area | ✓ | | (NE only) |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | ✓ | | (Far NE only) |
| | Probable Shallow Coal Mine Workings | ✓ | | (NE only) |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | None recorded | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Various land owners | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 23

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground from localised former development
- Partly developed - demolition and grubbing out required
- Ground gases (made ground)
- Shallow coal mining issues
- Recorded mine shafts within vicinity
- Possible unrecorded mineshafts
- Soil contamination – former works, **petrol station, garage**
- Groundwater contamination – former works, **petrol station, garage**
- Works within close proximity to adjacent residential properties

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £13,000 to £30,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £71,000 to £142,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping (assume 1 untreated) | £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £35,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £54,000 |
| | Possible removal of contaminated soils **(Higher risk associated with former garage and petrol station use)** | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up **(Higher risk associated with former garage and petrol station use)** | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 24

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.25Ha | | | |
| Historic Uses: | • Open fields<br>• Rectangular building shown on 1938 edition mapping – Unknown use<br>• Irregular shaped building shown from 1968 edition mapping – Unknown use | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | Yard Coal conjectured to outcrop 200m to the east of the site | | |
| | Made ground: | None Recorded | | |
| | Faults: | None Recorded | | |
| BGS Borehole Records: | No boreholes within the site, a few around site but confidential. | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | Shafts approx. 250m from the recorded to go down to bottom coal. |
| | Development High Risk Area | | ✓ | | Just within area |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | Recorded approx. 200m to northeast of site |
| | Probable Shallow Coal Mine Workings | | ✓ | | Just within area |
| | Coal Outcrops | | | ✓ | None recorded |
| Opencast Mining: | None recorded within area | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | | |
| Landfill Sites: | On Site: | None Recorded | | | |
| | Within 250m: | One to NE –types of waste accepted included commercial, household and liquids/sludge | | | |
| Pollution Incidents on Site: | None recorded on site. A significant incident recorded approx. 50m to NE of site in 2001. Impact to land recorded. Details of pollutant is specific waste materials. | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 24

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site. Also landfill within 250m of site boundary
- Potential shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – from made ground. Use of former buildings prior to former public house unknown.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures
- Made ground and buried obstructions including possible cellars - Former Public House

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £6,850 – £16,300 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case – deeper drilling with high grout uptake | £16,000 – £32,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £8,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ floor slabs and substructures | Grubbing out and backfilling (cellars likely) | £10,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas | £12,000 |
| | Possible removal of contaminated soils | Quantity Unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

There is no housing site 25

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 26

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | Total 0.9899 hectares comprising two sites<br>West: 0.6845 hectares East: 0.3054 hectares | | | |
| Historic Uses: | • Land associated with former clay pit – includes depressions, spoil mounds and possibly two water bodies<br>• West site former sports field | | | |
| Recorded Geology: | Superficial: | Glacio lacustrine Deposits | | |
| | Bedrock: | West site: Pennine Lower Coal Measures Formation (mudstone, siltstone and sandstone). Possibly Sandstone of the Pennine Lower Coal Measures in far west of site.<br>East site: Pennine Middle Coal Measures Formation. Possibly Pennine Lower Coal Measures Formation in south western corner of site. | | |
| | Outcrops: | Heathen Coal recorded to outcrop at western boundary of eastern site.<br>Vanderbeckei (Stinking) Marine Band and Stinking Coal recorded to outcrop at western boundary of western site. | | |
| | Made ground: | Recorded across site | | |
| | Faults: | Recorded approx. 10m north of western site, downthrown to north | | |
| BGS Borehole Records: | No borehole records within site boundary. One record indicated grouting 'to arrest spontaneous combustion in backfill to an old pit' which appears to include part of the western site area. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | One shaft indicated, no treatment details |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | One recorded –No details available. | | |
| | Within 250m: | Five. | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | BGS borehole records indicate grouting has taken place to 'arrest spontaneous combustion in backfill to an old pit' due to presence combustible materials and voids. Subsidence recorded adjacent to western site boundary (pub car park). Grouting taken place in NW of western site – possibility of further problems. Subsidence also recorded locally. Further researches and intrusive investigation likely to be required. | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 26

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified (clay pit / landfill)
- Ground gases (made ground and landfill within part of western site)
- Shallow coal mining issues
- Recorded mine shaft possibly within site (no treatment details)
- Possible unrecorded mineshafts
- Soil contamination – landfill, former spoil mounds
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £16,000 to £32,000 |
| Additional investigation of backfilled materials (dependent on initial findings) | Further site investigations likely to include rotary boreholes, cable percussion boreholes and chemical testing etc. Dependent on initial SI findings. | £10,000 to £25,000 |
| Highwall associated with former clay pits / landfill | Define highwall by rotary borehole investigation and / or possible trial trenching | £10,000 to £50,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £64,000 to £128,000 |
| Recorded mine shaft (further researches required to ascertain precise location) | Treatment to include drilling and pressure grouting and capping | £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground | £32,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £48,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Above costings assume works to be undertaken at both sites as one project – additional mobilisation costs would be incurred if investigated separately.**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 27

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 0.67Ha | | | | |
| Historic Uses: | • Farmland and associated farm buildings | | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits in western section of the site | | | |
| | Bedrock: | Coalbrookdale Formation | | | |
| | Outcrops: | No coal outcrops within area | | | |
| | Made ground: | None recorded within site area | | | |
| | Faults: | Fault trending east/west down throwing to the north is located approx. 500m to the north of the site. | | | |
| BGS Borehole Records: | No BGS borehole logs on or near the site | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | |
| | Development High Risk Area | | | ✓ | |
| | Surface Coal Resource Area | | | ✓ | To the west and north of the site |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | | ✓ | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded within area | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | | |
| Landfill Sites: | On Site: | None Recorded | | | |
| | Within 250m: | None Recorded | | | |
| Pollution Incidents on Site: | None recorded on site. | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive (where present) | | | | |
| Aquifer Designation (Bedrock): | Secondary B | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Limestone Pits to the north of the site. | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 27

Possible Constraints Relating to Past Mining and Industrial Heritage

- Some made ground likely to be present
- Ground gases from made ground on site.
- Soil contamination – from made ground.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, gas monitoring, chemical testing (soils and groundwater). | £6,500 - £8,000 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £11,500 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £5,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | Dependent on SI findings |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 28

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 0.6 hectares | | | | |
| Historic Uses: | • No development shown | | | | |
| Recorded Geology: | Superficial: | Glacial Till | | | |
| | Bedrock: | Pennine Middle Coal Measures | | | |
| | Outcrops: | Wyrley Bottom | | | |
| | Made ground: | None recorded | | | |
| | Faults: | None recorded within site, several within surrounding area | | | |
| BGS Borehole Records: | Shaft data available for adjacent colliery. Several seams identified including Wyrley Bottom at approx. 9.3m & Old Park at 29m. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | Three shafts located to east of site |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | ✓ | | |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | None recorded | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | None recorded | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Colliery situated to east of site with three shafts.<br>Geological memoir indicates several coal seams Colliery : Wyrley Bottom Coal 1.7m at 9.3m, Old Park Coal (2 leaves) 1.4m at 30.6m, Heathen Coal 0.9m at 59.2m and Stinking Coal 0.6m at 74.6m. | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 28

Possible Constraints Relating to Past Mining and Industrial Heritage

- Shallow coal mining issues
- Unrecorded mineshafts
- Soil contamination
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £9,000 to £20,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £39,000 to £77,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes (assume Amber 1 equivalent) | £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £28,000 to £30,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 29

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.66Ha | | | |
| Historic Uses: | • Residential Housing<br>• Social Club | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | Yard Coal seam to the west of the site, Bottom Coal Seam to the East | | |
| | Made ground: | None Recorded | | |
| | Faults: | Several faults recorded in the deep coal trending NE/SW to the west of the site. | | |
| BGS Borehole Records: | No boreholes within the site, nearest borehole approx. 150m to the NE of site describes sands and gravels to a depth of 9m. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | Shafts present approx. 200m from site to the north south and west. In addition a level road in the deep coal seam is recorded. The end of the road is recorded approx. 200m to the south of the site. |
| | Development High Risk Area | ✓ | | Just within area |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | Recorded approx. 150m to the SE of the site |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | | ✓ | To the west and east of the site. |
| Opencast Mining: | None recorded within immediate site area, opencast recorded approx. 700m to south of the site | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | None Recorded | | |
| Pollution Incidents on Site: | None recorded on site or near to the site | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 29

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site.
- Potential shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – from made ground.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £7,975 – £16,250 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) cost assuming worst case – deeper drilling with high grout uptake | £42,000 – £84,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £10,650 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ floor slabs and substructures | Grubbing out and backfilling (cellars likely) | £6,000 |
| Soil contamination | Human health risk assessment | £7,500 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas | £32,000 |
| | Possible removal of contaminated soils | Quantity Unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

There is no housing site 30

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 31

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.55Ha | | | |
| Historic Uses: | • **Ammunition Factory**<br>• Forklift factory/offices | | | |
| Recorded Geology: | Superficials: | None Recorded | | |
| | Bedrock: | Kidderminster Formation | | |
| | Outcrops: | None Recorded | | |
| | Made ground: | None Recorded | | |
| | Faults: | No geological sheet available | | |
| BGS Borehole Records: | No boreholes within the site. Nearest borehole approx. 50m to south east of the site records nominal made ground underlain by medium dense to very dense gravels. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | | ✓ | |
| | Surface Coal Resource Area | | ✓ | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded within area | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | One to the south of the site (approx. 150m). No information on types of waste accepted. | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Principal | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | **Former Ammunition Factory – UXO report prudent prior to redevelopment** | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 31

Possible Constraints Relating to Past Mining and Industrial Heritage

- Former ammunition factory, potential for residue from ammunition manufacture
- Made ground likely – from former site developments, extent unknown
- Ground gases from made ground on site. Also landfill within 250m of site boundary
- Soil contamination – from made ground.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, gas monitoring, chemical testing (soils and groundwater). | £9,000 – £13,000 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £16,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £5,000 |
| Soil contamination | Human health risk assessment | £7,500 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £24,000 |
| | Possible removal of contaminated soils (Subject to SI findings) **(Former Ammunition Factory Potentially Higher Risk/Cost for site clean up)** | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |
| Other | **Former Ammunition Factory – UXO report prudent prior to redevelopment** | Specialist Contractor Costs Required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 32

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 0.31 hectares | | | | |
| Historic Uses: | • Numerous unnamed buildings<br>• Two tower blocks – built mid 1960s, demolished circa 2004. | | | | |
| Recorded Geology: | Superficial: | None | | | |
| | Bedrock: | Pennine Middle Coal Measures | | | |
| | Outcrops: | None recorded within site boundary. Thick Coal recorded around site. | | | |
| | Made ground: | None recorded on site, large areas of made ground surrounding site | | | |
| | Faults: | None within site boundary, several faults locally | | | |
| BGS Borehole Records: | Local borehole records indicate approx. 1m of made ground.<br>Coal, broken coal and broken ground indicated locally at depths of between 13.8m to 20m. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | None indicated on CA interactive website, one shaft indicated on geological plan |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | None recorded | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | None recorded | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | No superficial deposits | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Shaft indicated adjacent to site on geological map and memoir: Thick coal (upper leaf) 2.6m thick, Hob and Jack 2.6m thick and Thick Coal (lower leaf) 4.3m thick at 24.14m. Note: shaft not indicated on Coal Authority website. | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 32

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground from previous development
- Ground gases (made ground)
- Shallow coal mining issues
- Suspected mine shaft within influencing distance of site
- Possible unrecorded mineshafts
- Soil contamination – former development
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £9,000 to £18,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI). Thick coal recorded locally. | £20,000 to £50,000 |
| Suspected mine shaft (further researches required to ascertain precise locations) | Treatment to include drilling and pressure grouting and capping | £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated | £10,000 |
| In-situ substructures | Grubbing out and backfilling | £3,000 to £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £15,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 33

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 0.14 hectares | | | | |
| Historic Uses: | • Residential | | | | |
| Recorded Geology: | Superficial: | Glacial Till | | | |
| | Bedrock: | Pennine Middle Coal Measures | | | |
| | Outcrops: | None recorded | | | |
| | Made ground: | None recorded | | | |
| | Faults: | None recorded | | | |
| BGS Borehole Records: | None available | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | ✓? | | Several within vicinity, exact locations to be confirmed. |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | Workings recorded in area to west of site |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | None recorded | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | None recorded | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | From geology plan memoir - recorded shafts within vicinity record shallow coal approx. 200m to 250m west:<br>Bass Coal at 50.9m<br>Heathen Coal at 27.7m<br>Recorded shafts within vicinity record shallow coal approx. 300m south:<br>Old Park Coal top recorded at 5.5m | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 33

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground (former development)
- Ground gases (made ground)
- Shallow coal mining issues
- Recorded mine shafts within vicinity, further research required regarding locations

Possible Constraints Relating to Past Mining and Industrial Heritage (continued)

- Possible unrecorded mineshafts
- Soil contamination – made ground
- Groundwater contamination

Possible Remedial Works

| **Constraint** | **Possible Works** | **Possible Cost*** |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £13,500 to £24,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £10,000 to £20,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £15,000 per shaft |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £5,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £5,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £7,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 34

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.07 hectares | | | |
| Historic Uses: | • Unnamed buildings | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Middle Coal Measures | | |
| | Outcrops: | None recorded on site. Thick Coal recorded approx. 30m south. | | |
| | Made ground: | Recorded across site | | |
| | Faults: | None recorded within site boundary, many within local area | | |
| BGS Borehole Records: | Local borehole records indicate up to approx. 1.1m made ground onto stiff clay or sandstone. Geological memoir indicates shallow Thick Coal approx. 60m west of site: 3.2m thick at 15.2m bgl. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | (✓) | | Many shafts indicated locally, possibly recorded on site. CA mining report required. |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | None recorded | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | - | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 34

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely due to previous development
- Ground gases (made ground)
- Shallow coal mining issues
- Recorded mine shafts within vicinity (may be on site), no treatment details
- Possible unrecorded mineshafts

Possible Constraints Relating to Past Mining and Industrial Heritage (continued)

- Soil contamination – former development
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £5,000 to £20,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI). Thick Coal recorded locally. | £5,000 to £12,000 |
| Recorded mine shafts (further researches required to ascertain precise locations) | Treatment to include drilling and pressure grouting and capping | £15,000 per shaft (say £30,000) |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated | £1,500 to £2,500 |
| In-situ substructures | Grubbing out and backfilling | £2,000 to £5,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £3,000 to £5,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 35

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.17Ha | | | |
| Historic Uses: | • Former residential housing and associated gardens | | | |
| Recorded Geology: | Superficial: | Glacial Sands and Gravels | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | None Recorded | | |
| | Made ground: | None Recorded | | |
| | Faults: | Moat Fault trending east west down throwing to the south located approx. 200m to the north of the site. | | |
| BGS Borehole Records: | No exploratory holes recorded within the site. The nearest is a trial pit located approximately 50m to the north of the site identified 0.6m made ground overlying glacial sands and gravels. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | | ✓ | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded within area | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | None Recorded | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | Site situated in the Zone 2 (Outer Zone) Groundwater Protection Zone | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 35

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely –extent unknown
- Ground gases from made ground on site.
- Soil contamination – from made ground.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £9,000 – £17,500 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £6,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £9,500 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 36

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.26ha | | | |
| Historic Uses: | • Openfields<br>• Former residential flats<br>• Recently used as compound for adjoining residential development | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Middle Coal Measures | | |
| | Outcrops: | None Recorded | | |
| | Made ground: | None recorded | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | None within site Nearest borehole to site is approx. 80m east of the site. Borehole identified glacial till to 8m depth underlain by firm to stiff grey clays with coal fragments considered to be strata of the Pennine Middle Coal Measures | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | | ✓ | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | None recorded | | |
| Pollution Incidents on Site: | None | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 36

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground – past development
- Ground gases (made ground)
- Possible unrecorded mineshafts
- Soil contamination (made ground)
- Groundwater contamination
- Building sub-structures / relic services likely

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £6,100 – £6,250 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £4,000 |
| In-situ substructures | Grubbing out and backfilling | £2,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £5,000 |
| | Possible provision of clean cover for landscape and garden areas dependent on findings from site investigation. Based on provision of say 600mm of clean cover for say 40% of the site area to cover all garden and landscaped areas. | £12,000 |
| | Possible removal of contaminated soils | Quantity Unknown |
| Groundwater contamination | If deemed necessary following findings from SI works - Groundwater risk assessment | £7,500 |
| | If deemed necessary following findings from SI works - Groundwater clean-up | Dependent on SI results |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 37

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 0.07ha | | | | |
| Historic Uses: | • 2 buildings shown on site from 1884<br>• Site redeveloped with residential housing in the north and an unnamed building in the south<br>• By 1982 Housing demolished, building still present in south of site | | | | |
| Recorded Geology: | Superficial: | Glacial Till | | | |
| | Bedrock: | Alveley Member (mudstone and sandstone) | | | |
| | Outcrops: | None | | | |
| | Made ground: | None recorded | | | |
| | Faults: | None recorded | | | |
| BGS Borehole Records: | None within site. Nearby borehole shows glacial till to 4m overlying mudstone. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | |
| | Development High Risk Area | | | ✓ | |
| | Surface Coal Resource Area | | | ✓ | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | | ✓ | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone. | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | 2 recorded<br>- Licence status recorded as effective, receiving waste excluding inert waste<br>- No data on type of waste buried. | | | |
| Pollution Incidents on Site: | None | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | - | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 37

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground – past development
- Ground gases (made ground)
- Soil contamination (made ground)
- Groundwater contamination
- Building sub-structures / relic services likely

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, gas monitoring, chemical testing (soils and groundwater). | £3,000 |
| Ground gas | Depending of SI installation of gas protection measures vents and / or membranes may be required | £1,600 |
| In-situ substructures | Grubbing out and backfilling | £2,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £2,500 |
| | Possible provision of clean cover for landscape and garden areas dependent on findings from site investigation. Based on 600mm of clean cover for 40% of the site area. | £4,800 |
| | Possible removal of contaminated soils | Quantity Unknown |
| Groundwater contamination | If deemed necessary following findings from SI works - Groundwater risk assessment | £7,500 |
| | If deemed necessary following findings from SI works - Groundwater clean-up | Dependent on SI Results |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 38

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.51Ha | | | |
| Historic Uses: | • Possible pit<br>• Brewery | | | |
| Recorded Geology: | Superficial: | Glacial Till Deposits, and Glacial Sands and Gravels | | |
| | Bedrock: | Pennine Lower Coal Measures | | |
| | Outcrops: | None Recorded | | |
| | Made ground: | Worked ground shown within the site | | |
| | Faults: | Fault trending east west down throwing to the south located approx. 200m to the north of the site. | | |
| BGS Borehole Records: | No boreholes within the site. Nearest boreholes approx. 30m to north and south of the site. BH's record drift deposits to around 5m underlain by clays, shale and marl of the Lower Coal Measures, overlying Wenlock series, comprising limestone and mudstone bands. These boreholes approx. 150m deep were used for the extraction of groundwater for the brewery. Two of the boreholes are reported to have been capped. | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | |
| | Development High Risk Area | | | ✓ | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | | ✓ | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded within area | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone consideration zone. | | | |
| Landfill Sites: | On Site: | None Recorded | | |
| | Within 250m: | None Recorded | | |
| Pollution Incidents on Site: | None recorded on site. | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | Site situated in the Zone 1 (Inner Zone) Groundwater Protection Zone | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Large chimney on site and apparently a listed building | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 38

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground likely – from infilled pits, and former site development, extent unknown
- Ground gases from made ground on site.
- Potential shallow ironstone mining issues (old workings in Blue Flats recorded 150m to the east of the site)
- Possible unrecorded mineshafts
- Soil contamination – from made ground, including infilled sand and gravel pit.
- Possible groundwater contamination
- Possible buried obstructions - Former works floor slabs and sub-structures

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £13,750 – £22,250 |
| Ground gas | Installation of gas protection measures vents and / or membranes | £16,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ floor slabs and substructures | Grubbing out and backfilling | £5,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Soil contamination | Human health risk assessment | £7,500 |
| | Possible requirement for the provision of clean cover for garden and landscaped areas, (Subject to SI findings) | £24,000 |
| | Possible removal of contaminated soils (Subject to SI findings) | Quantity unknown |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Possible groundwater clean-up | Dependent on SI findings |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 39

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 1.85 hectares | | | |
| Historic Uses: | • Depressions noted throughout historical mappings which appear to have been filled | | | |
| Recorded Geology: | Superficial: | Glacial Till<br>Glaciolacustrine Deposits in far SW corner | | |
| | Bedrock: | Pennine Lower Coal Measures Formation (mudstone, siltstone and sandstone).<br>Igneous intrusion indicated immediately west of site. | | |
| | Outcrops: | Bottom Coal / Bottom Holers Coal recorded to outcrop within west of site (trending N/S) and within far north eastern corner. | | |
| | Made ground: | Recorded across site | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | None available within site boundary | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | Area indicated adjacent to western boundary, possibly encroaches into SW corner |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | Note: outcrops shown within site boundary on geological mapping but not on CA website |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | One –Landfill Site – operated 1976-1977 accepting inert, industrial, commercial, household and special wastes. Gas control measures included.<br>Note: Walsall Council have indicated that the site also operated between 1962 and 1963. | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Glacial Till = Unproductive Strata<br>Glaciolacustrine Deposits = Secondary Aquifer (Undifferentiated) | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | Possible flood risk in far east of site – further research recommended | | | |
| Additional Notes: | Sub-station noted on aerial maps | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 39

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground identified on geological mapping
- Ground gases (made ground and possibly from Pouk Hill landfill)
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – former spoil mounds, light industrial land use, sub-station
- Presence of high voltage services and sub-station
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £25,000 to £40,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £118,500 to £237,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated based on historical maps | Say £60,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £5,000 to £15,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | Say £90,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

There is no housing site 40

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 41

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.25 hectares | | | |
| Historic Uses: | • Unnamed buildings, perhaps industrial | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Central and eastern site area: Pennine Lower Coal Measures – Sandstone<br>West of site: Pennine Lower Coal Measures – Mudstone, Siltstone and Sandstone | | |
| | Outcrops: | Vanderbeckei (Stinking) Marine Band and Stinking Coal are recorded to outcrop immediately west of the site | | |
| | Made ground: | None recorded | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | None within site boundary or nearby within similar geological setting | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | None within site boundary, although several shafts noted within the vicinity |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | | Shallow coal mine workings indicated to east of site |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | Two: Landfill Site lies approx. 60m SW of site and accepted inert and industrial wastes.<br>Landfill Site lies approx. 200m east of the site which accepted commercial and household waste and has gas control measures. | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | - | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 41

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground from previous development
- Ground gases (made ground and nearby landfill)
- Shallow coal mining issues
- Possible unrecorded mineshafts, recorded mine shafts within vicinity
- Soil contamination – former industrial setting
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £12,500 to £21,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £16,000 to £32,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – made ground anticipated | £6,000 to £8,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £2,500 to £5,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £12,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 42

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 1.72 hectares | | | |
| Historic Uses: | • Spoil tip<br>• Residential properties<br>• Engineering Works | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Lower Coal Measures – Sandstone (majority of site)<br>Pennine Lower Coal Measures – Mudstone, Siltstone and Sandstone<br>Pennine Middle Coal Measures (far W of site) | | |
| | Outcrops: | Vanderbeckei (Stinking) Marine Band and Stinking Coal shown to outcrop along western site boundary | | |
| | Made ground: | Recorded in far north of site | | |
| | Faults: | None within site. Fault shown to north of site, downthrown to south. | | |
| BGS Borehole Records: | None within site | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | Possibly 3 shafts, no treatment details |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | Landfill Site lies approx. 200m NE of site (accepted inert and industrial wastes) | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | Far SW corner may lie within Flood Zone 2 or 3 | | | |
| Additional Notes: | Vacant land recently used as storage for building materials and skips<br>Multiple land ownerships | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 42

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground (recorded within north of site on geological mapping)
- Ground gases (made ground and nearby landfill)
- Shallow coal mining issues
- Recorded mine shafts, no treatment details
- Possible unrecorded mineshafts
- Soil contamination – former works, storage of unknown materials
- Shallow groundwater – within / adjacent to area known to flood
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £18,000 to £35,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £110,000 to £220,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £45,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £55,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ substructures | Grubbing out and backfilling | £17,200 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £83,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 43

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.64 hectares | | | |
| Historic Uses: | • Spoil mound<br>• Numerous unnamed buildings | | | |
| Recorded Geology: | Superficial: | West - Glacial Till<br>East – Glaciofluvial Deposits | | |
| | Bedrock: | Lower Coal Measures – Sandstone | | |
| | Outcrops: | None recorded | | |
| | Made ground: | None recorded on site (recorded adjacent to east of site) | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | None within site boundary or within similar geological context | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | Possibly two, both without treatment details |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | Records indicate past shallow mining to north of site |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | Two: Landfill Site lies adjacent to eastern boundary which accepted commercial and household waste and has gas control measures.<br>Landfill Site lies approx. 170m from western boundary and accepted inert and industrial wastes. | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | West - Glacial Till – unproductive strata<br>East – Glaciofluvial Deposits – Secondary A | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | - | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 43

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground due to previous development
- Ground gases (made ground and adjacent landfill)
- Shallow coal mining issues
- Recorded mine shafts without treatment details
- Possible unrecorded mineshafts
- Soil contamination – former spoil mounds and long development history
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £13,500 to £24,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £41,000 to £82,000 |
| Recorded mine shafts (further researches required to ascertain precise locations) | Treatment to include drilling and pressure grouting and capping | £30,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated | £20,500 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £6,400 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £31,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 44

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Size: | 1.82 hectares over two parcels of land | | | | |
| Historic Uses: | • Manufacturing including locks, engineering works, saw mill | | | | |
| Recorded Geology: | Superficial: | Glacial Till | | | |
| | Bedrock: | Pennine Lower Coal Measures – Sandstone | | | |
| | Outcrops: | None recorded on site. Vanderbeckei (Stinking) Marine Band and Stinking Coal indicated to west of site. | | | |
| | Made ground: | None recorded | | | |
| | Faults: | None recorded | | | |
| BGS Borehole Records: | None available within close proximity to site | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | | ✓ | |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | None recorded | | | | |
| Landfill Sites: | On Site: | None recorded | | | |
| | Within 250m: | Two | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | None recorded | | | | |
| Additional Notes: | Former railway to north of site<br>Cemetery to east of site | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 44

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground from past development
- Ground gases (made ground, nearby landfill sites)
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – former engineering works
- Groundwater contamination due to significant industrial uses

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £20,000 to £45,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £117,000 to £233,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £60,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £18,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £88,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 45

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.38 hectares | | | |
| Historic Uses: | • Spoil heaps<br>• Factory building | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Middle Coal Measures Formation (mudstone, siltstone and sandstone). Lower Coal Measures indicated. | | |
| | Outcrops: | None on site – Vanderbeckei (Stinking) Marine Band and Stinking Coal outcrop to east of site | | |
| | Made ground: | None recorded – former spoil heap indicated | | |
| | Faults: | None | | |
| BGS Borehole Records: | No records available for site. Records from local area suggest deep made ground (greater than 2.9m) and broken and / or shallow coal. Broken coal 6.1m-6.3m and 19.9m – 21m in one borehole and 3.4m – 3.9m in another. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | One possibly within site – CA Mining Report required |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | | ✓ | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | | ✓ | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | None recorded | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Based on geological sequence, Stinking Coal is likely to be beneath site (geological mapping indicates recorded thickness 0.5m to 1.1m). | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 45

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified locally
- Ground gases (made ground)
- Shallow coal mining issues
- Recorded mine shafts within vicinity (may be on site), no treatment details
- Possible unrecorded mineshafts
- Soil contamination – former spoil mounds
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £9,000 to £18,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £25,000 to £50,000 |
| Recorded mine shafts (further researches required to ascertain precise location) | Treatment to include drilling and pressure grouting and capping | £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated | £30,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £4,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £18,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 46

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 0.75 hectares | | | |
| Historic Uses: | • Former well<br>• Unnamed small buildings – possibly works buildings | | | |
| Recorded Geology: | Superficial: | Glacial Till in west<br>Glaciofluvial in east | | |
| | Bedrock: | Lower Coal Measures (sandstone) in west<br>Lower Coal Measures (mudstone, siltstone and sandstone) in east | | |
| | Outcrops: | New Mine recorded to outcrop in west of site<br>Fireclay recorded to outcrop at eastern boundary | | |
| | Made ground: | None recorded | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | None within site boundary. Several shallow boreholes at adjacent site - made ground up to 2.6m. Nearby borehole indicates several coal seams at shallow depth, conjectured to be the following: Fireclay Coal (2 leaves) 6.09m – 7.16m and 8.53m – 8.83m, Two Foot Coal 11.87m – 12.17m and Bottom Coal 3 leaves – shallow / deep) at 14.30m - 14.91m, 15.09m – 16.44m & 17.43m – 18.55m. | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | | ✓ | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | Recorded adjacent to SW of site |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Glaciofluvial – Secondary A<br>Glacial Till – unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Fireclay and New Mine coal likely to be present at shallow depth beneath site. Geological memoir indicates a shaft located south of the site recorded New Mine Coal 3.2m thick at 24.2m and the roof of the Bottom Coal at 32m bgl. | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 46

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground (colliery spoil) identified locally and previous development
- Ground gases (made ground)
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – former spoil mounds and storage facility for end of life vehicles
- Groundwater contamination
- Former well

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £10,000 to £20,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £48,000 to £96,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Former well recorded, treatment unknown | Excavate or drill and grout, depending on depth. Further researches and exploratory works required. | Say £10,000 |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated | £24,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £7,500 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for garden and landscaped areas | £36,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 m**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 47

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | North site – 1.59 hectares<br>South site – 0.07 hectares | | | |
| Historic Uses: | • North site – works buildings, 'old shafts'<br>• Residential development | | | |
| Recorded Geology: | Superficial: | North site - Glacial Till in east, absent in west of site<br>South – absent – glacial till indicated to east of site | | |
| | Bedrock: | Thick Coal underlies both sites.<br>Middle Coal Measures in far north east of northern site and west of southern site. | | |
| | Outcrops: | Thick Coal present | | |
| | Made ground: | Present across whole of both sites | | |
| | Faults: | North site - fault in NE corner<br>South site – none recorded | | |
| BGS Borehole Records: | None available to view on site. Records to SE of site indicate deep fill (up to 8.9m bgl) with coal beneath (2.7m thick at 11.6m and 1.3m at 23.7m). | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | ✓ | | Possibly six shafts, five untreated on north site. None on southern site. |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | ✓ | | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | Southern site. Thick coal at surface across both sites. |
| Opencast Mining: | Thick coal recorded to be worked at surface locally | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | One - Landfill Site approx. 190m easy of southern site | | |
| Pollution Incidents on Site: | None recorded<br>Compliance rating for one car spares company on northern site 'moderate' with category 3 and 4 breaches. | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | Geological memoir indicates Thick Coal at 11m SE of northern site | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 47

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified locally
- Ground gases (made ground)
- Shallow coal mining issues
- Recorded mine shafts, some without treatment details
- Possible unrecorded mineshafts
- Soil contamination – former works
- Groundwater contamination
- Oversized obstructions within fill area

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £18,000 to £35,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI). Thick Coal likely beneath sites. | £106,000 to £266,000 |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £75,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Ground gas | Installation of gas protection measures vents and / or membranes | £54,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| In-situ substructures | Grubbing out and backfilling | £16,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £80,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 48

| Item | Comments | | | |
|---|---|---|---|---|
| Site Size: | 4 hectares | | | |
| Historic Uses: | • Series of bolt and nut manufacturers<br>• Cutting and mound in east<br>• Some residential properties in south | | | |
| Recorded Geology: | Superficial: | Glacial Till | | |
| | Bedrock: | Pennine Middle Coal Measures | | |
| | Outcrops: | Rubble Coal in NW of site, trending approx. N/S | | |
| | Made ground: | None recorded | | |
| | Faults: | None recorded | | |
| BGS Borehole Records: | Boreholes in south indicate made ground (0.76m to 3.2m), approx. 0.6m coal at 4m to 5m depth and broken ground | | | |
| Coal Mining: | Item: | Yes | None Recorded | Comments |
| | Mine Entries | | ✓ | |
| | Development High Risk Area | ✓ | | |
| | Surface Coal Resource Area | ✓ | | |
| | Surface Mining | | ✓ | |
| | Past Shallow Coal Mine Workings | | ✓ | |
| | Probable Shallow Coal Mine Workings | ✓ | | |
| | Coal Outcrops | ✓ | | |
| Opencast Mining: | None recorded | | | |
| Limestone Mining: | None recorded | | | |
| Landfill Sites: | On Site: | None recorded | | |
| | Within 250m: | Two –Landfill (industrial wastes)<br>Landfill (industrial and inert wastes), both approx. 170m north of site. | | |
| Pollution Incidents on Site: | None recorded | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | |
| Source Protection Zones: | None recorded | | | |
| Flood Risk: | None recorded | | | |
| Additional Notes: | None | | | |

Summary of Potential Industrial and Mining Legacy Issues
Housing Site 48

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified locally, previous development indicated across site
- Ground gases (made ground)
- Shallow coal mining issues – coal and broken ground identified at shallow depth
- Possible unrecorded mineshafts
- Soil contamination – former works
- Groundwater contamination
- Oversized obstructions within fill areas ('rubble fill' indicated in borehole logs)

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £39,000 to £56,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | £256,000 to £512,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Deep made ground unsuitable for founding | Piling for selected plots, assessment required | Say £6,000 extra over per plot |
| Ground gas | Installation of gas protection measures vents and / or membranes | £128,000 |
| Existing buildings | Demolition /site clearance works and asbestos survey | Contractor to cost |
| In-situ substructures | Grubbing out and backfilling | £40,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £192,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater risk assessment | £7,500 |
| | Groundwater clean-up | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 2 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Costings based on assumption of housing density of 40 plots per hectare and average house size approx. 80 $m^2$**

**APPENDIX 3**

**Site Information Sheets and Detailed Pro-Formas for Employment Sites**

## Site IN104 – Phoenix 10 (former James Bridge IMI and tip sites)

## Address: Reservoir Rd, Walsall

## Area: 18ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN104 – Phoenix 10, Reservoir Place, Walsall

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Reservoir Place, Walsall | | | | | |
| National Grid Reference: | 399405, 297770 | | | | | |
| Site Size: | 18 hectares | | | | | |
| Current Land Use: | Several land parcels. Former copper works, now vacant. Park area and industrial units present. | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Reservoir Place or Woodwards Road | | | | | |
| Historic Uses: | • Multiple shafts<br>• Series of mounds and pits<br>• James Bridge Colliery<br>• James Bridge Brick Works<br>• Canal basin<br>• Copper works | | | | | |
| Recorded Geology: | Superficials: | Generally Glacial Till<br>SW corner: Glaciofluvial deposits | | | | |
| | Bedrock: | Pennine Lower Coal Measures and Pennine Lower Coal Measures (Sandstone) | | | | |
| | Outcrops: | New Mine outcrops E/W through northern area | | | | |
| | Made ground: | Recorded in northern site area | | | | |
| | Faults: | James Bridge Fault indicated in central site, downthrown to north. (Moat Fault present adjacent to northern boundary, downthrown to south). | | | | |
| BGS Borehole Records: | Multiple records within site - selected deeper records reviewed. Deep fill (up to 6m). Several coal seams recorded at shallow depth including 2m thick at 14m depth and probable workings 4.5m thick with base at 20m bgl. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Multiple - estimated to be in excess of 100 mine entries, many without treatment details | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | Two: Alumwell School Landfill Site (accepted industrial, commercial and household wastes – gas control measures included) and James Bridge Copper Works (1940 – 1982 accepted industrial, commercial, household, special and liquids/sludges). | | | | |
| | Within 250m: | Three: Bentley Mill Lane Landfill Site (accepted commercial and household wastes – has gas control measures in place), Anson Branch of the Walsall Canal (accepted inert, industrial, commercial and household wastes in 1989 with gas control measures) and James Bridge Copper Works Landfill Site (accepted inert, industrial, commercial, household and liquids/sludges between 1940-1993). | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Glaciofluvial deposits – Secondary A<br>Glacial Till – Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | **High risk to contaminated soils and contaminated groundwater**<br>Walsall Council have indicated that 'James Bridge East' and 'James Bridge West' landfill sites are present within the site boundary. In addition, the council have indicated that land associated with the nearby cinema and Globe Public House have been subjected to landfill operations and lies within 250m of the site boundary. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN104 – Phoenix 10, Reservoir Place, Walsall

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground
- Ground gases (made ground)
- Shallow coal mining issues
- Recorded mineshafts
- Possible unrecorded mineshafts
- Soil contamination – former land uses and landfill **High risk to contaminated soils**
- Groundwater contamination – **High risk to contaminated groundwater**

**KNOWN SIGNIFICANT LARGE SCALE ISSUES REGARDING GROUNDWATER AND SOIL CONTAMINATION – SEE OTHER PREVIOUS DETAILED REPORTS**

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £180,000 to £360,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £50 per $m^2$ of development |
| Recorded mine shafts | Treatment to include drilling and pressure grouting and capping | £15,000 per shaft say £1,500,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | Say £180,000 |
| Soil contamination | Human health risk assessment | £15,000 |
| | Provision of clean cover for landscaped areas | £72,000 |
| | Possible removal of contaminated soils **High risk to contaminated soils** | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment – further assessment required following investigation | **High Cost** |
| | Groundwater clean-up **High risk to contaminated groundwater** | SI information required **Very High Costs** |

* based on previous information not being available.

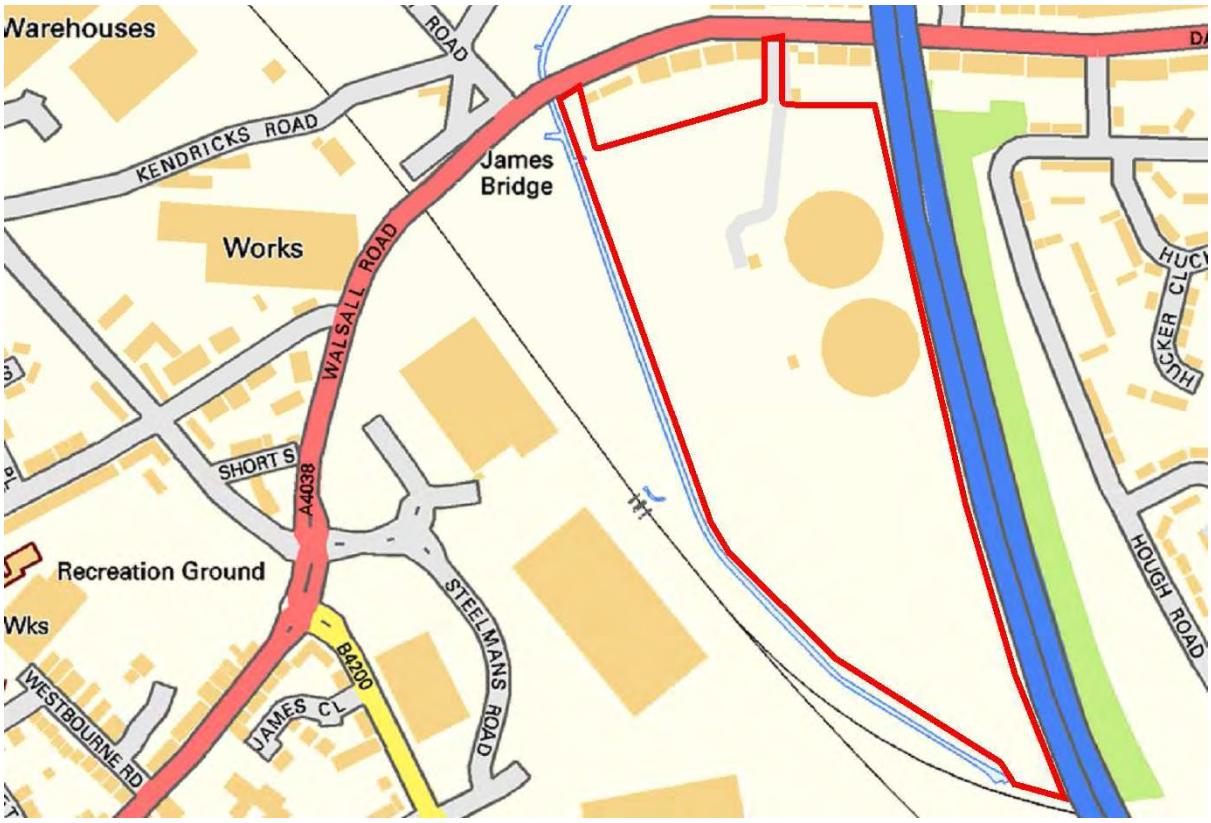
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN111, IN112 - James Bridge Gasholders

## Address: Darlaston Road, James Bridge

## Area: 8.3ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN111, IN112 – James Bridge Gasholders

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Darlaston Road, James Bridge | | | | | |
| National Grid Reference: | 399127, 297333 | | | | | |
| Site Size: | 8.3 hectares | | | | | |
| Current Land Use: | Former gas holder site (plant and equipment still present) and scrubland | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Darlaston Road | | | | | |
| Historic Uses: | • Open fields<br>• Several mounds/changes in topography recorded<br>• Gas holders and associated plant | | | | | |
| Recorded Geology: | Superficials: | Glacial Fluvial Deposits | | | | |
| | Bedrock: | Pennine Lower Coal Measures | | | | |
| | Outcrops: | None recorded | | | | |
| | Made ground: | Made ground recorded across the southern section of the site, described as colliery spoil, domestic waste and embankments on published mapping. | | | | |
| | Faults: | None recorded | | | | |
| BGS Borehole Records: | None available on site. Previous SI reports made ground recorded across majority of the site up to 2.65m depth of mixed composition, overlying alluvium, glacial till and glacial sands and gravels. Underlying solid geology was not investigated. Elevated levels of methane and carbon dioxide recorded. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | Bottom Coal/Bottom Holers Recorded to outcrop in the northern section of the site | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | 30m to west of the site. Box Pool Landfill, recorded to have accepted inert and industrial waste.<br>NB. Southern section of the site no recorded as a landfill but previous SI info suggests tipped waste of varying composition present. | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | Flood zone 2 and 3 within the site area | | | | | |
| Additional Notes: | Walsall Council have indicated that the land to the rear of the Globe Public House off Darlaston Road lies within 250m of the site and has been subjected to landfill operations. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN111, IN112 – James Bridge Gasholders

Possible Constraints Relating to Past Mining and Industrial Heritage

- Probable deep made ground
- Ground gases (made ground, nearby landfill)
- Possible presence of gas works type waste
- Possible shallow mineworkings
- Possible unrecorded mineshafts
- Soil contamination – former gas works and possible 'tipped waste of various composition in southern section of the site.
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £50,000 to £60,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| Demolition and Site Clearance | Specialist contractor required for the decommissioning and deconstruction of gas holders and associated plant | Contractor to Cost |
| In-situ substructures | Grubbing out and backfilling | Contractor to Cost |
| Soil contamination | Human health risk assessment | £10,000 |
| | Provision of clean cover for landscaped areas | £32,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN12.11- Westgate North / Linley Lodge

## Address: Westgate, Aldridge

## Area: 0.75ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN12.11 – Westgate North / Linley Lodge

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Westgate, Aldridge | | | | | |
| National Grid Reference: | 404070, 300880 | | | | | |
| Site Size: | 0.75 hectares | | | | | |
| Current Land Use: | Vacant | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | |
| Access to site: | Off Westgate | | | | | |
| Historic Uses: | • No evidence of former development, possible regrading at western edge associated with canal. | | | | | |
| Recorded Geology: | Superficials: | Glacial Till | | | | |
| | Bedrock: | Western site area: Pennine Middle Coal Measures Formation<br>Eastern site area: Etruria Formation | | | | |
| | Outcrops: | None recorded | | | | |
| | Made ground: | None recorded | | | | |
| | Faults: | Site lies north of Clayhanger or Daw End Fault | | | | |
| BGS Borehole Records: | Indicate topsoil onto sand and gravel and red and grey clay | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | | |
| | Development High Risk Area | | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | | ✓ | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded on site, untreated Daw End Limestone Mine located approximately 145m west of site. | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | Linley Lime Works Landfill Site accepted inert wastes (no dates of operation listed) | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Spot level for Brooch Coal given 150m bgl approx. 50m east of site | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN12.11 – Westgate North / Linley Lodge

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (possible localised regrading associated with formation of canal)
- Ground gases
- Shallow coal mining issues – indicated as surface coal resource area
- Possible unrecorded mineshafts
- Soil contamination from adjacent sites and former land uses
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £10,000 to £20,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – low to high gas levels | Say £5 to £10 per $m^2$ of development |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £3,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN12.14 - Former Mckechnie's

## Address: Middlemore Lane/Dumblederry Lane

## Area: 5.94ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN12.14 – Former Mckechie's, Middlemore Lane, Aldridge

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Middlemore Lane / Dumblederry Lane, Aldridge | | | | | |
| National Grid Reference: | 404915, 300825 | | | | | |
| Site Size: | 5.94 hectares | | | | | |
| Current Land Use: | Vacant engineering works and ancillary buildings | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Middlemore Lane | | | | | |
| Historic Uses: | • Canal basin<br>• Ponds<br>• Engineering works<br>• Brass works | | | | | |
| Recorded Geology: | Superficials: | SW – Glacial Till<br>NE – Glaciofluvial deposits | | | | |
| | Bedrock: | SW – Pennine Middle Coal Measures Formation<br>NE – Etruria Formation | | | | |
| | Outcrops: | None recorded | | | | |
| | Made ground: | None recorded | | | | |
| | Faults: | None recorded | | | | |
| BGS Borehole Records: | None within site boundary. Local records indicate made ground between 2.3m and 2.9m bgl adjacent to site. Shaft record indicates several coal seams, shallowest at approx. 27.5m bgl. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | Two shafts recorded south of site | |
| | Development High Risk Area | | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | SW corner of site only | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | | ✓ | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | None recorded | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | SW – Glacial Till – unproductive strata<br>NE – Glaciofluvial deposits – Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Daw End Branch of Wyrley and Essington Canal | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN12.14 – Former Mckechie's, Middlemore Lane, Aldridge

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (extensive development across site)
- Ground gases (made ground, former pond)
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – former engineering and brass works
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £60,000 to £80,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | Say £60,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £24,000 |
| | Possible removal of contaminated soils (former heavy industry) | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

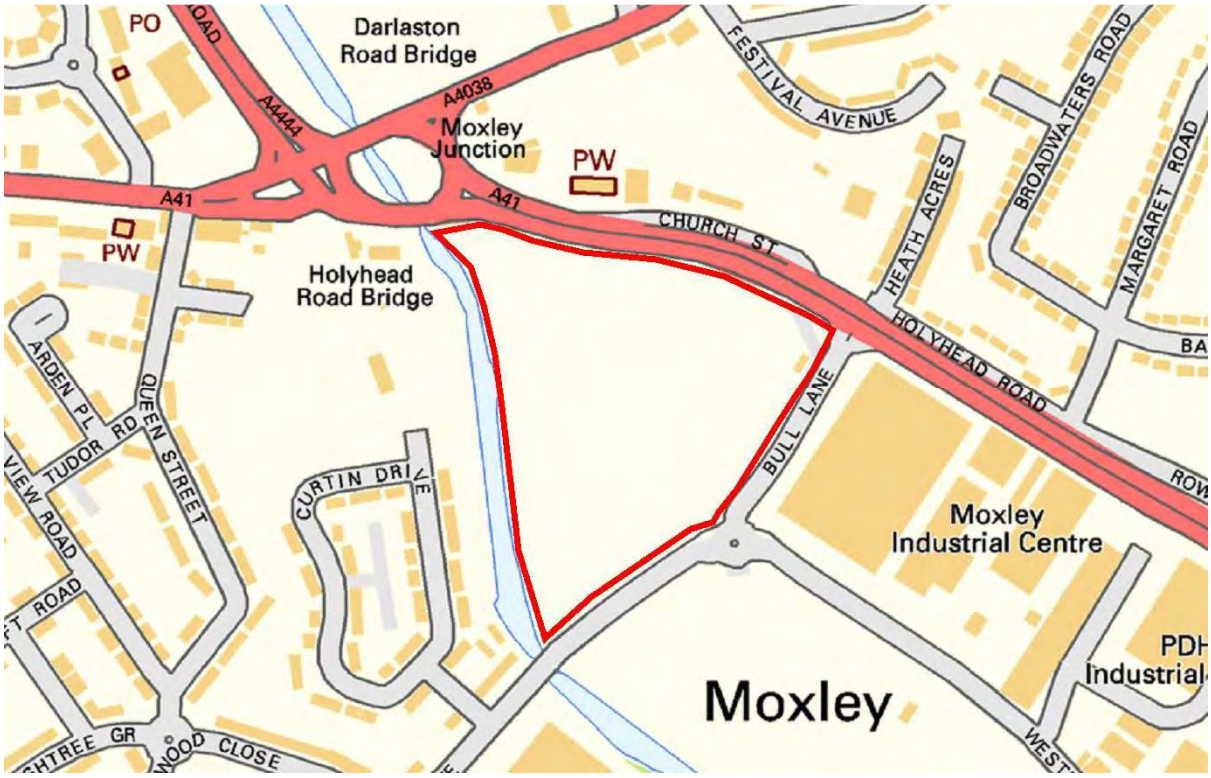
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN120.3 Former Wesson, Bull Lane

## Address: Bull Lane

## Size: 4.96ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN120.3 Former Wesson, Bull Lane, Moxley

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Bull Lane, Moxley | | | | | |
| National Grid Reference: | 396985, 295705 | | | | | |
| Site Size: | 4.96 hectares | | | | | |
| Current Land Use: | Vacant former industrial site (demolished) | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Bull Lane | | | | | |
| Historic Uses: | • Iron works<br>• Brick works<br>• Sand pit<br>• Two canal basins<br>• Mineral railway network | | | | | |
| Recorded Geology: | Superficial: | North: glaciolacustrine deposits<br>Central and South: Glaciofluvial deposits | | | | |
| | Bedrock: | East and northwest corner: Pennine Middle Coal Measures<br>Central: Thick Coal | | | | |
| | Outcrops: | Heathen Coal in NE corner<br>Thick Coal across central area (approx. N/S) | | | | |
| | Made ground: | Small area in NE corner (conjectured to be location of former sand pit) | | | | |
| | Faults: | None recorded | | | | |
| BGS Borehole Records: | Selected borehole records reviewed. Made ground recorded up to 5m deep. Coal recorded at shallow depth (3m thick at 12m). Evidence of possible workings 27.3m – 28.3m depth. Memoir indicates numerous coal seams (and one ironstone seam) recorded within shaft including Upper Thick Coal 2.7m thick at 16.9m, Lower Thick Coal 3.7m thick at 21.8m. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Two – no treatment details | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | Eight: Old Birchalls Wharf (inert, industrial and liquids/sludges), Blackroot Tip (inert, commercial and household), Patent Shaft (commercial), and Western Way (inert, industrial and liquids/sludges). No details are held for Land North Curtain Drive, Land adjacent to Walsall Canal, Bull Lane or Land West of Festival Avenue but are within 250m of site boundary. | | | | |
| Pollution Incidents on Site: | None recorded<br>Significant incident affecting canal water south of site in 2002 | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Three sub-stations previously recorded (unknown whether still present)<br>Travelling crane and weighbridges (potentially substantial bases).<br>Walsall Council have indicated that there are two landfills on site although no further details are provided | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN120.3 Former Wesson, Bull Lane, Moxley

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground
- Ground gases (made ground, possible landfill)
- Shallow coal mining issues
- Recorded mineshafts
- Possible unrecorded mineshafts
- Soil contamination – former land uses – **High risk of contamination due to past site usage**
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £50,000 to £100,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £50 per $m^2$ of development |
| Recorded mine shafts | Search and treat. Treatment to include drilling and pressure grouting and capping | £15,000 per shaft<br>Say £30,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £25,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £20,000 |
| | Possible removal of contaminated soils<br>**High risk of contamination due to past site usage** | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

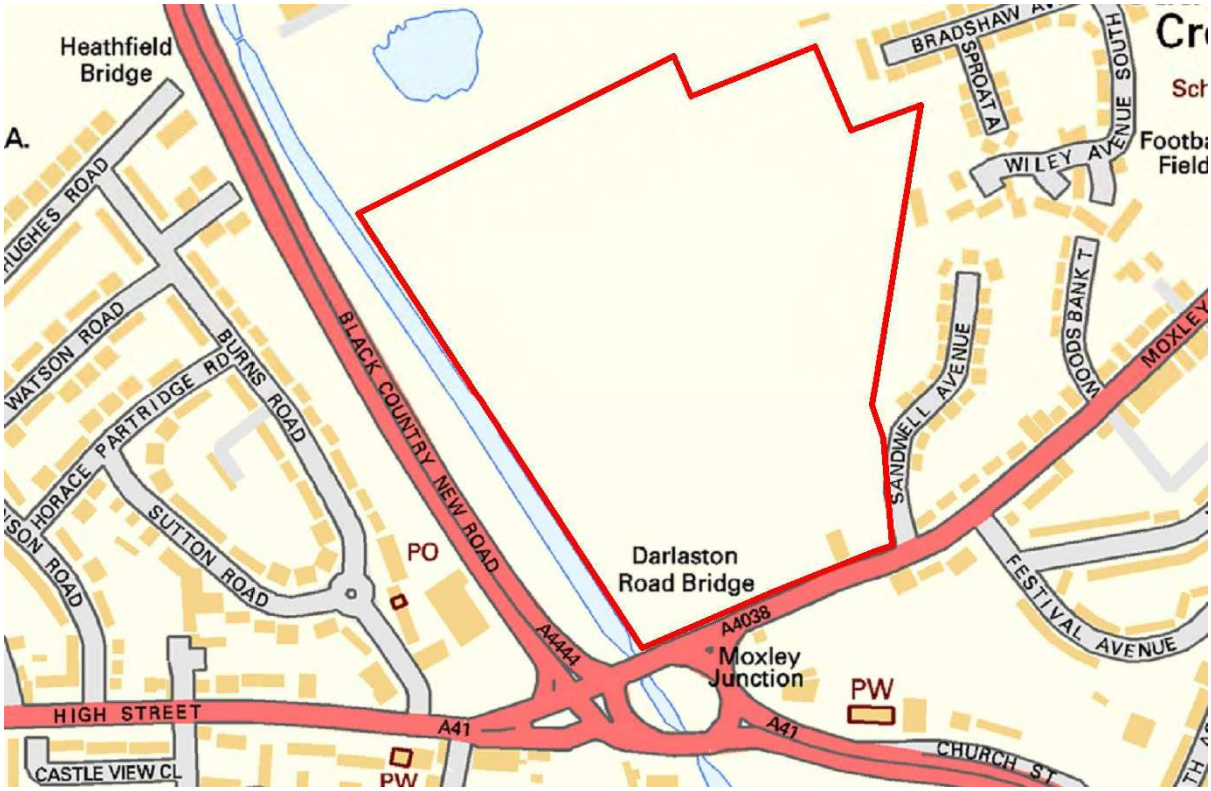
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN122: Moxley Tip

## Address: Moxley Road

## Area: 10.37ha



Summary of Potential Industrial and Mining Legacy Issues
Site IN122 – Moxley Tip

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Moxley Road, Moxley | | | | | |
| National Grid Reference: | 396810, 296140 | | | | | |
| Site Size: | 10.37 hectares | | | | | |
| Current Land Use: | Open land | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | | Residential | ✓ |
| Access to site: | Off Moxley Road | | | | | |
| Historic Uses: | • Sand extraction<br>• Lime and brick works<br>• 'Old shafts'<br>• Refuse tip | | | | | |
| Recorded Geology: | Superficials: | Glaciolacustrine Deposits and some Glacial Till | | | | |
| | Bedrock: | Pennine Middle Coal Measures, Pennine Lower Coal Measures and Pennine Lower Coal Measures (Sandstone) | | | | |
| | Outcrops: | Heathen Coal<br>Vanderbeckei (Stinking) Marine Band and Stinking Coal | | | | |
| | Made ground: | Infilled sand and gravel pit (backfilled) | | | | |
| | Faults: | Two unnamed faults | | | | |
| BGS Borehole Records: | Multiple records: Made ground up to 16.8m including ash, foundry sand, slag, 'industrial' and 'domestic' wastes. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Possibly 4, only one grouted and capped | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | | |
| Opencast Mining: | Sand and gravel extraction, no indication of opencast coal mining | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | Yes | | | | |
| | Within 250m: | Five | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | Flood risk in far west of site | | | | | |
| Additional Notes: | Walsall Canal adjacent to west of site<br>Thick Coal recorded to outcrop to west of site | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Site IN122 – Moxley Tip

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified locally
- Ground gases (landfill)
- Shallow coal mining issues
- Recorded mine shafts, some with no treatment details
- Possible unrecorded mineshafts
- Soil contamination – former brick and lime works, landfill site (evidence of 'domestic' waste) **Higher risk for contamination due to previous land use and recorded landfill on site**
- Shallow groundwater – within area known to flood
- Groundwater contamination (and possible effects on adjacent canal)
- Oversized obstructions within fill
- Highwall associated with former sand extraction

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £100,000 to £200,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts | Search and treat recorded shafts. Treatment to include drilling and pressure grouting and capping | £15,000 per shaft say £45,000 to £60,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling (unlikely to be extensive, no significant development recorded) | £105,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £42,000 |
| | Possible removal of contaminated soils **Higher risk for contamination due to previous land use and recorded landfill on site** | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN133 - Willenhall Sewage Works

## Address: Anson Road

## Area: 9.7ha

Summary of Potential Industrial and Mining Legacy Issues
Site IN133 - Willenhall Sewage Works

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Anson Road, Willenhall | | | | | |
| National Grid Reference: | 397865, 298330 | | | | | |
| Site Size: | 9.7 hectares | | | | | |
| Current Land Use: | Partially decommissioned Severn Trent Water sewage works | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | | Residential | ✓ |
| Access to site: | Service road off Anson Road. No access off Black Country Route | | | | | |
| Historic Uses: | Sewage works including filter beds, tanks and pumping station | | | | | |
| Recorded Geology: | Superficials: | Alluvium<br>Lies partially within Proto-Tame Channel | | | | |
| | Bedrock: | Pennine Lower Coal Measures – Sandstone<br>Pennine Lower Coal Measures Formation – Mudstone, Siltstone and Sandstone | | | | |
| | Outcrops: | Multiple – Bottom Coal, Bottom Holers Coal, Fireclay Coal and New Mine Coal | | | | |
| | Made ground: | None recorded | | | | |
| | Faults: | Moat Fault (downthrown to south)<br>Unnamed fault, downthrown to southwest | | | | |
| BGS Borehole Records: | Multiple records. Boreholes indicate multiple shallow coal seams: Fireclay Coal 14.3m (1.3m thick) & 16.4m (1.2m thick), Bottom Coal at 24.18 (1.44m thick), Bottom Holers 0.59m thick at 25.53m. Deep made ground also identified locally (up to 4.1m) including ash and slag. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Three, no treatment details | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | One – Anson Road Landfill Site | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | Zone 2 and 3 | | | | | |
| Additional Notes: | Adjacent watercourse<br>Bound by railway to south<br>Contrary to the preceding site proforma, Walsall Council have indicated that the site is not completely decommissioned as there is a large overflow storm tank remaining on site for the Black Country trunk sewer. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Site IN133 - Willenhall Sewage Works

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground identified locally
- Ground gases (sewage works)
- Shallow coal mining issues
- Recorded mine shafts, no treatment details
- Possible unrecorded mineshafts
- Soil contamination – sewage works
- Shallow groundwater – within area known to flood
- Groundwater contamination (and possible effects on adjacent watercourse)
- Oversized obstructions within fill area

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £100,000 to £20,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts | Search and treat recorded shafts. Treatment to include drilling and pressure grouting and capping | £15,000 per shaft say £45,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £100,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £39,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

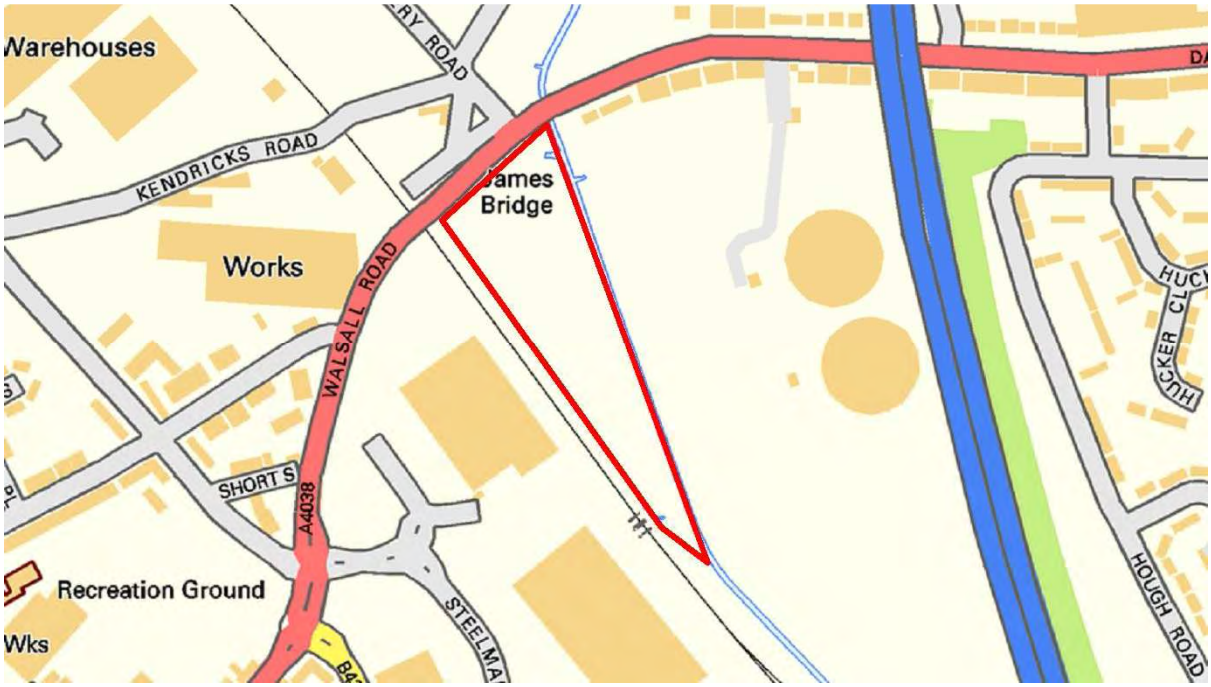
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN18.2 – Box Pool

## Address: Darlaston Road, Darlaston

## Size: 1.67ha



Summary of Potential Industrial and Mining Legacy Issues
Site IN18.2 – Box Pool

| Item | Comments | | | | |
|---|---|---|---|---|---|
| Site Address: | Darlaston Road, Darlaston | | | | |
| National Grid Reference: | 398945, 297340 | | | | |
| Site Size: | 1.67 hectares | | | | |
| Current Land Use: | Owned by Darlaston Builders Merchants. Open land – STW sub-surface storm water attenuation tanks present – to be retained | | | | |
| Surrounding Land Use: | Bound by railway to southwest, River Tame to east and Darlaston Road to north. Primarily industrial / commercial properties within the vicinity, some residential properties off Darlaston Road. Gas holder station lies adjacent to east. | | | | |
| Access to site: | Off Darlaston Road | | | | |
| Historic Uses: | Marshy area indicated within south of site. Majority of the site indicated as a pond in later mappings. | | | | |
| Recorded Geology: | Superficials: | Alluvium | | | |
| | Bedrock: | Pennine Lower Coal Measures<br>Site wholly within Proto-Tame channel (buried glacial channel). | | | |
| | Outcrops: | Fireclay Coal and Bottom Coal / Bottom Holers Coal indicated to outcrop in the north and south of the site, respectively. | | | |
| | Made ground: | Northern and western site area indicated to comprise made ground (typically colliery spoil). | | | |
| BGS Borehole Records: | Made ground recorded up to 2.9m - materials include ash, slag and steel. | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments |
| | Mine Entries | | | ✓ | None on site, many within vicinity |
| | Development High Risk Area | | ✓ | | |
| | Surface Coal Resource Area | | ✓ | | |
| | Surface Mining | | | ✓ | |
| | Past Shallow Coal Mine Workings | | | ✓ | |
| | Probable Shallow Coal Mine Workings | | ✓ | | |
| | Coal Outcrops | | ✓ | | 2 seams |
| Opencast Mining: | None recorded | | | | |
| Limestone Mining: | None recorded | | | | |
| Landfill Sites: | On Site: | Yes – Box Pool Landfill Site | | | |
| | Within 250m: | | | | |
| Pollution Incidents on Site: | None recorded | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | |
| Source Protection Zones: | None recorded | | | | |
| Flood Risk: | Partially within Flood Risk Zone 3 | | | | |
| Additional Notes: | Walsall Council have indicated that the land to the rear of the Globe Public House off Darlaston Road lies within 250m of the site and has been subjected to landfill operations. | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Site IN18.2 – Box Pool

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground (landfill)
- Ground gases (landfill and made ground)
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination – landfill on site, adjacent gas governor
- Shallow groundwater – formerly marshy / pond. Flooding recorded.
- Groundwater contamination (and possible effects on adjacent River Tame)
- Oversized obstructions within landfill
- Storm water attenuation tanks to be retained on site

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £16,500 to £33,500 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling (unlikely to be extensive, no significant development recorded) | £5,000 to £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | Say £7,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN18.2 – Land Opposite Mary Elliot School

## Address: Leamore Lane

## Size: 0.53ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN18.2– Land opposite Mary Elliot School, Leamore Lane

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Land opposite Mary Elliot School, Leamore Lane | | | | | |
| National Grid Reference: | 399110 301167 | | | | | |
| Site Size: | 0.53 hectares | | | | | |
| Current Land Use: | Carpark | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | |
| Access to site: | Off Leamore Lane | | | | | |
| Historic Uses: | • Marshland/disturbed land possibly associated with former mining activity<br>• Carpark area | | | | | |
| Recorded Geology: | Superficials: | None Recorded | | | | |
| | Bedrock: | Pennine Middle Coal Measures | | | | |
| | Outcrops: | None recorded on site | | | | |
| | Made ground: | Old Spoil Heaps recorded across local area | | | | |
| | Faults: | None Recorded on site | | | | |
| BGS Borehole Records: | No boreholes within site area | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | Possible mine entry adjacent to eastern site boundary | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | ✓ | | | |
| | Past Shallow Coal Mine Workings | | | ✓ | None within the site but areas recorded surrounding the site | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | None recorded | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | None recorded | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Walsall Council have indicated that Trident Alloys site lies within 250m of the site with regards to landfill sites. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN18.2– Land opposite Mary Elliot School, Leamore Lane

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (pits and embankments indicated)
- Ground gases (made ground)
- Possible unrecorded mineshafts
- Possible shallow mineworkings
- Soil contamination – former mining activities
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £7,500 to £17,500 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £5,000 to £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £2,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

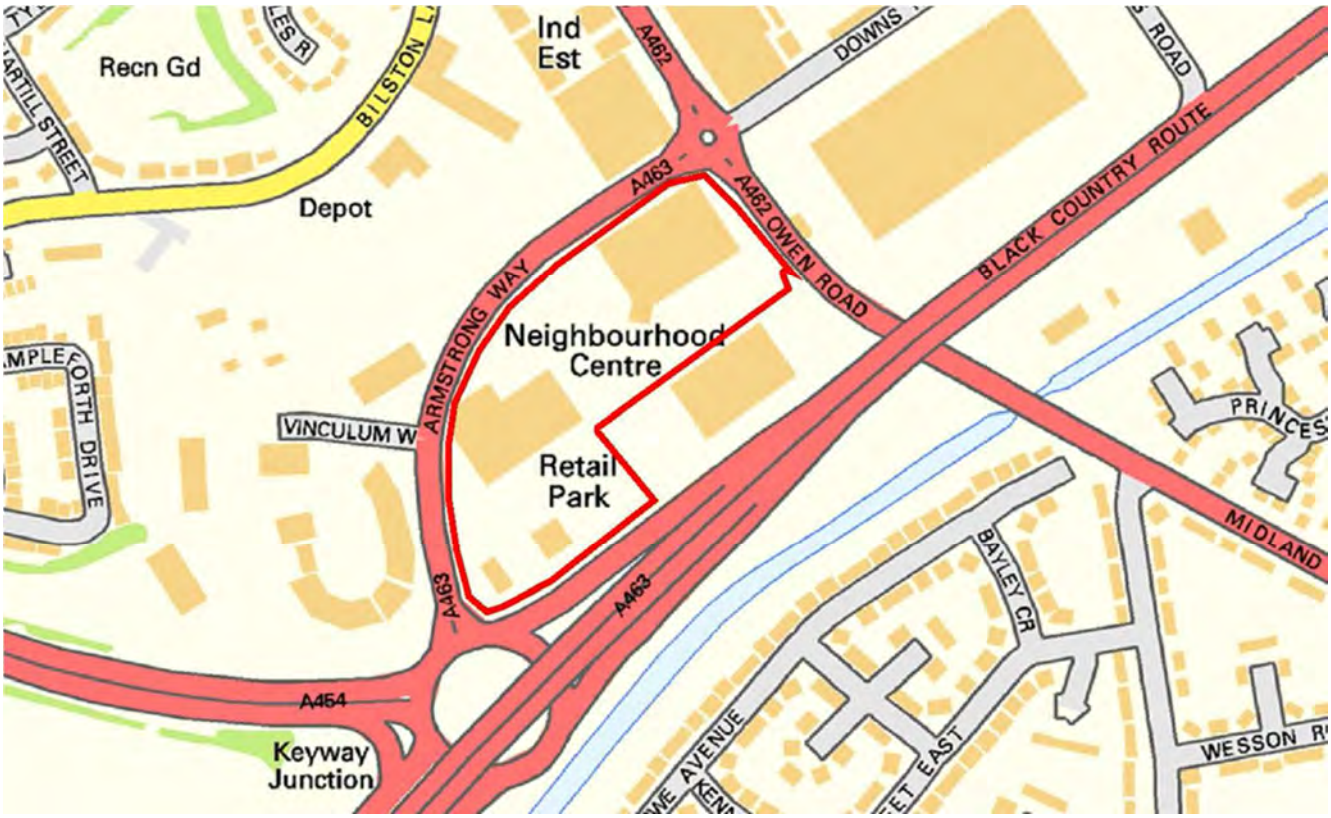
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN311 - Key Way Retail Park

## Address: Armstrong Way/Owen Road

## Area: 3.59ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN311 – Key Way Retail Park

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Armstrong Way / Owen Road, Willenhall | | | | | |
| National Grid Reference: | 397030, 297750 | | | | | |
| Site Size: | 3.59 hectares | | | | | |
| Current Land Use: | Retail Park | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | | Residential | ✓ |
| Access to site: | Off Armstrong Way | | | | | |
| Historic Uses: | • Old shafts<br>• Buildings associated with New Priestfield Ironworks, later Willenhall Furnaces<br>• Series of mounds and pits possibly associated with New Priestfield Colliery | | | | | |
| Recorded Geology: | Superficials: | Glacial Till | | | | |
| | Bedrock: | Pennine Middle Coal Measures Formation | | | | |
| | Outcrops: | Heathen Coal recorded to outcrop in east of site | | | | |
| | Made ground: | Made ground recorded in east of site | | | | |
| | Faults: | None recorded within boundary | | | | |
| BGS Borehole Records: | Multiple records available; selected deeper records reviewed.<br>Deep made ground (up to 10.2m deep).<br>Coal, presumed Heathen (worked) 0.15m thick at 13.4m deep, Rubble Coal 0.15m thick at 16.9m deep, Stinking Coal 0.45m thick at 28.04m deep.<br>Presumed old workings in New Mine Ironstone(?) 1.12m thick at 24.58m deep. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Multiple – 15? Difficult to determine precise number o CA website, many untreated. Further researches required. | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | None recorded | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None indicated flood risk for planning (rivers and sea) | | | | | |
| Additional Notes: | Geological plan / memoir records Heathen Coal 0.6m thick at 11.9m bgl in west of site.<br>Walsall Council have indicated that the site was previously remediated by Black Country Development Corporation in the 1980s. High levels of contamination are considered unlikely, however the extent of remediation is unknown at this time. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN311 – Key Way Retail Park

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground
- Ground gases (made ground)
- Shallow coal / ironstone mining issues
- Multiple mineshafts recorded
- Possible unrecorded mineshafts
- Soil contamination (some remediation, extent and to what standard currently unknown)
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £36,000 to £72,000 |
| Possible workings within coal / ironstone seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts | Probe drilling to locate shaft. Treatment to include drilling and pressure grouting and capping. Unknown quantity, further researches required. | £15,000 per shaft £115,000 to £225,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £18,000 to £36,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £14,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

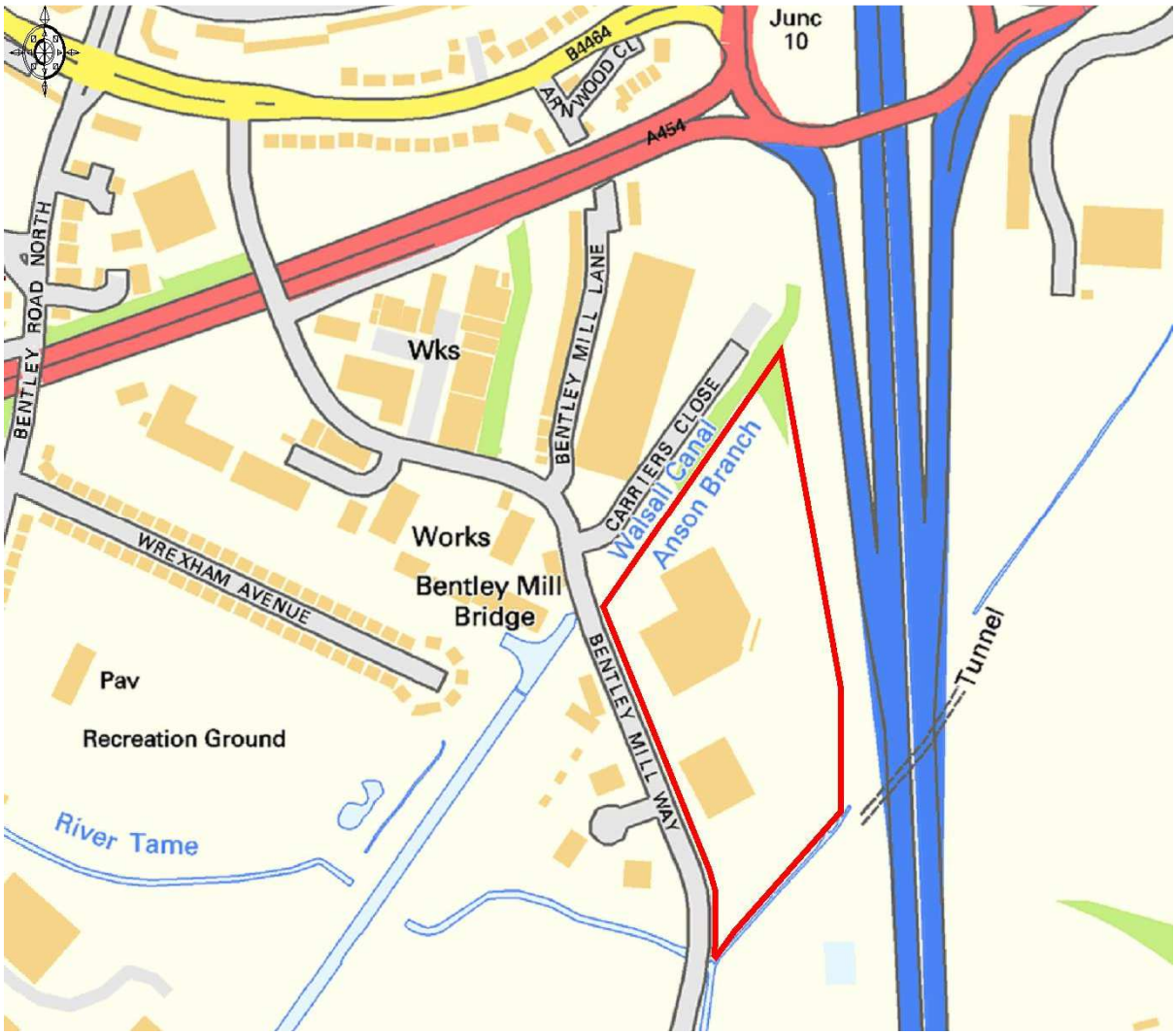
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN315 - Casino and Cinema, Bentley Mill Way

## Address: Bentley Mill Way, Darlaston

## Area: 4.58ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN315 – Casino and Cinema, Bentley Mill Way, Darlaston

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Bentley Mill Way, Darlaston | | | | | |
| National Grid Reference: | 399025, 298130 | | | | | |
| Site Size: | 4.58 hectares | | | | | |
| Current Land Use: | Cinema and casino | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Bentley Mill Way | | | | | |
| Historic Uses: | • No development indicated on past historical mappings reviewed. Made ground recorded on geological plan, likely to be colliery spoil associated with James Bridge Colliery. | | | | | |
| Recorded Geology: | Superficials: | Glaciofluvial Deposits in north<br>Alluvium in south | | | | |
| | Bedrock: | Pennine Lower Coal Measures in north of site<br>Pennine Lower Coal Measures (Sandstone) in south of site | | | | |
| | Outcrops: | Bottom Coal and Bottom Holers Coal recorded to outcrop at northern boundary.<br>New Mine Coal recorded to outcrop in centre of site | | | | |
| | Made ground: | Recorded in south of site | | | | |
| | Faults: | Moat Fault recorded in north of site, downthrown on south<br>Unnamed fault in centre of site trending E/W downthrown to north. | | | | |
| BGS Borehole Records: | Many borehole logs available, selected deeper logs viewed. Made ground recorded up to 7.9m. Several coal and ironstone seams (up to 2.5m thick) and probable workings (up to 3m thick) noted within top 30m with insufficient rock cover. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Numerous (unable to ascertain number – say 20 – 30?) | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | Bentley Mill Lane Landfill site accepted commercial and household wastes. Gas control measures included.<br>Anson Branch of Walsall Canal (1989) accepted inert, industrial, commercial and household wastes. Gas control measures included. | | | | |
| | Within 250m: | James Bridge Copper Works Landfill Site (1940 – 1993) accepted inert, industrial, commercial, household and liquids/sludges.<br>James Bridge Copper Works (1940-1982) accepted industrial, commercial, household, special and liquids/sludge.<br>Alumwell School accepted industrial, commercial and household wastes. Gas control measures included. | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | Flood Zone 2 recorded near boundary locally | | | | | |
| Additional Notes: | Majority of site lies within proto-tame channel with the exception of NE corner<br>Walsall Council have indicated that the area beneath the buildings was previously remediated by Black Country Development Corporation in the 1980s. High levels of contamination are considered unlikely in this area, however the extent of remediation is unknown at this time. The council note that the car park area was not remediated and has issues relating to instability and methane gas. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN315 – Casino and Cinema, Bentley Mill Way, Darlaston

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground
- Ground gases (made ground and landfill)
- Shallow coal/ironstone mining issues
- Numerous mineshafts recorded
- Possible unrecorded mineshafts
- Soil contamination – made ground **Higher risk for contamination due to recorded landfill on site, however, site known to be partially remediated**
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £45,000 to £90,000 |
| Possible workings within coal / ironstone seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts (numerous shafts – further researches required, some untreated) | Treatment to include drilling and pressure grouting and capping. Further researches required to ascertain the number of untreated shafts, 30 assumed initially. | £15,000 per shaft Say £450,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £20,000 to £45,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £18,500 |
| | Possible removal of contaminated soils **Higher risk for contamination due to recorded landfill on site** | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

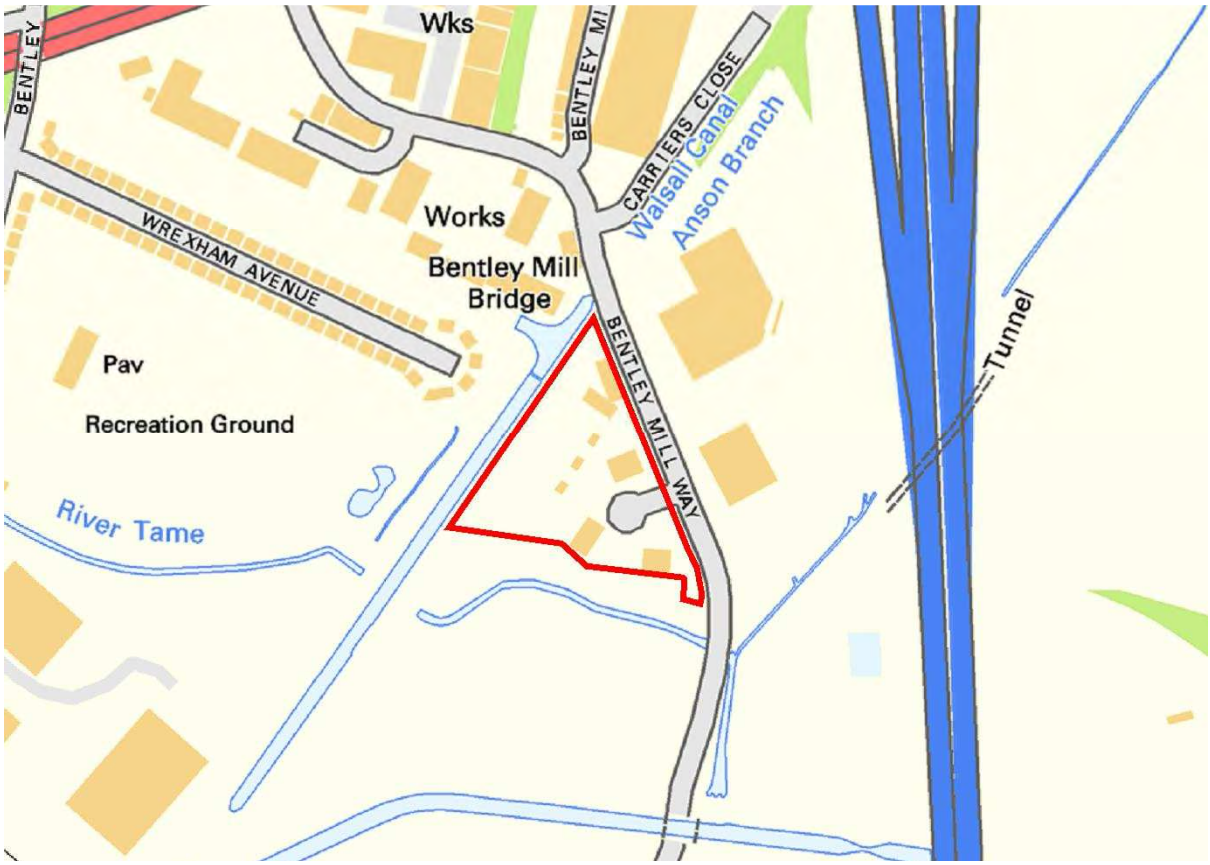
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN317 – Millers Close

## Address: Bentley Mill Way

## Size: 0.80ha



Summary of Potential Industrial and Mining Legacy Issues
Site IN317 - Millers Close

| Item | Comments |
|---|---|
| Site Address: | Millers Close, off Bentley Mill Way, Darlaston |
| National Grid Reference: | 398935, 298025 |
| Site Size: | 0.8 hectares |
| Current Land Use: | Two restaurants, one vacant building and associated car parking |
| Surrounding Land Use: | Some residential, primarily leisure (cinema and casino) and open / derelict land. River Tame lies adjacent to south of the site. |
| Access to Site: | Off Bentley Mill Way |
| Historic Uses: | Buildings associated with Bentley Flour Mill and former route of River Tame. |
| Recorded Geology: | Superficials: Alluvium comprising clay, silt, sand and gravel. The far north of the site may be overlain by glaciofluvial deposits (sand and gravel).<br>Bedrock: Sandstone of Pennine Lower Coal Measures<br>Site lies within proto-tame channel<br>Faults to north and south of site, downthrown to north.<br>Geological map / memoir indicate nearby shaft to west of site to have New Mine Coal (3.1m) at 14.3m bgl, Fireclay Coal (0.7m) at 18.1m bgl and Shallow Coal (2.3m) at 31.6m bgl. |
| BGS Borehole Records: | No borehole records within site boundary. Local shaft / borehole records indicate numerous coal seams as shallow as 6.8m, ironstone bands and probable workings (broken ground) at 19m. In addition, deep made ground was identified around the site. |
| Coal Mining: | CA mine entries indicate numerous shafts within local area. Unable to determine their exact location relative to site, further research required. Several shafts within the local area do not appear to have any records of treatment. Site lies within 'development high risk' zone and area marked as 'probable shallow coal mine workings'. Borehole records indicate 'probable workings', coal seams and ironstone seams, all within possible influencing distance of the surface. |
| Opencast Mining: | None recorded |
| Limestone Mining: | None recorded |
| Landfill Sites: | Three landfill sites lies within 250m of the site boundary. The closest, Bentley Mill Lane Landfill site accepted commercial and household wastes and is recorded as having a gas control system. James Bridge Copper Works Site and Alumwell School Landfill Site lie approx. 35m south and 245m east of the site, respectively. The James Bridge Copper Works accepted inert, industrial, commercial, household and liquids/sludge wastes between 1940 and 1993. The Alumwell School site accepted industrial, commercial and household wastes and is recorded as having a gas control system. |
| Pollution Incidents: | Significant incident noted approx. 165m south of the site. Sewage materials affected the Walsall Canal. |
| Aquifer Designation (Superficial Deposits): | Secondary A |
| Aquifer Designation (Bedrock): | Secondary A |
| Source Protection Zones: | None recorded |
| Flood Risk: | Zone 2 flood risk |
| Additional Notes: | River Tame lies adjacent to the south of the site. Walsall Canal lies approx. 165m south of the site.<br>Walsall Council have indicated that the site was previously remediated by Black Country Development Corporation in the 1980s. High levels of contamination are considered unlikely, however the extent of remediation is unknown at this time. |

Summary of Potential Industrial and Mining Legacy Issues
Site IN317 - Millers Close

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground, possibly deep
- Former river channel (River Tame)
- Ground gases (landfill and made ground)
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination (partially remediated, however extent unknown)
- Groundwater contamination (and possible effects on adjacent River Tame and local canal network)
- Sub-structures within localised areas of the site from former land use

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £8,000 to £16,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts | Search and treat recorded shafts. Treatment to include drilling and pressure grouting and capping | £15,000 per shaft say £45,000? |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling (unlikely to be extensive, no significant development recorded) | £8,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £3,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN343 - Green Lane Open Space

## Address: Green Lane

## Area: 4.13ha

Summary of Potential Industrial and Mining Legacy Issues
Site IN343 - Green Lane, Walsall

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Green Lane, Walsall | | | | | |
| National Grid Reference: | 400180, 300290 | | | | | |
| Site Size: | 4.13 hectares | | | | | |
| Current Land Use: | Open space | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Green Lane | | | | | |
| Historic Uses: | • Green Lane / Birchills Furnaces<br>• 'Old shafts'<br>• Canal basin<br>• Tramroad network connecting pits to canal | | | | | |
| | Superficials: | Till across majority of site. May be absent along western boundary. | | | | |
| Recorded Geology: | Bedrock: | Pennine Middle Coal Measures (mudstone, siltstone and sandstone) | | | | |
| | Outcrops: | Old Park Coal | | | | |
| | Made ground: | None recorded | | | | |
| | Faults: | One recorded in south, downthrown to south | | | | |
| BGS Borehole Records: | None on site. Boreholes to north indicate up to 4m of made ground (including ash and rubble) and localised peat (up to 1m). | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Multiple entries (11?), no treatment records for any | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | One | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | 2 – North Walsall Depot and JJ Gallagher Ltd Landfill | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Wyrley and Essington Canal located to west and south of site | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Site IN343 - Green Lane, Walsall

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground (former development)
- Ground gases (former development)
- Shallow coal mining issues
- Multiple recorded mineshafts, possibly untreated
- Possible unrecorded mineshafts
- Soil contamination – historic land use (former foundry)
- Groundwater contamination from historic land use and possible effects of adjacent canal
- Oversized obstructions within fill materials (deep fill and 'rubble' recorded north of site boundary)

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £41,500 to £83,00 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts | Search and treat shafts. Treatment to include drilling and pressure grouting and capping | £15,000 per shaft Say £165,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling (previous development) | £42,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | Say £16,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

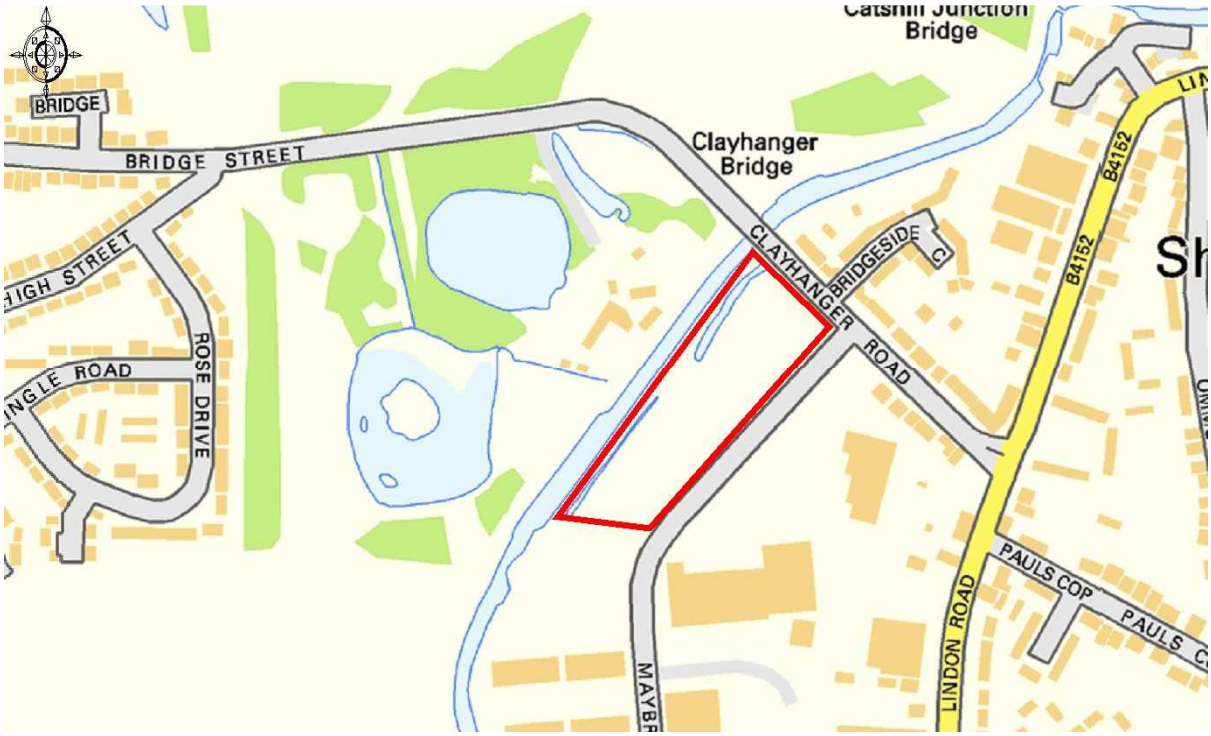
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN5.1: Land North of Maybrook Road

## Address: Maybrook Road, Brownhills

## Size: 1.68ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN5.1 – Land North of Maybrook Road, Brownhills

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Maybrook Road, Brownhills | | | | | |
| National Grid Reference: | 404730, 304540 | | | | | |
| Site Size: | 1.68 hectares | | | | | |
| Current Land Use: | Northern area vacant<br>Southern area occupied by Heathyards<br>Ponds indicated on OS mapping | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Maybrook Road | | | | | |
| Historic Uses: | • Land associated with brickworks including embankments, pits and mineral railway.<br>• Canal basin at southern site boundary | | | | | |
| Recorded Geology: | Superficials: | Glacial Till | | | | |
| | Bedrock: | Majority of site underlain by Alveley Member - Mudstone and Sandstone<br>NW - Alveley Member – Sandstone<br>NE - Etruria Formation - Mudstone, Sandstone and Conglomerate | | | | |
| | Outcrops: | None recorded | | | | |
| | Made ground: | None recorded | | | | |
| | Faults: | One fault indicated on BGS interactive mapping, not shown on older map editions.<br>Faults indicated in Shallow and Bass coal | | | | |
| BGS Borehole Records: | Local boreholes indicate deep made ground (i.e. 4m to in excess of 12m) | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | | |
| | Development High Risk Area | | | ✓ | | |
| | Surface Coal Resource Area | | | ✓ | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | | ✓ | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | Clayhanger Landfill Site indicated approx. 200m north operated between 1966 and 1986 and accepted inert, industrial and commercial wastes. Includes gas and leachate control measures. | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Wyrley Yard Coal recorded at approx. 375m bgl<br>Adjacent to Daw End Branch of Wyrley and Essington Canal<br>Walsall Council have indicated that Clayhanger landfill site does not have leachate control measures. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN5.1 – Land North of Maybrook Road, Brownhills

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (pits and embankments indicated and deep made ground recorded locally)
- Ground gases (made ground)
- Possible highwall associated with pit
- Possible unrecorded mineshafts
- Soil contamination – former mining activities
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £10,000 to £20,000 |
| Possible highwall | Rotary and trial trenching investigation | £10,000 to £50,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £5,000 to £16,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £6,750 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN5.4 – Maybrook / Lindon Road (Former Unalco)

## Address: Maybrook Road, Brownhills

## Size: 0.61ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN5.4 – Maybrook / Lindon Road, Brownhills

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Maybrook Road, Brownhills | | | | | |
| National Grid Reference: | 404650, 304170 | | | | | |
| Site Size: | 0.61 hectares | | | | | |
| Current Land Use: | Storage / parking | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | |
| Access to site: | Off Maybrook Road | | | | | |
| Historic Uses: | • Part of Walsall Wood Colliery<br>• Canal basin<br>• Mineral railway<br>• Spoil mounds | | | | | |
| Recorded Geology: | Superficials: | Glacial Till | | | | |
| | Bedrock: | Alveley Member | | | | |
| | Outcrops: | None recorded | | | | |
| | Made ground: | None recorded | | | | |
| | Faults: | None recorded (Fault in Deep Coal indicated to southeast and west of site) | | | | |
| BGS Borehole Records: | Two records of shafts from east of site indicating multiple coal seams, shallowest appears to be approx. 300m bgl. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | | |
| | Development High Risk Area | | | ✓ | | |
| | Surface Coal Resource Area | | | ✓ | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | | ✓ | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | Two: Clayhanger Landfill Site indicated approx. 200m north operated between 1966 and 1986 and accepted inert, industrial and commercial wastes. Includes gas and leachate control measures.<br>Old Walsall Wood Railway operated until 1978 and accepted inert, commercial and household wastes. | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Walsall Council have indicated that Clayhanger landfill site lies more than 250m from the site and does not have leachate control measures. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN5.4 – Maybrook / Lindon Road, Brownhills

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (associated with former colliery)
- Ground gases (made ground)
- Possible unrecorded mineshafts
- Soil contamination – former colliery
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £10,000 to £20,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £5,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £2,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN52.2 – Walsall Enterprise Park West

## Address: Prince Street / Regal Drive, Pleck

## Area: 0.80ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN52.2 – Walsall Enterprise Park West

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Prince Street / Regal Drive, Pleck | | | | | |
| National Grid Reference: | 400155, 297625 | | | | | |
| Site Size: | 0.8 hectares | | | | | |
| Current Land Use: | Vacant | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | ✓ |
| Access to site: | None currently, could access off Prince Street or Regal Drive | | | | | |
| Historic Uses: | • Pump on site boundary<br>• Unnamed small buildings<br>• Depression shown in north of site | | | | | |
| Recorded Geology: | Superficials: | Glacial Till | | | | |
| | Bedrock: | Pennine Lower Coal Measures | | | | |
| | Outcrops: | Mealy Grey (Singing) Coal recorded partly within site boundary | | | | |
| | Made ground: | Recorded across majority of site except NW corner | | | | |
| | Faults: | None recorded | | | | |
| BGS Borehole Records: | Borehole log to east of site indicates deep made ground (up to 4.57m) Ironstone (1.22m thick at 34.75m) and several bands of Limestone (some 40m thick). | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | | |
| | Development High Risk Area | | ✓ | | Within far NW corner only | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | Within far NW corner only | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | One: Pleck Road Works accepted special waste and liquid / sludges up to 1981 (approx. 230m east of site). | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Former canal basin indicated to east of site<br>Possible gas main easement in part of site<br>Land formerly associated with Pleck Gas Works | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN52.2 – Walsall Enterprise Park West

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (identified deep locally and localised former development)
- Ground gases (made ground)
- Shallow coal mining issues
- Possible ironstone and limestone mining
- Possible unrecorded mineshafts
- Soil contamination – former development
- Groundwater contamination
- Former pump on / near site

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £10,000 to £20,000 |
| Possible workings within coal / ironstone / limestone seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £50 per $m^2$ of development |
| Investigate/treat pump / well | Possible drill and grout required. May be possible to carry out surface scrape with excavator depending on made ground depths. | Say £15,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £4,000 to £8,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £3,000 to £4,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

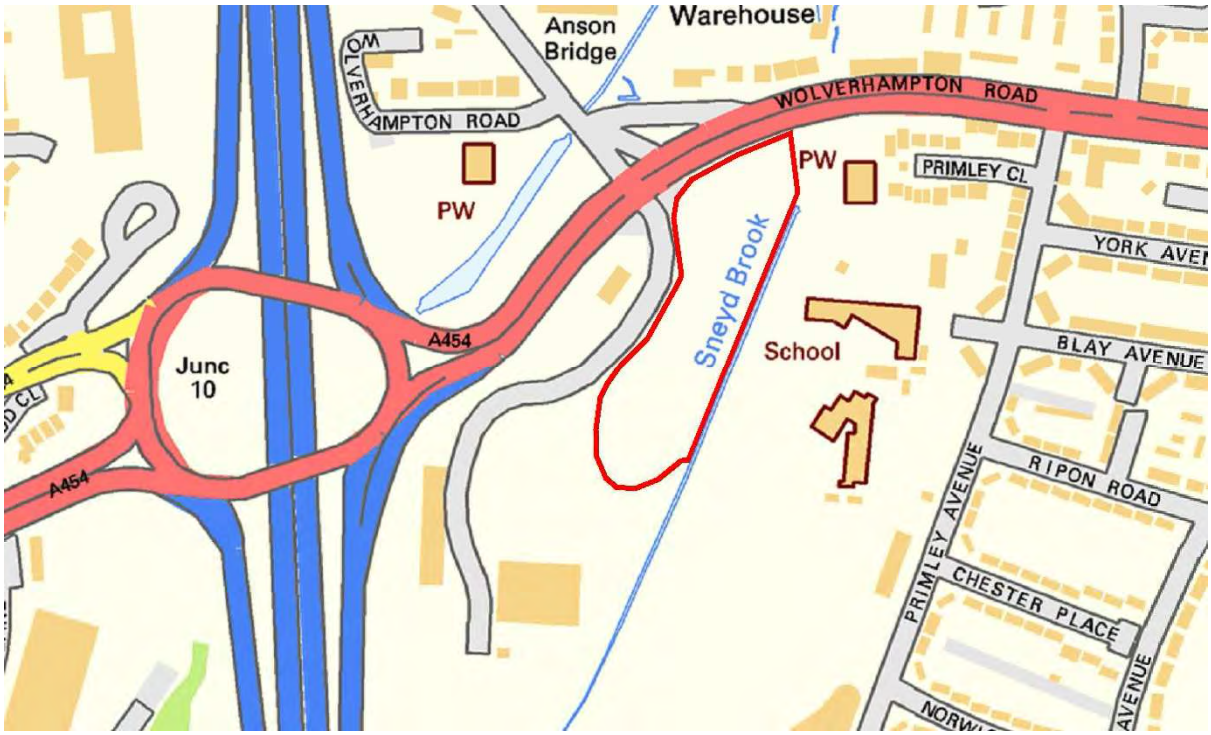
**NOTE: Costings above for comparison purposes only – not definitive costs**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN63 – Tempus 10 North (Onyx)

## Address: Tempus Drive, Walsall

## Size: 1.74ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN63, Tempus 10 North (Onyx)

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Tempus 10 North, Tempus Drive, Walsall | | | | | |
| National Grid Reference: | 399435, 298710 | | | | | |
| Site Size: | 1.74 hectares | | | | | |
| Current Land Use: | Scrubland | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | | Residential | ✓ |
| Access to site: | Off Tempus Drive | | | | | |
| Historic Uses: | • Open fields<br>• Historical Landfill | | | | | |
| Recorded Geology: | Superficials: | Glacial Fluvial Deposits, and Alluvium | | | | |
| | Bedrock: | Pennine Lower Coal Measures | | | | |
| | Outcrops: | Bottom and Bottom Holers coal seams outcrop to the north and west of the site. | | | | |
| | Made ground: | Made ground recorded across the site, described as colliery spoil, domestic waste and embankments on published mapping. | | | | |
| | Faults: | Moat Fault to the south of the site, trending east-west down throwing to the south | | | | |
| BGS Borehole Records: | None available on site. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | 2 recorded shafts within the site area. No treatment details | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | Just within the area | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | Bottom Coal/Bottom Holers Recorded to outcrop in the northern section of the site | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone | | | | | |
| Landfill Sites: | On Site: | One – Alumwell School Landfill site, recorded to have accepted industrial, commercial and household waste. | | | | |
| | Within 250m: | None recorded within 250m of the site boundary | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | Flood zone 2 and 3 within the site area | | | | | |
| Additional Notes: | Walsall council have indicated that the landfill on site is 'land at junction 10' and the Alumwell School landfill is within 250m of the site. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN63, Tempus 10 North (Onyx)

Possible Constraints Relating to Past Mining and Industrial Heritage

- Variable depths of made ground
- Ground gases (made ground)
- Possible shallow mineworkings
- Two recorded mineshafts
- Soil contamination
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £20,500 - £27,500 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts | Probe drilling, drill, pressure grout and cap recorded shafts | £30,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | Say £17,000 |
| Soil contamination | Human health risk assessment | £10,000 |
| | Provision of clean cover for landscaped areas | £7,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

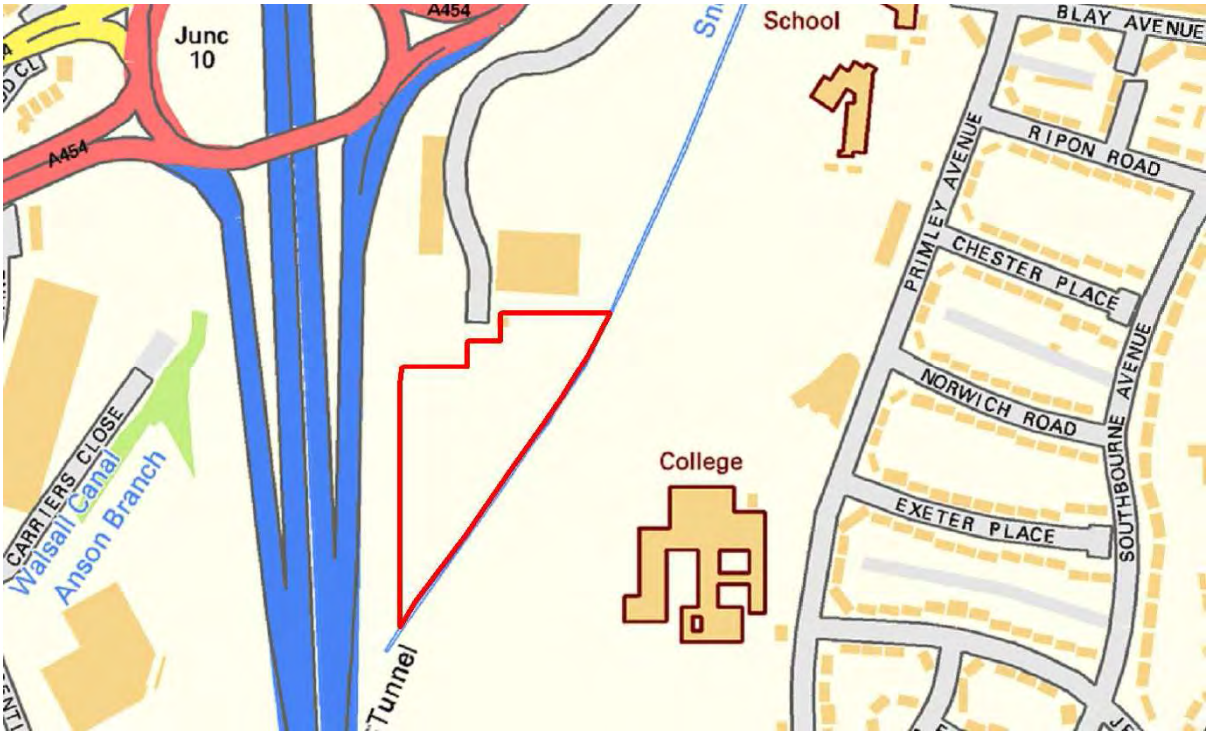
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN64 - Tempus 10 South (Opal)

## Address: Tempus Drive Walsall

## Area: 1.72ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN64, Tempus 10 South (Opal)

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Tempus Drive, Walsall | | | | | |
| National Grid Reference: | 399253, 298360 | | | | | |
| Site Size: | 1.72 hectares | | | | | |
| Current Land Use: | Extensive mound of tipped material - scrubland | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | | Residential | |
| Access to site: | Off Tempus Drive | | | | | |
| Historic Uses: | • Open fields<br>• Historical Landfill<br>• Extensive mound of tipped materials | | | | | |
| Recorded Geology: | Superficials: | Glacial Fluvial Deposits, and Alluvium | | | | |
| | Bedrock: | Pennine Lower Coal Measures | | | | |
| | Outcrops: | Bottom and Bottom Holers coal seams outcrop to the north and west of the site. | | | | |
| | Made ground: | Made ground recorded across the site, described as colliery spoil, domestic waste and embankments on published mapping. | | | | |
| | Faults: | Moat Fault to the south of the site, trending east-west down throwing to the south | | | | |
| BGS Borehole Records: | None available on site. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | Numerous shafts present to the south of the site | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | Just within the most southern extent of the site | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | Bottom Coal/Bottom Holers Recorded to outcrop in the northern section of the site | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | According to the interactive planning map on the Walsall Council website the site is not within a Limestone Consideration Zone | | | | | |
| Landfill Sites: | On Site: | One – Alumwell School Landfill site, recorded to have accepted industrial, commercial and household waste. | | | | |
| | Within 250m: | Bentley Mill Lane landfill site, recorded to have accepted industrial, commercial and household waste. | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | Flood zone 2 and 3 within the site area | | | | | |
| Additional Notes: | Extensive mound of tipped material present across the majority of the site which will require removal prior to any redevelopment of the site.<br>Walsall council have indicated that the landfill on site is 'land at junction 10' and the Alumwell School landfill is within 250m of the site. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN64, Tempus 10 South (Opal)

Possible Constraints Relating to Past Mining and Industrial Heritage

- Extensive mound of tipped materials present on site.
- Probable deep made ground
- Ground gases (made ground)
- Possible shallow mineworkings
- Possible unrecorded mineshafts
- Soil contamination.
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| **Site Clearance** | **Extensive mound of tipped material present across the majority of the site which will require removal prior to any redevelopment of the site.** | **£2,000 000 to £4,000 000** |
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £20,500 - £29,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | Say £17,000 |
| Soil contamination | Human health risk assessment | £10,000 |
| | Provision of clean cover for landscaped areas | £7,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

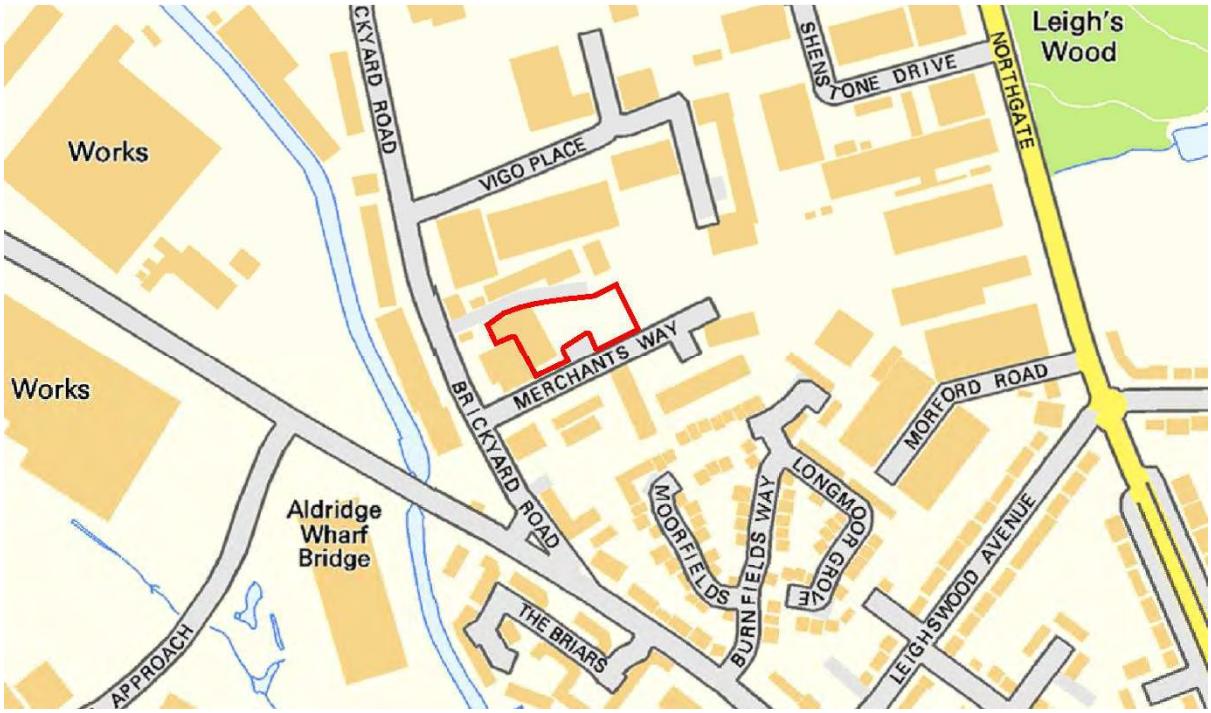
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN9.3 - Merchants Way, Aldridge

## Address: Merchants Way, Aldridge

## Area: 0.43ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN9.3 – Merchants Way, Aldridge

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Merchants Way, Aldridge | | | | | |
| National Grid Reference: | 405080, 301380 | | | | | |
| Site Size: | 0.43 hectares | | | | | |
| Current Land Use: | Vacant | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | ✓ | Residential | |
| Access to site: | Off Merchants Way | | | | | |
| Historic Uses: | • Council Depot<br>• Part of large unnamed building and yard | | | | | |
| Recorded Geology: | Superficials: | Glacial Till | | | | |
| | Bedrock: | Etruria Formation | | | | |
| | Outcrops: | None | | | | |
| BGS Borehole Records: | Record from site indicates in excess of 1.8m of made ground associated with former development. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | | ✓ | | |
| | Development High Risk Area | | | ✓ | | |
| | Surface Coal Resource Area | | | ✓ | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | | ✓ | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | None recorded | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Walsall Council's waste management facility lies adjacent to east of site<br>Sub station.<br>Walsall Council have indicated that there may be fuel tanks locally beneath part of the site. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN9.3 – Merchants Way, Aldridge

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (former development)
- Ground gases (made ground)
- Soil contamination – former development, fuel tanks
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £10,000 to £20,000 |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £4,000 to £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £2,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

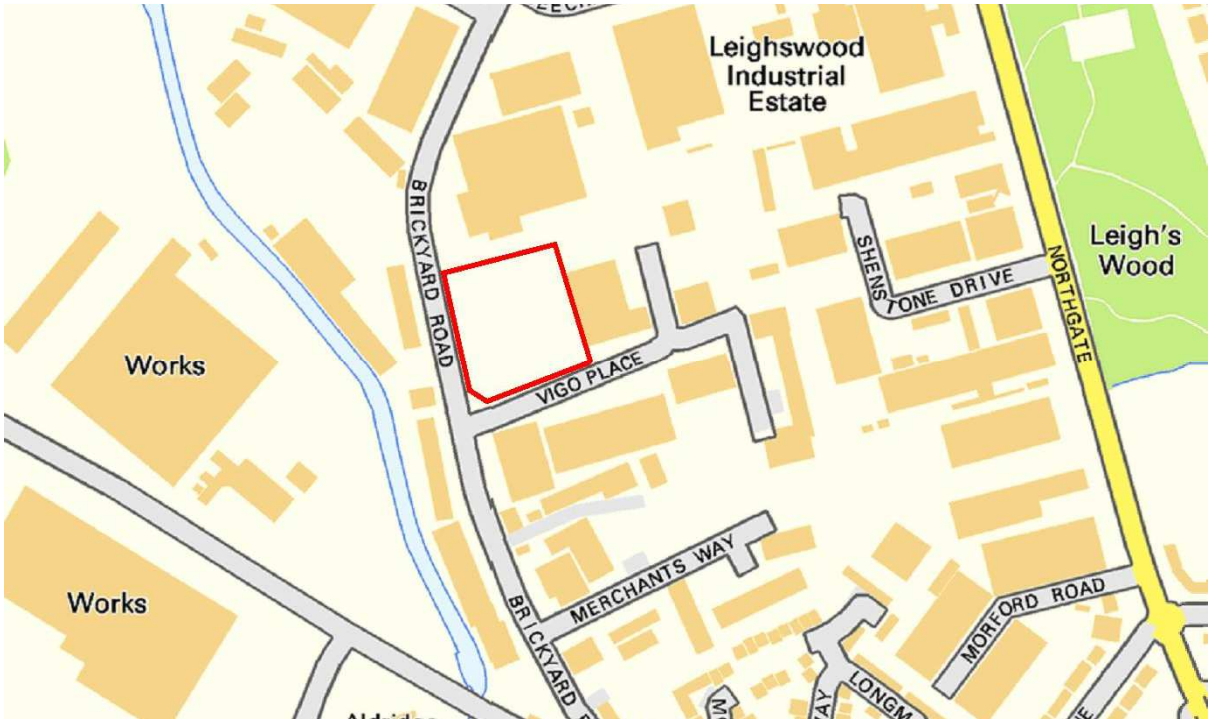
**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## SAD Employment Land Delivery Proformas

## Site IN9.4 Vigo Place

## Address: Corner of Vigo Place and Brickyard Road, Aldridge

## Area: 0.86ha



Summary of Potential Industrial and Mining Legacy Issues
Site IN9.4 Land at Vigo Place / Brickyard Road, Aldridge

| Item | Comments |
|---|---|
| Site Address: | Corner of Vigo Road and Brickyard Road, Aldridge |
| National Grid Reference: | 405010, 301535 |
| Site Size: | 0.86 hectares |
| Current Land Use: | Storage of containers / portacabins |
| Surrounding Land Use: | Industrial estate / business park |
| Access to Site: | Off Vigo Place |
| Historic Uses: | Possible railway and sidings. |
| Recorded Geology: | Glacial Till onto Etruria Formation consisting of mudstone, sandstone and conglomerate. Middle Coal Measures lie beneath Etruria Formation in geological sequence. Some faulting indicated locally. |
| BGS Borehole Records: | Borehole records indicate Leighswood Colliery 3 shaft located north of the site at a depth of 375.45m. Coal was recorded in several bands, the first of which was in excess of 60m bgl. Boreholes were drilled to 30m at and around the location to investigate the shaft; no 'serious' voids were encountered. |
| Coal Mining: | No coal outcrops recorded locally. No past or current surface mining recorded on CA interactive map viewer. One shaft present, conjectured to be to north of site boundary. Shaft appears to have been treated by being filled (1960), plugged with concrete (1973/74) and grouted to 45m in 1981. |
| Opencast Mining: | None recorded |
| Limestone Mining: | None recorded |
| Landfill Sites: | Stubbers Green Road Landfill site recorded approx. 245m northwest of the site is recorded as accepting 'non bio-degradable wastes' and is now closed. There are several other sites located within 1km of the site. |
| Pollution Incidents: | None recorded within 250m of the site. Closest incident, approximately 565m west of the site, had a 'significant' impact to water and involved oils and fuel in September 2001. |
| Aquifer Designation (Superficial Deposits): | None |
| Aquifer Designation (Bedrock): | Secondary A |
| Source Protection Zones: | None recorded |
| Flood Risk: | None recorded |
| Additional Notes: | Rushall Canal located approx. 65m west of the site |

Summary of Potential Industrial and Mining Legacy Issues
Site IN9.4 Land at Vigo Place / Brickyard Road, Aldridge

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground, possibly deep
- Ground gases
- Shallow coal mining issues
- Possible unrecorded mineshafts
- Soil contamination
- Groundwater contamination (and possible effects nearby Rushall Canal)
- Sub-structures within localised areas of the site

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £8,600 to £17,200 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling (unlikely to be extensive, no significant development recorded) | £8,600 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £3,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN9.8: Coppice Lane

## Address: Coppice Lane / Brickyard Road, Aldridge

## Size: 1.04ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN9.8 – Coppice Lane / Brickyard Road, Aldridge

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Coppice Lane / Brickyard Road, Aldridge | | | | | |
| National Grid Reference: | 404660, 302380 | | | | | |
| Site Size: | 1.04 hectares | | | | | |
| Current Land Use: | Waste processing site | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Coppice Lane | | | | | |
| Historic Uses: | • Land associated with Aldridge Colliery including spoil mounds, mineral railway, buildings<br>• Land formerly occupied by plant hire and aggregates supplier | | | | | |
| Recorded Geology: | Superficials: | Glacial Till | | | | |
| | Bedrock: | Etruria Formation | | | | |
| | Outcrops: | None recorded | | | | |
| | Made ground: | None recorded | | | | |
| | Faults: | None recorded | | | | |
| BGS Borehole Records: | Geological plan indicates two shafts, depths recorded in 'downcast' shaft:<br>Base of Etruria Marl: 152.1m<br>Base of Bottom Robbins 2.28m thick at 236.53m)<br>Base of Brooch (0.76m thick at 265.8m)<br>Base of Shallow and Deep (4.19m thick at 408.74m) | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Two (filled, grouted to 112m and 161m and capped) in 1981/82 | |
| | Development High Risk Area | | ✓ | | Area around shafts only | |
| | Surface Coal Resource Area | | | ✓ | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | | ✓ | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | Five: Mitco (inert, household, special and liquids/sludges), Empire Brickworks (industrial, special and liquids/sludges), Highfields South Landfill Site (no information), Utopia Quarry (no information), Vigo Utopia (inert and non-hazardous wastes) | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Unproductive strata | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | None recorded | | | | | |
| Additional Notes: | Processing, screening and recycling imported inert wastes (construction and demolition wastes). Stockpiles of some 8m to 10m over approx. 1/3 of site. wastes<br>**Higher potential contamination risk use to waste processing on site** | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN9.8 – Coppice Lane / Brickyard Road, Aldridge

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (localised former development, colliery, imported wastes)
- Ground gases (made ground)
- Two recorded mineshafts
- Possible unrecorded mineshafts
- Soil contamination – former colliery and imported wastes **Higher potential contamination risk use to waste processing on site**
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £10,000 to £20,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £5,000 to £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £4,000 to £5,000 |
| | Possible removal of contaminated soils **Higher potential contamination risk use to waste processing on site** | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN92 – Aspect 2000

## Address: Bentley Mill Way

## Size: 3.34ha

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN92 – Aspect 2000, Bentley Mill Way, Darlaston

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Bentley Mill Way, Darlaston | | | | | |
| National Grid Reference: | 398865, 297890 | | | | | |
| Site Size: | 3.34 hectares | | | | | |
| Current Land Use: | Truck, haulage storage and repair business | | | | | |
| Surrounding Land Use: | Commercial | ✓ | Industrial | | Residential | |
| Access to site: | Off Bentley Mill Way | | | | | |
| Historic Uses: | • Possible water bodies<br>• Sports ground and pavilion<br>• Embankment indicated in west of site<br>• 'Track' indicated through central area (E/SW) | | | | | |
| Recorded Geology: | Superficials: | Alluvium | | | | |
| | Bedrock: | Pennine Lower Coal Measures Formation - Sandstone | | | | |
| | Outcrops: | None recorded within site boundary | | | | |
| | Made ground: | Recorded in SW corner. Much of surrounding area recorded to comprise made ground. | | | | |
| | Faults: | James Bridge Fault recorded within north of site (trending E/W), downthrown to north. | | | | |
| BGS Borehole Records: | Up to 9.8m of made ground. The top of the Pennine Lower Coal Measures strata were typically between 6m and 15m bgl comprising sandstone, siltstone, mudstone and coal seams. Several coal seams up to 1.4m thick were encountered at relatively shallow depth. Possible workings were identified between depths of 15m and 23m bgl. | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | 7 mine shafts, none of which have treatment details | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | | ✓ | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | | ✓ | | |
| Opencast Mining: | None recorded | | | | | |
| Limestone Mining: | None recorded on site (Darlaston Green Colliery indicated approx. 80m W of site – untreated). | | | | | |
| Landfill Sites: | On Site: | None recorded | | | | |
| | Within 250m: | Four: James Bridge Copper Works (1940 – 1993) accepted imert, industrial, commercial, household and liquids/sludges.<br>Bentley Mill Lane Landfill Site accepted commercial and household wastes. Gas control measures included.<br>Anson Branch of the Walsall Canal (1989) accepted inert, industrial, commercial and household wastes. Gas control measures included.<br>Alumwell School Landfill Site accepted industrial, commercial and household wastes. Gas control measures included. | | | | |
| Pollution Incidents on Site: | None recorded on site.<br>Significant impact to canal water south of site due to sewage materials (2002) | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None recorded | | | | | |
| Flood Risk: | Flood Zone 2 or 3 across large area of the site | | | | | |
| Additional Notes: | Sewer beneath current access track that has development stand-off.<br>Site bound by Walsall Canal (Anson Branch) to south, River Tame to north and Bentley Mill Lane to east. A disused arm of the canal is indicated to west of site. | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN92 – Aspect 2000, Bentley Mill Way, Darlaston

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground
- Ground gases (made ground and nearby landfill sites)
- Shallow coal mining issues
- Recorded mineshafts
- Possible unrecorded mineshafts
- Soil contamination – truck storage / repair
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £33,500 to £67,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Recorded mine shafts | Search and treat recorded shafts. Treatment to include drilling and pressure grouting and capping | £15,000 per shaft say £105,000 |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling (unlikely to be extensive, no significant development recorded) | £5,000 to £10,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £13,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

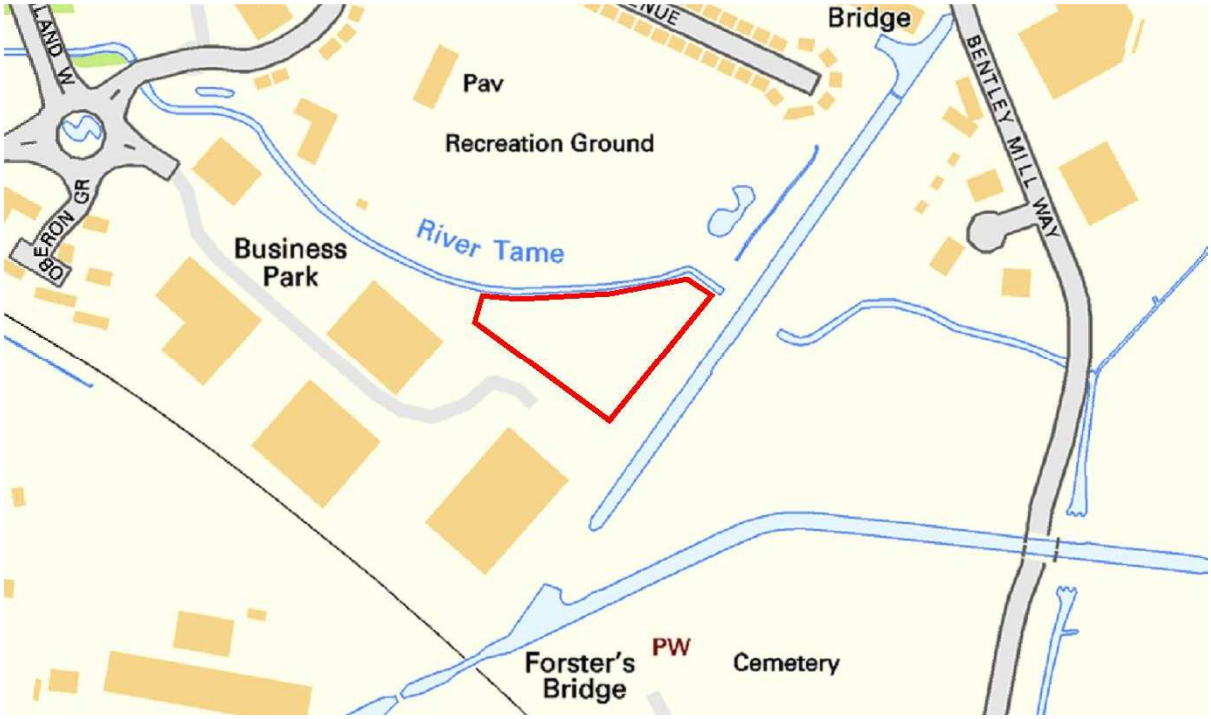
**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

## Site IN93.2 – Axcess 10 East

## Address: Axcess 10 Business Park Bentley Road North, Darlaston

## Size: 1.11ha



Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN93.2 – Axcess 10 Business Park, Bentley Road North, Darlaston

| Item | Comments | | | | | | |
|---|---|---|---|---|---|---|---|
| Site Address: | Axcess 10 Business Park, Bentley Road North, Darlaston | | | | | | |
| National Grid Reference: | 398649, 297938 | | | | | | |
| Site Size: | 1.11 hectares | | | | | | |
| Current Land Use: | Scrubland and carpark | | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | | |
| Access to site: | Off Axcess 10, directly off Bentley Road North | | | | | | |
| Historic Uses: | • Former sewage farm. | | | | | | |
| Recorded Geology: | Superficials: | Alluvium | | | | | |
| | Bedrock: | Pennine Lower Coal Measures<br>Pennine Lower Coal Measures (Sandstone) | | | | | |
| | Outcrops: | No coal seam outcrops recorded | | | | | |
| | Made ground: | Recorded in west of site | | | | | |
| | Faults: | James Bridge Fault runs though the southern section of the site trending in an east west direction down throwing to the north. | | | | | |
| BGS Borehole Records: | Many borehole logs available, selected deeper logs viewed. Made ground recorded up to 3.05m overlying sands and gravel, overlying sandstone. Two coal seams are recorded 1.2m thick at 10.70m depth and 1.85m thick at 12.80m depth. | | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | | |
| | Mine Entries | | | ✓ | Several directly adjacent to the site. | | |
| | Development High Risk Area | | ✓ | | | | |
| | Surface Coal Resource Area | | ✓ | | | | |
| | Surface Mining | | | ✓ | | | |
| | Past Shallow Coal Mine Workings | | | ✓ | Present close to the northern site boundary | | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | | |
| | Coal Outcrops | | | ✓ | | | |
| Opencast Mining: | None recorded | | | | | | |
| Limestone Mining: | None recorded within the site. Untreated limestone mine recorded to the south of the site. | | | | | | |
| Landfill Sites: | On Site: | None Recorded | | | | | |
| | Within 250m: | None Recorded | | | | | |
| Pollution Incidents on Site: | None recorded | | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary A | | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | | |
| Source Protection Zones: | None recorded | | | | | | |
| Flood Risk: | Flood Zone 2 and Flood zone 3 within the site | | | | | | |
| Additional Notes: | Power line and sewer running over part of the site recorded as constrains on the development of the site | | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site IN93.2 – Axcess 10 Business Park, Bentley Road North, Darlaston

Possible Constraints Relating to Past Mining and Industrial Heritage

- Deep made ground (former sewer)
- Ground gases (made ground)
- Potential shallow coal mining issues (although none recorded on site)
- Possible unrecorded mineshafts
- Soil contamination – made ground
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | 15,500 to 24,000 |
| Possible workings within coal seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) | Say £20 to £40 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| In-situ substructures | Grubbing out and backfilling | £10,000 – £20,000 |
| Soil contamination | Human health risk assessment | £5,000 |
| | Provision of clean cover for landscaped areas | £4,500 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

Summary of Potential Industrial and Mining Legacy Issues
Employment Site - Hughes Road, Loxdale

Summary of Potential Industrial and Mining Legacy Issues
Employment Site - Hughes Road, Loxdale

| Item | Comments | | | | | |
|---|---|---|---|---|---|---|
| Site Address: | Land off Hughes Road, Loxdale | | | | | |
| National Grid Reference: | 396306 296385 | | | | | |
| Site Size: | 8.8 hectares | | | | | |
| Current Land Use: | Scrubland | | | | | |
| Surrounding Land Use: | Commercial | | Industrial | ✓ | Residential | ✓ |
| Access to site: | Off Hughes Road, and Dales Street | | | | | |
| Historic Uses: | • Infilled canal basin in central eastern section of site<br>• Former pits and mounds<br>• Former landfill<br>• Large mound in north western corner of site<br>• Possible old coal shafts<br>• Former Pond in central eastern section of site<br>• Pond in central section of the site | | | | | |
| Recorded Geology: | Superficials: | Glaciolacustrine deposits and glacial Till | | | | |
| | Bedrock: | Pennine Middle Coal Measures | | | | |
| | Outcrops: | Thick, Wyrley Bottom, Old Park Coal Little Coal and the Heathen Coal Seams in the north eastern section of the site | | | | |
| | Made ground: | Across entire site – mainly colliery spoil, domestic refuse and embankments | | | | |
| | Faults: | None recorded | | | | |
| BGS Borehole Records: | | | | | | |
| Coal Mining: | Item: | | Yes | None Recorded | Comments | |
| | Mine Entries | | ✓ | | Numerous recorded within site and surrounding area | |
| | Development High Risk Area | | ✓ | | | |
| | Surface Coal Resource Area | | ✓ | | | |
| | Surface Mining | | | ✓ | | |
| | Past Shallow Coal Mine Workings | | ✓ | | Within southern section of the site | |
| | Probable Shallow Coal Mine Workings | | ✓ | | | |
| | Coal Outcrops | | ✓ | | | |
| Opencast Mining: | None Recorded | | | | | |
| Limestone Mining: | None Recorded | | | | | |
| Landfill Sites: | On Site: | Hughes Road Landfill Site – Commercial and Household Waste No dates given for first or last waste received. | | | | |
| | Within 250m: | 4 landfills,- The Lunt Sewage Works, Dale St, Heathfield Lane West, and Land Adjacent to Walsall Canal | | | | |
| Pollution Incidents on Site: | None recorded | | | | | |
| Aquifer Designation (Superficial Deposits): | Secondary Undifferentiated | | | | | |
| Aquifer Designation (Bedrock): | Secondary A | | | | | |
| Source Protection Zones: | None Recorded | | | | | |
| Flood Risk: | Low to medium risk of flooding from rivers and seas, central and southern section of the site within flood zone 2 and 3 | | | | | |
| Additional Notes: | Probable very high remediation and reclamation costs associated with the redevelopment of this site due to the landfill on site and likely extensive historic mining within the site area | | | | | |

Summary of Potential Industrial and Mining Legacy Issues
Employment Site - Hughes Road, Loxdale

Possible Constraints Relating to Past Mining and Industrial Heritage

- Made ground (probable deep made ground, recorded landfill with domestic and commercial waste
- Ground gases (made ground)
- Potentially extensive shallow coal mining issues
- Possible ironstone mining
- Recorded mineshafts
- Probable unrecorded mineshafts
- Soil contamination – landfill material
- Groundwater contamination

Possible Remedial Works

| Constraint | Possible Works | Possible Cost* |
|---|---|---|
| Unknown depths of made ground, possible coal seams, contamination | Site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). | £90,000 – £180,000 |
| Probable extensive workings within coal / ironstone seams | Drill and grout investigation beneath development footprint (dependent on findings of initial SI) **Thick Coal Seam outcropping on site – High drill and grout costs associated** | Say £50 to £70 per $m^2$ of development |
| Unrecorded mine shafts | Treatment to include drilling and pressure grouting and capping | £10,000 per shaft |
| Recorded mine shafts | Search and treatment of shafts to include drilling and pressure grouting and capping | £15,000 per shaft |
| Piled foundations | Piled foundations in areas of deep made ground (dependent on proposed structure and SI results) | Unable to cost |
| Ground gas | Installation of gas protection measures vents and / or membranes – assume high gas levels – deep made ground anticipated locally | Say £10 per $m^2$ of development |
| Soil contamination | Human health risk assessment | £10,000 |
| | Provision of clean cover for landscaped areas | £36,000 |
| | Possible removal of contaminated soils | £200 per $m^3$ (quantity unknown) |
| Groundwater contamination | Groundwater Risk Assessment (if required) – further assessment required following investigation | £7,500 |
| | Groundwater clean-up (if required) | SI information required |

* based on previous information not being available.

**PROBABLE VERY HIGH REMEDIATION AND RECLAMATION COSTS ASSOCIATED WITH THE REDEVELOPMENT OF THIS SITE DUE TO A LANDFILL ON SITE AND LIKELY EXTENSIVE HISTORIC MINING WITHIN THE SITE AREA**

**Costs for Comparison purposes only – Based on Table 1 Cost Rationale for Site Investigation and Remedial Works – Review of Mining and Industrial Heritage – WM10974**

**Site specific cost estimates can be provided following receipt of development proposals, unknown building specifications therefore unable to provide indicative cost ranges at this stage.**

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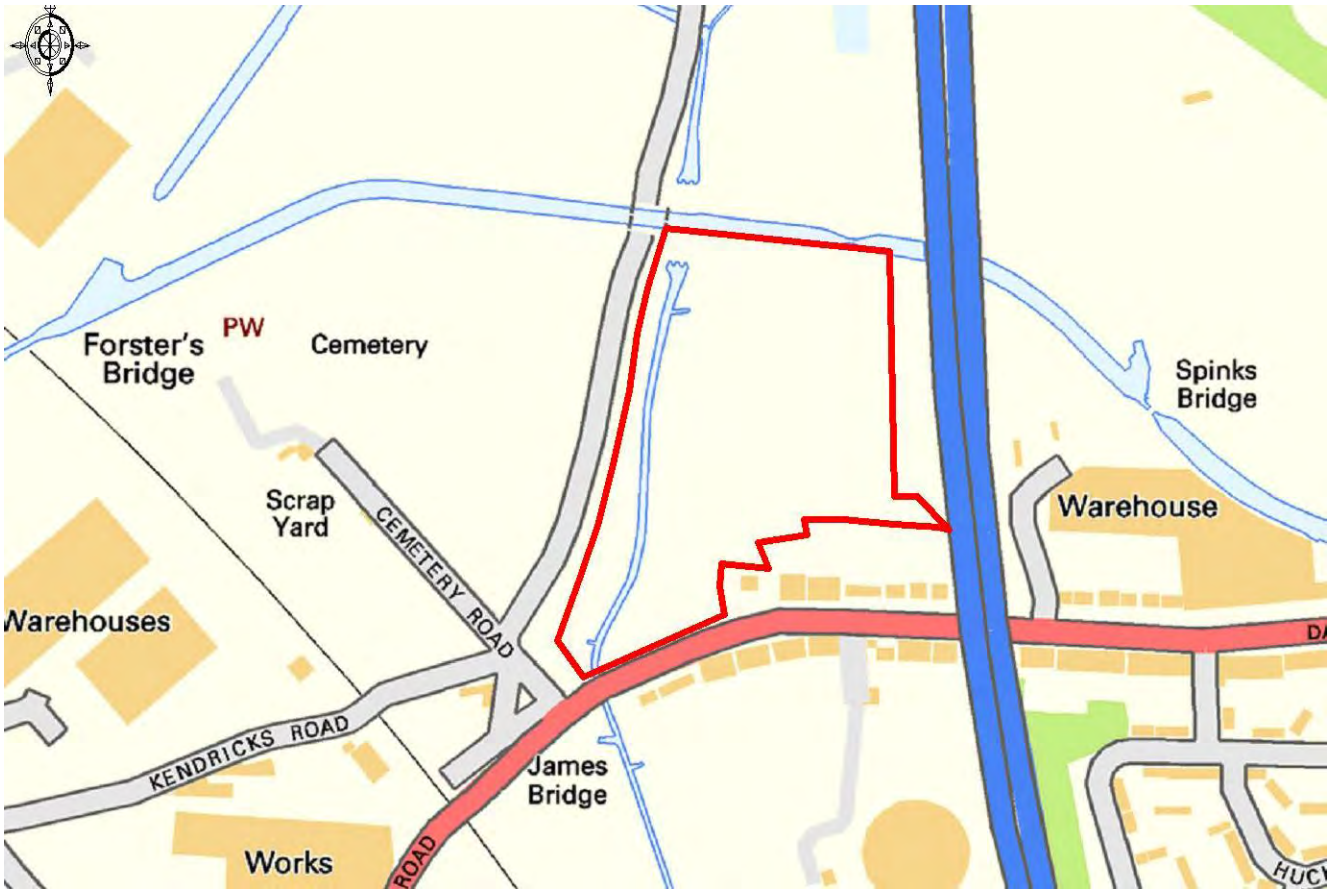
# Appendix 2a – Employment Site Proformas (0-5 year)

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Parallel 9/10 | | **Site Ref** | IN105 |
| **Plan:** | | | **Landowner:** | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Darlaston Road, Darlaston |
| **Site Description** | The site is located to the north of Darlaston Road, Walsall.<br><br>The site is covered by a mix of rough grassland and marsh areas. Semi mature and mature trees were noted along the western and eastern boundaries of the site. There is another drainage infrastructure constraint within the north western corner of the site. Additionally a number of linear unidentified trenches were observed during the survey. These trenches varied in size and some were found to be holding water and supporting marsh vegetation. A number of bunds / mounds were noted across site. A low level bund was noted along the southern boundary, and a bund approximately 1.5 to 2m in height was observed within the south western area of the site. |
| **Gross Site Area:** | 3.31 ha (8.17 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site benefits from a good location. The site is bound by the M6 to the east, Walsall Canal raised above the site on the James Bridge Aqueduct is located to the north, Bentley Mill Way is located to the west and Darlaston Road to the south.<br><br>As the area sits within the Black Country Enterprise Zone, the availability of funding mechanisms could increase the market attractiveness of the site. Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | Site is located in Darlaston Local Development Order Area.<br><br>DSDA access project.<br><br>This site could potentially provide a significant inward investment opportunity given its size. |
| **Constraints** | The current road network would be barely adequate to support a large employer.<br><br>There is some residential on the front of the site which restricts access. |
| **Abnormal Costs** | The site is known to have poor ground conditions.<br><br>There are possible unrecorded mineshafts onsite. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 142,124 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at 5.25 psf<br>Yield at 6.5% |
| **Development Costs** | Build cost at £40 psf<br>Remediation cost at £1,030,000<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£15,202,606 |
| | Construction Costs<br>£7,810,163 |

| | |
|---|---|
| | Remediation Costs<br>£1,030,000 (£126,070/acre) |
| | Professional Fees<br>£884,016 |
| | Marketing and Disposal<br>Letting Fees: £207,192<br>Disposal Fees: £179,011 |
| | Finance<br>£179,011 |
| | Profit<br>£1,867,941 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £520,949 |
| **Residual Site Value per acre (With Abnormals)** | £43,420 |
| **Residual Site Value without Abnormals** | £2,258,394 |
| **Residual Site Value per acre (Without Abnormals)** | £188,235 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2016 -2021 |
| **Delivery Strategy** | Assistance available through the EZ designation i.e. grants for site investigation works and other potential financial assistance through the EZ business rates mechanism.<br><br>The Council expect the site to be delivered in the next 5 years by the private sector with the support of the public sector through the site's Black Country Enterprise Zone status and the business rate mechanism. Intrusive site investigation works have been completed. A Memorandum of Understanding has been entered into by the land owner and the Local Authority with provisions set |

| | |
|---|---|
| | out to achieve the redevelopment of the site for commercial uses. Potential milestones for delivery are:<br><br>- Owner to engage in dialogue with the appropriate bodies in relation to remediation, infrastructure works, and planning requirements (2015/16)<br>- Owner to prepare a scheme capable of achieving planning consent and an outline business case (2015/16)<br>- Completion of Council funding provisions (2015/16)<br>- Planning permission obtained by 2017<br>- Complete remediation and any infrastructure works by 2019<br>- Assumed build out to commence by 2020 |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Phoenix 10 | | **Site Ref** | IN 104 |
| **Plan:** | | | **Landowner:** HCA and Walsall Council | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Reservoir Road, Walsall |
| **Site Description** | Phoenix 10 is the Borough's single biggest employment land regeneration opportunity and could provide for up to 625 net jobs. The main former copper works site is formed of the cleared land to the east of the M6 and a parcel to the west of the motorway, which was used by IMI as a tip, connected to the main site by means of a tunnel under the M6. Immediately to the north of the main IMI site is an area of open land, which is a former commercial and domestic refuse tip. |

| | |
|---|---|
| | The site is bound by the M6, River Tame, Walsall Canal, school Academy, industrial units and residential properties. The Brown Lion Junction is going to be improved as part of the DSDA Access Project. This will ease access to M6 Junction 9 from the Phoenix 10 area. |
| **Gross Site Area:** | 18 ha (44 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site is in close proximity to Parallel 9/10 and the Gasholders site – all three sites in combination could potentially provide a significant inward investment opportunity due to their size.<br><br>Phoenix 10 would be particularly suitable for a large manufacturing operator, with its satellite sites serving as parking or ancillary offices. Otherwise it could be remediated and developed in stages. Given the costs associated with remediation it is clear that some form of public sector intervention will be required for the site to deliver its projected outputs.<br><br>As the area sits within the Black Country Enterprise Zone, the availability of funding mechanisms could increase the market attractiveness of the site. Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development.<br><br>It is the largest site within the Black Country Enterprise Zone. Currently companies enquiring about new facilities will find it difficult to secure large, modern, and readily available facilities within the Black Country. There are also few sites which could accommodate design and build solutions and many larger sites require extensive remediation, including Phoenix 10.<br><br>The site is currently being marketed by DTZ. The landowners are seeking to procure a development partner to remediate and develop the site. This public sector partnering opportunity is being advertised in the Official Journal of the European Union. |
| **Opportunities** | Site located in Darlaston Local Development Order area.<br><br>DSDA access project. The Brown Lion Junction is going to be improved as part of the DSDA Access Project. This will ease access to M6 Junction 9 from the Phoenix 10 area.<br><br>Site IN205 (Bentley Mill Way East), which was used by IMI as a tip, could be used for storage or parking associated with the main site.<br><br>The adjacent Primley Avenue Park could be used to facilitate remediation, but would require reinstatement as a public park.<br><br>Additional third party land could be incorporated into the site purchase. |

| | |
|---|---|
| **Constraints** | Access to the site is constrained which would require the acquisition of a third party unit to improve the access and marketability of the site.<br><br>Situated between M6 junctions 9 and 10. However, the current road network would be barely adequate to support a large employer and access is highly restricted. |
| **Abnormal Costs** | The site is known to be contaminated and extensive remediation is required prior to development. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 500,000 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at 5.25 psf<br>Yield at 6.75% |
| **Development Costs** | Build cost at £40 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£59,708,478 |
| | Construction Costs<br>£30,674,540 |
| | Remediation Costs<br>£4,127,295 (£93,802/acre) |
| | Professional Fees<br>£3,480,183 |
| | Marketing and Disposal<br>Letting Fees: £813,751<br>Disposal Fees: £703,067 |
| | Finance<br>£6,740,133 at a debit rate of 6.5% |

| | |
|---|---|
| | Profit<br>£7,336,356 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £2,060,564 |
| **Residual Site Value per acre (With Abnormals)** | £46,831 |
| **Residual Site Value without Abnormals** | £9,085,751 |
| **Residual Site Value per acre (Without Abnormals)** | £195,174 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2018 -2021 |
| **Delivery Strategy** | Joint procurement approach by the land owners to appoint a private sector delivery partner.<br><br>Assistance available through the EZ designation i.e. grants for site investigation works and other potential financial assistance through the EZ business rates mechanism.<br><br>We expect the site to be delivered in the next 5 years. There is known demand in the site and its location in the Black Country BCEZ close to M6 Junction 10 makes it attractive to occupiers. The site can be delivered with support from public sector grant funding through the EZ business rates mechanism. Funds are available to deal with the viability gap arising from the high costs of site remediation and treatment of site abnormal. The public sector landowners are in the process of appointing a private sector partner to undertake the remediation and development with funding support. The milestones for delivery are:<br><br>• Preferred bidder selected by March 2016<br>• Funding support agreed by October 2016<br>• Planning permission obtained by February 2017<br>• Remediation works commence (phase 1) by June 2017<br>• Development commences (phase 1) by 2018<br>• Phase 1 completed by 2019<br>• All phases complete by 2022. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Aspect 2000 | | **Site Ref** | IN 92 |
| **Plan:** | | | **Landowner:** Bulstrode Investments Ltd | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Bentley Mill Way |
| **Site Description** | The site is currently occupied by F W Thomas, a truck and haulage storage and repair business (without planning or other consents). It has had permission in outline for industry (B1b and c, B2 and B8) in 2002, although this consent was never implemented. The site is bounded to the south by the Walsall canal, to the east by Bentley Mill Way, to the north by the units on Millers Close and to the west by the Anson Branch canal. According to the report on the planning application of 2002, the site is prominent and will be well located when the DSDA Access project is complete. Updated Site Investigation works have recently been completed for the site which outlines the ground condition issues. |
| **Gross Site Area:** | 3.34 ha (8.25 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site is generally not affected by many issues except the shape of the site which poses a slight constraint. The site is cleared and currently occupied by a haulage company. It is understood to be allocated for employment uses.<br><br>The site's proximity to the motorway raises its profile. The site lies along Bentley Mill Way and therefore has good access to the M6 and other transport routes.<br><br>As the area sits within the Black Country Enterprise Zone, the availability of funding mechanisms could increase the market attractiveness of the site. Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development.<br><br>It is one of the largest sites within the Black Country Enterprise Zone. |
| **Opportunities** | The site is located in in the Black Country Enterprise Zone and under the Darlaston Local Development Order. The DSDA Access project would improve its access to the Black Country Route, and help to create a redevelopment opportunity. The project to improve the Bentley Mill Way road would improve the prospects of the site attracting a more beneficial use than open storage.<br><br>A Memorandum of Understanding has been entered into by the land owner and the Local Authority with provisions set out to achieve the redevelopment of the site for commercial uses.<br><br>Potential job numbers: 244<br><br>The site is occupied by a haulage company of 2.89 ha (7.14 acres), 94,725 sq ft (8,800 sq m).<br><br>It is a potential SAD Waste site. Wardell Armstrong's Waste Sites Viability and Delivery Study states: 'The site has outline permission for B1b and c, B2 and B8 use. B2 use includes general industrial use and is generally considered appropriate for waste uses. This site therefore has the potential to be developed for a waste treatment use and could accommodate more than 100,000 tonnes of waste per annum.' |
| **Constraints** | The site is known to have poor ground conditions. The site is also located within flood zone 3 and is part of a SLINC (Site of Local Importance to Nature Conservation).<br><br>The site has a sewer that cannot be built on beneath the existing access track.<br><br>The site is bounded to the south and west by Walsall Canal and Anson Branch Canal. The closest development comprises warehousing with a cemetery to the south and the nearest houses are 150m to the North West, on Wrexham Avenue. |

| | |
|---|---|
| **Abnormal Costs** | According to Wardell Armstrong, the site also has a former mining use and has the potential to require remediation as a result. The major constraint is likely to be flood risk. The Environment Agency's maps indicated that a large part of the site is in a zone 3 flood risk area.<br><br>Although the residual land value is positive, the site is known to be difficult. Possible constraints relating to past mining and industrial heritage include:<br>- Deep made ground<br>- Ground gases (made ground and nearby landfill sites)<br>- Shallow coal mining issues<br>- Recorded mineshafts<br>- Possible unrecorded mineshafts<br>- Soil contamination – truck storage / repair<br>- Groundwater contamination |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 143,805 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.25 psf<br>Yield at 6.75% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£11,079,183 |
| | Construction Costs<br>£5,691,802 |
| | Remediation Costs<br>£719,430 (£215,398/ acre) |
| | Professional Fees<br>£641,123 |

| | |
|---|---|
| | Marketing and Disposal<br>Letting Fees: £150,995<br>Disposal Fees: £130,457 |
| | Finance<br>£791,214 at a debit rate of 6.5% |
| | Profit<br>£1,361,295 at 15% profit on cost |

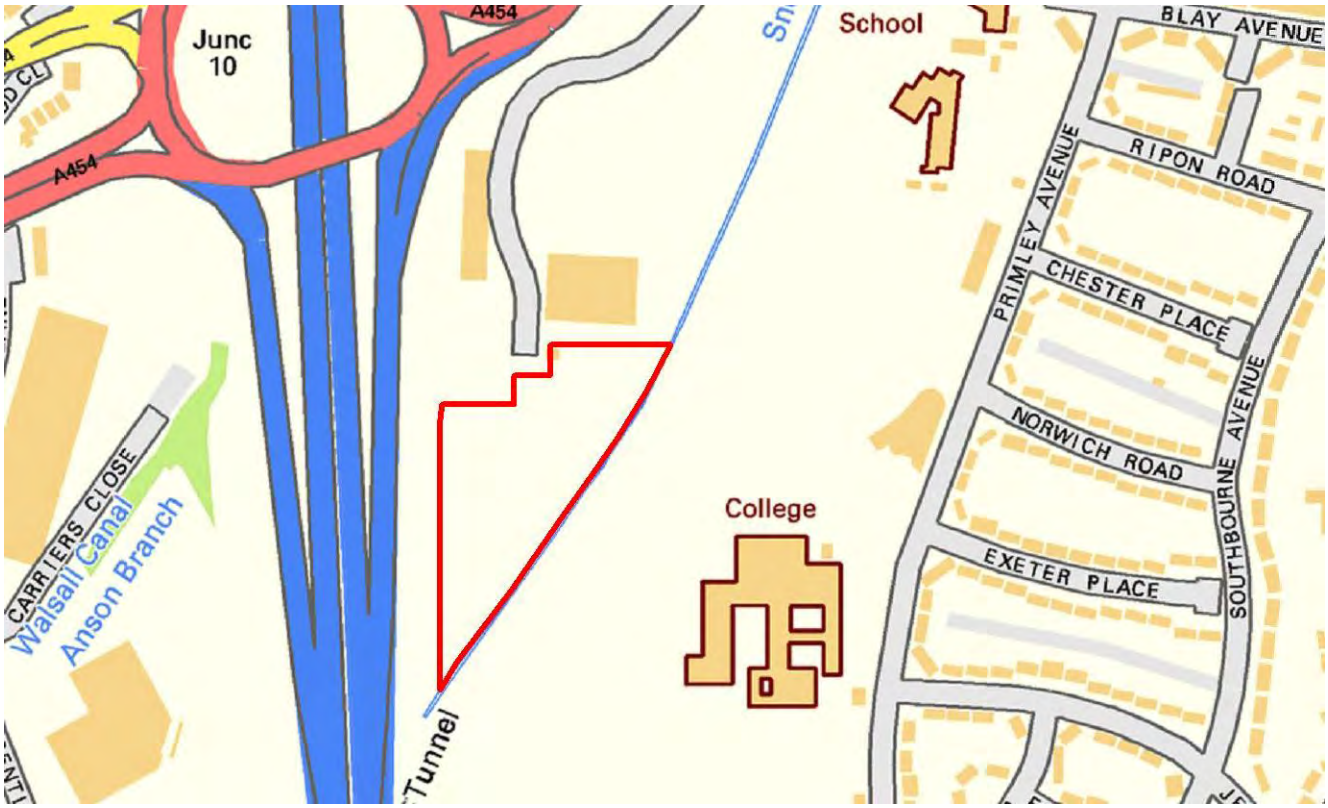
## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £631,628 |
| **Residual Site Value per acre (With Abnormals)** | £76,561 |
| **Residual Site Value per acre (Without Abnormals)** | £214,661 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2016 -2021 |
| **Delivery Strategy** | Assistance available through the EZ designation for site investigation works and other potential financial assistance through the EZ business rates mechanism.<br><br>It is expected that the site be delivered in the next 5 years by the private/public sector with the support of funding available through the site's Enterprise Zone status.<br><br>Intrusive site investigation works have been completed through a grant funded Enterprise Zone programme.<br><br>We expect the site to be delivered in the next 5 years by the private/public sector with the support of public sector funding available through the sites Black Country Enterprise Zone status and business rates mechanism. The site is currently occupied by F W Thomas, a truck and haulage storage and repair business, without planning or other consents. The Local Authority will support the land owner and business with their relocation requirements to a suitable alternative site. Intrusive site investigation works have been completed through a grant funded Enterprise Zone wide programme. These investigations provide a level of detail around the ground condition constraints and begin to inform the remediation requirements/costs, with additional intrusive works required once the site is fully vacated to finalise a remediation strategy. As part of the Darlaston Access Project, new access will also be constructed to the site by 2016. A Memorandum |

| | |
|---|---|
| | of Understanding has been entered into by the land owner and the Local Authority with provisions set out to achieve the redevelopment of the site for commercial uses. The initial activities set out in the MoU will determine whether the site will be delivered by the private sector with public sector funding or potentially acquired by the public sector to lead delivery as part of the BCEZ. The milestones for delivery are:<br><br>• Preferred delivery route will be determined by 2015/16<br>• Completion of legal and financial provisions of the preferred delivery route by Q4 2015/16<br>• Completion of additional survey works and intrusive investigations by 2016/17<br>• Completion of new site access by Q3 2016<br>• Planning permission obtained by Q4 2016/17<br>• Commence remediation and utilities work (water connection to site boundary required) by Q1 2017<br>• Assumed build out to commence 2018/19<br>• Build out to be completed in phases by 2020/21 |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Tempus 10 South (Opal) | | **Site Ref** | IN 64 |
| **Plan:** | | | **Landowner:** Abacus Developments Ltd | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Tempus Drive, Walsall |
| **Site Description** | This site is the southern of the Tempus 10 Sites and is bounded by open space to the south and east, and by a hotel to the north. The land owner proposes to bring forward a planning application to seek permission to remove the waste, remediate the site and deal with ground levels by redistributing reclaimed material on the Tempus 10 North site (Onyx). To date only a screening option has been sought from the LPA.<br><br>Consent for B8 lapsed in 2013. |
| **Gross Site Area:** | 1.72 ha (4.25 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site has excellent strategic access to M6 Junction 10. The site is marketed by HGA and Bulleys for employment uses. The site is currently vacant.<br><br>As the area sits within the Black Country Enterprise Zone, the availability of funding mechanisms could increase the market attractiveness of the site. Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | The site is part of the Black Country Enterprise Zone and subject to the Darlaston Local Development Order.<br><br>The site is very close to junction 10 of the M6 and is therefore excellently located for the road network.<br><br>Tempus 10 'Onyx' and 'Opal' are one of the select few high quality development sites in Walsall.<br><br>There is the potential for site assembly with Onyx Tempus 10 and Phoenix 10 to include current access to the motorway network. |
| **Constraints** | Part of the site is in flood zone 3b.<br>The site is triangular in shape and at the rear of existing hotels. |
| **Abnormal Costs** | The site is in a Coal Development High Risk area.<br><br>The site is known to have poor ground conditions due to extensive tipping, rendering the site not immediately available for development. The resultant waste material from the tipping activity is subject to an enforcement case which has not yet reached a conclusion.<br><br>Possible constraints relating to past mining and industrial heritage include:<br>- Extensive mound of tipped materials present on site<br>- Probable deep made ground<br>- Ground gases (made ground)<br>- Possible shallow mineworkings<br>- Possible unrecorded mineshafts<br>- Soil contamination<br>- Groundwater contamination |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Medium |

# EMPLOYMENT VIABILITY PROFORMA

| | |
|---|---|
| **Development Capacity** | We have assumed the site can deliver 74, 055 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.50 psf<br>Yield at 6.75% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£6,071,960 |
| | Construction Costs<br>£3,151,040 |
| | Remediation Costs<br>£3,341,700 (£781,576 / acre) |
| | Professional Fees<br>£649,274 |
| | Marketing and Disposal<br>Letting Fees: £81,461<br>Disposal Fees: £71,497 |
| | Finance<br>£379,040 |
| | Profit<br>£746,059 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

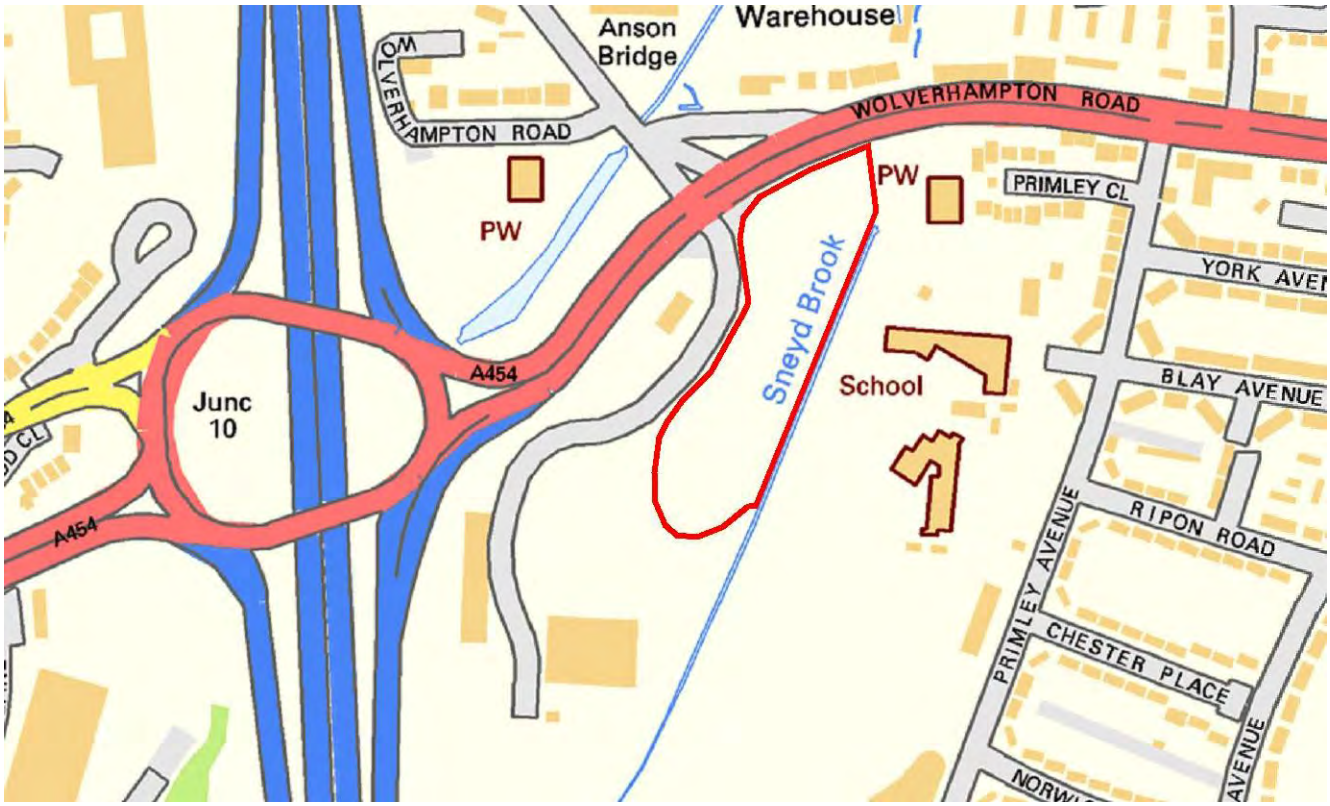
| | |
|---|---|
| **Residual Site Value (With Abnormals)** | -£2,843,594 |
| **Residual Site Value per acre (With Abnormals)** | Negative |
| **Residual Site Value (Without Abnormals)** | £1,057,196 |
| **Residual Site Value per acre (Without Abnormals)** | £235,115 |

# EMPLOYMENT VIABILITY PROFORMA

| | |
|---|---|
| **Benchmark Site Value per acre** | £250,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2016 -2021 |
| **Delivery Strategy** | Assistance available through the EZ designation for site investigation works and other potential financial assistance through the EZ business rates mechanism.<br><br>It is expected that both Tempus 10 sites are delivered simultaneously and in the next 5 years. We expect the land owner to secure a planning consent in 2015 for the creation of development platforms through the treatment and movement of surplus waste materials from one site (Tempus 10 south) to another (Tempus 10 north) to create level platforms upon which future development can take place. There is known demand in the sites and its location in the Black Country Enterprise Zone (BCEZ) close to M6 Junction 10 make the site attractive to owner occupiers. Whilst the sites on paper are unviable it is assumed that they can be delivered with support from public sector grant funding. These funds are available to the land owner to deal with the sites development viability gap arising from the high costs of site remediation and treatment of site abnormals:<br>These funds are made available through the sites BCEZ status where the retention of future business rates can be used by the Local Authority to prudentially borrow and then grant aid development viability. This is a national mechanism available across Enterprise Zone sites and is based upon the principles of a Tax Increment Finance (TIF) Model. A Memorandum of Understanding has been entered into by the land owner and the Local Authority setting out milestones for delivery. These being:<br><br>• Planning permission sought Q2 2015<br>• Completion of earthworks to create development platforms and address planning enforcement matters by Q4 2015/16<br>• Completion of business case/risk analysis Q2 2016<br>• Completion of Council funding provisions Q1 2017<br>• Commence remediation works and enter into pre-let arrangements with prospective end occupiers by Q3 2017 [note will require pre-lets as developer has no interest to build spec.]<br>• Assumed build out based on pre-lets to commence Q1 2017/18 [note this is commenced not complete as units may be delivered on a phased basis] |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Tempus 10 North (Onyx) | | **Site Ref** | IN 63 |
| **Plan:** | | | **Landowner:** Abacus Developments Ltd | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Tempus Drive, Walsall |
| **Site Description** | This site is the northern of the Tempus 10 sites that fronts onto Wolverhampton Road. The site has been vacant since 1992. There was previously an unimplemented permission for a mixture of B1 office and B8 but this has now lapsed. The landowner had recently been pursuing a non-industrial use on this site through pre-application discussions which have ceased. |
| **Gross Site Area:** | 1.74 ha (4.29 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site has excellent strategic access to M6 Junction 10.<br><br>The Tempus 10 site is one of the select few high quality development sites in Walsall which is currently being marketed. |

| | |
|---|---|
| | As the area sits within the Black Country Enterprise Zone, the availability of funding mechanisms could increase the market attractiveness of the site. Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | The site is part of the Black Country Enterprise Zone and subject to the Darlaston Local Development Order.<br><br>Potential for site assembly with Opal Tempus 10 and Phoenix 10 sites.<br><br>A Memorandum of Understanding has been entered into by the land owner. |
| **Constraints** | Part of the site is in flood zone 3b. |
| **Abnormal Costs** | There are issues regarding ground conditions and levels.<br><br>Possible constraints relating to past mining and industrial heritage include:<br>- Variable depths of made ground<br>- Ground gases (made ground)<br>- Possible shallow mineworkings<br>- Two recorded mineshafts<br>- Soil contamination<br>- Groundwater contamination |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 74,917 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.50 psf<br>Yield at 6.75% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£6,142,638 |
| | Construction Costs<br>£3,187,718 |
| | Remediation Costs<br>£1,764,900 (£411,399 / acre) |

| | |
|---|---|
| | Professional Fees<br>£495,262 |
| | Marketing and Disposal<br>Letting Fees: £82,409<br>Disposal Fees: £72,330 |
| | Finance<br>402,527 at debit rate of 6.5% |
| | Profit<br>£754,743 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value (With Abnormals)** | -£1,121,390 |
| **Residual Site Value per acre (With Abnormals)** | Negative |
| **Residual Site Value (Without Abnormals)** | £988,483 |
| **Residual Site Value per acre (Without Abnormals)** | £230,416 |
| **Benchmark Site Value per acre** | £250,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2016 -2021 |
| **Delivery Strategy** | Assistance available through the EZ designation for site investigation works and other potential financial assistance through the EZ business rates mechanism.<br><br>It is expected that both Tempus 10 sites are delivered simultaneously and in the next 5 years. We expect the land owner to secure a planning consent in 2015 for the creation of development platforms through the treatment and movement of surplus waste materials from one site (Tempus 10 south) to another (Tempus 10 north) to create level platforms upon which future development can take place. There is known demand in the sites and its location in the Black Country Enterprise Zone (BCEZ) close to M6 Junction 10 make the site attractive to owner occupiers. Whilst the sites on paper are unviable it is assumed that they can be delivered with support from public sector grant funding. These funds are available to the land owner to deal with the sites development viability gap arising from the high costs of site remediation and treatment of site abnormals:<br>These funds are made available through the sites BCEZ status where the retention of future business rates can be used by the Local Authority to prudentially borrow and then grant aid |

| | |
|---|---|
| | development viability. This is a national mechanism available across Enterprise Zone sites and is based upon the principles of a Tax Increment Finance (TIF) Model. A Memorandum of Understanding has been entered into by the land owner and the Local Authority setting out milestones for delivery. These being:<br><br>• Planning permission sought Q2 2015<br>• Completion of earthworks to create development platforms and address planning enforcement matters by Q4 2015/16<br>• Completion of business case/risk analysis Q2 2016<br>• Completion of Council funding provisions Q1 2017<br>• Commence remediation works and enter into pre-let arrangements with prospective end occupiers by Q3 2016/17 [note will require pre-lets as developer has no interest to build spec.]<br>• Assumed build out based on pre-lets to commence 2017/18 [note this is commenced not complete as units may be delivered on a phased basis] |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Walsall Enterprise Park | | **Site Ref** | IN 52.2 |
| **Plan:** | | | **Landowner:** Godwen Pleck Limited | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Princes Street/ Regal Drive, Pleck |
| **Site Description** | Walsall Enterprise Park has been developed in stages over the years on the former Pleck gas works site; a vacant plot remains on the west. The Walsall Canal and a residential area adjoin the northern and western boundaries. The site was recently sold at auction by National Grid. |
| **Gross Site Area:** | 0.80 ha (1.98 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | There is known development/ end user interest in the site. The site is not currently being marketed.<br><br>Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |

| | |
|---|---|
| **Opportunities** | Walsall Enterprise Park is a modern high quality industrial/warehouse development. This was formally Pleck Gasworks but has been developed over the last 10 years by St Modwen. There are a few vacant units and three small remaining vacant sites. It is designated as a 'best quality' area in the UDP. |
| **Constraints** | Possible gas main easement through part of the site may sterilise some development or guide development layout.<br><br>On balance, the site qualifies as high quality, in spite of its constrained access (through Pleck local centre) and residential on the western side. |
| **Abnormal Costs** | There are no other environmental concerns known of. Possible constraints relating to past mining and industrial heritage include:<br>- Made ground (identified deep locally and localised former development)<br>- Ground gases (made ground)<br>- Shallow coal mining issues<br>- Possible ironstone and limestone mining<br>- Possible unrecorded mineshafts<br>- Soil contamination – former development<br>- Groundwater contamination<br>- Former pump on / near site |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary Location Medium |
| **Development Capacity** | We have assumed the site can deliver of 34,444 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £4.75 psf<br>Yield at 7.25% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£2.14m |
| | Construction Costs £1.5m |
| | Remediation Costs £196,000 (£99,000/acre) |
| | Professional Fees: £166,159 |

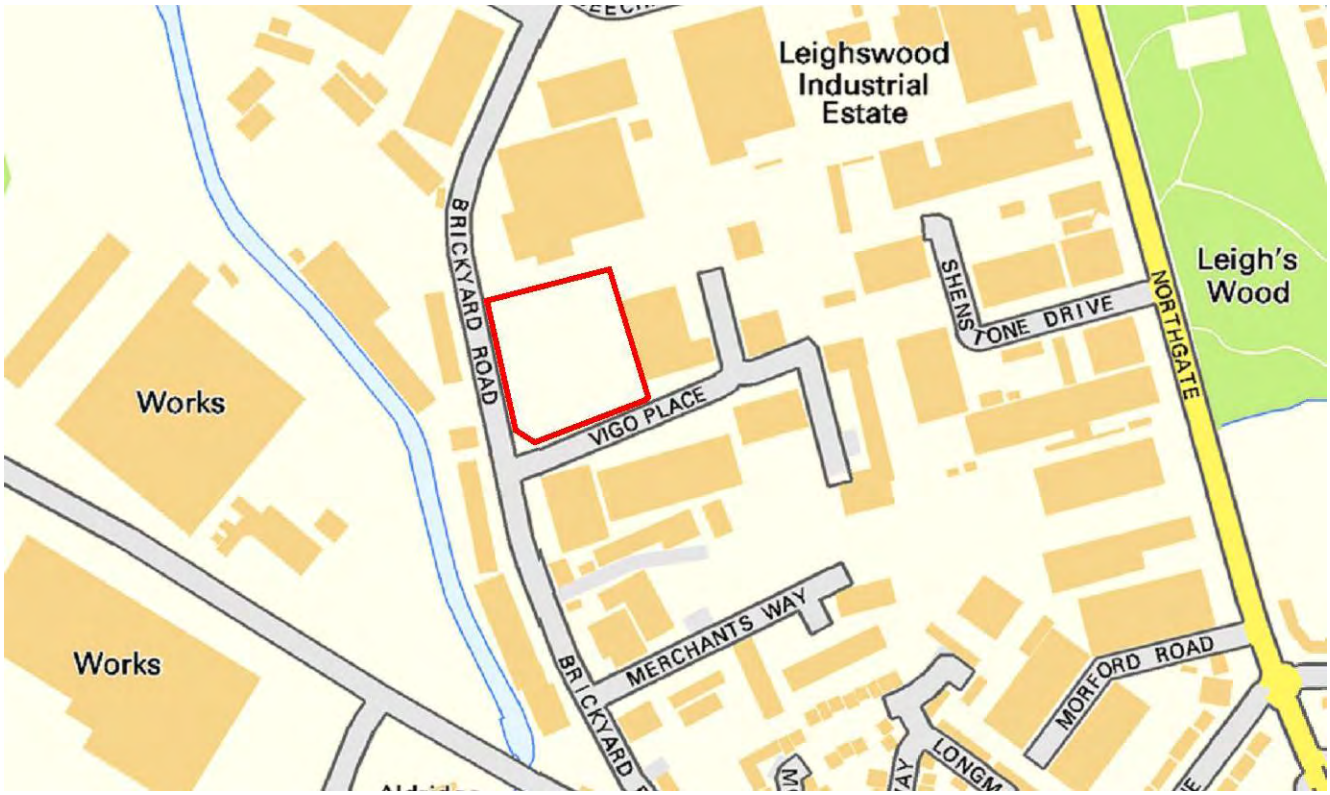
| | |
|---|---|
| | Marketing and Disposal<br>Legal Fees:£13,000<br>Disposal Fees:£44000 |
| | Finance:£50,000 a t debt rate of 6.5% |
| | Profit:£263,000 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | -£369,858 |
| **Residual Site Value per acre (With abnormals)** | Negative |
| **Residual Site Value without Abnormals** | -£15,449 |
| **Residual Site Value per acre (without abnormals)** | Negative |
| **Benchmark Site Value per acre** | £175,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2016-21 |
| **Delivery Strategy** | There is a good track record of development in this area.<br>It is expected that this site will be developed in the next 5 years by the private sector. Whilst on paper this site is unviable, it may be developed through an occupier led scheme.<br><br>The Council will continue to progress enquiries from expanding local companies in the area in relation to this site.<br><br>The Walsall Enterprise Park has been developed in stages between 1998 and 2009, and this is one of the two vacant parts remaining, after Promat BD occupied the site adjoining it in 2013. The built units have a good rate of occupancy. There is known development interest. The Council will continue to progress enquiries from expanding local companies in the area in relation to this site. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Vigo Place | | **Site Ref** | IN 9.4 |
| **Plan:** | | | **Landowner:** S Wernick & Sons (Holdings) Ltd | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Corner of Vigo Place and Brickyard Road, Aldridge |
| **Site Description** | This site adjoins existing industry in Vigo Place and Brickyard Road in Aldridge. It has had permission for industrial units and also storage of portacabins, and some portacabins are on site. There are no apparent problems, the site has a regular shape and there is no housing in the vicinity. |
| **Gross Site Area:** | 0.86 ha (2.12 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | Local and strategic access are slight issues (in view of distance from Aldridge to the strategic road network). The site was previously marketed by JLL. |
| **Opportunities** | The existing site has been cleared and levelled for redevelopment. There is no known reason for the site owner not to co-operate with local partners. There is an existing access from Vigo Place and utilities are understood to be available in the local area. |
| **Constraints** | There are some site specific constraints to be overcome. The site is currently occupied by an open storage user.<br><br>The site's local road infrastructure and motorway access are generally suitable. There are no issues of prominence, shape of the site, or topography. |
| **Abnormal Costs** | Requires a ground condition survey.<br><br>Possible constraints relating to past mining and industrial heritage including: made ground, ground gases, shallow coal mining issues, possible unrecorded mineshafts, soil contamination, groundwater contaminations and sub-structures within localised areas of the site. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Prime Location Medium |
| **Development Capacity** | We have assumed the site can deliver 37 027 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.50 psf<br>Yield at 6.75% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation and flood zone restrictions<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£3,035,939 |
| | Construction Costs<br>£1,575,499 |

| | |
|---|---|
| | Remediation Costs<br>£175,060 (£82,575/acre)<br><br>Professional Fees<br>£175,056 |
| | Marketing and Disposal<br>Letting Fees: £40,730<br>Disposal Fees: £35,748 |
| | Finance<br>£217,199 at a debit rate of 6.5% |
| | Profit<br>£373,025 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

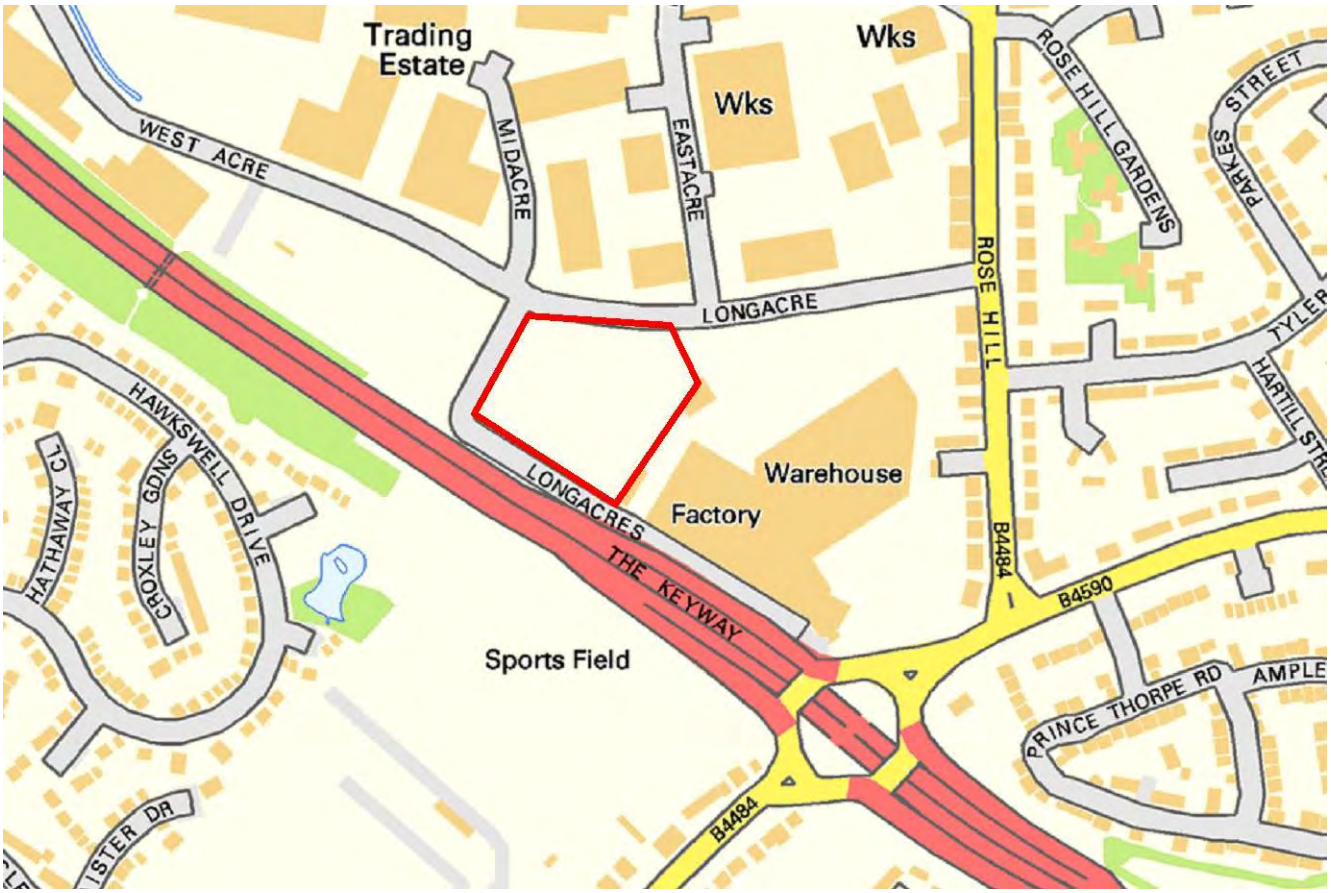
| | |
|---|---|
| **Residual Site Value with Abnormals** | £118,238 |
| **Residual Site Value per acre (with abnormals)** | £83,924 |
| **Residual Site Value without Abnormals** | £516,884 |
| **Residual Site Value per acre (without abnormals)** | £230,447 |
| **Benchmark Site Value per acre** | £250,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2015-2021 |

| | |
|---|---|
| **Delivery Strategy** | There is a good track record of development in this area. Walsall MBC expect the site to be delivered by the private sector in the period 2015 -2021. WMBC is currently in discussion with the landowner to consider delivery options. The site has recently been taken off the market.<br><br>Development in the recent past in this part of Aldridge have included the following, with the most significant schemes being occupier led:<br>- Gainsborough Plastics, Brickyard Rd (1999),<br>- new workshops in the Empire Estate (2000 & 2009),<br>- new speculative development to provide units at Merchants Way (2003),<br>- new B1 on Merchants Way (2010),<br>- and extension to Kepston at Coppice Lane (2011), and<br>- new units for Interserve on Brickyard Rd (2012) and,<br>- Langley Industries site (2013).<br><br>Walsall Council now consider that the site is more marketable that previously suggested. The site seems to be a good size for development based on previous experience in Aldridge. It is also flat and has a regular shape. It seems reasonable to consider that the site will come forward for development within the next five years. The site is one of 7 sites in Aldridge / Brownhills, in the 5yr / 10yr employment land supply, totalling 6.45 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of high quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the assumed rate of take up in the five year land supply and the five to ten year land supply (1.29 ha / annum), and on this basis it is reasonable to assume that the sites in the five to ten year supply are deliverable over the time period.<br><br>Nevertheless, even if this site does not come forward in the next five years, it is expected that another site of this size will come forward in another part of the Borough to substitute. |

# Appendix 2b – Employment Site Proformas (5-10 year)

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Former PSL International | | **Site Ref** | IN78.6 |
| **Plan:** | | | **Landowner:** | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Longacres, Walsall<br><br>The site is part of the Longacres Industrial Estate that was developed in stages over the 1980s and 1990s. |
| **Gross Site Area:** | 1.19 ha (2.9 acres) |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 51,237 sq ft (gross) of commercial space based on 40% site coverage. |

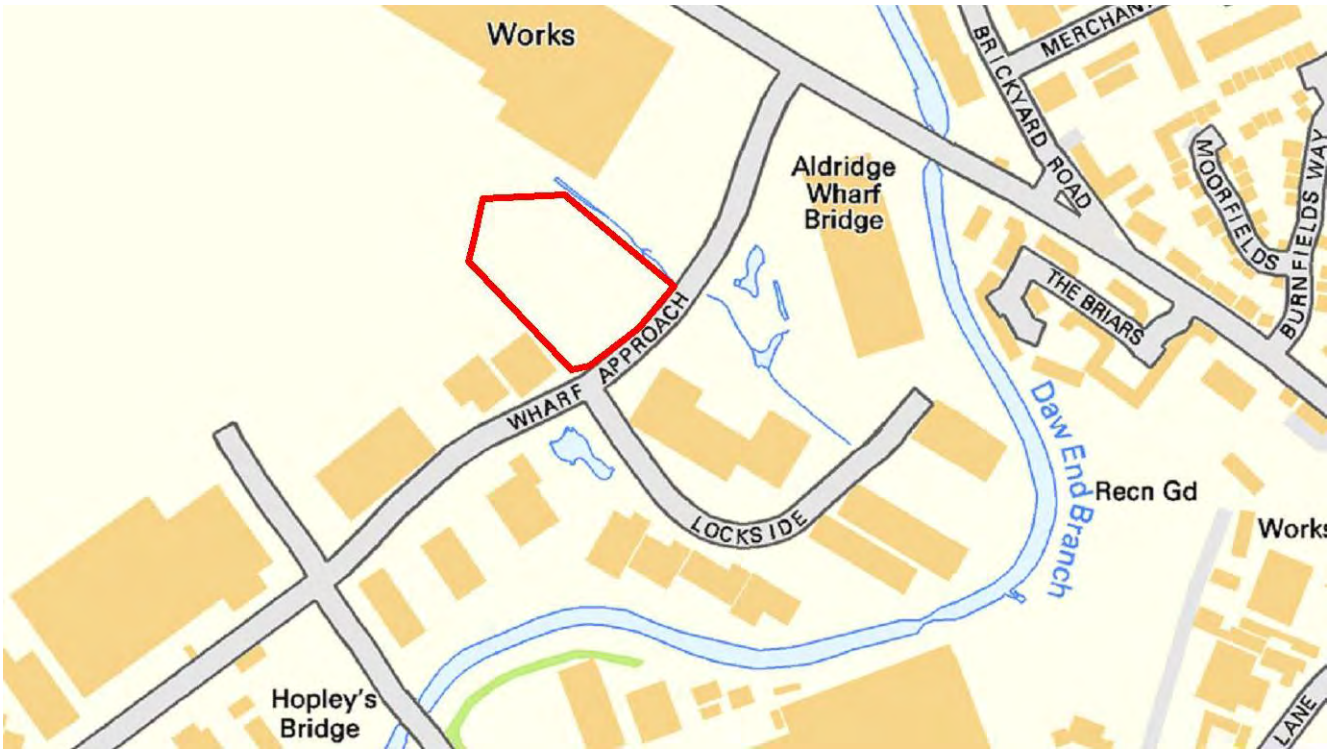
| | |
|---|---|
| **Value Assumptions** | Rent at £5.25<br>Yield of 6.5%<br>9 months rent free |
| **Development Costs** | Build costs at £45.51 psf |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £490,610 |
| **Residual Site Value per acre (with Abnormals)** | £159,977 |
| **Residual Site Value without Abnormals** | £681,959 |
| **Residual Site Value per acre (without Abnormals)** | £222,372 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | While on paper this site is currently unviable for speculative industry, the Council expect this site to be developed between 2021-26 by a prospective occupier. It not currently being marketed but is in a good location. This could accommodate standalone unit, or serve as expansion land for Blakemore's across the road.<br><br>The site is in a good location, though is not being marketed, and is part of the Longacres Industrial estate that was developed in stages over the 1980s and 1990s for Blakemore's. The BCR corridor has seen good rates of development, with Poundland distribution hub (2000) Initial City Link /Yodel (2000), The Crescent (2012). Smaller units have also been developed close to this site at Midacre (2001), the former Masons Woodyard (2010), Eastacre (Middleton Paper, 2015). |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Adj Shaylors | | **Site Ref** | IN10.2 |
| **Plan:** | | | **Landowner:** Hortons Estates | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Wharf Approach, Aldridge |
| **Gross Site Area:** | 0.75 ha (1.85 acres) |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 32,292 sq ft (gross) of commercial space based on 40% site coverage. |
| **Value Assumptions** | Rent at £4.75<br>Yield of 7.25%<br>9 months rent free |
| **Development Costs** | Build costs at £48.93 psf |

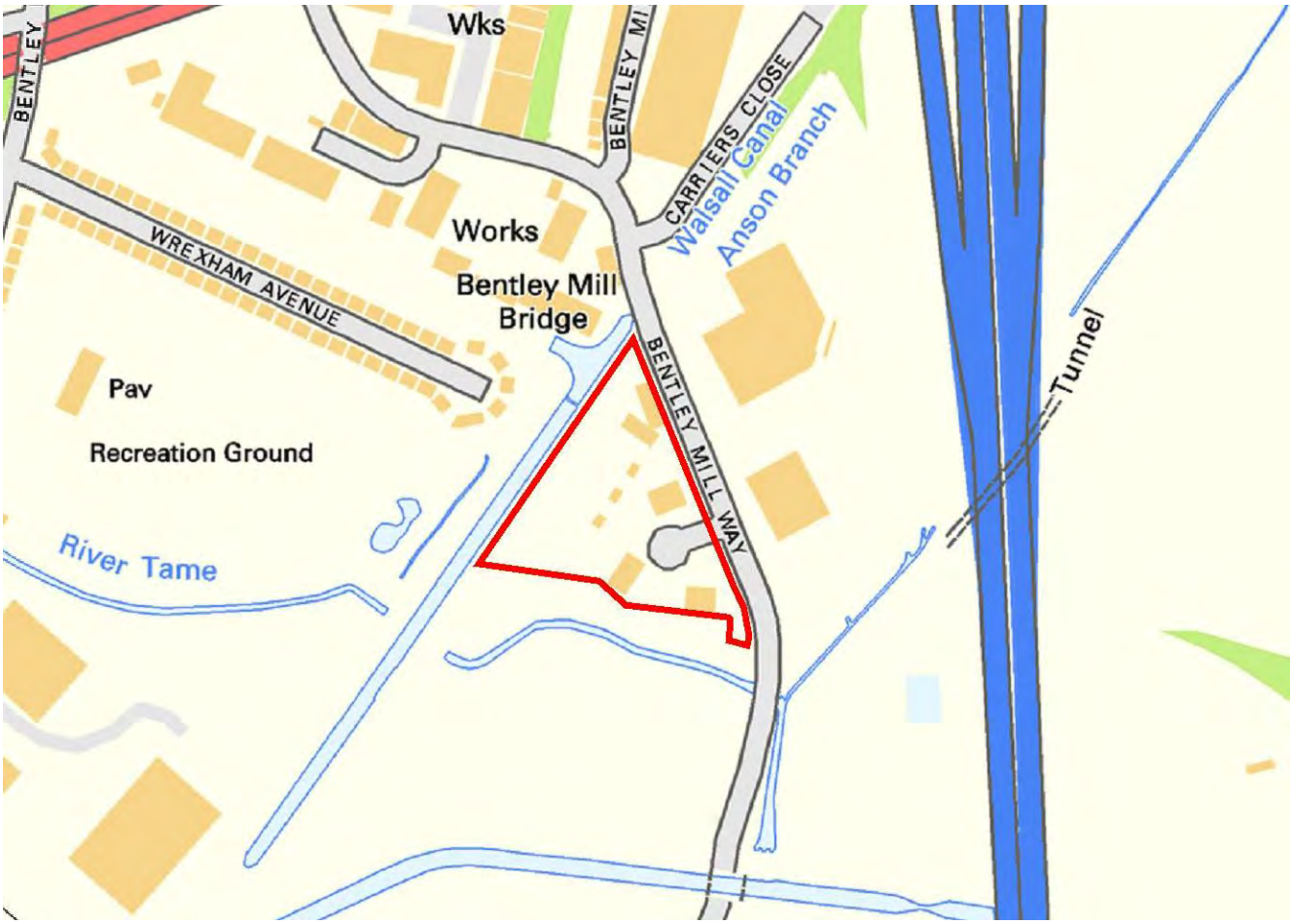
# EMPLOYMENT VIABILITY PROFORMA

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | -£157,808 |
| **Residual Site Value per acre (with abnormals)** | Negative |
| **Residual Site Value without Abnormals** | -£22,367 |
| **Residual Site Value per acre (without Abnormals)** | Negative |
| **Benchmark Site Value per acre** | £250,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | While on paper this site is currently marginal/unviable for speculative industry, the Council expect the site to be developed between 2021-2026 by a prospective occupier.<br><br>Development in this part of Aldridge has in the recent past included the following:<br><br>- The Tintagel Way development was provided in 1998 and 2001, and,<br>- The Wharf Approach has been developed in stages between the mid-1990s and 2006, and,<br>- The Aldridge Fields was redeveloped from the former Corby Windows site in 2008.<br><br>Representing the final remaining plot of the Wharf Approach development, the plot is small, with poor frontage. Notwithstanding this, as a serviced development plot (rather than a site that has simply been vacated), it has reasonable to assume the site may be developed over the next 5 to 10 years. The site is not currently being marketed, although the Council understand that Hortons Estates are considering marketing the site.<br><br>The site is one of 6 sites in Aldridge / Brownhills, in the 5yr / 10yr employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of prime quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the assumed rate of take up in the five year land supply and the five to ten year land supply (1.05 ha / annum), and on this basis it is reasonable to assume that the sites in the five to ten year supply are deliverable over the time period, as well as other Aldridge/Brownhills sites as applicable. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Millers Close | | **Site Ref** | IN 317 |
| **Plan:** | | | **Landowner:** Venus and Co Cash and Carry Ltd | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Bentley Mill Way, Walsall |
| **Site Description** | The site is currently partly occupied by two restaurants (Chiquito and Cinnamon Court) and a third vacant building. It is acknowledged that it is unlikely that these businesses will continue operate in this out of centre location as development continues to progress in the town centre – Chiquito's being a confirmed occupier in the Waterfront development. The site is bounded by the River Tame at the south. The Casino and Cinema site are adjacent the north-east boundary on the opposite side of Bentley Mill Way. |
| **Gross Site Area:** | 0.8 ha (1.98 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | This site is currently unviable for development. The site is currently occupied by two restaurants which would require relocation. Although it is not an Enterprise Zone site it is situated within the EZ cluster and the M6 corridor and therefore may benefit from uplift in the area as a whole. |
| **Opportunities** | Darlaston Local Development Order.<br><br>DSDA access project.<br><br>Business relocation support and links with the Town Centre AAP. |
| **Constraints** | Current occupiers require relocation.<br><br>As the site lies in the 'Pollution Combined' zone there is the *potential* for contamination on site.<br><br>The site is located within a High Risk Coal Development Area.<br><br>Very minor patch of Flood Zone 3 to part of southern boundary. |
| **Abnormal Costs** | The site requires a ground condition survey. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 47 791 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.50 psf<br>Yield at 6.75% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation and flood zone restrictions<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£2,824,152 |
| | Construction Costs<br>£1,465,592 |
| | Remediation Costs<br>£205,800 |
| | Professional Fees<br>£167,139 |

| | |
|---|---|
| | Marketing and Disposal<br>Letting Fees: £37,888<br>Disposal Fees: £33,254 |
| | Finance<br>£136,288 at a debit rate of 6.5% |
| | Profit<br>£347,002 at 15% profit on cost |

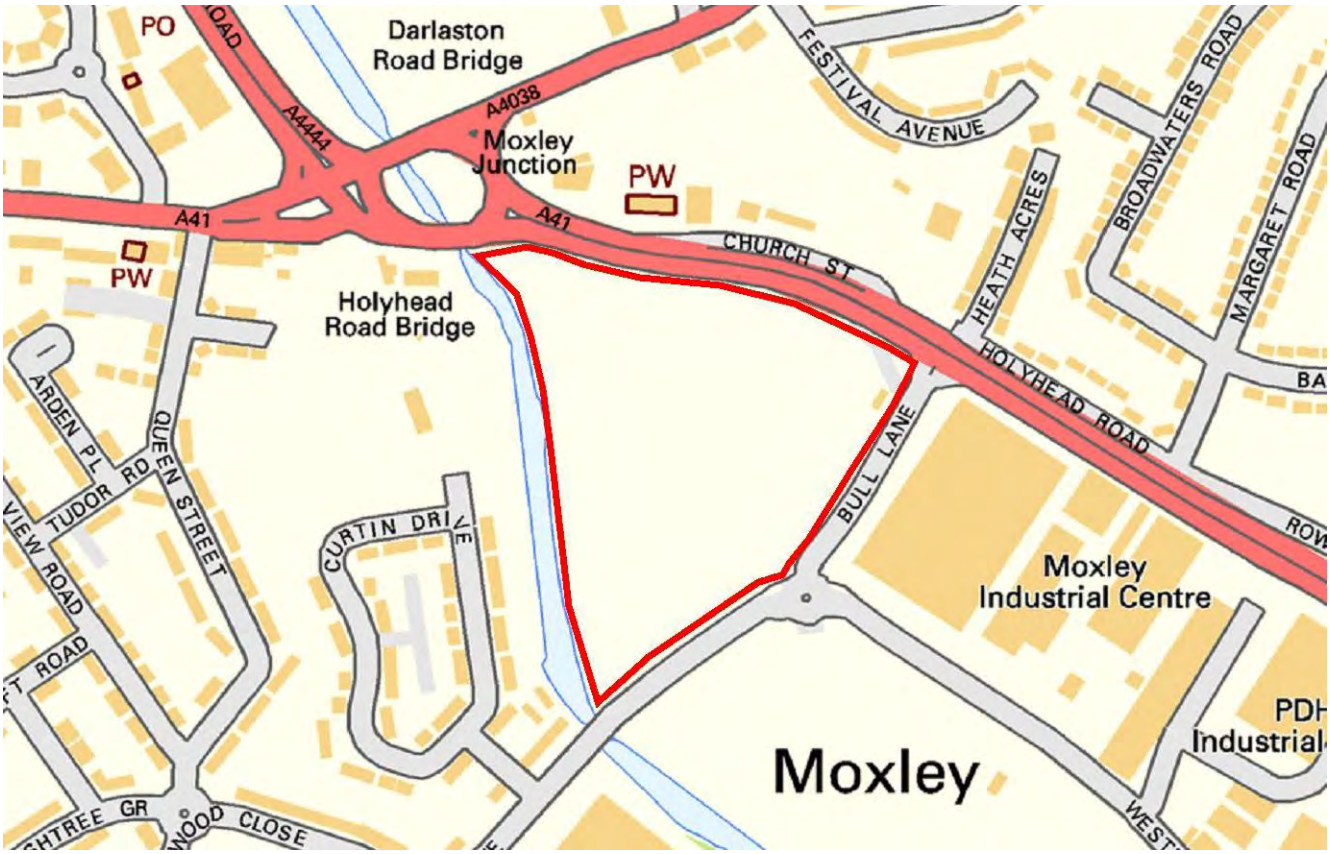
## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £130,757 |
| **Residual Site Value per acre (With Abnormals)** | £62,735 |
| **Residual Site Value per acre (Without Abnormals)** | £230,694 |
| **Benchmark Site Value per acre** | £250,000 |
| **Viability Status** | Marginal/ Not Viable |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | Site of marginal viability, but potential high quality<br><br>Although not an EZ site itself it situated within the EZ cluster and the M6 corridor and is expected to benefit from the uplift in this area<br><br>While on paper this site is currently marginal/unviable for speculative industry, we expect this site to be developed between 2021-26 by a prospective occupier. The site is currently occupied by two restaurants – Chiquito and Cinnamon Court – which would require relocation. Although not an EZ site itself it situated within the EZ cluster and the M6 corridor and is expected to benefit from the uplift in this area.<br><br>The milestones are:<br>• DSDA Access Project completion 2016<br>• Site Allocation to industry 2016.<br>• Relocation of existing businesses 2017-19<br>• Site preparation 2020 |

| | |
|---|---|
| | • Development 2021 |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Former Wesson, Bull Lane | | **Site Ref** | IN 120.3 |
| **Plan:** | | | **Landowner: BA Pension Fund** | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Bull Lane, Moxley |
| **Site Description** | This is a large site that was previously a steelworks, cleared in 2010. It is bounded by the canal on the west side and by Bull Lane and the Black Country New Road. There are minor ground contamination problems but excellent local and strategic access. There is consent for 150,000 sqft unit for B2 on part of the site. |
| **Gross Site Area:** | 4.96 ha (12.256 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | This is a good sized site that has potential for a range of uses. The site has good access routes. The site is well located and visible to arterial road network.<br><br>Bulleys site appraisal concludes that: the site scores 29 out of 30; only the shape of site is a slight constraint.<br><br>The site is currently vacant. It is available to the market on a freehold or leasehold design and build basis. It provides a good development opportunity for high quality employment and there has been previous development interest.<br><br>The site has been cleared of existing buildings.<br><br>Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development.<br><br>There is a planning application pending for speculative B1, B2 and B8 industry and occupier interest. |
| **Opportunities** | The wider area is a mixed but potentially high quality employment area comprising various storage, distribution, industrial and manufacturing uses. Some sites in Sandwell to the south have been developed and could be considered high quality.<br><br>Potential job numbers: 619 according to the Bulleys site appraisal.<br><br>Utilities understood to be available in the local area.<br><br>No known reasons for site owner not to co-operate with local partners.<br><br>The Waste Sites Viability and Delivery Study prepared by Wardell Armstrong state that the site has potential to accommodate a range of waste uses including more complex processes, for example combining materials recovery and energy from waste. |
| **Constraints** | Potential contamination zone. Wardell Armstrong note that 'the site is a former industrial site and borehole evidence suggests that there may be 5m depth of made ground in parts of the site. There are also recorded mine entries. There may be contamination and stability issues to resolve before the site can be developed.' There are sensitive receptors close by with a houses to the North east, on Holyhead Road and to the west on Curtin Drive. An area of trees provides some screening for the properties on Curtin Drive.<br><br>High Risk Coal Development area. The site has ground remediation required.<br><br>Part of site is a SLINC (Site of Local Important to Nature Conservation)<br><br>No other immediate environmental concerns known.<br><br>There is no residential in the vicinity which would cause out of hours restrictions. |

# EMPLOYMENT VIABILITY PROFORMA

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 213,55 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.25 psf<br>Yield at 6.75% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£15,498,668 |
| | Construction Costs<br>£8,452,507 |
| | Remediation Costs<br>£1,055,300 |
| | Professional Fees<br>£950,781 |
| | Marketing and Disposal<br>Letting Fees: £224,233<br>Disposal Fees: £193,733 |
| | Finance<br>£1,175,860 at a debit rate of 6.5% |
| | Profit<br>£2,021,567 at 15% profit on cost |

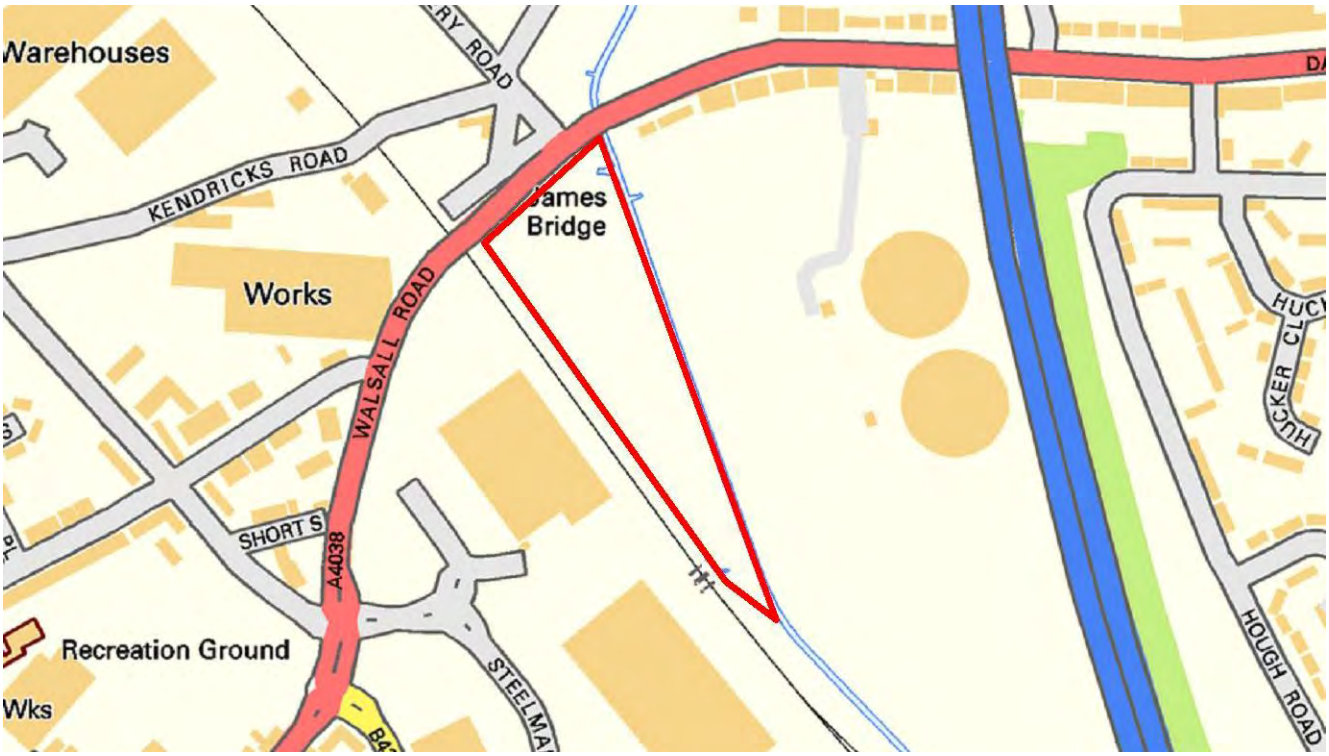
## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £1,005,894 |

| | |
|---|---|
| **Residual Site Value per acre (With Abnormals)** | £75,697 |
| **Residual Site Value without Abnormals** | £2,888,956 |
| **Residual Site Value per acre (Without Abnormals)** | £217,403 |
| **Benchmark Site Value per acre** | £250,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2016-2026 |
| **Delivery Strategy** | The former Wesson Ductile site, on Bull Lane is a high quality site with an application to develop for industry . The site has excellent access, and while some remediation is required, it is likely to be developed soon.<br><br>We expect this site to be developed in stages over the 2016-26 time period for a number of units to meet local demand.<br><br>Timescale:<br>• Planning 2016<br>• Site preparation 2017<br>• Development 2018 |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Box Pool | | **Site Ref** | IN 18.2 |
| **Plan:** | | | **Landowner:** Darlaston Builders Merchants | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Darlaston Road, Darlaston |
| **Site Description** | The site is bounded by the River Tame (east), railway line (west) and Darlaston Road (north). The site is part of a former land fill and requires some remediation works. Severn Trent Water have installed sub surface storm water attenuation tanks on the site which will need to be retained and considered as part of any future layout. Planning consent for the development of a builders merchants lapsed in April 2014. |
| **Gross Site Area:** | 1.67 hectares (4.12 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site has excellent strategic access to M6 Junction 10.<br><br>The site has had its site level raised to facilitate future development by removing the risk of flooding. |

| | |
|---|---|
| | The site should continue to be in employment use.<br><br>As the area sits within the Black Country Enterprise Zone, the availability of funding mechanisms could increase the market attractiveness of the site. Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | The site is part of the Black Country Enterprise Zone and subject to the Darlaston Local Development Order.<br><br>The site is adjacent to the Gasholders.<br><br>The site should be suitable for high quality development. Access improvements are planned for Bentley Mill Way. |
| **Constraints** | Part of the site is in flood zone 3b.<br><br>The triangular shape of the site could be a constraint to development. |
| **Abnormal Costs** | The site is located within a High Risk Coal Development Area.<br><br>Possible constraints relating to past mining and industrial heritage include:<br><br>• Deep made ground (landfill)<br>• Ground gases (landfill and made ground)<br>• Shallow coal mining issues<br>• Possible unrecorded mineshafts<br>• Soil contamination – landfill on site, adjacent gas governor<br>• Shallow groundwater – formerly marshy/pond<br>• Groundwater contamination<br>• Oversized obstructions within landfill<br>• Storm water attenuation tanks to be retained on site |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 71, 903 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.50 psf<br>Yield at 6.75% |

| | |
|---|---|
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£5,895,512 |
| | Construction Costs<br>£3,059,473 |
| | Remediation Costs<br>£319,200 (£77,746 /acre) |
| | Professional Fees<br>£337,867 |
| | Marketing and Disposal<br>Letting Fees: £79,093<br>Disposal Fees: £69,420 |
| | Finance<br>£423,181 at a debit rate of 6.5% |
| | Profit<br>£724,379 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £301.961 |
| **Residual Site Value per acre (with Abnormals)** | £73,292 |
| **Residual Site Value without Abnormals** | £936,249 |
| **Residual Site Value per acre (without Abnormals)** | £214,787 |
| **Benchmark Site Value per acre** | £250,000 |
| **Viability Status** | Marginal |

| | |
|---|---|
| **Timeline for Delivery** | 2021-26 |
| **Delivery Strategy** | The site is one of 13 in the BCEZ. It is situated within the M6 corridor and is expected to benefit from the general uplift in the area. The site can be delivered with support available through the EZ designation for site investigation works and other potential financial assistance through the EZ business rates mechanism. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Westgate North/ Linley Lodge, Aldridge | | **Site Ref** | IN 12.11 |
| **Plan:** | | | **Landowner:** Ryon Investments Ltd | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Westgate, Aldridge |
| **Site Description** | This vacant site is accessed from Westgate. A waste management facility adjoins the southern boundary, industry to the north, and the canal to the west. The site has permission for B8 expired in November 2014. |
| **Gross Site Area:** | 0.75 ha (1.85 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site's lack of prominence and shape are its main problems and may affect its market attractiveness. As with other Aldridge sites, distance from the motorway and local road access is somewhat constrained.<br><br>Most development has been occupier-led and the area as a whole has a recent history of considerable occupier-led development.<br><br>The site is currently being marketed by KGA. There was previous interest in the site and planning |

| | |
|---|---|
| | permission for Movecorp to move into the site. This purchase was halted in 2013 after the bank loan fell through, although Movecorp have spoken with the Council and have expressed that they are still interested in the site. |
| **Opportunities** | There has previously been interest in locating a B8 facility on the site; particularly Movecorp who had a known interest. However the permission for B8 has expired as already noted.<br><br>There are no known reasons for the site owner not to co-operate with local partners.<br><br>Utilities understood to be available in the local area. |
| **Constraints** | The site is accessed from Westgate and is positioned in between Biffa Waste and another occupier. There are therefore concerns regarding rights of access into the site as well as its lack of prominence. Moreover, the shape of the site itself could potentially be restrictive.<br><br>As a result of the issues of prominence and access outlined above, it may be advised that the site be used for infill development for one of the adjacent occupiers, as their co-operation would be required on access arrangements. There are further concerns regarding both local road infrastructure and motorway access which may prove problematic in unlocking a rear plot of land. |
| **Abnormal Costs** | There is a Site of Local Importance to Nature Conservation (SLINC) on part of the site.<br><br>It is adjacent to a Strategic Waste site. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 32,291 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £4.75 psf<br>Yield at 7.25% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with** | -£184,708 |

| | |
|---|---|
| **Abnormals** | |
| **Residual Site Value per acre (with Abnormals)** | Negative |
| **Residual Site Value without Abnormals** | -£14,484 |
| **Residual Site Value per acre (without Abnormals)** | Negative |
| **Benchmark Site Value** | £175,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2021-26 |
| **Delivery Strategy** | There is a good track record of development in this area.<br>Development in this part of Aldridge has in the recent past included the following:<br><br>- The Tintagel Way development was provided in 1998 and 2001, and,<br>- the Wharf Approach has been developed in stages between the mid 1990s and 2006, and,<br>- the Aldridge Fields was redeveloped from the former Corby Windows site in 2008.<br><br>This site is, however, small, with poor frontage and lacks the scale and frontage attributes of the Tintagel Way and Wharf Approach developments. The Council are confident that if this site does not come forward another one in Aldridge will due to high turnover. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Coppice Lane | | **Site Ref** | IN 9.8 |
| **Plan:** | | | **Landowner:** Mr and Mrs O'Reilly | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Coppice Lane/ Brickyard Road, Aldridge |
| **Site Description** | The site is bounded by Coppice Lane to the north and Brickyard Road to the west. To the south is Interserve Site Services and Ibstock Brick Ltd clay pit site. The site was formerly occupied by Bace Groundworks Ltd. |
| **Gross Site Area:** | 1.04 ha (2.56 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site is part of a large employment area to the north of Aldridge which includes a number of older, established employment estates together with undeveloped land and active brickworks.<br><br>There appears to be market demand for employment space at this location. Vacancy does not appear to be a problem in the wider area.<br><br>The site was recently acquired in February 2014. |

| | |
|---|---|
| | Most development has been occupier-led and the area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | The majority of the area should be retained for employment use.<br><br>The Waste Sites Viability and Delivery Study prepared by Wardell Armstrong states that: 'This site has an area of just over one hectare and may not be able to support a larger more complex waste site. However it is within an industrial area with other waste operations near-by and no sensitive receptors in the immediate vicinity.<br><br>It therefore has potential to be developed as a waste transfer station or one stage waste treatment facility.' |
| **Constraints** | |
| **Abnormal Costs** | The wider area has a legacy of clay mining and uncontrolled tipping which makes development or redevelopment complicated in some cases. There is the potential for contamination on site and a small area of high risk coal development. Mineral infrastructure and possible strategic waste site are further constraints.<br><br>Possible constraints include a recorded mine entries although it appears that these have been grouted and capped. There is the potential for ground gas associated with former spoil heaps on the site or migrating from the adjacent landfill, although this is known to be lined and to have a suitable gas extraction system. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 44 777 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £4.75 psf<br>Yield at 7.25% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |

## VIABILITY MODELLING OUTPUTS

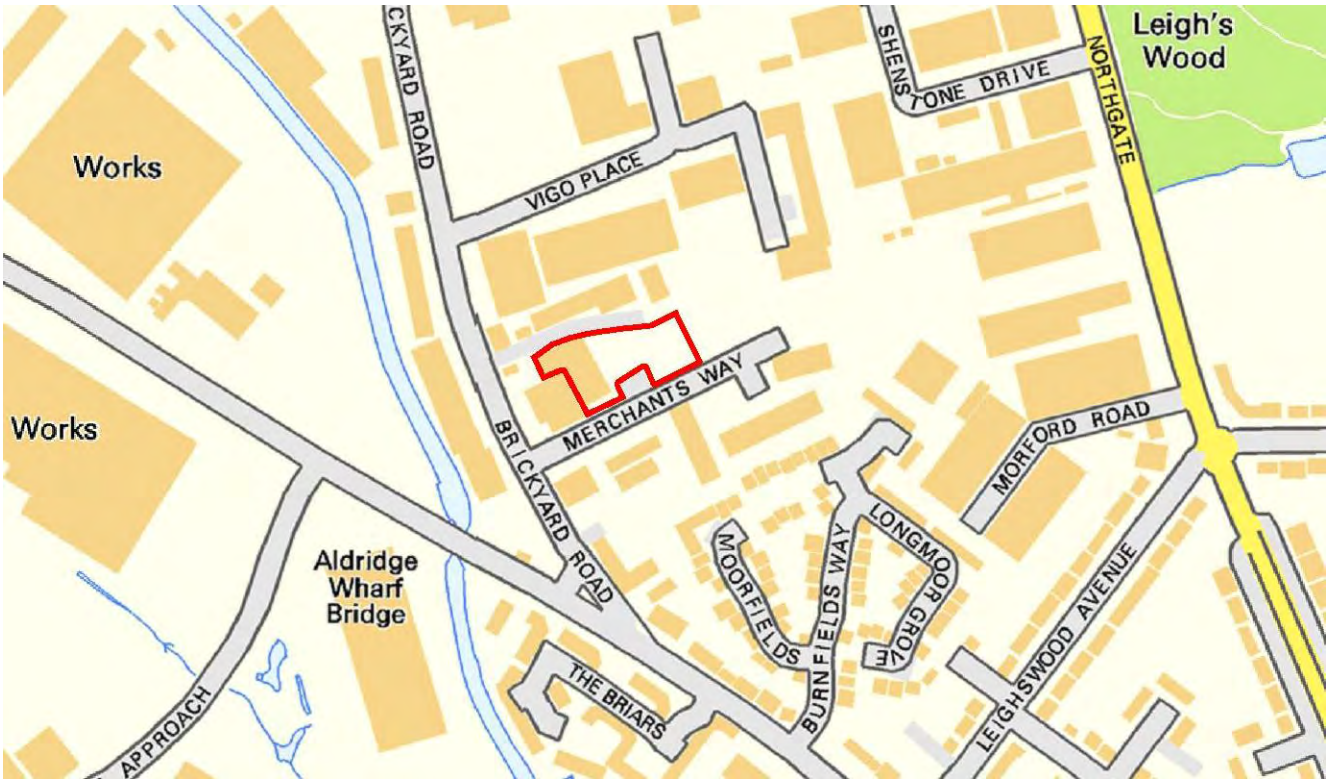
| | |
|---|---|
| **Residual Site Value with Abnormals** | -£241,031 |

# EMPLOYMENT VIABILITY PROFORMA

| | |
|---|---|
| **Residual Site Value per acre (with Abnormals)** | Negative |
| **Residual Site Value (without Abnormals)** | -£20,084 |
| **Residual Site Value per acre (without Abnormals)** | Negative |
| **Benchmark Site Value per acre** | £175,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | There is a good track record of development in this area. Development in the recent past in this part of Aldridge have included the following, with the most significant schemes being occupier led:<br>- Gainsborough Plastics, Brickyard Rd (1999),<br>- new workshops in the Empire Estate (2000 & 2009),<br>- new speculative development to provide units at Merchants Way (2003),<br>- new B1 on Merchants Way (2010),<br>- and extension to Kepston at Coppice Lane (2011), and<br>- new units for Interserve on Brickyard Rd (2012) and,<br>- Langley Industries site (2013).<br><br>The small size of the site, its irregular configuration and limited frontage make for a difficult development proposition. Neighbouring occupiers are Langley Industries and Interserve, and whilst these firms are international, there operations in Aldridge are “local”, and the prospects for expansion into this site would seem remote. It was recently sold and GVA are no longer marketing.<br><br>The site is one of 6 sites in Aldridge / Brownhills, in the 5yr / 10yr employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of prime quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the assumed rate of take up in the five year land supply and the five to ten year land supply (1.05 ha / annum), and on this basis it is reasonable to assume that the sites in the five to ten year supply are deliverable over the time period, as well as other Aldridge/Brownhills sites as applicable. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Merchants Way, Aldridge | | **Site Ref** | IN9.3 |
| **Plan:** | | | **Landowner:** tbc (sold by the Council) | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Merchants Way, Aldridge |
| **Site Description** | This site was a former Council depot, which was cleared and marketed in 2013. The shape of the site is irregular but it is not close to housing. The site however has had speculative planning consent since March 2014 for B2 units. Industry adjoins the site to the north, and the Council's waste management facility to the east. |
| **Gross Site Area:** | 0.43 ha (1.06 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The constraints to be overcome are prominence and shape; Aldridge as a whole is distant from the strategic highway network. The site is not currently being marketed.<br><br>Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led industrial development. |

| | |
|---|---|
| **Opportunities** | The site is cleared and there is no occupier.<br><br>Utilities are understood to be available in the local area. |
| **Constraints** | There are no residential uses in the vicinity that would cause hours of use restrictions.<br><br>There is an issue of prominence as the site lacks frontage to Brickyard Road, however a site assembly may create a better opportunity with adjacent occupiers.<br><br>As it stands, the site is likely to go for open storage use rather than redevelopment, unless a local occupier requires a smaller unit on site which is possible. The site is otherwise suitable for redevelopment with an existing access point. Motorway access and local road infrastructure from the site are generally satisfactory.<br><br>There are no issues regarding topography, although the shape may pose a constraint and the size is fairly small. |
| **Abnormal Costs** | A Strategic Waste site is located adjacent. There are no other immediate environmental concerns that are known of. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary Location Small |
| **Development Capacity** | We have assumed the site can deliver 18,513 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.00 psf<br>Yield at 7.25% |
| **Development Costs** | Build costs at £77 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£1,211,465 |
| | Construction Costs<br>£1,427,537 |
| | Remediation Costs<br>£53,700 |

| | |
|---|---|
| | Professional Fees<br>£148,124 |
| | Marketing and Disposal<br>Letting Fees: £18,513<br>Disposal Fees: £14,265 |
| | Finance<br>£73,224 at debit rate of 6.5% |
| | Profit<br>£148,853 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | -£875,299 |
| **Residual Site Value per acre (with Abnormals)** | Negative |
| **Residual Site Value without Abnormals** | -£675,032 |
| **Residual Site Value per acre (without Abnormals)** | Negative |
| **Benchmark Site Value per acre** | £200,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2021-261 |

| | |
|---|---|
| **Delivery Strategy** | There is a good track record of development in this area. WMBC expect the site to be delivered by the private sector in the period 2014 -2021. Merchants Way has difficulties due to its lack of frontage, but the Council are confident that if this site does not come forward another one in Aldridge will due to high turnover.<br><br>The site is vacant and marketed.<br><br>Development in the recent past in this part of Aldridge have included the following, with the most significant schemes being occupier led:<br>- Gainsborough Plastics, Brickyard Rd (1999),<br>- new workshops in the Empire Estate (2000 & 2009),<br>- new speculative development to provide units at Merchants Way (2003),<br>- new B1 on Merchants Way (2010),<br>- and extension to Kepston at Coppice Lane (2011), and<br>- new units for Interserve on Brickyard Rd (2012) and,<br>- Langley Industries site (2013). |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Axcess 10 East | | **Site Ref** | IN 93.2 |
| **Plan:** | | | **Landowner:** AXA REIM | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Axcess 10 Business Park, Bentley Road North, Darlaston |
| **Site Description** | This is the remaining vacant part of the Axcess 10 Business Park that was completed in phases in the 1990s. The site has permission for a B2 unit. |
| **Gross Site Area:** | 1.11 ha (2.742 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site is part of the wider Central Darlaston and Darlaston Green Employment Area. This is a very large and complex employment area including a mix of uses ranging from scrap metal recycling to high quality distribution units.<br><br>Most development in the wider area has been occupier-led and the area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | No known reasons for the site owner not to co-operate with local partners.<br><br>A good site which is part of an existing popular business park and capable of attracting development in the short term. Although not an EZ site itself it is situated within the EZ cluster. It has the benefit of aLocal Development Order status (ie, planning permission is not needed for industrial uses)<br><br>The topography, size, and shape of the site have all been deemed as 'good' by the Bulleys site appraisal. There are no further residential constraints. Motorway Access and the Local Road Infrastructure are both good. There is suitable access to the site from the existing business park, with access onto the Black Country Route at Anson Junction and subsequently a short distance from the M6 Motorway Junction 10.<br><br>Wardell Armstrong's Waste Sites Viability and Delivery Study states that the 'site has an area of 1.11ha and may therefore be too small to support a complex waste site. However it is in an industrial area and has planning permission for B2 use. There are no sensitive receptors in the immediate vicinity of the site and it may therefore be suitable for a small scale waste use such as a transfer station or one stage treatment process.' |
| **Constraints** | One slight issue is lack of prominence. There is a sewer running underneath the site and a power line over part of it. The potential constraints include probable shallow mine workings and possible |
| **Abnormal Costs** | Part of the site is located in Flood Zone 3b<br><br>High Risk Coal Development Area |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Prime Location Medium |
| **Development Capacity** | We have assumed the site can deliver 47 791 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.50 psf<br>Yield at 6.75% |

| | |
|---|---|
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation and flood zone restrictions<br>Profit on cost at 15% |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value (With Abnormals)** | £67,126 |
| **Residual Site Value (Without Abnormals)** | £214,661 |
| **Benchmark Site Value** | £250,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | There is a good track record of development in this area. WMBC expect this sites to be delivered by the private sector in the period 2021-26.<br><br>Site of marginal viability, but potential high quality.<br><br>Although not an EZ site itself it situated within the EZ cluster and the M6 corridor and is expected to benefit from the uplift in this area. It is also located in the Local Development Order area and has existing planning permission. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Maybrook (Former Unalco) | | **Site Ref** | IN18.2 |
| **Plan:** | | | **Landowner:** Mr P Daly | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Maybrook Road, Brownhills |
| **Site Description** | This is a small site in a good quality industrial area that has seen recent investment. It has been in use sporadically for storage and parking, and there were a succession of permissions for industry in the 1990s, never taken up. The Wryley and Essington Canal and Maybrook Road form the western and eastern boundaries respectively. Ground conditions are not known. The site is not currently marketed. |
| **Gross Site Area:** | 0.61 ha (1.5 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

# EMPLOYMENT VIABILITY PROFORMA

| | |
|---|---|
| **Market Attractiveness** | There are a number of new, reasonable quality units that are accessible from Maybrook Road. It is a core employment area in the UDP. Compared to the relatively poor quality of the Borough's stock, the units at Maybrook road are generally high quality.<br><br>The site can be accessed directly from Lindon Road. This part of the industrial area comprises a number of older units, depots and vacant space which require investment and renewal. |
| **Opportunities** | This site could be regenerated/renewed to meet the demand for high quality industrial units at this location. There is evidence elsewhere in the Borough of developers investing in protected employment sites. Most development has been occupier-led and the area as a whole has a recent history of considerable occupier-led development.<br><br>The site forms part of a coherent parcel of employment land. Brownhills is one of the Borough's most accessible locations. The surrounding roads are generally industrial estate roads, used by HGV traffic and parking. |
| **Constraints** | There is a possibility that the area will use its integrity through further incremental residential development. Currently there is no adjacent residential and therefore no associated restriction on hours of use. |
| **Abnormal Costs** | There is a Site of Local Importance to Nature Conservation (SLINC) on part of the site. Possible constraints relating to past mining and industrial heritage include:<br>• Made ground (associated with former colliery)<br>• Ground gases (made ground)<br>• Possible unrecorded mineshafts<br>• Soil contamination – former colliery<br>• Groundwater contamination |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 26,263 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £4.75 psf<br>Yield at 7.25% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |

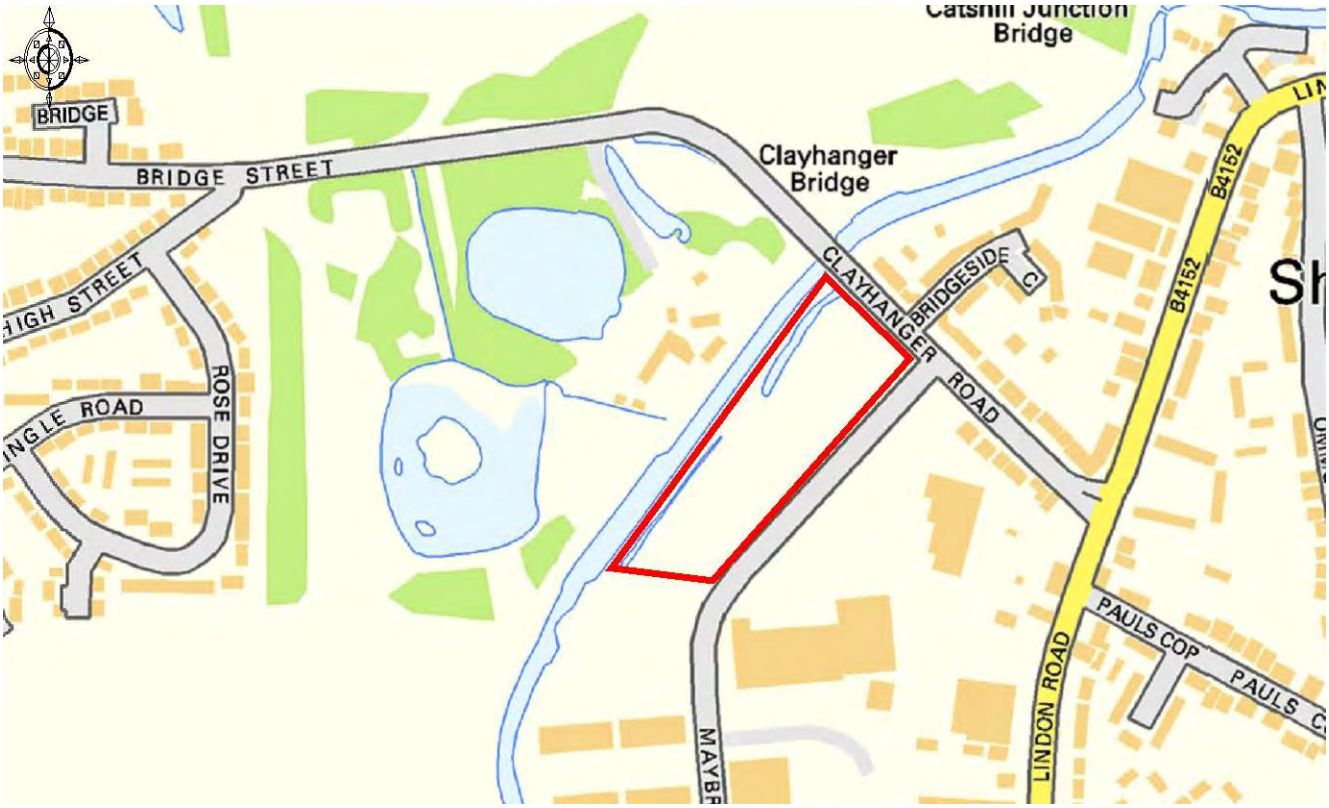
## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with** | -£184,708 |

| | |
|---|---|
| **Abnormals** | |
| **Residual Site Value per acre (With Abnormals)** | Negative |
| **Residual Site Value without Abnormals** | -£11,780 |
| **Residual Site Value per acre (Without Abnormals)** | Negative |
| **Benchmark Site Value per acre** | £175,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | There is a good track record of development in this area. WMBC expect the site to be delivered by the private sector in the period 2021-26. If necessary the Council will help the owner market this site and direct investment enquiries to it.<br><br>Development in the recent past in BROWNHILLS has have included the following, with the most significant schemes being occupier led:<br><br>- Engine Lane (2002),<br>- the Castings/CNC Speedwell complex (2002, 2005, 2011),<br>- Pelsall Road (2011),<br>- Sadler Rd/Lichfield Rd (2011) and, the Heathyards development on Maybrook Road (2011).<br><br>The small size of the site makes for a difficult development proposition. The site is not being marketed and there is a risk of the site not being developed within the next 10 years.<br><br>The site is one of 6 sites in Aldridge / Brownhills, in the 5yr / 10yr employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of prime quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the assumed rate of take up in the five year land supply and the five to ten year land supply (1.05 ha / annum), and on this basis it is reasonable to assume that the sites in the five to ten year supply are deliverable over the time period, as well as other Aldridge/Brownhills sites as applicable. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Land North of Maybrook Road | | **Site Ref** | IN 5.1 |
| **Plan:** | | | **Landowner:** Croudace Properties | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Maybrook Road, Brownhills |
| **Site Description** | The site is bounded by Maybrook Road and the Canal, and Heathyards, the pipe work manufacturer. This site was previously part of a larger site, whereby the southern section has recently been developed and occupied by Heathyards. It could form expansion land for Heathyards or a standalone development. There is housing across the road to the north. The site abuts the canal to the West. |
| **Gross Site Area:** | 1.68 ha (4.15 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site has previously been marketed by agents and details are available based on £500,000 for a land sale. The site currently stands vacant.<br><br>Brownhills is one of the Borough's most accessible locations. The A5 runs along the north of the area and Brownhills is directly linked to the M6 Toll road. Recently, there has been a large amount of employment development in the area. Most development has been occupier-led and the area as a whole has a recent history of considerable occupier-led development.<br><br>This was identified as a core employment area in the UDP.<br>Compared to the relatively poor quality of much of the Borough's stock, most of the units in the Maybrook area are of high quality. New manufacturing investment on the site has recently been developed by Heathyards, a pipework manufacturing company. The recent investment by Heathyards demonstrates a demand for sites in the area; even for sites which have until now been undeveloped since the 1960s. There may also be demand for high quality industrial units. |
| **Opportunities** | Utilities understood to be available in the local area.<br><br>No known reasons for site owner not to co-operate with local partners.<br><br>The prominence of the site has been deemed 'good' according to the Bulleys Site Appraisal. The site is also a regular shape and adjacent to the canal. There are no issues of topography. |
| **Constraints** | Motorway Access/Local Road Infrastructure: Average based on Bulleys site appraisal scoring. Brownhills as a whole enjoys generally good motorway access.<br><br>As residential development exists on the opposite side of Clayhanger Road, hours of use may be an issue. There is a risk that this wider area will lose its integrity through further residential development. |
| **Abnormal Costs** | . Part of the site is a SLINC (Site of Local Importance to Nature Conservation) – ecological survey and mitigation required. There are no other immediate environmental concerns that are known. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary Location Medium |
| **Development Capacity** | We have assumed the site can deliver 72 333 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £4.75 psf<br>Yield at 7.25% |
| **Development Costs** | Build costs at £43 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | -£485,394 |
| **Residual Site Value per acre (With Abnormals)** | Negative |
| **Residual Site Value without Abnormals** | -£32,444 |
| **Residual Site Value per acre (Without Abnormals)** | Negative |
| **Benchmark Site Value per acre** | £175,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | Development in the recent past in BROWNHILLS has have included the following, with the most significant schemes being occupier led:<br><br>- Engine Lane (2002),<br>- the Castings/CNC Speedwell complex (2002, 2005, 2011),<br>- Pelsall Road (2011),<br>- Sadler Rd/Lichfield Rd (2011) and, the Heathyards development on Maybrook Road (2011).<br><br>The site is one of 6 sites in Aldridge / Brownhills, in the 5yr / 10yr employment land supply, totalling 5.26 ha altogether. Whilst sites in Aldridge and Brownhills are not generally considered as being of prime quality, there remains strong local demand for sites in these areas, as reflected in average take up rates of 1.6 hectares / annum in Aldridge and 0.8 hectares / annum in Brownhills. These rates are consistent with the assumed rate of take up in the five year land supply and the five to ten year land supply (1.05 ha / annum), and on this basis it is reasonable to assume that the sites in the five to ten year supply are deliverable over the time period, as well as other Aldridge/Brownhills sites as applicable.<br><br>The site could also be used as expansion land for Heathyards. Understanding required of Heathyards business plan to determine whether part or the entire site would be required for any future business expansion and timescales working to. |

# Appendix 2c – Employment Site Proformas (Additional Sites)

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Reedswood Way | | **Site Ref** | IN58 |
| **Plan:** | | | **Landowner:** | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Reedswood Way, Walsall |
| **Gross Site Area:** | 4.07 ha ( 10.1 acres) |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 175,238 sq ft (gross) of commercial space based on 40% site coverage. |

| | |
|---|---|
| **Value Assumptions** | Rent at £5.25<br>Yield of 6.5%<br>9 months rent free |
| **Development Costs** | Build costs at £45.51 psf |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | N/A |
| **Residual Site Value per acre (with Abnormals)** | N/A |
| **Residual Site Value without Abnormals** | £2,110,946 |
| **Residual Site Value per acre (without Abnormals)** | £199,617 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Marginal |
| **Timeline for Delivery** | 2016 -2021 |
| **Delivery Strategy** | The site could be suitable for a large single occupier, or for several units.<br><br>The site could be delivered according to the following timescale:<br>- Planning application 2015/16<br>- Development 2016/17 |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Hughes Road | | **Site Ref** | IN 341 |
| **Plan:** | | | **Landowner:** Park Hill, Walsall Council and Unknown | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Off Hughes Road, Moxley |
| **Site Description** | The opportunity consists of three elements:<br>(1) **Land South of Citadel Junction**: This is vacant land in Wolverhampton which includes a SLINC, and is allocated in the Bilston Corridor Area Action Plan (2014) for high quality employment land. Area: 3ha. Allocated for industry as EDO13.<br>(2) **Land North of Hughes Road**. This is protected open space in Walsall, under UDP policy LC1. Housing adjoins the south of this site. Area: 4.37 ha.<br>(3) **Land to the rear of Dale Street**. This is a vacant land in Wolverhampton allocated in the Bilston Corridor Area Action Plan (2014) for high quality employment land. Area: 1.5ha. . Allocated for industry as EDO12.<br><br>The land is in mixed ownership, with parts owned by Park Hill and Walsall Council. Rough vegetation covers the area, with some trees on part. A raised gas main crosses the site from Citadel Junction to Hughes Road opportunity from the north. |

| | |
|---|---|
| **Gross Site Area:** | 8.87 ha (21.92 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | This opportunity is located on both sides of the Walsall – Wolverhampton boundary in the Moxley area. It is bounded by Citadel Junction to the north, the Black Country Spine Road to the East, Housing to the south east along Hughes Road, and industry to the west and southwest. The access is via Dale Street and Vulcan Road to the Black Country Route Junction 3. The opportunity area totals 8.87 ha. |
| **Opportunities** | An access from Dale Street/Murdoch Road would be appropriate for a site of this size in an established industrial area.<br><br>The first parcel of land (Land South of Citadel Junction) has been allocated for 3 hectares of high quality employment land, for delivery pre-2016, subject to remediation and mitigation for loss of nature conservation value (SLINC).<br><br>The second parcel (Land North of Hughes Road) is currently allocated as open space in the UDP, but it is poor quality and surplus to requirements. The eastern part of this is in the ownership of Park Hill Estates, with Walsall Council owning the Western part. There was found to be a low risk of subsidence according to a Wardell Armstrong Report (1994).<br><br>No part of the site is currently required for the extension of Citadel Junction. |
| **Constraints** | A large patch of Flood Zone 2 and 3 runs across the centre of the site.<br><br>Parts of the site consist of former sludge beds and refuse tips. There are levels changes affecting the site. A high pressure gas main runs north west to south east through the site. On parts of the site, mining has occurred up to the 1920s. There are some mineshafts and mines on site. |
| **Abnormal Costs** | Probable very high remediation and reclamation costs associated with the redevelopment of this site due to the landfill on site and likely extensive historic mining within the site area |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 545,515 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.25 psf<br>Yield at 6.5%<br>9 months rent free |
| **Development Costs** | Build costs at £40 psf<br>Remediation – 10% of build cost in absence of a site specific cost estimate<br>Profit on cost at 15% |

| | |
|---|---|
| **Summary Appraisal** | Gross Development Value<br>£29,767,681 |
| | Construction Costs<br>£15,292,802 |
| | Remediation Costs<br>£1,529,280 (£95,394/acre) |
| | Professional Fees<br>£1,682,208 |
| | Marketing and Letting<br>Letting Fees: £405,696<br>Disposal Fees: £350,514 |
| | Finance<br>£2,153,074 at a debit rate of 6.5% |
| | Profit<br>£3,657,543 |

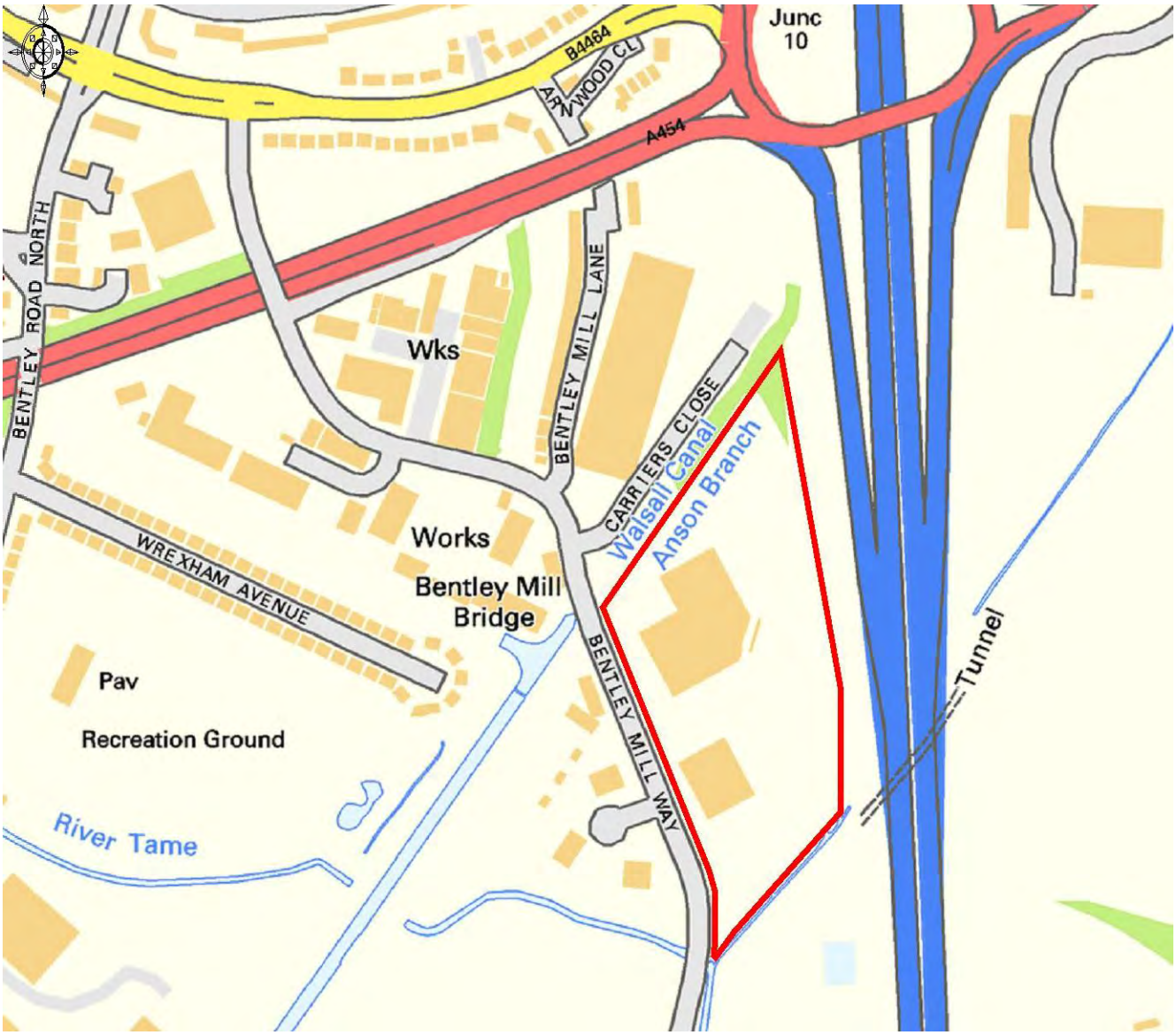
## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £2,091,044 |
| **Residual Site Value per acre (With Abnormals)** | £95,394 |
| **Residual Site Value per acre (Without Abnormals)** | £225,380 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Not Viable |

| | |
|---|---|
| **Timeline for Delivery** | 2016 -2026 |
| **Delivery Strategy** | Site acquisitions, including potential CPO to achieve comprehensive development site.<br><br>This land north of Hughes Road, is currently open space, with uneven topography, poor ground conditions, and a gas main bisecting it.<br><br>The site is on the boundary with Wolverhampton and there is scope to use adjacent sites on the Wolverhampton side to create a large development opportunity, with access to the BCR via Dale Street<br><br>This site is likely to be delivered in the latter part of the timescale, either for a large standalone occupier or for smaller units to meet local demand in Walsall and Wolverhampton.<br>Timescale<br>Hughes Rd SAD Allocation 2016<br>Funding 2019<br>Planning permission 2020<br>Site Assembly 2021-23<br>Phased development 2023-26 |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Casino and Cinema, Bentley Mill Way | | **Site Ref** | IN 315 |
| **Plan:** | | | **Landowner:** National Amusements Ltd LLC | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Bentley Mill Way, Darlaston |
| **Site Description** | This site is currently occupied by active non-industrial uses: a Showcase out-of-centre cinema and a casino. It is acknowledged that it is unlikely that these businesses will continue to operate in this out of centre location as development continues to progress in the town centre – particularly the cinema with the two recent planning consents for cinemas in the town centre . If the present users vacate it could provide an opportunity for industry. |

| | |
|---|---|
| | The site is bounded to the north by the Anson Branch canal (now filled in); to the east by the M6; to the south by a watercourse and the west by Bentley Mill Way. |
| **Gross Site Area:** | 4.58 ha (11.3 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | The site is well located in relation to the M6 Junction 10. The site is bounded to the east by the M6 and has commercial or industrial development surrounding it.<br><br>Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | Potential inclusion within the Darlaston LDO through the review process to be completed by April 2014.<br><br>DSDA access project. Project to improve the Bentley Mill Way Road would improve the prospects of the site.<br><br>The site could provide long term opportunities for industry if the present users leave. The former Showcase in Birmingham has been taken over by JLR, providing a precedent for out-of-centre commercial uses to be redeveloped for industry. The owner of the site applied to be included within the LDO boundary. There are two prospective cinemas planned for Walsall town centre, which could affect the viability of the cinema at this location.<br><br>If the site were to be used for waste, Wardell Armstrong suggest that the site would be able to accommodate 100,000 tonnes of waste per annum or more. |
| **Constraints** | Flood zone 3 on small section of the site. However, overall the site is not in a flood risk area.<br><br>The current use of the site may restrict availability for development. It is currently occupied by a cinema and casino. Walsall Council believe that due to recent development in the town centre, these uses may discontinue providing an opportunity for alternative uses.<br><br>The closest houses lie on Bentley Mill Lane and Wrexham Avenue, approximately 80m away. |
| **Abnormal Costs** | High Risk coal development area.<br><br>There may be methane issues requiring remediation. According to Wardell Armstrong Waste Sites Viability and Delivery Study, the site has a former mining use and mine entries and shallow mine workings are recorded. Information from the Council is that the site has been partly remediated but instability and ground gas issues still affect the car park area. |

# EMPLOYMENT VIABILITY PROFORMA

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 197,195 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at £5.25 psf<br>Yield at 6.75% |
| **Development Costs** | Build costs at £40 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value: £15.2 million |
| | Construction Costs: £9m |
| | Remediation Costs: £1.3m (£115,000 / acre) |
| | Professional Fees: £0.9 million |
| | Marketing and Disposal<br>Letting Fees: £207,000<br>Disposal Fees:£179,000 |
| | Finance<br>£0.43m at a debt rate of 6.5% |
| | Profit<br>£1.87m, 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £541,856 |
| **Residual Site Value per** | £47,952 |

| | |
|---|---|
| **acre (with Abnormals)** | |
| **Residual Site Value without Abnormals** | £2,667,639 |
| **Residual Site Value per acre (without Abnormals)** | £223,133 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2021-2026 |
| **Delivery Strategy** | While on paper this site is currently marginal/unviable for speculative industry, we expect this site to be developed between 2021-26 by a prospective occupier. Although not an EZ site itself it situated within the EZ cluster and the M6 corridor and is expected to benefit from the uplift in this area.<br><br>The site has been part remediated but its development would involve full remediation. The owner wishes the site to become part of the LDO area under which B1bc, B2 and B8 industry can be developed without the need to obtain planning permission.<br><br>Timescale proposed by Walsall Council:<br>• DSDA Access Project completion 2016<br>• Sad Allocation 2016<br>• Relocation of existing uses: 2017-18<br>• Development 2019-20<br><br>Business relocation support required. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Willenhall Sewage Works | | **Site Ref** | IN 133 |
| **Plan:** | | | **Landowner:** Severn Trent Water | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Anson Road |
| **Site Description** | This is a large potential development opportunity close to (but presently with no access to) the BCR. It consists of the decommissioned sewage works. The site is bounded by housing to the north, open space to the east, the BCR to the south and the rail line to the west. |
| **Gross Site Area:** | 9.7 ha (23.96 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | Bulleys site appraisal concludes that the site scores 27 out of possible 30, and is good on prominence, motorway access, size/shape, and topography.<br><br>However, local access is lacking.<br><br>There is also an adjoining residential area.<br><br>The site is not currently being marketed.<br><br>Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | Assuming that the issues associated with the site can be overcome, the site provides a good quality redevelopment opportunity for a high value manufacturing occupier.<br><br>Utilities understood to be available in the local area.<br><br>No immediate environmental concerns are known. |
| **Constraints** | Lack of access to the BCR.<br><br>Part of the site is sterilised to provide for Severn Trent's continuing needs.<br><br>Residential to the north and east of the site may have an impact on hours of use restrictions.<br><br>The site currently has no viable access but there is the potential to create an access onto the Black Country Route. This would provide good dual carriageway access to junction 10 of the M6, which is a short distance away. The bridge over Anson book is of a suitable capacity for commercial traffic. The site has very good visibility to the Black Country Route. Access on site would need to be retained for some of the remaining<br><br>The site suffers from overhead high voltage power lines to the south, adjacent to the Black Country Route. The result is that the net developable area will be reduced significantly, and possibly by up to 50%. However, this would need to be confirmed through further evaluation. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 417,639sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at 5.25 psf<br>Yield at 6.75% |

| | |
|---|---|
| **Development Costs** | Build cost at £40 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£32,176,203 |
| | Construction Costs<br>£16,530,152 |
| | Remediation Costs<br>£1,937,300 (£80,856/acre) |
| | Professional Fees<br>£1,846,745 |
| | Marketing and Disposal<br>Letting Fees: £438,521<br>Disposal Fees: £378,875 |
| | Finance<br>£2,308,104 at a debit rate of 6.5% |
| | Profit<br>£3,953,479 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

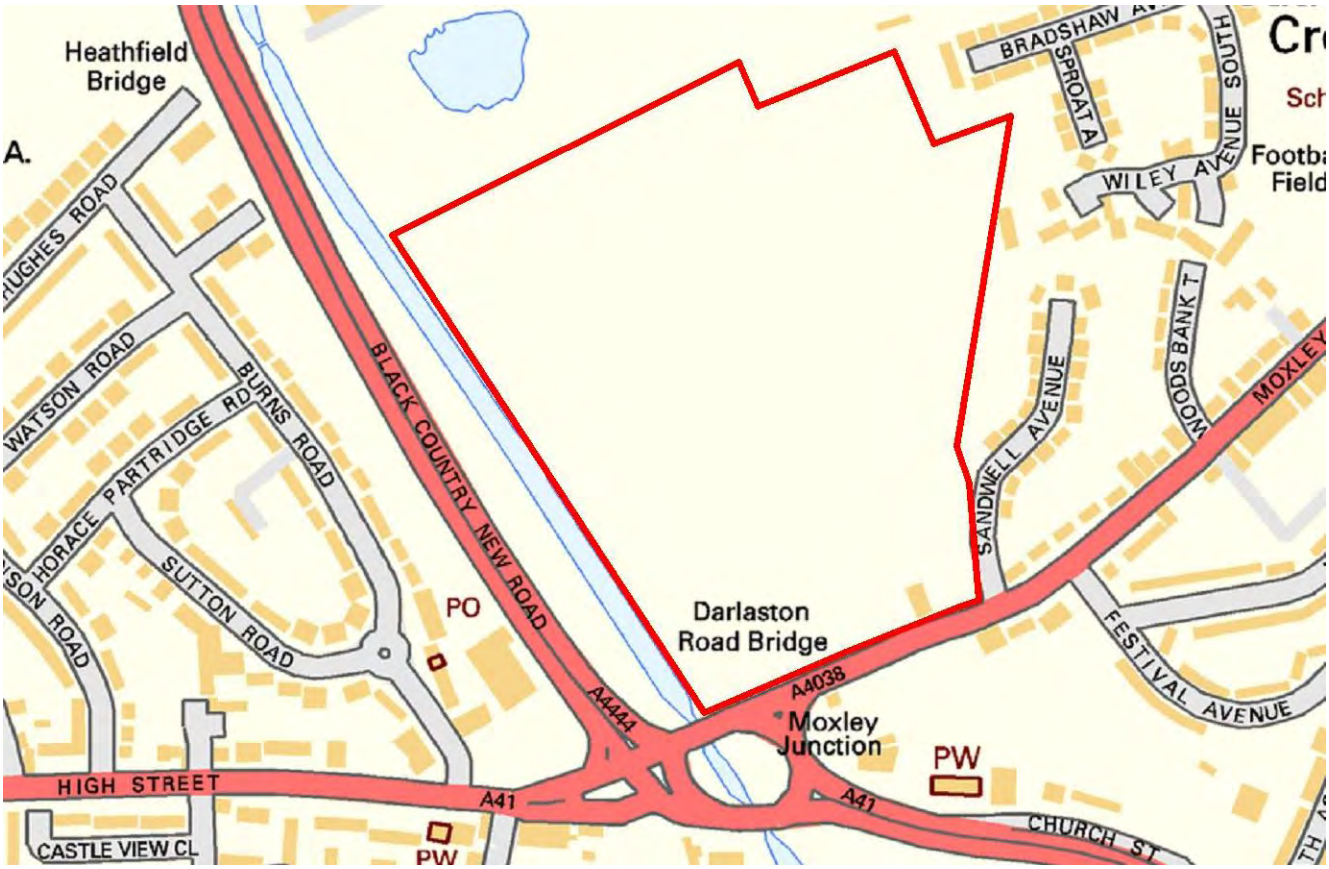
| | |
|---|---|
| **Residual Site Value with Abnormals** | £1,575,201 |
| **Residual Site Value per acre (with Abnormals)** | £65,743 |
| **Residual Site Value without Abnormals** | £5,649,790 |
| **Residual Site Value per acre (without Abnormals)** | £222,874 |
| **Benchmark Site Value per acre** | £300,000 |

# EMPLOYMENT VIABILITY PROFORMA

| | |
|---|---|
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2016 -2026 |
| **Delivery Strategy** | 'Access to Growth' project through the SEP to implement access infrastructure requirements from the Black Country Route.<br><br>Discussions required with the land owner, whose previous intention was to market for residential development – the access infrastructure would not be pursued in this instance. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Moxley Tip | | **Site Ref** | IN 122 |
| **Plan:** | | | **Landowner:** Park Hill Estates | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Moxley Road |
| **Site Description** | This is a large site close to the Black Country New Road. It is composed of two main elements. The larger western part has a leisure/recreation allocation in the UDP; however there has been planning permission for industry with this element and for the necessary remediation. The eastern strip is a current housing allocation, which has never been implemented. The site is bounded to the north by the AP UK site (a housing opportunity); to the east there is existing housing, with Moxley Road to the south, close to its junction with the Black Country New Road and the canal to the west. There was sand extraction in the 1930s, with waste tipping between 1940 and 1980. There are very poor ground conditions and mineshafts. |
| **Gross Site Area:** | 10.37 ha (25.62 acres) |

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | Bulleys site appraisal concludes that the site scores 27 out of 30, stating that topography is the main issue. There are other slight concerns about local road infrastructure and the shape of the site.<br><br>The site is close to and prominent to the Black Country New Road dual carriageway. There is potential direct access from the Moxley Junction roundabout.<br><br>Potential site development of 312,900 sq ft (29,000 sq m). The site has potential to be a prominent employment site with access to Moxley Junction.<br><br>The site is currently not on the market. It is currently allocated for leisure uses.<br><br>Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development.<br>A large site such as Moxley Tip is likely to require local authority intervention in order to be brought to the market.<br><br>The site is one of the largest development opportunities in the Walsall/Black Country area. It could provide a critical mass of development and potentially be brought forward around the same time as Phoenix 10, which benefits from an Enterprise Zone location. |
| **Opportunities** | Utilities understood to be available in the local area.<br><br>No known reasons for site owner not to co-operate with local partners. |
| **Constraints** | Potential contamination. Due to previous uncontrolled refuse tipping, there is likely to be poor ground conditions and likely contamination which would require remediation.<br><br>Part of site is located in flood zone 3.<br><br>There is intent to allow residential to the north of the site and this should be carefully considered to ensure that 24/7 hours of working is available to any employment occupier. The residential would be positioned to the rear of the site and be accessed via alternative routes.<br><br>The site would need improved road access. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |
| **Development Capacity** | We have assumed the site can deliver 446,487 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at 5.25 psf<br>Yield at 6.75% |

| | |
|---|---|
| **Development Costs** | Build cost at £40 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£34,398,742 |
| | Construction Costs<br>£17,671,955 |
| | Remediation Costs<br>£2,021,200 (£78,891) |
| | Professional Fees<br>£1,969,316 |
| | Marketing and Letting<br>Letting Fees: £468,811<br>Disposal Fees: £405,045 |
| | Finance<br>£2,470,901 at a debit rate of 6.5% |
| | Profit<br>£4,226,561 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

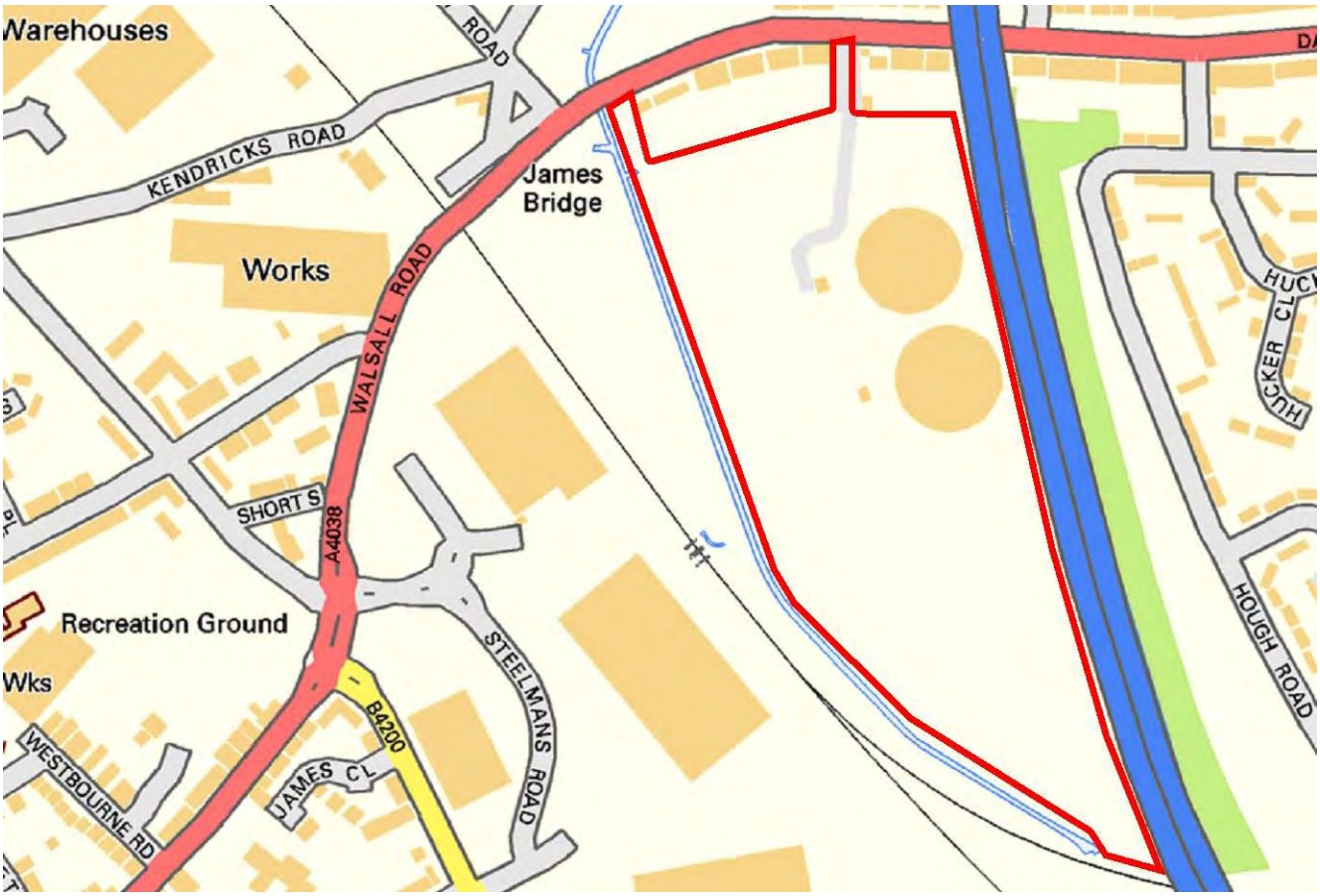
| | |
|---|---|
| **Residual Site Value with Abnormals** | £2,253,660 |
| **Residual Site Value per acre (with Abnormals)** | £87,965 |
| **Residual Site Value without Abnormals** | £6,040,043 |
| **Residua Site Value per acre (without Abnormals)** | £231,586 |

# EMPLOYMENT VIABILITY PROFORMA

| | |
|---|---|
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2016 -2021 |
| **Delivery Strategy** | 'Access to Growth' project through the Strategic Economic Plan to implement access infrastructure requirements from the Black Country Route.<br><br>This site would be suitable for a large single occupier and is likely to be delivered in the latter part of the 2016-26 time period.<br><br>It would need to involve an open space/recreation element.<br><br>Timescale<br><br>• SAD Allocation 2016<br>• Funding 2020<br>• Highway Access 2021<br>• Remediation 2022-23<br>• Development 2023-26 |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | James Bridge Gasholders | | **Site Ref** | IN 111, 112 |
| **Plan:** | | | **Landowner:** National Grid, H&H Properties Ltd | |




For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Darlaston Road, James Bridge, Darlaston |
| **Site Description** | The site consists of two elements in different landownerships - the recently decommissioned Gasworks and an adjoining site south of it. The southern and eastern boundaries are formed by the rail line and the River Tame. There is housing adjoining the north side. Site investigation works are currently on-going for both land ownerships. |
| **Gross Site Area:** | 8.3 ha (20.5 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | This is a gateway site alongside the M6 between M6 Junction 9 and M6 Junction 10, which forms the boundary to the west.<br><br>The site is currently vacant but is not being marketed currently.<br><br>It is one of the largest sites within the Enterprise Zone.<br><br>As the area sits within the Black Country Enterprise Zone, the availability of funding mechanisms could increase the market attractiveness of the site. Most development in the wider area has been occupier-led and the Walsall/Black Country area as a whole has a recent history of considerable occupier-led development. |
| **Opportunities** | Site is located in Darlaston Local Development Order Area.<br><br>DSDA access project.<br><br>Potential job numbers: 140. It is potentially a large development site, along with the site to the south.<br><br>Utilities understood to be available in the local area.<br><br>No known reason for site owner not to co-operate with local partners or to restrict the marketing or redevelopment of the site.<br><br>The site is currently of local quality. High quality development is a possibility. |
| **Constraints** | Access - the existing access to the Gasholder site is through a single track private access road between the terraced housing. There is separate access from Darlaston Road to the southern site; which is also a single lane track. The area is visible from the motorway but not as easily accessible to it, which offsets its profile.<br><br>Part of the site in flood zone 2.<br><br>The southern site is a SINC (Site of Importance to Nature Conservation).<br><br>There is some residential on the front of the site which restricts access into the site and hours of use. |
| **Abnormal Costs** | The site falls within the Council's identified 'Pollution Combined' zone and therefore there is *potential* for contamination on site.<br><br>Removal of gasholders to be undertaken. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Primary Location Large |

| | |
|---|---|
| **Development Capacity** | We have assumed the site can deliver 357,361 sq ft (gross) of commercial space based on 40% site coverage |
| **Value Assumptions** | Rent at 5.25 psf<br>Yield at 6.75% |
| **Development Costs** | Build cost at £40 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£27,532,199 |
| | Construction Costs<br>£14,144,348 |
| | Remediation Costs<br>£1,432,500 (£69,878) |
| | Professional Fees<br>£1,557,685 |
| | Marketing and Disposal<br>Letting Fees: £375,229<br>Disposal Fees: £324,192 |
| | Finance<br>£1,990,164 at a debit rate of 6.5% |
| | Profit<br>£3,382,871 |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | £1,916,381 |
| **Residual Site Value per** | £93,482 |

| | |
|---|---|
| **acre (with Abnormals)** | |
| **Residual Site Value without Abnormals** | £4,834,353 |
| **Residual Site Value per acre (without Abnormals)** | £222,894 |
| **Benchmark Site Value per acre** | £300,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2016 -2026 |
| **Delivery Strategy** | Assistance available through the EZ designation i.e. grants for site investigation works and other potential financial assistance through the EZ business rates mechanism. |

# EMPLOYMENT VIABILITY PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | Former McKechnie's | | **Site Ref** | IN 12.14 |
| **Plan:** | | | **Landowner:** St Francis Group | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Middlemore Lane/ Dumblederry Lane |
| **Site Description** | This site consists of the former McKechnies engineering works (before that, Bolton Brass) which was vacated in early 2014. The building, circa 400,000 sqft, has permission for demolition. The site is bounded to the north by the canal, to the east by playing fields, to the south by Middlemore Lane and to the west by Dumblederry Lane. |
| **Gross Site Area:** | 5.94 ha (14.67 acres) |

# EMPLOYMENT VIABILITY PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **Market Attractiveness** | There is some market demand for higher quality units in the wider area.<br><br>The McKechnie brass factory is large and currently underused. |
| **Opportunities** | There is a mix of buildings on the site, some of which in isolation could be considered high quality. Walsall Council expects the wider area to improve as buildings are redeveloped and the area is regenerated.<br><br>Most of the surrounding area forms a coherent employment area, separated from residential or other non-conforming uses. Any proposal to diversify the area should be resisted.<br><br>Most development has been occupier-led and the area as a whole has a recent history of considerable occupier-led development.<br><br>The site lies on an industrial estate, and the nearest housing is over 200m away. Wardell Armstrong therefore note that the 'site is therefore of suitable size to allow the development of a waste treatment site accepting more than 100,000 tonnes of waste per annum, it has a history of industrial use and has no nearby residential receptors.'<br><br>This site could cater for current strong demand for industry in Aldridge, but may require some form of gap funding. |
| **Constraints** | A large part of the site is occupied by a former engineering works. There is approval for demolition, but plant removal could be a complex undertaking . |
| **Abnormal Costs** | The site lies within the Council's 'Pollution Combined' zone and therefore there is the *potential* for contamination on site.<br><br>The entirety of the site is located within a SLINC (Site of Local Importance to Nature Conservation).<br><br>The Waste Sites Viability and Delivery Study prepared by Wardell Armstrong notes the following: 'The constraints associated with this site are the possible need to remediate contamination arising from the past use of the site for an engineering and brass works. There is also the potential for unrecorded mining activity'. |

## DEVELOPMENT ASSUMPTIONS

| | |
|---|---|
| **DTZ Category** | Secondary  Location Large |
| **Development Capacity** | We have assumed the site can deliver  255,750 sq ft (gross) of commercial space based on 40% site coverage |

| | |
|---|---|
| **Value Assumptions** | Rent at 4.50 psf<br>Yield at 7% |
| **Development Costs** | Build cost at £40 psf<br>Contingency at 10% to reflect potential remediation<br>Profit on cost at 15% |
| **Appraisal Summary** | Gross Development Value<br>£15,627,600 |
| | Construction Costs<br>£10,122,585 |
| | Remediation Costs<br>£1,116,900 (£76,134/acre) |
| | Professional Fees<br>£1,123,948 |
| | Marketing and Disposal<br>Letting Fees: £230,175<br>Disposal Fees: £184,015 |
| | Finance<br>£1,041,895 at a debit rate of 6.5% |
| | Profit<br>£1,920,155 at 15% profit on cost |

## VIABILITY MODELLING OUTPUTS

| | |
|---|---|
| **Residual Site Value with Abnormals** | -£1,859,920 |
| **Residual Site Value per acre (with Abnormals)** | Negative |
| **Residual Site Value without Abnormals** | £507,223 |

| | |
|---|---|
| **Residual Site Value per acre (without Abnormals)** | £142,683 |
| **Benchmark Site Value per acre** | £175,000 |
| **Viability Status** | Not Viable |
| **Timeline for Delivery** | 2016 -2026 |
| **Delivery Strategy** | Development in the recent past in this part of Aldridge have included the following, with the most significant schemes being occupier led:<br>Gainsborough Plastics, Brickyard Rd (1999),<br>new workshops in the Empire Estate (2000 & 2009),<br>new speculative development to provide units at Merchants Way (2003),<br>new B1 on Merchants Way (2010),<br>and extension to Kepston at Coppice Lane (2011), and<br>new units for Interserve on Brickyard Rd (2012) and,<br>Langley Industries site (2013).<br><br>The site is of a size that represents a viable development proposition. Such is the confidence of the land owner in making their bid for public sector funding (Local Growth Deal) that they will assign the funding to support the delivery of a first phase speculative unit.<br><br>Timescale:<br>Planning permission 2015<br>Funding Bid Determination 2015/16<br>Demolition & Remediation 2016-17<br>Phased development 2017-18 |

# Appendix 3 – Wardell Armstrong Waste Site Proforma’s

# POTENTIAL WASTE MANAGEMENT SITES PROFORMA

| | | | | |
|---|---|---|---|---|
| **Property:** | WP4: Land at Kendricks Road | | **Site Ref** | IN 99.1 |
| **Photograph:** | | | **Landowner:** Trustees of Foundry Services SSAS | |


For illustrative purposes

## THE SITE

| | |
|---|---|
| **Site Location** | Heath Road / Kendricks Road, Darlaston, Walsall WS10 8BU |
| **Site Description** | Small open, sub-rectangular site at the corner of Heath Road and Kendricks Road, with vehicular access off Kendricks Road, currently used for open storage. See General Characteristics below for further details. |
| **Gross Site Area:** | 0.46 hectares |
| **Sad Preferred Options:** | Reasons for Selection:<br>Planning Permission |

# POTENTIAL WASTE MANAGEMENT SITES PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

| | |
|---|---|
| **General Characteristics** | Small open, sub-rectangular site located within the Darlaston employment area, forms part of larger IN99.1 employment site (Station Street/ Heath Road). Site boundaries are formed by other employment land (also part of IN99.1) on the eastern and south-eastern sides, by Heath Road on the south-western side, and by Kendricks Road on the northern side. Site has no buildings or structures and is currently being used for open storage, and has access off Kendricks Road. |
| **Current Land Use** | The site is not vacant as stated in application 08/0256/FL – it is currently being used (possibly unlawfully) for open storage of skips and containers. |
| **Green Belt Site?** | No. |
| **Natural Environment** | No designated sites, no issues identified. |
| **Historic Environment** | No designated heritage assets and no entries on Walsall & Wolverhampton HER. However, First Edition OS map (1880s) shows mining activity on the site, including a mine shaft surrounded by spoil, and the Second Edition OS map (1900s) shows that the site subsequently became part of the former James Bridge Iron and Steel Works (Bridge and Roofing). Any previous below-ground archaeology is likely to have been removed by these developments although some survival may occur where surface mineral workings have not taken place, and where the former ground surface has been buried by spoil and "made ground." |
| **Landscape Character** | Urban site within Black Country HLC Character Area WL12: Darlaston. Site is on a prominent corner plot, on the edge of an established industrial estate, with mainly 20th century industrial buildings and vacant land to the north, east and south, and residential development to the south-west, on the opposite side of Heath Road. The approved gasification plant (08/0206/FL) would be in a large modern industrial building similar in design, height and scale to others in the area, with the exception of the stack, which would be up to 20m high (8m above the ridge line of the building). This would be a prominent feature in the townscape, clearly visible on the approach to the north. It is proposed to mitigate the visual impact through landscaping at the corner of Heath Road and Kendricks Road, in the area reserved for the proposed "5Ws" Midland Metro route. |
| **Agricultural Land** | Not applicable. |
| **Mineral Resources** | Surface Coal (South Staffordshire Coalfield), Sand and Gravel (Superficial). |
| **Ground Conditions** | Derelict land - on NLUD database. Site was formerly part of the larger James Bridge Iron and Steel Works and is therefore likely to have ground condition problems associated with this previous use. It is also within the Coal Mining Development Referral Area and a mine shaft is clearly shown in the vicinity of the site on the first published Ordnance Survey map. No information about ground conditions was provided with planning application 08/0206/FL, and the need for such information was dealt with by way of conditions attached to the planning permission. |

# POTENTIAL WASTE MANAGEMENT SITES PROFORMA

| | |
|---|---|
| **Flood Risk** | Flood Zone 1 - low probability of fluvial flooding, development proposals should comply with EA Standing Advice. No information about flood risk and surface water management was provided with 08/0206/FL and the requirement for such information was dealt with by way of conditions attached to the planning permission. |
| **Water Resources** | Secondary A Aquifer (Bedrock), but not within a Groundwater SPZ. |
| **Water Quality** | Within Tame, Anker & Mease Catchment - potential for impacts on water quality of Tame, Anker Mease - Secondary Combined groundwater body and River Tame (Wolverhampton Arm) from Source to Sneyd Brook surface water body. Humber RBMP (2009), Annex B indicates these water bodies are not expected to achieve overall "good" status until 2027 because it is technically infeasible in both cases, and disproportionately expensive in the case of the latter, to achieve this by 2015. |
| **Air Quality** | Site is near the M6 corridor, where the statutory limit values for nitrogen dioxide (NO2) are currently being exceeded, according to the latest air quality modelling carried out by Walsall MBC in September 2013. The previous planning permission (08/0206/FL) was for an organic based energy generation (gasification) plant, which has the potential to generate emissions of harmful pollutants into the atmosphere as well as generating an increase in emissions from traffic, but would be subject to regulation. An assessment report provided with the planning application indicates that emissions from |
| **Accessibility** | Current access to the site is off Kendricks Road, giving access to J10 of the M6 via the Black Country Route (A454). Permission 08/0206/FL (now expired) proposed no change to existing access arrangements, which was controlled by Condition 19 of the permission, and the Local Highway Authority has raised no objection in principle. Access to the motorway should be improved once the Darlaston Strategic Development Area (DSDA) Access Project has been completed. This will include improvements to the junction between Bentley Road South and Heath Road. |
| **Sensitive Receptors** | Main sensitive receptors in the vicinity of the site are:<br>**Housing** – existing housing on opposite side of Heath Road in Simmonds Place and along frontage of Heath Road, some of which is less than 50m away from south-western boundary of the site, although separation and screening is already provided by a wooded embankment along the opposite frontage of Heath Road, and potential visual impacts and impacts on amenity and would be addressed through mitigation, and controlled by conditions attached to the grant of permission.<br>**Neighbouring industrial premises** – factories and industrial units to the north, east and south are mostly occupied by engineering, automotive, warehousing and storage uses, although there is a wholesale food supplier (Euro Foods Ltd) on the opposite side of Kendricks Road. |
| **Specific Physical Constraints** | **Proposed light rail route/greenway**- proposed improvements to this section of Kendricks Road by Centro to provide for a light rail route (5Ws). There is also a proposed greenway (pedestrian/cycle route) identified in the UDP. These proposed improvements were allowed for in the design of the scheme approved under permission 08/0206/FL. Although there is now uncertainty over whether the light railway will go ahead the alignment is still protected as it is a proposed greenway in the UDP. |

| | |
|---|---|
| | **Proximity to residential properties** - site is less than 50m away from residential properties in Simmonds Place, on the opposite side of Heath Road, although proposed stack (around 20m high) would be further away. Screening is already provided by a wooded embankment along the frontage of Heath Road and this would reduce the visual impact of the proposal, although the stack would be visible.<br><br>A noise assessment provided with application 08/0206/FL by Ian Sharland Ltd concludes that noise from the plant would have a negligible impact on the properties. |
| **Cross-Boundary Issues** | The gasification plant approved under permission 08/0206/FL had a capacity of around 25,000 TPA but the submitted documents do not indicate the source of the imported timber to be used as feedstock. Given the proximity of the site to the motorway it is likely that at least some of the material was expected to be imported from outside the borough. |

## CURRENT PLANNING STATUS

| | |
|---|---|
| **Planning Policy – Walsall Local Plan** | **Walsall UDP 2005 – "saved" policies**<br>The site is within a Core Employment Area identified in the Walsall UDP 2005 (see "saved" Policy JP5 and "saved" Proposals Map).<br>**Black Country Core Strategy 2011**<br>This location is identified as "Retained Local Quality" employment land in the Black Country Core Strategy 2011 (see Economy Key Diagram and Appendix 2, Regeneration Corridor 6 Diagram). It is noted that the BCCS does not allocate particular sites for development, it identifies broad locations for development but these are indicative only and it is the purpose of the SAD to refine the locations identified in the BCCs and allocate specific sites. |
| **Darlaston LDO 2015** | The site is within the area covered by the Darlaston LDO 2015 but is not within Sub-Zone A where certain types of waste management use are permitted. The LDO permits development falling within Use Classes B1 (b), B1 (c), B2 and B8, although operational development is subject to restrictions. Waste management uses falling outside the specified "B" Use Classes are not permitted in this part of the LDO area. |
| **Planning Permissions** | Planning permission was granted in 2008 for an "in-building timber resource recovery centre" comprising a biomass (gasification) plant using wood as feedstock (08/0206/FL). It was not entirely clear from the information provided (but can be inferred) that at least some of the wood to be used as feedstock would be waste. The development was not implemented within the time allowed, even though an extension of time was approved in 2011 (11/0856/TE), and the permission expired on 22.08.14. The original permission and the extension of time permission both pre-dated the designation of the Darlaston LDO in 2012 (see above). |
| **Walsall SAD – Issues & Options for the Site** | The Issues & Options for industrial land and for waste management development are summarised in the SAD Issues & Options Report (April 2013). The report identifies the Leamore employment area as Potential High Quality employment land (IN99), reflecting the 2012 Walsall ELR - see Section 4, Map 4.2 and Appendix 4. The Heath Road/ Kendricks Road site itself is identified as a Potential Waste Management Site Allocation (WP4) - see Section 8, Table 8.7, Map 8.2, and Appendix 8a.<br>The main constraint to industrial development identified in Appendix 4a of the report is flood risk – the area is stated to be within Flood Zone 2. However, the latest digital Flood Risk mapping published by the Environment Agency indicates that this particular site is not within Zone 2, although other sites in the vicinity are affected (see above). |

# POTENTIAL WASTE MANAGEMENT SITES PROFORMA

## VIABILITY MODELLING OUTPUTS

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| **Viability and Delivery key issues identified by the Council** | We have identified the following potential constraints to development, which may be affecting the viability and delivery of waste management development on this site:<br>• Need for desk-top assessment/ site investigations to be carried out to identify the extent of contamination and geotechnical problems arising from historic mining activities and potential for pollution of soils and groundwater, and to identify a site remediation strategy that would address any problems identified, and enable the approved development or something similar to take place;<br>• Potential competition from other waste to energy proposals in Walsall and the surrounding area, and questions over whether the West Midlands conurbation will generate enough residual waste to supply all of the plants proposed over their anticipated lifetimes;<br>• Questions over supply of feedstock if the facility would be relying to a large extent on biomass timber crops, given the location of the site in relation to areas where such crops might be grown;<br>• Questions over supply of feedstock if the facility will be relying to a large extent on waste wood, given that significant quantities of low-grade waste wood are currently being exported to energy from waste facilities in Europe; and<br>• Questions over economic viability of energy from waste facilities going forward, given trends towards waste reduction, proposals by EC to increase recycling targets, uncertainties about incentives (e.g. FITs). |
| **Timeline for Delivery** | Delivery 2014 -2026, subject to market conditions and economic viability of approved scheme. |
| **Delivery Strategy** | We would expect this site to be delivered by the private sector. |

## KEY INFORMATION SOURCES

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| **Walsall Local Plan** | Black Country Core Strategy (BCCS) 2011<br>Walsall Unitary Development Plan (UDP) 2005 - "saved" policies and Proposals Map<br>N.B. Please refer to Annotated UDP Written Statement for details of which policies are "saved." | Available on Council website |
| **Darlaston LDO** | Darlaston Local Development Order 2015 | Available on Council website |
| **Walsall Local Plan – Waste Evidence** | Black Country Waste Planning Study (2009)<br>Black Country Core Strategy Waste Background Paper 2 and Appendices and Waste Monitoring Update July 2010 (2010) | Available on Council/ Black Country Core Strategy websites |
| **Walsall AMR 2013** | Walsall Local Plan Monitoring Report 2013 (Authority's Monitoring Report)<br>The latest published AMR covering the 2012/13 monitoring year. Section 5, pages 66 – 96 summarise progress on | Available on Council website |

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| | implementing the BCCS waste management requirements in Walsall and the wider Black Country. The underlying data can be found in the Waste Data Tables published alongside the report. | |
| **Walsall Site Allocation Document (SAD) Appraisal** | Walsall Site Allocation Document - Issues & Options Report and Appendices (April 2013)<br>Chapter 8 of the Issues & Options Report provides general background information on the BCCS waste capacity requirements, and explains what the SAD is expected to deliver. Appendix 8a includes a schedule of the potential site allocations identified at the time of publication. | Available on Council website |
| **Walsall SAD Sustainability Appraisal** | Integrated Sustainability Appraisal (SA) of the Walsall Site Allocations Development Plan Document (SAD) and Walsall Town Centre Area Action Plan (AAP) – SA Stage 2: Options Appraisal (April 2013)<br>Summarises outcome of preliminary SA of options for the SAD, including options for waste management. | Available on Council website |
| **SAD Waste Proposals** | Excel spreadsheet of potential waste sites<br>Digital mapping of potential waste sites<br>Emerging Waste Sites Assessment<br>Emerging Sustainability Appraisal of sites | Electronic copies of these documents provided |
| **Site WP4: Planning History** | Original permission 08/0206/FL for "timber resource recovery centre" and S73 permission for extension of time to implement the original permission 11/0856/TE. | Electronic copies of application forms, plans, supporting documents and decision notices provided |
| **Other Waste to Energy Proposals** | Site WP2: Fryers Road Scheme 1 – Permissions 07/0449/OL/W7, 07/1691/RM/W7, 08/1815/RM, 08/1459/FL, 10/1632/TE and 11/1336/TE<br>Site WP2: Fryers Road Scheme 2 – Permission 13/0725/WA<br>Willenhall Lane Pyrolysis Plant CLOPED – 13/1343/LP<br>AB Waste Current Application – 13/1712/WA<br>Refuse Derived Fuel (RDF) – Call for Evidence by Defra - Walsall MBC Note (March 2014) | Electronic copies of application forms, plans, supporting documents and decision notices provided |

# POTENTIAL WASTE MANAGEMENT SITES PROFORMA

## CONTACT DETAILS

| APPLICANT | AGENT |
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| Des Mitchell<br>O-Gen UK Limited<br>Unit 1<br>Blythe Hall<br>Cresswell<br>Stoke-on-Trent<br>Staffordshire<br>Tel: 07917 034692<br>Email: desmitchell@ogenuk.com<br>Website: http://web.ogenuk.com/ | As far as we are aware no agent is involved – both planning applications were submitted by the applicant. |

## SITE DETAILS

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| **Site Name:** | WP4: Land at Kendricks Road (IN99.1) |
| **Address:** | Heath Road / Kendricks Road, Darlaston, Walsall WS10 8BU |
| **Site Area:** | 0.46 hectares |

### Viability and Delivery Assessment

| Requirements | | Consultant's Comments |
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| 1 | **Site Visit –** general observations. | A site visit to the Kendricks Road site was conducted on 16th October 2014, and comments and observations regarding the site are as follows:<br>• The Kendricks Road site is a sub-rectangular site located within the Darlaston employment area. Site boundaries are formed by other employment land on the eastern and south-eastern sides, by Heath Road on the south-western side, and by Kendricks Road on the northern side.<br>• Current access to the site is from Kendricks Road leading off Heath Road. The site is close to J10 of the M6 with access via the Black Country Route (A454). The route to the site from Bentley Mill Way onto Kendricks Road crosses over the Walsall to Wolverhampton railway line via a single vehicle wide bridge.<br>• The site has secure palisade fencing along its perimeter with a good gated access onto the site.<br>• There is existing housing on the opposite side of Heath Road in Simmonds Place and along frontage of Heath Road, some of which is less than 50m away from south-western boundary of the site, separation and screening is provided by a wooded embankment along the opposite frontage of Heath Road. |

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| | | • The site is situated within an area of established commercial and industrial area with factories and industrial units to the north, east and south which are mostly occupied by engineering, automotive, warehousing and storage uses, although there is a wholesale food supplier (Euro Foods Ltd) on the opposite side of Kendricks Road. Adjacent to the site in the south east corner is a car repair business (Stephen Whitehouse) adjacent to the west is a steel and alloy coil distribution warehouse.<br>• The site is currently used as a storage area for skips and Ro Ro containers, closer inspection identified AWM Group and SB Recycling Services signage on the containers, with the majority of the containers associated with SB Recycling Services. It was not apparent if the containers were still in active use or just being stored. A later internet search showed that SB Recycling Services are still operating.<br>• The site is small c.0.46ha and would likely only be able to facilitate a small scale facility.<br>  <br>General site condition |
| **2** | **Feedback from Developer –** summary of comments from former applicants/agents on why the approved developments have not been implemented. | Contact was made with Des Mitchell at O-Gen UK Ltd to discuss the current status of the Kendricks Road site, feedback was as follows:<br>• Discussions confirmed that the planning permission for the timber resource recovery centre has now lapsed and there was no intention to develop on the site at present.<br>• As far as was understood there had been no evaluation of geotechnical risks or any site investigation works conducted on the site.<br>• Comment was made that O-Gen UK Ltd were now concentrating on a larger development, but it was not disclosed as to where this was. |
| **3** | **Attractiveness of Location** – is the general location likely to be attractive to prospective waste operators or industrial users? | It is considered that the Heath Road/Kendricks Road area would be more of an attractive location for industrial development rather than a waste development. The size of the site could restrict the type and size of waste facility to be developed, which could limit its economic attractiveness to waste operators. The site also has housing in close proximity. Although a modern waste facility will have high standards of pollution control waste sites can cause emissions, particularly odour, and they are therefore best placed in industrial areas with a buffer between them and local residents. For an industrial user, the site offers good access routes and already re-sides within a |

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| | | commercial and industrial zone. |
| 4 | **Ground Conditions –** could existing ground conditions be a significant barrier to delivery of viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site (N.B. this also relates to Task 1 d)? | The Kendricks Road site is a sub-rectangular site located within the Darlaston employment area. Current access to the site is off Kendricks Road leading off Heath Road.<br>Historical mapping shows evidence of a possible slag heap with old shaft noted. The site was formerly used as a works building and has steep changes in topography around the boundaries.<br>Geological mapping shows made ground recorded across the site (generally indicated to be colliery spoil).<br>• Superficials:- The south west of the site is overlain by boulder clay. The north east of the site is overlain by alluvium. The outer edge of a buried glacial channel is recorded approximately half way across the site trending north / south and covering the eastern part of the site.<br>• Bedrock - The west of the site comprises Middle Coal Measures, now known as Pennine Middle Coal Measures. The east of the site consists of Sandstone within the Lower Coal Measures, now known as Pennine Lower Coal Measures. The solid strata across the site generally comprises inter-bedded grey mudstone, siltstone and pale grey sandstone. Seams of the Vanderbeckei (Stinking) Marine Band and Stinking Coal are recorded to outcrop beneath the site trending roughly north / south. These seams form the split between the middle and lower coal measures.<br>Two BGS borehole records indicate that made ground at depths of between 2.5m and 4.2m is present on the site.<br>An 'old shaft' was indicated on the 1888 map. The Coal Authority website appears to indicate a shaft within the site boundary which is recorded as being grouted in 1977.<br>Shallow coal seams are present beneath the site. The Geological Memoir indicates that Darlaston Green No 28 Pit shaft is present to the north of Kendricks Road, which recorded the base of the Bottom (Deep) Coal at 44.2m below ground level. There is no indication of open cast mining.<br>There are no landfill sites within site boundary. Wood Green Landfill site is located within 100m to the west of the site and is believed to have accepted industrial wastes. Charles Richard Fasteners Ltd Landfill site lies beyond, approx. 300m west of the site. Box Pool Landfill site lies approx. 245m east of the site. The Box Pool Landfill operated between 1955 and 1989 accepting industrial and inert wastes.<br>There are no records of source protection zones or flood risk areas within the boundary. The site has a Secondary A Aquifer designation for both the superficial deposits and bedrock.<br>Possible Constraints Relating to Past Mining and Industrial Heritage include the following:<br>• Deep made ground – historic plans indicate steep changes in topography and a possible slag heap<br>• Ground gases (anticipated due to the deep made ground and nearby landfill site)<br>• Shallow coal mining issues<br>• Former shaft which is understood to be grouted although there are no details of capping<br>• Possible unrecorded mineshafts<br>• Soil contamination<br>• Groundwater contamination (and possible effects on adjacent canal)<br>• Possible sub-structures within localised areas of the site, associated with former works building.<br>Records indicate that there has been one 'significant' pollution incident recorded within 250m of the site involving discharge of sewage materials to surface water. This is unlikely to have left any lasting contamination. |

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| | | There are no recorded incidents of flooding and the site is located within a Flood Zone 1 Area, that is it has a low probability of fluvial flooding. |
| 5 | **Additional Physical Constraints –** are there any further physical constraints, other than ground conditions, that could be a significant barrier to viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site? | The site covers an area of c.0.45Ha which is likely to be restrict the size of waste management facility proposed. The recent permission for a gasification plant, using wood as feedstock, had an intended annual input of c.30, 000 tpa, which is likely to be a good reflection of what is an achievable capacity for a waste management development.<br><br>There is existing housing on the opposite side of Heath Road in Simmonds Place and along the Heath Road frontage immediately to the south of the site. Some of these residential receptors are less than 50m away from south-western boundary of the site. Some properties are elevated and overlook the site although a wooded embankment along the opposite frontage of Heath Road provides some screening for the properties in Simmonds Place.<br><br>There are factories and industrial units to the north, east and south of the site, which are mostly occupied by engineering, automotive, warehousing and storage uses, although there is a wholesale food supplier (Euro Foods Ltd) on the opposite side of Kendricks Road.<br><br>There are proposed improvements on Kendricks Road by Centro, to provide for a light rail route as part of the Midlands Metro development works. This was a factor taken into consideration in the development design within the lapsed planning permission 08/0206/FL. |
| 6 | **Other Constraints –** are there any other constraints that could be a significant barrier to viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site? | The site is near the M6 corridor, where the statutory air quality limit values for nitrogen dioxide (NO2) are currently being exceeded, according to the latest air quality modelling carried out by Walsall MBC in September 2013. This may limit the ability to gain an environmental permit for an energy to waste facility or any facility which will cause emissions of nitrogen dioxide. |
| 7 | **Key Delivery Requirements –** what actions or interventions would be needed to overcome the barriers to viability and delivery identified in 4 and 5 above, what are the likely additional costs, and how would this affect the economic viability of a waste management development or an industrial development? | Actions to be considered following investigations undertaken on the ground conditions associated with the Kendricks Road Site are as follows:<br>• Unknown depths of made ground, possible coal seams and possible contamination are present. There is therefore a requirement to undertake a site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). **Possible costs incurred c. £9 200.**<br>• There is potential for workings within coal seams. Recommended works would include a drill and grout investigation beneath development footprint (dependent on findings of initial SI) in order to stabilise any such works. **Possible costs incurred c. £30-£40 /m2.**<br>• A mine shaft is recorded as being treated on site. Further research should be required to ensure that this has been properly remediated, with the possibility of drilling, pressure, grouting and capping being required**. Possible costs incurred c. £10 000 per shaft.**<br>• Unrecorded mine shafts may be present. Recommended works would include drilling, pressure grouting and capping should the initial investigation identify shafts. **Possible costs incurred c. £10 000 per shaft.**<br>• Ground gas may be present. Recommended works would include the installation of gas |

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| | | protection measures vents and / or membranes. **Possible costs incurred c. £10 /m2 of building footprint.**<br>• A piled foundation solution is likely for any proposed development costs to be confirmed following site investigation.<br>• Grubbing out and backfilling may be required to remediate in-situ sub-structures. **Possible costs incurred c. £4 600.**<br>• For remediation of contaminated soil it is recommended that a human health risk assessment be undertaken. **Possible costs incurred c. £5 000.**<br>• In addition there may be a requirement to provide clean cover for landscaped areas. **Possible costs incurred c. £1 840.**<br>• There may be a requirement for the removal of contaminated soils. **Possible costs incurred c. £200 /m3.**<br>• For groundwater contamination it would be recommended to undertake a ground water risk assessment. **Possible costs incurred c. £7 500, rate only.**<br>• Groundwater clean-up may be required. **Possible costs would depend on the outcome of the risk assessment.**<br><br>**NOTE: Costings above are for comparison purposes only and are not definitive costs, which can only be determined following an initial site investigation.** |
| **8a** | **Conclusions – Previously Approved Scheme –** what are your views on the likely viability and deliverability of a development similar to that previously granted planning permission (08 0206/FL and 11/0856/TE) in the light of the issues identified in 1 – 7 above? | The site has already been granted a planning permission, 08/0206/FL (now lapsed) for a timber resource recovery centre with a capacity to consume c.30, 000 tpa of timber, which would establish a positive precedent for the potential to deliver a similar development of a similar size.<br><br>Due to the small size of the site it is likely to be suitable for a more specialist use, with a single or limited incoming waste streams, such as the previously proposed scheme. There is unlikely to be capacity for large scale sorting of waste or complex treatment processes. However the site could support a small scale specialist recycling use which required only a limited footprint.<br><br>Transport would need to be considered as there will be limited space for manoeuvring articulated lorries and a small scale use that could be accomplished with use of smaller vans may be more appropriate.<br><br>The points identified in 1-7 above will continue to be factors of consideration for any proposed waste management facility. In particular high standards of protection to human health and the environment will be required as there are residential receptors close by. |
| **8b** | **Conclusions – Alternative Waste Management Development -** what are your views on the likely viability and deliverability of an alternative waste management development to that previously approved, in the light of the issues identified in 1 – 7 | Alternative waste management development could be considered on the Kendricks Road site, based on the following suggestions:<br>• An alternative option for consideration would be to develop another small scale specialist recycling site, for example granulation of source segregated plastics or other simple processing of single waste stream or limited waste streams.<br>• The main constraint for this site is the available area to develop in order to establish an economically viable waste management facility which has the footprint to allow proper control of all waste storage, waste processing and necessary abatement. |

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| | above? | |
| **8c** | **Conclusions – Industrial Development -** what are your views on the likely viability and deliverability of an industrial development, in the light of the issues identified in 1 – 7 above? | Given the site location, close to housing, and the limited available space the site may be suitable for small scale clean industrial use which does not give rise to significant noise, odour or dust. |
| **9** | **Overall Conclusions -** please provide an overall conclusion on the site's general suitability for waste management development, for example, "not suitable for waste development", "suitable for waste development" or "suitable but with constraints." Where the site is considered suitable, please explain what types of waste development the site could support. | The site is suitable for waste development but with significant constraints. A more specialist use with simple processing may be appropriate within the limited footprint of the site. |
| **10** | **Alternative Land Use Options** – what other types of development could be delivered on this site, having regard to the issues identified in 1 – 9 above, and current local plan policy? | Small business units may be considered more favourable than the waste management option due to restricted space and because there would be less potential impact on the amenity of local residents due to odour, litter and dust. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Property:** | WP11: Cemetery Road | | **Site Ref** | IN 98.1 and IN 98.2 |
| **Photograph:** | | | **Landowner:** St Francis Group / Walsall Council | |


For illustrative purposes

## THE SITE

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| **Site Location** | Cemetery Road, Darlaston WS10 8NA |
| **Site Description** | Two vacant parcels of land - Junction Works Site (Walsall ELR Ref. IN98.1) and Railway Tavern Site (Walsall ELR Ref. IN98.2) – separated by Kendricks Road. See General Characteristics below for further details. |
| **Gross Site Area:** | 1.72 hectares (combined area of both sites) |
| **SAD Preferred Options:** | Reasons for Selection:<br>SAD "Call for Site" Submission |

Walsall Council

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

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| **General Characteristics** | Broadly rectangular site, divided into two separate parcels of land - Junction Works Site (Walsall ELR Ref. IN98.1) and Railway Tavern Site (Walsall ELR Ref. IN98.2) - by Kendricks Road at the point where it crosses the railway line. The south-western boundary of the site is formed by the former Walsall to Wolverhampton to Walsall railway line (formerly part of Grand Junction railway line, currently freight only) which is in a cutting along this section, the NW boundary of the site is formed by Darlaston Cemetery, the NE boundary of the site is formed by Cemetery Road, and the SE boundary is formed by a stopped-up section of road and an embankment running alongside Darlaston Road (A4038). Both sites are largely cleared of buildings, and are currently vacant, but until recently were occupied by A B Waste Management Ltd as an open waste transfer station and skip hire facility for mixed wastes, and for open air processing of construction, demolition and excavation waste (CD&EW). Most of these activities were being carried out without the benefit of a valid planning permission and following enforcement action and prosecution the unlawful operations have now ceased leaving the site vacant. |
| **Current Land Use** | Vacant land |
| **Green Belt Site?** | No. |
| **Natural Environment** | No designated sites, no issues identified. |
| **Historic Environment** | No designated heritage assets within the site. However, the northern part of the site was formerly occupied by the Grand Junction Works (nuts, bolts, rivets and heavy ironwork), which is recorded on the HER, and the southern part of the site was until recently occupied by a 19th century public house (Railway Tavern). The whole site has been cleared of any structures associated with these uses and nothing remains above ground. There are a number of historic assets recorded on the HER in the vicinity of the site including the James Bridge Cemetery, the Walsall Canal, and the James Bridge Aqueduct which is also statutorily listed (Grade II). |
| **Landscape Character** | Urban site within Black Country HLC Character Area WL12: Darlaston. The site is on the northern edge of the HLC Character Area, near to site WP4. Site is mostly enclosed by fencing (generally of poor quality), and lies within a mixed area, whose dominant townscape features are the railway line (in cutting), which forms the western boundary of the site, the local road network, and the areas to the east that form part of the adjacent HLC Character Area WL07: Bentley. These include the James Bridge Cemetery and Walsall Canal, which together form a large block of open space to the north of the site, and the River Tame corridor, which runs to the east on the other side of Bentley Mill Way. Proposed DSDA highway improvements will have a major impact on the townscape in this area, although mitigation is proposed to address potential harmful effects. |
| **Agricultural Land** | Not applicable. |
| **Mineral Resources** | Surface Coal (South Staffordshire Coalfield), Sand and Gravel (Superficial). |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Ground Conditions** | Railway Tavern site is derelict land – on NLUD database. Whole site is within Coal Mining Development High Risk Area, although in the absence of any Coal Mining Report it is not clear whether there are any mine entries or surface mining activities have taken place prior to use for industry and as a public house. There are likely to be risks from previous industrial use of the site (the Junction Works site was formerly occupied by Grand Junction Works) and the "call for sites" submission indicates that contamination is suspected, although it does not identify any risks from historic mining. Known mining and industrial activities in the vicinity of the site are summarised in the information provided with the planning application for the Bentley Mill Way Improvements on adjacent land (12/0109/FL), which form part of the DSDA Access Project. |
| **Flood Risk** | Flood Zones 2 and 3 - medium/ high probability of fluvial flooding. Also some susceptibility to surface water flooding (intermediate/ less). Environment Agency has advised that waste management use would be deemed "appropriate" in Zone 2 or 3 according to NPPF, but consider that if it is in Zone 3b (functional floodplain), new development should not be permitted. They also advise that new development proposals would require site-specific FRA and surface water management strategy. |
| **Water Resources** | Secondary A Aquifer (Bedrock), but not within a Groundwater SPZ. |
| **Water Quality** | Within Tame, Anker & Mease Catchment - potential for impacts on water quality of Tame, Anker Mease - Secondary Combined groundwater body and River Tame (Wolverhampton Arm) from Source to Sneyd Brook surface water body. Humber RBMP (2009), Annex B indicates these water bodies are not expected to achieve overall "good" status until 2027 because it is technically infeasible in both cases, and disproportionately expensive in the case of the latter, to achieve this by 2015. |
| **Air Quality** | Site is near the M6 corridor, where the statutory limit values for nitrogen dioxide (NO2) are currently being exceeded, according to the latest air quality modelling carried out by Walsall MBC in September 2013. As the site is in use (albeit unlawfully), redevelopment with a new waste management use is unlikely to significantly increase trips to and from the site or traffic emissions. The unlawful waste management operations currently being carried out on the site are also likely to have greater potential to generate dust and particulate matter, and risks from fires, than an enclosed operation. |
| **Accessibility** | The main vehicular access to the site is off Cemetery Road which gives access to Junction 9 and 10 of the M6 via Darlaston Road (A4038) and Bentley Mill Way. Access to the motorway should be improved once the Darlaston Strategic Development Area (DSDA) Access Project has been completed, as this includes improvements to the junction between Bentley Mill Way, Cemetery Road and Darlaston Road (A4038). |
| **Sensitive Receptors** | **Housing** – some of the residential properties to the north and south of Darlaston Road are less than 100m away from the boundary of the former Railway Tavern site. These houses are already exposed to air pollution and high levels of noise the motorway as well as noise from the railway. Residents have also been affected by noise, dust and odour from the unauthorised operations being carried out on the site by AB Waste. Noise and emissions from traffic on local roads are expected to be reduced by the DSDA Access Project highway improvements, once they are implemented. Effects from the operations on the site would also be significantly reduced by the relocation of AB Waste to a more suitable site and redevelopment of the site with a modern waste facility in a building.<br>**James Bridge Cemetery** – the cemetery has also been affected in the past by noise, dust and odour from the unauthorised operations being carried out on the site by AB Waste. These effects would be reduced by the relocation of AB Waste to a more suitable site and redevelopment of the site by a fully enclosed, modern waste facility. |

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| | **Neighbouring industrial premises** –there are industrial and commercial uses to the west, off Kendricks Road, including Darlaston Tyre on the other side of the railway line opposite the former Railway Tavern site, and a wholesale food supplier (Euro Foods Ltd) on the other side of the railway line opposite the Junction Works Site. There is also another food distribution warehouse (AF Blakemore) further to the south, off Walsall Road (A4038). |
| **Specific Physical Constraints** | **Proximity to residential properties** - site is around 100m away from the nearest residential properties to the north and south of Darlaston Road (A4038). The existing operations have already impacted on the amenity of nearby residents from noise, odour, dust and traffic, and at times have also affected the James Bridge Cemetery and encroached on adjacent railway operational land. The site is not considered suitable for unenclosed, noisy, waste processing operations. |
| **Cross-Boundary Issues** | Given the location near to J10 of the M6, at least some of the material being processed on the site is likely to come from other authority areas outside Walsall Borough, although it is impossible to say how much or where from. Environment Agency returns do not indicate an originating WPA for the waste inputs into this site. |

## CURRENT PLANNING STATUS

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| **Planning Policy – Walsall Local Plan** | **Walsall UDP 2005 – "saved" policies**<br>The site is within a Core Employment Area identified in the Walsall UDP 2005 (see "saved" Policy JP5 and "saved" Proposals Map).<br>**Black Country Core Strategy 2011**<br>This location is identified as "Retained Local Quality" employment land in the Black Country Core Strategy 2011 (see Economy Key Diagram and Appendix 2, Regeneration Corridor 6 Diagram). It is noted that the BCCS does not allocate particular sites for development, it identifies broad locations for development but these are indicative only and it is the purpose of the SAD to refine the locations identified in the BCCs and allocate specific sites. |
| **Darlaston LDO 2015** | The site is within the area covered by the Darlaston LDO 2015, but is not within Sub-Zone A. The LDO permits development falling within Use Classes B1 (b), B1 (c), B2 and B8, although operational development is subject to restrictions, and waste management uses falling outside the specified "B" Use Classes are not permitted in this part of the LDO area. |
| **DSDA Access Project – Bentley Mill Way Improvements** | Planning Permission and Listed Building Consent were granted in March and April 2012 for improvements to the junction between Bentley Mill Way, Cemetery Road and Darlaston Road (A4038), highway realignment, traffic signalisation, and engineering works relating to James Bridge Aqueduct (12/0109/FL and 12/0110/LB) and the highway improvement works were underway at the time the study was completed. The supporting information provided with the applications includes information about previous mining and industrial activities and ground conditions in the area (Appendices – Supplementary Information and Appendices 3 C1 – C3). Further information about the DSDA Access Project can be found on the Council website:<br>http://cms.walsall.gov.uk/index/transport_and_streets/transorming_walsall_transportation_system/darlastonsda.htm<br>Walsall Council Press Release 10/10/14:<br>https://www.walsall.gov.uk/News/Story/2014/10/10/Road_closures_scheduled_for_%C2%A326m_ |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| | Darlaston_project<br>Walsall Council Press Release 20/03/15:<br>https://www.walsall.gov.uk/News/Story/2015/3/20/Work_to_widen_busy_road_reaches_halfway_stage |
| **Planning Permissions** | There is currently a valid planning permission for waste transfer use, covering a small part of the Junction Works site fronting onto Cemetery Road (BC53816P). Other permissions granted for similar uses on other parts of the Junction Works site are deemed to have lapsed, because they were not implemented in accordance with the terms of the permissions. The planning history of the site is summarised in a report to Planning Committee on 02.02.12 regarding enforcement against unauthorised use of the site for waste management development (see below). |
| **Enforcement Cases** | The tenants of the site (A B Waste Management Ltd) are recycling construction, demolition and excavation waste (CD&EW) and operating a transfer facility for putrescible wastes in the open, across the whole of the Junction Works and former Railway Tavern sites, without a valid planning permission for this use. The Council's Planning Committee resolved to commence enforcement action in September 2012. These operations are clearly shown on an aerial photograph taken in May 2013. Two enforcement notices (E05/0634 and E10/0499) were served upon the land owner and tenant in September and October2012, requiring the unauthorised land uses to cease on both sites, and requiring the removal of all related structures, plant and equipment. Appeals against both enforcement notices were dismissed in August 2013.<br>The Council has been working constructively with the land owner and tenants to find an alternative, more suitable site for the tenants to relocate to, as they want to remain in the area. They have applied for a waste management development on a site at Fryers Road in Bloxwich, adjacent to Waste Site WP2 (13/1712/WA). This was still undetermined at the time this pro-forma was prepared (September 2014) but has since been refused permission on grounds of harmful impacts on amenity of nearby residential occupiers and harmful impacts on local landscape character. AB Waste has now relocated to the Bescot Triangle South Site (Waste Site WP10) which has planning permission for CD&EW recycling use. After being prosecuted in March 2015 for failing to comply with the enforcement notices, they vacated the Cemetery Road sites. |
| **Walsall SAD – Issues & Options for the Site** | The Issues & Options for industrial land and for waste management development are summarised in the SAD Issues & Options Report (April 2013). The report identifies these sites as Retained Local Quality employment land (IN98A and IN98B), reflecting the 2012 Walsall ELR - see Section 4, Map 4.2 and Appendix 4. The site is also identified as an Existing Waste Management Site (W3) - see Section 8, Map 8.1, and Appendix 8a. The 2014 ELR has re-classified the sites as Potential High Quality employment land because they are expected to benefit from the DSDA Access Project.<br>The main constraint to industrial development identified in Appendix 4a of the report is flood risk – parts of both sites are stated to be within Flood Zones 2 and 3. The latest digital Flood Risk mapping published by the Environment Agency confirms that this is the case, and that both sites are mostly within the Flood Zones. |
| **Call for Sites Submissions** | Following the public consultation on the Issues & Options, the Cemetery Road sites were put forward for potential Industry, Offices, Waste Management or Retail land use by land owner St. Francis Group in 2013, in response to the second "call for sites" (CFS63: Cemetery Road). They therefore need to be considered as a potential site allocation for new waste management development hence they have been included in this viability and delivery study. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## VIABILITY MODELLING OUTPUTS

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| **Viability and Delivery key issues identified by the Council** | We have identified the following constraints which could impact on viability and deliverability of a more intensive form of waste management development (for example, a development including buildings) on this site:<br>• Potential for some disruption in the vicinity of the site in the short-term while the adjacent junction improvements are underway – works are due to begin later in 2013 and are expected to be completed by the end of 2015 (though in the long-run these improvements should make the site more attractive to investors);<br>• Need for ground condition survey/ site investigations to be carried out to identify the extent of contamination and geotechnical problems arising from historic mining activities, and to identify a site remediation strategy that would address any problems identified, and enable a more intensive waste management or industrial development on either or both sites;<br>• Need for flood risk assessment to determine the likely levels of risk of flooding to both sites, and identify a surface water management strategy that would enable a more intensive waste management or industrial development on either or both sites; and<br>• Depending on outcome of the above surveys, cost of site remediation and surface water management needed to support new development on either or both parts of the site. |
| **Timeline for Delivery** | Delivery 2014 -2026, suitable to identifying a suitable waste management proposal, the economic viability of bringing it forward and the time needed to address the constraints identified. |
| **Delivery Strategy** | We would expect this site to be delivered by the private sector. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## CONTACT DETAILS

| OWNER | WALSALL COUNCIL* |
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| Andy Plant<br>St. Francis Group<br>April Barns<br>Redditch Road<br>Ullenhall<br>Henley-in-Arden<br>Warwickshire B95 5NY<br><br>Tel: 0485 555 4040<br>Email: andy.plant@stfrancisgroup.com<br>Website: http://www.stfrancisgroup.com/ | DSDA Access Project<br>Steven Edwards<br>Senior Transport Planner<br>Regeneration Directorate<br>Tel: 01922 654771<br><br>Email: edwardssteven@walsall.gov.uk<br><br>A B Waste Enforcement Cases<br>Phil Wears<br>Development Management Team<br>Planning & Building Control<br>Regeneration Directorate<br>Tel: 01922 652611<br>Email: wearsphilip@walsall.gov.uk |

*Walsall Council is the local highway authority and owns the section of Kendricks Road which divides the Junction Works and Railway Tavern sites, as well as being responsible for implementation of the DSDA Access Project. The Council has also taken enforcement action against the unlawful use of parts of the site for waste transfer and processing operations and as a result these operations have now ceased. Contact names have been provided so that the relevant people may be contacted by the Consultant if necessary for the purpose of the site evaluation, although this is optional.

Walsall Council

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## SITE DETAILS

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| **Site Name:** | WP11: Cemetery Road (IN98.1 & IN98.2) |
| **Address:** | Cemetery Road, Darlaston, WS10 8NA |
| **Site Area:** | 1.72 hectares |

## Viability and Delivery Assessment

| Requirements | | Consultant's Comments |
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| 1 | **Site Visit –** general observations. | A site visit to the Cemetery Road site was conducted on 16th October 2014, and the follow comments on observations are as follows:<br>• Access to the site is via Bentley Mill Way, Kendricks Road or off Darlaston Road with reasonable good routes to both Junctions 9 and 10 of the M6. There are limitations to the routes, along Bentley Mill Way the road is restricted to single vehicle access through the James Bridge Aqueduct and along Kendrick's Road vehicles cross the Walsall to Wolverhampton rail line via a single vehicle bridge. Signage was erected indicating road improvement works were due to start in October 2014 due for completion in late 2015 as part of the Darlaston Strategic Development Area (DSDA) Project works[1]. It is likely the road improvements would improve vehicular access into the site as well as access to the M6.<br>• The Cemetery Road site comprises two separate sites, the Junction Works Site, which is a large rectangular site to the north and a smaller site, separated by Kendrick's Road, to the south known as the Railway Tavern Site. This currently has palisade fence around its perimeter. At the time of the site visit the smaller site was an open space used as a car park. The rectangular site was occupied by A B Waste Management Ltd who were operating an open transfer and CD&EW recycling facility without the benefit of a valid planning permission.<br>• The Junction Works site is bordered by Cemetery Road to the north east, Kendrick's Road to the south, the cemetery to the north and the Walsall to Wolverhampton railway line to the west. The Railway Tavern Site is bordered by Kendrick's Road to the north, Cemetery Road to the east, Darlaston Road to the south and the Walsall to Wolverhampton railway line to the west.<br>• Access into the Junction Works site is from Cemetery Road, which is also provides access into the James Bridge Cemetery, which is recorded in the historic environment record (HER). Dependant on the type and size of facility proposed for this site an increase in traffic could have a significant impact along Cemetery Road.<br>• On the junction of Cemetery Rd, Kendricks Rd and Bentley Mill Way there was considerable evidence of surface water flooding which also identified the low point of the site area, flooding may be a cause of concern at this site.<br>• Industrial and commercial premises are located to the west of the site on the far side of the Walsall to Wolverhampton railway line, which include a wholesale food supplier (Euro Foods Ltd) opposite the Junction Works Site as well as another food distribution warehouse (AF Blakemore) further to the south, off Walsall Road. In addition there are |

[1] The proposed highway improvements are now underway – see Current Planning Status above.

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| | | steel manufacturing warehouses located on Heath Road opposite the Junction Works Site. Midland Tyre Supplies is located along Kendricks Road opposite the Railway Tavern Site.<br>• Housing is located along Darlaston Road with the nearest about 100m from the site. Natural vegetation provides screening between the site and closest residential properties.<br>• The Junction Works Site is enclosed by generally poor quality fencing around most of the perimeter. The operations being carried out on the site at the time of the site visit included an open air waste transfer station and skip hire facility for mixed wastes with processing of construction, demolition and excavation waste (CD&EW). The site was observed to be operating a crusher, trommel and shredder, a grab, two excavators and a loading shovel. There were no permanent structures visible on site, as illustrated in the photograph below. It is understood that since the site visit the operator has vacated the site and all plant and machinery has been removed. |
| | |  <br>General View of the Junctions Works Site at time of site visit (16.10.14) |

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| | |  <br>Railway Tavern Site at time of site visit (16.10.14) |
| **2** | **Feedback from Land Owner –** summary of comments from site owner on whether there have been any desk-top or site investigations into ground conditions, and what sort of waste management development they propose, and whether there have been any expressions of interest from prospective developers. | • Contact was made with Rob Baird at the St Francis Group to discuss the current status of the Cemetery Road site, feedback as follows:<br>• The owner commented that there has been no evaluation of geotechnical risks made at the site or any other form of site investigation works.<br>• The present occupier, A B Waste Management Ltd, was keen to continue their operations at the site. It was the feeling of the operator that activities at the site had been scaled down as a result of the current enforcement action and that once this was resolved business would continue as normal.<br>• The owner commented that they had been prepared to make a financial investment, together with A B Waste Management Ltd, to upgrade the facilities; however with uncertainty over the longevity of the current operations this has been withdrawn.<br>• In response to the uncertainty over the continued operations at Cemetery Road A B Waste had started to move operations to the Bescot Triangle South Site (WP10) – since the owner was contacted, they have now completed their relocation to this site. |
| **3** | **Attractiveness of Location** – is the general location likely to be attractive to prospective waste operators or industrial users? | • Planning permission was granted retrospectively in 1999 for an inert waste transfer facility[2] on a small part of the Junction Works site, which provides a positive precedent for any future development considered. The site was at the time of the assessment in use as a waste transfer station and skip hire facility for mixed wastes, and for open air processing of construction, demolition and excavation waste (CD&EW).<br>• Discussions with the Agent confirmed that the current operator at the site, A B Waste Management Ltd, is keen to remain at the site. It was suggested that the Agent and Operator were prepared to make a financial investment to improve the existing operations at Cemetery Lane, although this was in abeyance due to the current enforcement action. This is an indication that the site already attracts business from waste producers and has an established demand from an end user or users. |

[2] Though we understand that this was considered not to have been implemented in accordance with the conditions and is therefore not a lawful use of the site.

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| | | • Road improvements have already commenced on the Bentley Mill Way and Cemetery Road Junction, which will be completed in 2015. This will provide good access to the site which already has good links to Junction 9 and 10 of the M6 via Darlaston Road and Bentley Mill Way. |
| **4** | **Ground Conditions –** could existing ground conditions be a significant barrier to delivery of viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site (N.B. this also relates to Task 1 d)? | • The use of the site for the storage of waste has the potential to allow contamination if wastes are stored incorrectly. (Degradable wastes should be stored on impermeable pavement with a sealed drainage system to prevent this risk).<br>• Historical mapping shows the larger north site was formerly occupied by the Grand Junction Works (a bolt and nut works). Mapping shows smaller buildings formerly located in the southern site, one of which appears to be the Railway Tavern. James Bridge Station is also shown in the southern section of the site.<br>• Geological mapping shows Pennine Lower Coal Measures across the site, these are overlain in the Southern area by alluvium whilst the northern area is overlain by glacio-fluvial deposits. There are no recorded BGS borehole records within the site.<br>• There are no shafts indicated on the north or south site and no indication of historical open cast mining. However geological mapping shows two coal outcrops within the site boundary, New Mine Coal and Fireclay Coal. Given the geological sequence, coal seams are likely to exist beneath the majority of the site.<br>• There are no recorded landfill sites on site, though Box Pool Landfill Site is recorded to south east of Darlaston Road. This is believed to have operated between 1955 and 1989. The site accepted inert and industrial wastes.<br>• Possible Constraints Relating to Past Mining and Industrial Heritage include:<br>• Made ground – unknown depths from former use as works<br>• Ground gases (anticipated deep made ground)<br>• Shallow coal mining issues<br>• Possible unrecorded mineshafts<br>• Soil contamination<br>• Groundwater contamination (and possible effects on nearby River Tame)<br>• Possible sub-structures within areas of the site associated with former development.<br>• The Environment Agency have recorded one 'significant' incident within 250m of the site. This involved the discharge of sewage materials to a water course and is unlikely to have caused lasting contamination.<br>• The local superficial deposits and bedrock are recorded as a Secondary A aquifer, that is they comprise permeable layers capable of supporting water supplies at a local rather than strategic scale and which may provide an important source of base flow to rivers.<br>• The flood map for planning indicates the majority of the site lies within Flood Zone 3 and it therefore at high risk of flooding. The River Tame is located approximately 50m from the site.<br>• Any new development proposals will require a site specific flood Risk Assessment (FRA) and surface water management strategy. This may restrict development and will add to the costs of development. |

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| | |  <br><br>Potential surface water flooding issues. |
| 5 | **Additional Physical Constraints –** are there any further physical constraints, other than ground conditions, that could be a significant barrier to viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site? | Additional constraints to be taken into consideration when assessing the sites potential viability and deliverability for a higher quality waste management facility are as follows:<br><br>• The NE boundary of the Junction Works site is formed by James Bridge Cemetery identified as a historic asset and recorded on the Historic Environment Record (HER) database. The cemetery has been affected in the past by noise, dust and odour from the operations being carried out on the site by AB Waste.<br>• Access to the site is along Cemetery Road, also used as access to James Bridge Cemetery with no alternative access available. A larger facility could cause increased vehicle movements with potential congestion issues along Cemetery Road. However improvements due to start on the road junction adjacent to the site may improve traffic flow.<br>• There are road restrictions along Bentley Mill Way, which passes through the single access James Bridge Aqueduct and also along Kendricks Road which has a single vehicle access bridge over the rail line although there is good access to Junction 9 and 10 of the M6 via Darlaston Road.<br><br>• The south west boundary of the site is formed by the former Walsall to Wolverhampton railway line, which is set in a cutting. This made need to be taken into consideration in any new development.<br><br>• The site is approximately 100m away from the nearest residential properties to the north and south, off Darlaston Road (A4038). The previous unlawful waste management operations have already impacted on the amenity of nearby residents causing noise, odour, dust and traffic issues. However development of a waste processing facility in an enclosed building would mitigate against many of these problems.<br><br>• The site is split into two separate parcels of land with a combined area of c. 1.72Ha. Because the site is split by Kendricks Road at the point where it crosses the railway line, it is highly unlikely to be possible to bring forward a comprehensive scheme covering both sites, and there may be constraints on the design of any facility, with restricted space being a potential problem on the Railway Tavern site. |

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| 6 | **Other Constraints –** are there any other constraints that could be a <u>significant</u> barrier to viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site? | Other constraints that could be considered as significant barriers include the following:<br>• The sites are near the M6 corridor, where the statutory limit values for nitrogen dioxide (NO2) are currently being exceeded, according to the latest air quality modelling carried out by Walsall MBC in September 2013. This may limit the scope of any future environmental permits and may be a factor against development as an energy from waste facility. |
| 7 | **Key Delivery Requirements –** what actions or interventions would be needed to overcome the barriers to viability and delivery identified in 4 and 5 above, what are the likely additional costs, and how would this affect the economic viability of a higher quality waste management use enclosed within a building or an industrial development? | Actions to be considered following investigations undertaken on the ground conditions associated with the Cemetery Road Sites are as follows:<br>• Unknown depths of made ground may be present on site, along with possible coal seams and possible contamination from previous industrial use. There will therefore be a requirement to undertake a site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring and chemical testing (soils and groundwater). **Possible costs incurred c. £34 400.**<br>• There are possible workings within coal seams. Recommended works would include drill and grout investigations beneath any development footprint (dependent on findings of initial SI). **Possible costs incurred c. £30-£40 /m2.**<br>• Unrecorded mine shafts. Recommended works to include treatment to include drilling and pressure grouting and capping. **Possible costs incurred c. £10 000 per shaft – rate only.**<br>• Ground gas. Recommended works to include the installation of gas protection measures vents and / or membranes. **Possible costs incurred c. £5 /m2 of building footprint.**<br>• Piled foundation solution likely for proposed development, which would likely be deep. Awaiting Information.<br>• Grubbing out and backfilling to remediate in-situ sub-structures. **Possible costs incurred c. £17,200.**<br>• For remediation of contaminated soil it is recommended that a human health risk assessment be undertaken. **Possible costs incurred c. £5 000.**<br>• In addition there may be a requirement to provide clean cover for landscaped areas. **Possible costs incurred c. £6 880.**<br>• Possible removal of contaminated soils. **Possible costs incurred c. £200 /m3.**<br>• For groundwater contamination it would be recommended to undertake a ground water risk assessment (if required). **Possible costs incurred c. £7 500, rate only.**<br>• Groundwater clean-up. **SI information required.**<br>• Initial flood risk assessment. **Possible costs incurred £2,000**<br>• Possible flood defence/mitigation measures. **Cost dependent on initial flood risk assessment.**<br>**NOTE: Costings above for comparison purposes only – not definitive costs. Actual costs will be dependent on the findings of the initial investigations** |

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| **8a** | **Conclusions – Alternative Waste Management Development –** what are your views on the likely viability and deliverability of a higher quality waste management use enclosed within a building, in the light of the issues identified in 1 – 7 above? | It is considered that the Junction Works site has the potential to be developed into a higher quality waste management facility enclosed within a building based for the following reasons:<br>• The previous use was as an open waste transfer station and skip hire facility for mixed wastes, and for open air processing of construction, demolition and excavation waste (CD&EW). Most of these activities were being carried out without the benefit of a valid planning permission - however, there is a valid planning permission for waste use on part of the site.<br>• The waste management operations previously being carried out on the site have potential to generate dust and particulate matter. However a Materials Recycling Facility or refuse derived fuel production facility production contained within a building would have greater control over emissions and would be more acceptable, with reduced impacts on the nearby residential properties and local industry, including the adjacent wholesale food supplier (Euro Foods Ltd).<br>• Current junction improvements due for completion in 2015, are likely to have a beneficial impact on improving traffic flow and may facilitate a greater number of vehicle movements to and from the site.<br>• Remediation of the ground contamination and mining legacy may run to between £700,000 and £750,000. This may be acceptable within the total development budget for a high standard facility expected to be a several million pound development.<br>• The major constraining factor is likely to be the flood risk. Development of the site is likely to depend on whether the flood risk can be adequately addressed without excessive cost.<br><br>Alternative waste management options might include:<br>• Incineration or an advanced thermal treatment such as pyrolysis or gasification, provided that standards for emissions to air could be met;<br>• An anaerobic digestion plant with associated CHP;<br>• A dirty MRF to process mixed and or residual waste extracting additional recyclate;<br>• A clean MRF to refine separately collected or co-mingled recyclate and produce high quality secondary materials for market;<br>• In vessel composting of food and/or garden waste to produce high quality compost.<br><br>While it is unlikely that the Railway Tavern site could be included in such a development because it is physically separated from the Junction Works site by Kendricks Road, it is possible that it could be used as a “satellite” site, for example, for parking or ancillary operations. |
| **8b** | **Conclusions – Industrial Development -** what are your views on the likely viability and deliverability of an industrial development, in the light of the issues identified in 1 – 7 above? | Both sites could also be considered as a suitable location for industrial development, falling within Use Classes B1b, B1c, B2 or B8. The reasons for this consideration are as follows:<br>• The site is already located in an area of industrial and commercial use predominantly to the west of the site (off Kendricks Road).<br>• The site has good access routes to Junction 9 and 10 of the M6 via Darlaston Road and Bentley Mill Way.<br>• In light of the issues raised in 1-7 above there will still be a likely requirement to undertake a ground remediation works that may be necessary following detailed site investigation works. |

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| **9** | **Overall Conclusions -** please provide an overall conclusion on the site's general suitability for waste management development, for example, "not suitable for waste development", "suitable for waste development" or "suitable but with constraints." Where the site is considered suitable, please explain what types of waste development the site could support. | It is considered that the Cemetery Road sites are "suitable for waste development but with constraints".<br>Overall the sites are suitable for waste management use but there are likely to be ground stability and contamination issues to be addressed. The major constraint is that the site is within an area of high flood risk and this is most likely to be the limiting factor in how the site is developed. Another significant constraint is that the two sites are separated by Kendricks Road making a comprehensive development of both sites very difficult if not impossible. |
| **10** | **Alternative Land Use Options** – what other types of development could be delivered on this site, having regard to the issues identified in 1 – 9 above, and current local plan policy? | An industrial and or commercial development of small business units may be considered more favourable than the waste management option purely because it does not involve the movement and processing of waste materials and may reduce the potential impact on the amenity of local residents due to odour, litter and dust. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Property:** | WP10: Bescot Triangle Site | | **Site Ref** | IN 54.4 and IN 54.5 |
| **Photograph:** | | | **Landowner:** St Francis Group / Network Rail | |


For illustrative purposes

## THE SITE

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| **Site Location** | Off Bescot Road, Walsall |
| **Site Description** | Triangular open site, divided into two areas by an embanked, disused rail chord, site is largely "land-locked," being bounded by railway lines and an elevated section of the M6 motorway on all sides and having only one vehicular access point. See General Characteristics below for further details. |
| **Gross Site Area:** | Bescot Triangle North – 2.63 hectares<br>Bescot Triangle South – 2.31 hectares |
| **Sad Preferred Options:** | Reasons for Selection:<br>SAD "Call for Sites" Submission |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

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| **General Characteristics** | Triangular site, divided into two areas by an embanked, disused rail chord. The north-western boundary is formed by the "mothballed" South Staffordshire railway line which is on embankment, the north-eastern boundary is formed by the Walsall - Birmingham railway line, also on embankment, and the southern boundary is formed by an elevated section of the M6 Motorway. Both sites were formerly occupied by the Bescot Sewage Works (clearly shown on old OS maps). The northern site is currently open land, and the southern site is being used for storage and recycling of CD&EW. Although the Bescot Triangle sites are relatively large, and are close to Junction 9 of the M6 and to Bescot Stadium Railway Station on the Birmingham – Walsall railway line, the ELR considers them marginal because they are severed from the adjacent employment areas by the railway line, and access is restricted. |
| **Current Land Use** | Bescot Triangle North - Open Space identified in the latest WMBC Open Space Audit carried out in 2012 (Site OS5037).<br>Bescot Triangle South – Occupied by A B Waste Management from around April 2014, used for storage and recycling of building materials, which is in accordance with a 1992 planning permission. |
| **Green Belt Site?** | No. |
| **Natural Environment** | Bescot Triangle North is designated as a SLINC (Bescot Triangle). This area also contains trees and groups of trees which are protected by TPOs. |
| **Historic Environment** | No designated heritage assets and no entries on Walsall & Wolverhampton HER. However, Second Edition OS map (1900s) shows a sewage farm on the northern part of the site, and subsequent OS maps show that this gradually expanded into a much larger sewage works eventually covering the whole of the north and south sites. The Bescot Sewage Works was operated by the former Wednesbury Corporation, and would have closed as a result of local government reorganisation in the 1960s and 1970s. The previous use as sewage works is likely to have seriously affected any previous below-ground archaeology. |
| **Landscape Character** | Urban site within Black Country HLC Character Area WL11: South East Walsall. The embanked railway lines and elevated section of the M6 motorway which form the boundaries of the site are dominant features in the local landscape, and act as visual and physical "barriers" between the site and the surrounding residential areas to the west, and industrial and commercial areas to the north, east and south. |
| **Agricultural Land** | Not applicable. |
| **Mineral Resources** | Surface Coal (South Staffordshire Coalfield), Sand and Gravel (Superficial). |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Ground Conditions** | Derelict land - on NLUD database. There are likely to be contaminants present on both parts of the site, arising from former use as a sewage treatment works. Site is also partly within Coal Mining Development High Risk Area, although in the absence of any Coal Mining Report it is not clear whether any mining took place prior to the sewage works use. Although some reclamation has been carried out it is not clear whether this is to sufficient standard to support redevelopment with buildings. |
| **Flood Risk** | Flood Zones 2 and 3 - medium/ high probability of fluvial flooding. Also some susceptibility to surface water flooding (intermediate/ less). Environment Agency has advised that waste management use would be deemed "appropriate" in Zone 2 or 3 according to NPPF, but consider that if it is in Zone 3b (functional floodplain), new development should not be permitted. They also advise that new development proposals would require site-specific FRA and surface water management strategy. |
| **Water Resources** | Secondary A Aquifer (Bedrock), but not within a Groundwater SPZ. |
| **Water Quality** | Within Tame Anker & Mease Catchment - potential for impacts on water quality of Tame, Anker Mease - Secondary Combined groundwater body and Ford Brook from Source to River Tame surface water body. Humber RBMP (2009), Annex B indicates these water bodies are not expected to achieve overall “good” status until 2027, because it is technically infeasible in both cases, and disproportionately expensive in the case of the latter, to achieve this by 2015. |
| **Air Quality** | Site is next to the M6 motorway - statutory limit values for nitrogen dioxide ($NO_2$) are currently being exceeded in the M6 corridor, according to the latest air quality modelling carried out by Walsall MBC in September 2013. The Bescot Triangle South site has planning permission for recycling of building materials, which has the potential to generate dust and particulate matter, but as this is a “Part B” activity it is subject to regulation by the Council’s Pollution Control Team. |
| **Accessibility** | Access to the site is poor. The existing vehicular access to the site is from Bescot Road. This runs alongside housing, and is also via a tunnel beneath the embankment of the former South Staffordshire railway line. There is a pedestrian access from the adjacent employment area (IN54.2) under the Walsall – Birmingham railway line but this does not give easy or convenient access to the railway station. Local Highway Authority has raised no objections to waste use, but has identified an issue relating to the public right of way if this was to be used as a vehicular access. It is likely that access improvements would be needed to support a more intensive use of the site, subject to feasibility/ viability. |
| **Sensitive Receptors** | Main sensitive receptors in the vicinity of the site are:<br>**River Tame** – the river is on the other side of the motorway and the former Grand Junction railway line (now freight only), which links into Bescot Sidings, however, the risk of pollutants entering the river from surface water run-off from Bescot Triangle South are likely to be low except in extreme flood events, given that the railway line (partly on embankment) provides a barrier.<br>**Biodiversity** – development of the Bescot Triangle North site without mitigation would result in the loss of the SLINC and may also result in the loss of some protected trees and any habitats that remain could be vulnerable to pollutants generated by waste uses. An ecological survey and tree survey would be required to identify impacts on protected species, priority habitats and trees. Mitigation could include retention of existing habitats and trees where possible, minimisation of overall habitat loss and tree loss, and compensatory provision on-site and/ or off-site. |

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| | **Housing** – nearest housing backs onto the railway lines and is less than 50m away from the northern site. These houses are already exposed to air pollution and high levels of noise from the motorway, as well as to noise from freight and passenger trains on the active railway line. The noise from trains is likely to increase if the South Staffordshire railway line is brought back into use for freight.<br>**Neighbouring industrial premises** – adjoining the site are two construction and engineering depots: Amey Motorway Maintenance depot to the south-west, which is off the same access road, and Barhale Construction offices and depot off Wallows Lane and Bescot Crescent, to the north-east. Other industrial commercial premises to the north-east are mainly in manufacturing, warehousing and storage use, and the Bescot Retail Park lies beyond. |
| **Specific Physical Constraints** | **Fixed Boundaries** – the boundaries of the site are formed by the railway lines and M6 motorway, which prevent any further outward expansion.<br>**Poor Site Access** – existing access to the site is restricted and access improvements may be required to support a more intensive use of the site. However, such improvements are likely to be very expensive and may not be economically viable. Any engineering works affecting the railway embankments would also require the agreement of Network Rail.<br>**Proximity to Housing** – there is housing on Dickinson Road, backing onto the former South Staffordshire railway line, and on Wallows Lane, backing onto the Walsall – Birmingham passenger railway line, which is less than 50m away from the boundary of the northern site. The nearest housing to the existing recycling facility on the southern site is around 100m away. The railway embankments provide some screening and protection for the residential areas from activities within the site and the traffic on the M6 motorway beyond. |
| **Cross-Boundary Issues** | The site is adjacent to the boundary with Sandwell. Given the location next to the motorway and near J10 of M6, at least some of the building material being processed on the site is likely to come from other authority areas outside Walsall Borough, although it is impossible to say how much or where from. |

## CURRENT PLANNING STATUS

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| **Planning Policy – Walsall Local Plan** | **Walsall UDP 2005 – "saved" policies**<br>The site is "white land," not designated for any specific land use in the Walsall UDP 2005 (see "saved" Proposals Map).<br>**Black Country Core Strategy 2011**<br>This location is not identified for any specific use in the Black Country Core Strategy 2011 (see Economy Key Diagram and Appendix 2, Regeneration Corridor 7 Diagram). It is noted that the BCCS does not allocate particular sites for development, it identifies broad locations for development but these are indicative only and it is the purpose of the SAD to refine the locations identified in the BCCs and allocate specific sites |
| **Planning Permissions** | Planning permission was granted in 1992 for a "private nature reserve" on the Bescot Triangle North site and for a "depot for architectural salvage and recycling of building materials" on the Bescot Triangle South site (BC56946P).<br>Subsequent to this, planning permission was granted for fencing, a site hut and car parking in 2002 (02/0116/FL/W3), and a temporary permission (1 year only) was granted in 2003 on appeal to vary the hours of operation of the aggregate storage and processing site (02/0115/FL/W3), though this should have expired in February 2004. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Walsall SAD – Issues & Options for the Site** | The Issues & Options for waste management are summarised in the SAD Issues & Options Report (April 2013). The report identifies the Bescot Triangle sites for the following land uses:<br>• **Bescot Triangle North** – Choices Site CH10 – either Industry (IN54B) or Open Space (OS5037) (see Section 4, Map 4.1, Section 7, Map 7.1, Section 12, Map 12.2 and Table 12.1, and Appendices 4a and 7a).<br>• **Bescot Triangle South** – Land for Industry (IN54B), Strategic Waste Site (WS17), Permitted Mineral Infrastructure Site (MI4) (see Section 4, Map 4.1, Section 8, Table 8.5, Map 8.2, Section 9, Table 9.1a, Map 9.2, and Appendices 4a, 8a and 9a).<br>Both of the Bescot Triangle sites were identified in the 2012 Employment Land Review (ELR) as Retained Local Quality employment sites (Ref. 54a). The main constraint to industrial development identified in Appendix 4a of the Issues & Options Report is flood risk – parts of both sites are stated to be within Flood Zones 2 and 3. The latest digital Flood Risk mapping published by the Environment Agency confirms that this is the case. The Flood Zones cover most of Bescot Triangle South site and the southern half of the Bescot Triangle North site. Appendix 4a also notes that the Bescot Triangle North site was identified as Open Space in the latest Open Space Audit carried out in 2012 (OS5037). |
| **Call for Sites Submissions** | Following the public consultation on the Issues & Options, both sites were put forward for potential Residential, Industry, Offices, Waste Management or Retail land use by land owner St. Francis Group, in response to the second "call for sites" (CFS62: Bescot Road). They therefore need to be considered as a potential site allocation for new waste management development hence they have been included in this viability and delivery study. |
| **Other Proposals** | It is understood that Network Rail are proposing to bring the "mothballed" South Staffordshire railway line back into use for rail freight (track beds have recently been cleared for this purpose), which may have a bearing on the potential to improve the existing access to the site. |

## VIABILITY MODELLING OUTPUTS

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| **Viability and Delivery key issues identified by the Council** | We have identified the following potential constraints to development, which may be affecting the viability and delivery of a more intensive form of waste management development (for example, a development including buildings) on either or both of the Bescot Triangle Sites:<br>• Feasibility and cost of improving access to the site for vehicles and pedestrians, and improving links between the site and neighbouring employment areas (including obtaining agreement/ support from Network Rail);<br>• Need for ground condition survey/ site investigations to be carried out to identify the extent of contamination and geotechnical problems arising from historic mining activities, and to identify a site remediation strategy that would address any problems identified, and enable a more intensive waste management or industrial development on either or both sites;<br>• Need for flood risk assessment to determine the likely levels of risk of flooding to both sites, and identify a surface water management strategy that would enable a more intensive waste management or industrial development on either or both sites;<br>• Need for ecological survey of Bescot Triangle North site to identify whether any protected species are present, the biodiversity value of the habitats present, and to identify a strategy for development that would protect and conserve the most valuable habitats and provide adequate compensation for habitats that would be lost;<br>• Need for tree survey of Bescot Triangle North site to identify the location of all protected |

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| | trees, and to identify a strategy for development that would enable as many trees as possible to be retained; and<br>• Depending on outcome of the above surveys, cost of site remediation and surface water management needed to support new development on either or both parts of the site. |
| **Timeline for Delivery** | Delivery 2014 -2026, suitable to identifying a suitable waste management proposal, the economic viability of bringing it forward and the time needed to address the constraints identified. |
| **Delivery Strategy** | We would expect this site to be delivered by the private sector. |

## KEY INFORMATION SOURCES

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| **Walsall Local Plan** | Black Country Core Strategy (BCCS) 2011<br>Walsall Unitary Development Plan (UDP) 2005 - "saved" policies and Proposals Map<br>N.B. Please refer to Annotated UDP Written Statement for details of which policies are "saved." | Available on Council website |
| **Walsall Local Plan – Waste Evidence** | Black Country Waste Planning Study (2009)<br>Black Country Core Strategy Waste Background Paper 2 and Appendices and Waste Monitoring Update July 2010 (2010) | Available on Council/ Black Country Core Strategy websites |
| **Walsall AMR 2013** | Walsall Local Plan Monitoring Report 2013 (Authority's Monitoring Report)<br>The latest published AMR covering the 2012/13 monitoring year. Section 5, pages 66 – 96 summarise progress on implementing the BCCS waste management requirements in Walsall and the wider Black Country. The underlying data can be found in the Waste Data Tables published alongside the report. | Available on Council website |
| **Walsall Site Allocation Document (SAD)** | Walsall Site Allocation Document - Issues & Options Report and Appendices (April 2013)<br>Chapter 8 of the Issues & Options Report provides general background information on the BCCS waste capacity requirements, and explains what the SAD is expected to deliver. Appendix 8a includes a schedule of the potential site allocations identified at the time of publication. | Available on Council website |
| **Walsall SAD – Sustainability Appraisal** | Integrated Sustainability Appraisal (SA) of the Walsall Site Allocations Development Plan Document (SAD) and Walsall Town Centre Area Action Plan (AAP) – SA Stage 2: Options Appraisal (April 2013)<br>Summarises outcome of preliminary SA of options for the SAD, including options for waste management. | Available on Council website |
| **SAD Waste Proposals** | Excel spreadsheet of potential waste sites | Electronic copies of these |

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| | Digital mapping of potential waste sites<br>Emerging Waste Sites Assessment<br>Emerging Sustainability Appraisal of sites | documents provided |
| **Site WP10: Planning History** | BC56946P – original permission for "private nature reserve" and "depot for architectural salvage and recycling of building materials."<br>02/0116/FL/W3 – permission for fencing, site hut and car parking | Electronic copies of application form, plans and decision notices will be provided |
| **Walsall SAD – Sustainability Appraisal** | Integrated Sustainability Appraisal (SA) of the Walsall Site Allocations Development Plan Document (SAD) and Walsall Town Centre Area Action Plan (AAP) – SA Stage 2: Options Appraisal (April 2013)<br>Summarises outcome of preliminary SA of options for the SAD, including options for waste management. | Available on Council website |
| **SAD Call for Sites Submission** | CFS62: Bescot Road | Electronic copies of documents submitted provided |

## CONTACT DETAILS

| **Land Owner** | **Occupier** | **Network Rail*** |
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| Andy Plant<br>St. Francis Group<br>April Barns<br>Redditch Road<br>Ullenhall<br>Henley-in-Arden<br>Warwickshire B95 5NY<br><br>Tel: 0485 555 4040<br>Email: andy.plant@stfrancisgroup.com<br>Website: http://www.stfrancisgroup.com/ | Kevin Thistlewaite<br>A B Waste Management Ltd<br>3 High Street<br>Amblecote<br>Stourbridge<br>West Midlands DY8 4BX<br>Tel: 0121 568 8687<br><br>Agents (for Fryers Road proposal):<br>Danielle Elson<br>QSP Consultancy<br>Hawthorns House<br>Smethwick<br>West Midlands B66 1BB<br>Tel: 0121 565 2299<br>Email: d.elson@qsp.ltd.uk | Diane Clarke<br>Network Rail<br>Kings Place<br>90 York Way<br>London, N1 9AG<br>Tel: 020 7557 8000<br>Email:<br>TownPlanning.LNW@networkrail.co.uk<br>Website:<br>http://www.networkrail.co.uk/aspx/1346.aspx |

*Network Rail owns the disused rail chord that bisects the site and the adjacent rail operational land, including the embankment under which the current access road passes. See amended location plan provided with Call for Sites Submission which excludes this land.

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## SITE DETAILS

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| **Site Name:** | WP10: Bescot Triangle Site (IN54.4 & IN54.5) |
| **Address:** | Off Bescot Road, Walsall |
| **Site Area:** | Bescot Triangle North – 2.63 hectares<br>Bescot Triangle South – 2.31 hectares |

## Viability and Delivery Assessment

| Requirements | | Consultant's Comments |
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| 1 | **Site Visit –** general observations. | A site visit to the Bescot Triangle site was conducted on 16th October 2014, and the follow comments on observations are as follows:<br>• Access to the site is poor with vehicles entering the site turning right immediately exiting the M6 Junction 9 roundabout into Bescot Road. Problems with entering the site were experienced at first hand, having to cross two lanes of heavy public traffic entering the M6 Junction 9 roundabout. Any substantial increase in the volume of vehicles accessing the site entrance is likely to have a significant impact on current traffic movements.<br>• The access leading into the Bescot Triangle is along a hard standing road bordered by housing on the left and a Highways Agency Maintenance compound on the right. Entry into the Bescot Triangle is via a single vehicle sized tunnel beneath the South Stafford railway line which leads into the North Site. The route continues through a second single vehicle sized tunnel, beneath the disused rail chord, into the South Site.<br>• The South Site is currently occupied by A B Waste Management Ltd whose activities include the processing of construction and building materials. Equipment on site included a loading shovel, excavator, crusher and screen. It is believed that current activities commenced in April 2014. The current operations are in accordance with a 1992 planning permission ref. BC56946P 'depot for architectural salvage and recycling of building materials.' The area is an open space with the raised M6 running along the southern limit of the site.<br>• The North Site is an area of established vegetation and open land with areas of established trees. Bordering the west side of the site is the South Stafford Rail line which appeared ready for operation. Immediately on the far side of the South Stafford line is housing and it is noted that residents of Dickinson Drive, currently have an uninterrupted view into the open space of the North Site.<br>• The north site is currently designated as open space, its use being natural and semi-natural green space, and is identified as such in the latest WMBC Open Space Audit 2012 ref OS5037. The area has established vegetation and trees and is likely to offer a favourable habitat for certain fauna. It is also understood that planning permission was granted for this area in 1992 for a 'private nature reserve'.<br>• A well-used public foot path was noted, starting from the first tunnel beneath the South Stafford rail line, following the line of the North Site side of the disused rail chord leading towards the pedestrian crossing point of the Walsall to Birmingham rail line, which borders the east side of the Bescot Triangle site. This path is a public right of way.<br>• There is an established employment area on the far side of the Walsall to Birmingham |

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| | | rail line but the pedestrian crossing point is the only direct access to this area from the Bescot Triangle site.<br>• The site has established palisade fencing around the perimeter of the whole of the Bescot Triangle site. |
| **2a** | **Feedback from Occupier/ Agent –** summary of comments from occupier on whether occupation of Bescot Triangle South (WP10) is a permanent/ long-term tenancy, whether it represents a relocation from the Cemetery Road site (WP11), and if the latter, their anticipated timetable for vacating that site. | • See comments below (2b). |
| **2b** | **Feedback from Land Owner –** summary of comments from site owner on whether there have been any desk-top or site investigations into ground conditions, and what sort of waste management development they propose, if the current occupation by AB Waste is not intended to be permanent/ long-term. | Contact was made with Rob Baird (RB) at the St Francis Group to discuss the current status of the Bescot Triangle site, his feedback was as follows:<br>• RB confirmed that A B Waste Management Ltd were operating in the south area of the Bescot Triangle under a short term lease of 5 years.<br>• RB also confirmed that the operation on Bescot Triangle South was in re-action to activities being scaled down at Cemetery Road and would potentially be a re-location of the Cemetery Road operations if the outcome of the current enforcement action at that site was upheld.[1] (Enforcement notices have been served at the Cemetery Road site as the waste operation covers a large area, only a small part of which is covered by a valid planning permission). |

[1] Since the assessment was carried out, the enforcement action has resulted in the removal of A B Waste from the Cemetery Road site – see separate Pro-forma for this site (WP10) for further details.

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| **2b** | **Feedback from Network Rail –** summary of comments on implications for rail operational land if access improvements are sought which affect adjacent railway operational land, including the railway embankments. | Rob Turner at Network Rail contacted, by email, on 15th October 2014.Information was provided and feedback requested. The response was as follows:<br>• In terms of the Bescot Curve I confirm that Network Rail's Senior Strategic Planner is not aware of any proposals for future use of the curve.<br>• Network Rail's sectional appendix confirms that it is not included as part of the network.<br>• The South Staffs line has, as part of the Walsall re-signalling project, reopened as far as Bescot Curve Junction as a run around facility for freight services. Therefore any proposals to improve access through to this site via the existing tunnel need to take in to account that this is now an operational railway.<br>• Any improvement of access under Network Rail's property would be subject to Network Rail approvals including completion of an appropriate Asset Protection Agreement and a Property Agreement. In this regard it will be important to provide details of any possible development to Network Rail at an early stage.<br>• The Freight Team have no particular comments to add and are not aware of any freight-specific concerns in that area beyond Bescot yard and the newly-commissioned Dudley Run Round. |
| **3** | **Attractiveness of Location –** is the general location likely to be attractive to prospective waste operators or industrial users? | The Bescot Triangle site is split into two areas north and south bisected by the disused rail chord. It is considered that the north site would not be a location likely to be attractive to prospective waste operators or industrial users due to the following factors:<br>• The Existing biodiversity within the north site.<br>• The likely improvements and upgrade works required on the site access.<br>• Poor access to the site from Bescot Road.<br>• Cost of site remediation of any areas of ground contaminated.<br>• Environmental impacts on nearby receptors i.e. River Tame, Biodiversity, housing and neighbouring industrial premises.<br>• Proximity of housing, nearest c.70m.<br>• Restrictions presented by boundary railway lines.<br>• Increased traffic movements to the site.<br>• Potential flood risk in both sites.<br>• The north site is a permitted 'private nature reserve' (current state to be determined).<br>• The north site is currently designated as Open Space and taking into account the factors above is not considered an attractive location for a waste operator or industrial user.<br>The south site is the current location of a permitted recycling operation, operated by A B Waste Management Ltd and used for storage and recycling of building materials with simple mechanical processing. This provides an established waste management use, but the constraints on site may preclude any intensification of these activities. |
| **4** | **Ground Conditions –** could existing ground conditions be a <u>significant barrier</u> to delivery of viability and delivery of a higher quality waste | The Bescot Triangle site consists of a triangular open site, divided by an embankment for a disused rail chord. This restricts the available space for development breaking the site into two areas, the smaller south site (c.2.31ha) is currently used as an operational waste processing facility, operated by A B Waste Management Ltd and the larger north site (c.2.63ha) is vacant with established vegetation and habitat.<br>The surrounding area contains a mixture of residential and industrial / commercial use. The site is bound by rail tracks on the east and west boundaries and the M6 motorway to the south. |

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| | management use enclosed within a building or an industrial development on the site (N.B. this also relates to Task 1 d)? | The site is the location of a former Sewage works operated by the former Wednesbury Corporation. The Environment Agency website indicates the site was also used as former landfill.<br>Geological mapping shows superficial deposits over the central and southern areas overlain by alluvium and the northern area being overlain by boulder clay, now known as glacial till, as the site is within a buried glacial channel. The bedrock is recorded as Pennine Lower Coal Measures with the Mealy Grey (Singing) Coal outcrop indicated in the east of site and out cropping just to the east. Two faults are noted across the northern section of the site (Darlaston Fault and Kings Hill Fault) both downthrown to the south.<br><br>There are no BGS borehole records available on site. Nearby boreholes located to the east of the site indicate variable depths of made ground (up to 1.7m) onto sand to depths in excess of 10.45m.<br><br>The site is partially located within a zone indicated to have 'probable shallow coal mine workings'. There are no records of any opencast mining within the site. There are no shafts recorded on the site<br><br>Both northern and southern sections of site are recorded as historic landfills. The wastes deposited are understood to include inert and commercial wastes. There are two other landfill sites within 250m of the site boundary. The closest, 'Former Brockhurst Sewage Works', accepted industrial waste and is indicated to have gas control measures. The second, Fellows Park, operated between 1920 and 1990 and accepted industrial and commercial wastes.<br><br>Possible constraints relating to past mining and Industrial Heritage include the following:<br><br>• Deep made ground – historic landfill site.<br>• Ground gases (anticipated deep made ground and landfill site).<br>• Shallow coal mining issues.<br>• Possible unrecorded mineshafts.<br>• Soil contamination (former sewage works, use as waste management facility and landfill site)<br>• Groundwater contamination (and possible effects on River Tame and Ford Brook).<br>• Possible sub-structures within localised areas of the site associated with former sewage works buildings.<br>• Stability issues associated with railway embankment.<br><br>These along with the additional constraints listed below may be a significant barrier to developing the site for a more intensive waste use. |

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| 5 | **Additional Physical Constraints –** are there any further physical constraints, other than ground conditions, that could be a significant barrier to viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site? | The following physical constraints also apply to the site:<br>• The Bescot Triangular north and south sites are divided by a disused rail chord embankment which limits the available space. This could be removed but the necessary earthworks and recovery/disposal of materials would need to be factored in to development costs. In addition the embankment may provide a barrier to flood waters and should the site be levelled this would need to be factored into a wider flood risk assessment.<br>• The north-western boundary is formed by the South Staffordshire railway line, which is used for freight. This line is on an embankment. The north-eastern boundary is formed by the Walsall - Birmingham railway line, also on embankment, and the southern boundary is formed by an elevated section of the M6 Motorway. These permanent features are considered as constraints for future development, not only because they form a physical barrier but also because there would be a need to demonstrate that any engineering works carried out on site will not impact the integrity/stability of the embankments or other engineered features and that these major transport routes will not be adversely impacted. Network Rail have indicated that an Asset Protection Agreement would be required.<br>• Access to both sites is poor and restricted. The existing vehicular access to the site is from Bescot Road, turning right immediately after leaving the Junction 9 roundabout, as shown in the photograph below. Traffic management may therefore be a constraint.<br>• The access road runs alongside nearby housing and accesses the north site via a single vehicle width tunnel beneath the embankment of the South Stafford railway line. From here access is gained into the south site via a second single access tunnel beneath the disused rail chord.<br><br>This is likely to restrict access to the site as shown in the photograph below and improved access is likely to be required for any intensification of development.<br><br>  <br><br>Access to site from Besot Road |

Single lane access under bridge.

- There is a pedestrian right of way located at the site entrance in the south-west corner and running along the line of the disused rail chord towards the pedestrian crossing point on the Walsall-Birmingham railway line. This access will probably need to be retained or rerouted as part of the development. There is no vehicular access in to the site on the eastern boundary.
- The Local Highway Authority has raised no objections to developing a waste site, but has identified an issue relating to the public right of way if this was to be used as a vehicular access.
- Bescot Triangle North is designated as a Site of Local Importance for Nature Conservation (UK) (SLINC). Arial photos supported by a site visit confirm that this area is populated with established trees and groups of trees which are protected by Tree Preservation Orders (TPOs).
- There is housing along Dickinson Road, backing onto the South Staffordshire railway line, and along Wallows Lane, backing onto the Walsall – Birmingham passenger railway line, which is less than 50m away from the boundary of the northern site. A number of these properties have a direct line of sight into the north site, as can be seen in the photograph below. Amenity issues will therefore be of major importance and it will be necessary to demonstrate that any development will not impact on the health or wellbeing of local residents.

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| | |  <br>Existing housing overlooking the site.<br><br>• The nearest housing to the existing recycling facility, on the south site, is approximately 100m away. The disused rail chord embankment provides some screening and protection for the residential areas from the current activities within the site and the traffic on the M6 motorway beyond, however these houses are already exposed to air pollution and high levels of noise generated from the M6 motorway as well as to noise from freight and passenger trains on the active railway line.<br>• The area has been identified as being within Flood Zones 2 and 3, which designates the area as having a medium to high probability of fluvial flooding. The area is also susceptible to some surface water flooding during wet weather. It is probable that any new development proposals would require a site-specific Flood Risk Assessment to determine the likely risk of flooding to both sites, and identify a surface water m<br>• Management strategy that would enable a more intensive waste management or industrial development on either or both sites. |
| 6 | **Other Constraints** – are there any other constraints that could be a significant barrier to viability and delivery of a higher quality waste management use enclosed within a building or an industrial development on the site? | • Additional constraints that may be considered as a significant barrier to development include the following:<br>• Available information shows that planning permission was granted, to the Bescot Triangle North Site, in 1992 for a 'private nature reserve', no further details on the current state of this planning permission have been found.<br>• The Bescot Triangle site is next to the M6 motorway, as a result statutory air quality standards for nitrogen dioxide (NO2) are known to have been exceeded locally, as predicted by the latest air quality modelling carried out by Walsall MBC in September 2013. There is also a current recycling facility on the site, which may emit dust. This background air pollution may restrict the extent to which further activities may be permitted under the Environmental Permitting Regulations 2010 and may be a barrier to the use of the site for Energy from Waste.<br>• Bescot Triangle North site was identified as Open Space in the latest Open Space Audit carried out in 2012. |

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| 7 | **Key Delivery Requirements –** what actions or interventions would be needed to overcome the barriers to viability and delivery identified in 4 and 5 above, what are the likely additional costs, and how would this affect the economic viability of a higher quality waste management use enclosed within a building or an industrial development? | • Actions to be considered following investigations undertaken on the ground conditions associated with the Bescot Triangle Site are as follows:<br>• There are unknown depths of potentially deep made ground, possible coal seams and contamination. There is therefore a requirement to undertake a site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, and chemical testing (soils and groundwater) in order to fully characterise the contamination on site and determine the remediation that might be required. **Possible costs incurred c. £98 800.**<br>• There are possible workings within coal seams beneath the site. Recommended works would include drill and grout investigations beneath any development footprint (dependent on findings of initial SI). **Possible costs incurred c. £30-£40 /m2.**<br>• There may be unrecorded mine shafts on site. Recommended works would include treatment to include drilling and pressure grouting and capping. **Possible costs incurred c. £10 000 per shaft.**<br>• Ground gas may be present. Recommended works would include the installation of gas protection measures vents and / or membranes (dependent on the findings of the initial SI). **Possible costs incurred c. £10 /m2 of building footprint.**<br>• A piled foundation solution is likely to be required for any proposed development, and piles may need to be deep due to the former landfill use. **Possible costs cannot be quantified without further information.**<br>• Grubbing out and backfilling may be necessary to remediate in-situ sub-structures due to the previous industrial use of the site**. Possible costs incurred c. £49 400.**<br>• For remediation of contaminated soil it is recommended that a human health risk assessment be undertaken to determine the works necessary to protect future users of the site. **Possible costs incurred c. £5 000.**<br>• In addition there may be a requirement to provide clean cover for landscaped areas. **Possible costs incurred c. £19 760.**<br>• Contaminated soils may need to be removed from site. **Possible costs incurred c. £200 /m3 (including landfill tax at £80 a tonne).**<br>• If groundwater contamination is present it would be recommended to undertake a ground water risk assessment to determine the possible impacts of this and how the risk may altered by any development**. Possible costs incurred c. £7 500.**<br>• Groundwater clean-up. **SI information required before costs can be determined.**<br>• In addition:<br>• Any development of the Bescot Triangle North could result in the loss of the Site of Local Importance to Nature Conservation (SLINC) and may result in the loss of some protected trees. Habitats that remain could be vulnerable to pollutants generated by waste uses. There would therefore need to be an ecological survey of Bescot Triangle North site to identify whether any protected species are present and evaluate the biodiversity value of the habitats present. This would be used to identify a strategy for development that would protect and conserve the most valuable habitats and provide adequate compensation for habitats that would be lost.<br>• There would also be a requirement to conduct a tree survey of Bescot Triangle North site to identify the location of all protected trees, and to identify a strategy for development that would enable as many trees as possible to be retained. Such a survey would incur costs of c. £2k.<br>• Any mitigation is likely to include retention of existing habitats and trees where possible, minimisation of overall habitat loss and tree loss, and compensatory provision on-site and/ or off-site. |

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| | | • It is recommended that a Phase I habitat survey is conducted to establish the ecological setting of the site which would incur cost in the region of c. £2k. Subsequent species specific surveys, resulting from the Phase 1 habitat survey, would incur additional costs as follows:<br>  • Birds - **Possible costs incurred c. £3 000 - £4 000.**<br>  • Bats - **Possible costs incurred c. £3 000 - £4 000**<br>• There is no evidence of any permanent water bodies on site or within 500m which negates the need to complete a Great Crested Newt survey.<br>• A site-specific flood risk assessment will be required on all proposals for new development (including minor development and change of use) as the site lies within in Flood Zones 2 and 3.<br>**Possible costs incurred for an initial assessment would be c. £ 2000.**<br>• This may recommend flood protection measures or compensatory flood plain arrangements. It is not possible to predict costs without further information but the costs could be tens of thousands.<br>• It is likely that access improvements would be necessary to support a more intensive use of the site and with this in mind it would be recommended to undertaken a site inspection and feasibility/viability study of the existing access and recommendations thereafter. **Possible costs incurred c. £2 000.**<br>• Any improvements to the access would incur considerable costs and would need approval from Network Rail. An indication of costs for any access improvements would be better provided following a feasibility/viability study.<br>**NOTE: Costings above are for comparison purposes only – not definitive costs as the results of the initial investigations are required to confirm the extent of remediation works.** |
| **8a** | **Conclusions – Alternative Waste Management Development –** what are your views on the likely viability and deliverability of a higher quality waste management use enclosed within a building, in the light of the issues identified in 1 – 7 above? | • It is considered that the Bescot Triangle site would not provide a suitable location for a higher quality waste management facility, enclosed within a building, due to a number of restrictive factors that a developer would need take into consideration and overcome.<br>• Whilst none of the constraints identified would prevent development in its own right, with technical solutions allowing them to be overcome, it is considered that the range and number of constraints would be likely to make development of the site for a higher quality and/or more intensive waste use economically unviable. Full assessment and remediation of the ground conditions, flood risk, site access and ecological importance could run into several million pounds.<br>• It is considered that a developer might accept costs of between 10 and 15% of the capital expenditure for site investigations and remediation but that the development is unlikely to proceed if the costs of remediation approach 20% or more of the total cost of developing the site. |
| **8b** | **Conclusions – Industrial Development -** what are your views on the likely viability and deliverability of an industrial development, in the light of the issues identified in 1 – 7 | • With regards to industrial use within Classes B1b, B1c, B2 or B8 the same factors, as already highlighted above, would need to be considered, including access, ground remediation, public right of way, biodiversity, proximity to housing, fixed boundaries and need for protection of transport routes.<br>• The positives in favour of industrial development would include the following:<br>• The site is already located in an area of industrial and commercial use with construction offices and a depot off Wallows Lane and Bescot Crescent to the north- |

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| | above? | east. Other similar premises lie to the north east with mainly manufacturing, warehousing and storage facilities and the Bescot Retail Park lying beyond. So any development of a similar nature would be sympathetic to the surrounding area.<br>• The site is close to Junction 9 of the M6 via Bescot Road, and there is a pedestrian link across the Walsall-Birmingham railway line to the neighbouring industrial and commercial premises.<br>• An industrial development of small business units would be likely to have a lower risk of impacting on the amenity for local residents through noise, litter, odour and dust.<br>• Both of the Bescot Triangle sites were identified in the 2012 Employment Land Review (ELR) as Retained Local Quality employment sites.<br>• The south site may offer better opportunities for industrial development as this is area accommodates current operations and does not have the biodiversity issues associated with the north site.<br>• However any development will need to take into account the accessibility of the site, the flood risk, biodiversity issues and ground remediation. Whilst a less intensive use would maybe require less remediation it will also attract less revenue and the constraints may still make the site uneconomic for a developer. |
| **9** | **Overall Conclusions -** please provide an overall conclusion on the site's general suitability for waste management development, for example, "not suitable for waste development", "suitable for waste development" or "suitable but with constraints." Where the site is considered suitable, please explain what types of waste development the site could support. | • Over all it is concluded that the site is not suitable for a waste development as the cost of overcoming the constraints is likely to make the development uneconomic. In addition there are local residents overlooking part of the site who are liable to be impacted by emissions from the site, particularly odour. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Property:** | WP2: Land at Fryers Road | | **Site Ref** | IN 17.2 |
| **Photograph:** | | | **Landowner:** JPE Holdings Ltd<br>Revelan (IOM) Ltd<br>Revelan Estates (Anglo) Ltd<br>Revelan Properties (IOM) Ltd<br>Revelan UK Ltd | |


For illustrative purposes

## THE SITE

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| **Site Location** | Fryers Road, Bloxwich, Walsall WS3 2JX |
| **Site Description** | Vacant triangular site forming part of Leamore employment area in Bloxwich. See General Characteristics below for further details. |
| **Gross Site Area:** | 3.5 hectares |
| **SAD Preferred Options:** | Reasons for Selection<br>BCCS Site, Planning Permission |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## SITE OPPORTUNITIES & CONSTRAINTS

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| **General Characteristics** | Vacant triangular site forming part of Leamore employment area in Bloxwich. Site boundaries formed by employment land (IN17.1 and IN17.3) and former rail siding on north-western side, by Fryers Road on north-eastern side and by the Wyrley & Essington Canal on southern side. |
| **Current Land Use** | Site is currently vacant. |
| **Green Belt Site?** | No. |
| **Natural Environment** | Adjacent to Wyrley & Essington Canal SLINC. |
| **Historic Environment** | No designated heritage assets, but the site is adjacent to the Wyrley & Essington Canal, which is recorded on the Walsall & Wolverhampton HER. North-western edge of site was formerly occupied by Hatherton Brick Works, mining and quarrying across the rest of the site has probably obliterated any earlier below-ground archaeology. |
| **Landscape Character** | Urban site within Black Country HLC Character Area WL05: West Central Walsall. Site is located within an established industrial estate, surrounded by mainly 20th century industrial buildings to the north-east and north-west, and to the south, by the Wyrley & Essington Canal, which is an important feature within the local landscape. The north-western boundary of the site is formed by a former rail siding which originally served the former Hatherton Brick Works, and subsequently, the former Delaville Spelter Works on adjacent land now occupied by Impalloy and the AB Waste application site (13/1712/WA). |
| **Agricultural Land** | Not applicable. |
| **Mineral Resources** | Surface Coal (South Staffordshire Coalfield). |
| **Ground Conditions** | Derelict land - on NLUD database. Also in the Coal Mining Development High Risk Area. Known problems from previous mining, infilling and industrial activity. Preliminary Geo-Environmental Assessment Report by DAM Geotechnical Services (2012) submitted with planning application for Scheme 2 (13/0725/WA). This describes current ground conditions and remediation works previously carried out by JPE Holdings. Conclusions recommend further intrusive site investigations prior to development, to determine the extent of contamination and the potential for ground/ mine gas generation, and to identify the most appropriate strategy to prepare the site for development. Section 6 of the Environmental Statement summarises the proposed remediation strategy for the site. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Flood Risk** | Not in a Flood Zone but some susceptibility to surface water flooding. |
| **Water Resources** | Secondary A Aquifer (Bedrock), but not within a Groundwater SPZ. |
| **Water Quality** | Within Tame, Anker & Mease Catchment Area – potential for impacts on water quality of Tame, Anker, Mease Secondary Combined groundwater body and Sneyd Brook from Source to Tame (Wolverhampton Arm). Humber RBMP (2009), Annex B indicates these water bodies are not expected to achieve overall "good" status until 2027 because it is technically infeasible to achieve this by 2015. |
| **Air Quality** | Statutory limit values for nitrogen dioxide (NO2) are currently being exceeded in the access routes from this site to the M6 corridor, and in the M6 corridor itself, according to the latest air quality modelling carried out by Walsall MBC in September 2013. The latest planning permission (13/0725/WA) is for a gasification plant, which has the potential to generate emissions of harmful pollutants into the atmosphere as well as generating an increase in emissions from traffic, but would be subject to regulation to control the emission of pollutants. Assessment reports provided with the planning application indicate that emissions from traffic and from the gasification plant can be effectively controlled. Conditions 7a and 7b of 13/0725/WA also require prior approval of details of wheel-cleaning apparatus to minimise deposition of dust on the highway. |
| **Accessibility** | Vehicular access to proposed waste recovery facility and gasification plant (approved under permission 13/0725/WA) would be off Fryers Road, giving access to Junction 9 of M6 via Leamore Lane, Green Lane (A34) and Walsall Town Centre Ring Road (A4148). Access and parking arrangements agreed in principle by Local Highway Authority, subject to compliance with Conditions 5a, 5b, 6a and 6b of 13/0725/WA, which require prior approval of details before work commences. |
| **Sensitive Receptors** | Main sensitive receptors in the vicinity of the site are:<br>**Wyrley & Essington Canal** – designated as a SLINC, the canal forms the southern boundary of the site.<br>**Housing** – existing housing on Irvine Road and Castings Close, around 100m away from north-eastern boundary of the site, though this is separated from the site by existing industrial premises and the railway line, and potential impacts from air, soil and water pollution, light pollution, noise and traffic, would be addressed through mitigation, and controlled by conditions attached to the grant of permission.<br>**Neighbouring industrial premises** – factories and industrial units on Fryers Road and Willenhall Lane are mostly occupied by engineering, warehousing and storage uses, one of the occupiers of the National Distribution Centre on Fryers Road is a confectionery supplier (Freemans). |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

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| **Specific Physical Constraints** | **Proximity to residential properties** – north-eastern boundary of the site is around 100m away from the nearest residential properties in Irvine Road and Castings Close – these are on the opposite side of the railway line, with other industrial premises in between. Conditions attached to permission 13/0725/WA address amenity issues and potential impacts on health such as risks from air, soil and water pollution, highway safety, traffic management, light pollution, noise, dust and hours of operation. |
| **Cross-Boundary Issues** | Supporting information with 13/0725/WA suggests the waste will be mainly sourced from within Birmingham and the Black Country, but given the capacity (up to 300,000 TPA) and drivers towards recycling, it is likely that at least some waste would be sourced from further afield. |

## CURRENT PLANNING STATUS

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| **Planning Policy – Walsall Local Plan** | **Walsall UDP 2005 – "saved" policies**<br>Site is within a Core Employment Area (see "saved" Policy JP5 and "saved" UDP Proposals Map).<br>**Black Country Core Strategy 2011**<br>Leamore employment area is identified as "Retained Local Quality" employment land (see Economy Key Diagram and Appendix 2, Regeneration Corridor 7 Diagram. Former Trident Alloys site is also identified as a location for development of a "resource recovery park" (see Waste Key Diagram, Policy WM3, Table 17, WP3). It is noted that the BCCS does not allocate particular sites for development, it identifies broad locations for development but these are indicative only and it is the purpose of the SAD to refine the locations identified in the BCCs and allocate specific sites. |
| **Planning Permissions** | Planning permission has been granted for the following alternative waste management schemes, proposed by the same agent (Alliance Planning) on behalf of different applicants:<br>**Scheme 1: JPE Holdings (MRF and CHP Plant)**<br>Approved in stages during 2007 and 2008 (07/0449/OL/W7, 07/1691/RM/W7, 08/1815/RM and 08/1459/FL). Project was to be brought forward in two phases, therefore each element subject to separate applications. Time limits of the original permissions were subsequently extended (10/1632/TE and 11/1336/TE).<br>**Scheme 2: BH Energy Gap LLP (Material Recovery/ RDF Production/ Gasification Plant)**<br>New proposal by a different applicant, which supersedes Scheme 1. Planning permission for this was granted in 2013 (13/0725/WA). This proposal was agreed to be EIA development by the Council and the applicant, and included an Environmental Statement supported by a range of technical reports, reflecting the Scoping Opinion adopted by the Council (12/0860/ND). |
| **Walsall SAD – Issues & Options for the Site** | Issues & Options for industrial land and waste management development are summarised in the SAD Issues & Options Report (April 2013). The report identifies the Leamore employment area as Retained Local Quality employment land (IN19) - see Chapter 4, Map 4.2 and Appendix 4a. The Fryers Road site itself is identified as a Potential Waste Management Site Allocation (WP2) - see Chapter 8, Table 8.7, Map 8.2, and Appendix 8a. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## VIABILITY MODELLING OUTPUTS

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| **Viability and Delivery key issues identified by the Council** | We have identified the following potential constraints to development, which may be affecting the viability and delivery of waste management development on this site:<br>• Costs of implementing the site remediation strategy outlined in Section 6 of the Environmental Statement of 13/0725/WA, and risks that unexpected additional costs may arise as a result of the outcomes of the site investigation phase;<br>• Discussions with the proposer of Scheme 1 suggested that access to finance from the banks may have been a factor in preventing the bringing forward of that scheme;<br>• Potential competition from other waste to energy proposals in Walsall and the surrounding area (see Note on Defra "Call for Evidence" on RDF), and questions over whether the West Midlands conurbation will generate enough residual waste to supply all of the plants proposed over their anticipated lifetimes;<br>• Potential links to/ dependence on adjacent A B Waste proposal for RDF production facility (13/1712/WA - planning application yet to be determined); and<br>• Questions over economic viability of energy from waste facilities going forward, given trends towards waste reduction, proposals by EC to increase recycling targets, uncertainties about renewable energy incentives (e.g. FITs). |
| **Timeline for Delivery** | Delivery 2014 -2026, subject to market conditions and economic viability of approved scheme. |
| **Delivery Strategy** | We would expect this site to be delivered by the private sector. |

## KEY INFORMATION SOURCES

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| **Walsall Local Plan – Waste Evidence** | Black Country Waste Planning Study (2009)<br>Black Country Core Strategy Waste Background Paper 2 and Appendices and Waste Monitoring Update July 2010 (2010) | Available on Council/ Black Country Core Strategy websites |
| **Walsall AMR 2013** | Walsall Local Plan Monitoring Report 2013 (Authority's Monitoring Report)<br>The latest published AMR covering the 2012/13 monitoring year. Section 5, pages 66 – 96 summarise progress on implementing the BCCS waste management requirements in Walsall and the wider Black Country. The underlying data can be found in the Waste Data Tables published alongside the report. | Available on Council website |
| **Walsall Site Allocation ocument (SAD)** | Walsall Site Allocation Document - Issues & Options Report and Appendices (April 2013)<br>Chapter 8 of the Issues & Options Report provides general background information on the BCCS waste capacity requirements, and explains what the SAD is expected to | Available on Council website |

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| | deliver. Appendix 8a includes a schedule of the potential site allocations identified at the time of publication. | |
| **Walsall SAD Sustainability Appraisal** | Integrated Sustainability Appraisal (SA) of the Walsall Site Allocations Development Plan Document (SAD) and Walsall Town Centre Area Action Plan (AAP) – SA Stage 2: Options Appraisal (April 2013)<br>Summarises outcome of preliminary SA of options for the SAD, including options for waste management. | Available on Council website |
| **SAD Waste Proposals** | Excel spreadsheet of sites<br>Digital mapping of sites<br>Emerging Waste Sites Assessment<br>Emerging Sustainability Appraisal of sites | Electronic copies of these documents provided |
| **Site WP2: Planning History** | Scheme 1 – Permissions 07/0449/OL/W7, 07/1691/RM/W7, 08/1815/RM, 08/1459/FL, 10/1632/TE and 11/1336/TE<br>Scheme 2 – Permission 13/0725/WA | Electronic copies of application forms, plans, supporting documents and decision notices provided |
| **Other Waste to Energy Proposals** | Willenhall Lane Pyrolysis Plant CLOPED – 13/1343/LP<br>AB Waste Current Application – 13/1712/WA<br>Site WP4Heath Road/ Kendricks Road, Darlaston - 08/0256/FL for "timber resource recovery centre" and S73 permission to extend time for implementation (11/0856/TE).<br>Refuse Derived Fuel (RDF) – Call for Evidence by Defra - Walsall MBC Note (March 2014) | Electronic copies of application forms, plans, supporting documents and decision notices provided |

## CONTACT DETAILS

| **APPLICANT (Scheme 1)** | **APPLICANT (Scheme 2)** | **AGENT** |
|---|---|---|
| Steven Birch<br>Director<br>JPE Aggregates<br>The Lodge<br>Warstone Road<br>Essington<br>Wolverhampton<br>WV11 2AR<br>Tel: 01922 475055<br>Email: steven.birch@jpeh.co.uk<br>Website: http://www.jpeaggregates.co.uk/ | Alisdair MacConnell<br>Partner<br>BH Energy Gap LLP<br>Abbey House<br>1650 Arlington Business Park<br>Theale<br>Reading<br>Berkshire RG7 4SA<br>Tel: 0118 929 8185<br>Website:<br>http://www.bhenergygap.co.uk/ | Mark Walton<br>Alliance Planning<br>3rd Floor<br>54 Hagley Road<br>Edgbaston<br>Birmingham B16 8PE<br>Tel: 0121 456 7444<br>Email: mw@alliance-plan.co.uk<br>Website: http://www.alliance-plan.co.uk/contact.jsp?office=Birmingham#main<br><br>N.B. Agent is now WYG, who have recently taken over Alliance Planning. |

# POTENTIAL WASTE MANAGEMENT SITE PROFORMA

## SITE DETAILS

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| **Site Name:** | WP2: Land at Fryers Road (IN17.2) |
| **Address:** | Fryers Road Bloxwich, Walsall WS3 2JX |
| **Site Area:** | 3.5 hectares |

## Viability and Delivery Assessment

| Requirements | | Consultant's Comments |
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| 1 | **Site Visit** – general observations. | A site visit to the Fryers Road site was conducted on 16th October 2014, and the follow comments on observations are as follows:<br>• The Fryers Road site is a vacant triangular site forming part of Leamore employment area in Bloxwich. Site boundaries are formed by employment land and a former rail siding on the north-western side, by Fryers Road on the north-eastern side and by the Wyrley & Essington Canal on the southern side.<br>• On the North West boundary of the site is an industrial complex occupied by Impalloy, a steel fabrication and steel protection business, which has an associated large chimney stack. Access to the site is from Fryers Road via an access point which has been constructed in preparation for future development. The sites location offers good access to Junction 9 of the M6 via Leamore Lane, Green Lane (A34) and Walsall Town Centre Ring Road (A4148).<br>• Palisade fencing is erected around the perimeter of the site.<br>  <br>Site entrance and fencing shown on left of picture.<br>• The site is located in an area of established factories and industrial units along Fryers |

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| | | Road and Willenhall Lane, mostly occupied by engineering, warehousing and storage businesses. Directly adjacent the site on Fryers Road is a confectionary supplier (Freemans) and opposite the site on the far side of the canal is a meat manufacturing unit (Lawrence Meats Ltd). These businesses are likely to be the closest sensitive receptors along with the Wyrley and Essington Canal, which will need to be protected from any potential contaminated run-off.<br>• The nearest residential properties are located on Irvine Road and Castings Close about 100m away on the opposite side of the railway line. These properties have no direct view into the Fryers Road site and are screened by vegetation and industrial premises between.<br><br>  <br>General view of the site. |
| **2** | **Feedback from Developer –** summary of comments from former applicants/agents on why the approved developments have not been implemented. | Contact was made with Mark Walton of Alliance Planning (Agent), who provided the following feedback:<br>• JPE Holdings, the site owner, submitted and were granted planning permission for the development of a MRF/CHP facility which was subject to a number of extensions of time with the latest permission for a time extension ref. 11/1336/TE currently lapsing on 9th December 2014.<br>• Following the grant of permission JPE Holdings subsequently marketed the site for the permitted development. This was taken forward in a partnership with BH Energy Gap LLP.<br>• BH Energy Gap LLP submitted an application for their own development (Material Recovery/RDF Production/Gasification) ref. 13/0725/WA granted on 6th September 2013.<br>• As far as it was known, BH Energy Gap LLP have been in continued dialogue with the Environment Agency with regards to the remediation of the site as well as the working to secure the required funding for the development.<br>• To the best of Alliance Planning's knowledge BH Energy Gap LLP are still actively continuing with their development proposal (Scheme 2).<br><br>Contact was also made with Alisdair MacConnell of BH Energy Gap LLP, the Scheme 2 Applicant, who provided the following feedback: |

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| | | • BH Energy Gap LLP has a condition of contract with JPE Holdings to purchase the Fryers Road site from them.<br>• BH Energy Gap LLP submitted the application for Scheme 2, which has been granted permission. They are hoping to commence development sometime in 2015, preferably between April and June.<br>• Comment was made that if Scheme 2 did not progress Scheme 1 was unlikely to go ahead as it was based on a specific process at the time of the application, which is now believed to be unworkable.<br>• An Environmental Permit Application has been submitted and is currently being considered by the Environment Agency.<br>Since the land owner was contacted the Agent details have changed (Agent is now WYG). The Council has also reported that an EIA Scoping request has been received in advance of an application for modifications to the gasification plant scheme. The proposed changes affect the overall footprint and scale of the buildings and the height of the stack, but it is understood there would be no change to the types of operation or to the proposed annual throughput of waste. |
| **3** | **Attractiveness of Location** – is the general location likely to be attractive to prospective waste operators or industrial users? | • The Fryers Road Site should be considered an attractive location for a waste operator because of the following:<br>• BH Energy Gap LLP has already expressed an interest in the site and has planning permission to develop a material recovery/RDF production/ Gasification facility.<br>• BH Energy Gap LLP is in the process of submitting an Environmental Permit Application for Scheme 2.<br>• BH Energy Gap LLP are looking to commence development of Scheme 2 in April to June 2015.<br>• The Fryers Road site has been identified within the Black Country Core Strategy (2011) as a proposed location for new strategic waste management infrastructure, making a significant contribution towards the new capacity requirements within the region.<br>• At the time the assessment was carried out there was a proposal for the development of a materials recovery facility by A B Waste Management Ltd, on land adjacent to Trident Alloys on Willenhall Lane. This could have had potential links with the Fryers Road development, possibly supplying RDF to the gasification plant. However, the planning application has since been refused by the Council on grounds of potential adverse impacts on amenity of nearby residential properties and impacts on the landscape.<br>• If the site is developed as an energy recovery facility there is the potential to develop a district heating scheme to link in to the neighbouring industrial premises and households.<br>• The site has good transport links.<br>• The site lies in an industrial area and the nearest residential receptors are approximately 100m away, providing a buffer between the site and housing.<br>• 3.5ha of land are available providing space to develop a waste reception and processing facility inside a building of buildings with associated storage infrastructure such as a weighbridge, and odour abatement equipment (eg biofilter or chemical scrubber).<br>Indications are that the Fryers Road Site will be developed as a waste management facility.<br>Considered could also be given to the site being an attractive location for industrial use, based on the following observations:<br>• The site is already located within an area of established industrial and commercial use with industrial units and factories along Fryers Road and Willenhall Lane comprising mostly engineering, warehousing and storage units.<br>• The site has good access onto Fryers Road, giving access to Junction 9 of the M6 via |

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| | | Leamore Lane, Green Lane and Walsall Town Centre Ring Road. Access and parking arrangements have already been agreed in principle by the Local Highway Authority with respect to the Scheme 2 proposal suggesting there are no barriers to suitable site access.<br>• If developed for industrial use there would still be the issue of ground remediation and associated costs accompany this, which could be considerable |
| **4** | **Ground Conditions –** could existing ground conditions be a significant barrier to delivery of viability and delivery of a waste management development or an industrial development on the site (N.B. this also relates to Task 1 d)? | The Fryers Road Site comprises an area of derelict land covering an area of c.3.5ha. The earliest available mapping of the site indicates that it was used as the Hatherton Brick Works and details of an 'old shaft' are recorded on site. The site area later became part of the Spelter Works and so appears to have a history of metal working, with the potential for zinc, lead, copper and other contaminants to have been deposited. The later map also shows several depressions across the site area, these are conjectured to be clay pits, perhaps associated with the brickworks.<br><br>A Geo-Environmental Assessment Report was submitted as part of the JPE Holdings Ltd, Scheme 1 application, which gives a description of current ground conditions and remediation requirements with conclusions recommending further intrusive site investigation prior to development, to determine the extent of contamination and the potential for ground/ mine gas generation, and to identify the most appropriate strategy to prepare the site for development.<br><br>A review of the above report and a further desk study of the available data resources provides an indication of the ground conditions at the Fryers Road site as follows:<br>• Geological mapping shows Pennine Middle Coal Measures with no superficial deposits recorded across the site area. There are no BGS borehole records within the site boundary to provide any more refined data.<br>• There are numerous shafts indicated on the Coal Authority's Interactive Map Viewer. All shafts appear to have been treated via pressure grouting and capping. The Geological Memoir indicates that the nearby Hatherton Colliery No 7 Shaft has recorded the base of the Bottom Coal at 95.1m below surface level, whilst historical mapping also suggests the excavation of parts of the site, conjectured to be clays for use within the adjacent brickworks. There is thus the potential for near surface and deep works on site.<br>• The local bedrock is recorded as a Secondary A aquifer, that is it is likely to comprise permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. Secondary aquifers are generally aquifers formerly classified as minor aquifers.<br>• Possible constraints relating to past mining and Industrial Heritage include the following:<br>o Deep made ground – historic plans indicate steep changes in topography and former landfill. The SI suggests the made ground is between 1m and 15m deep.<br>o Ground gases (from former landfill and anticipated deep made ground).<br>o Shallow coal mining issues.<br>o Possible unrecorded mineshafts.<br>o Soil contamination from former brickworks and spelter works.<br>o Groundwater contamination (and possible effects on adjacent canal).<br>o Possible sub-structures within localised areas of the site associated with structures in the south east of the site<br>• Records indicate an authorised landfill on site 'Willenhall Lane Landfill Site'. Operated by JPE Holdings Ltd, the landfill is now closed. It is understood to have accepted industrial wastes.<br>• Previous SI has been undertaken at the site. A brief review of publicly available |

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| | | information suggests that the SI had a good coverage of the site including trial pits, light percussion boreholes, cable percussion, rotary boreholes, gas monitoring, chemical testing and geotechnical testing.<br><br>• BGS borehole records indicate numerous 'confidential' records including trial pits and boreholes.<br>From an analysis of the information available, the costs of implementing the site remediation strategy, explained in the Scheme 1 Environmental Statement, and the potential risks associated with any unexpected additional costs would be considered a significant barrier to implementing any development at the site as the cost may out way the economic benefit of the facility. |
| 5 | **Additional Physical Constraints –** are there any further physical constraints, other than ground conditions, that could be a significant barrier to viability and delivery of a waste management development or an industrial development on the site? | In addition to the mining and industrial legacy issues outlined above the site has the following potential constraints.<br>• The north-eastern boundary of the site is around 100m away from the nearest residential properties in Irvine Road and Castings Close. Although there is a 100m buffer between these properties and the site there remain identified amenity issues and potential impacts on health including the risks of air, soil and water pollution, highway safety, traffic management issues, light pollution, noise and dust. These issues have been addressed by the recent permission 13/0725/WA granted to BH Energy Gap LLP and would also need to be addressed in any subsequent planning application.<br>• Factories and industrial units on Fryers Road and Willenhall Lane are mostly occupied by engineering, warehousing and storage uses, however one of the occupiers of the National Distribution Centre on Fryers Road is a confectionery supplier (Freemans) and to the south of the site and the opposite side of the Wyrley & Essington Canal is located a meat manufacturing unit (Lawrence Meats Ltd). Food businesses may be more sensitive to dust and odour due to the risk of tainting their products.<br>• Bordering the south perimeter of the site is the Wyrley & Essington Canal designated as a **Site of Local Importance to Nature Conservation** (SLINC). Any development will require a properly engineered drainage system which will protect water quality within the canal. |
| 6 | **Other Constraints –** are there any other constraints that could be a significant barrier to viability and delivery of a waste management development or an industrial development on the site? | In addition to the physical constraints identified above the following should also be factors taken into consideration:<br>• Statutory limit values for nitrogen dioxide (NO2) are currently being exceeded in the access routes from this site to the M6 corridor, and in the M6 corridor itself, according to the latest air quality modelling carried out by Walsall MBC in September 2013. It may be more difficult for a waste to energy facility to gain an environmental permit as a result. However assessment reports provided with the latest planning application have indicated that emissions from traffic and from the gasification plant can be effectively controlled.<br>• Potential competition from other waste to energy proposals in Walsall and the surrounding area and questions over whether the West Midlands conurbation will generate enough residual waste to supply all of the plants proposed over their anticipated lifetimes, given trends towards waste reduction, proposals by the European Community to increase recycling targets and uncertainties about renewable energy incentives (e.g.CFD).<br>Neither of these constraints would preclude other types of waste development, for example in-vessel composting (IVC) anaerobic digestion (AD) or materials recycling which could be developed on site as an alternative. |

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|---|---|---|
| 7 | **Key Delivery Requirements –** what actions or interventions would be needed to overcome the barriers to viability and delivery identified in 4 and 5 above, what are the likely additional costs, and how would this affect the economic viability of a waste management development or an industrial development? | Possible actions or interventions that may need to be considered necessary following any site investigation works are as follows:<br>• Considerable depths of made ground, possible coal seams, and contamination are present. Thus there is a requirement to undertake a site investigation to include trial pits, boreholes with installations, rotary boreholes, gas monitoring, chemical testing (soils and groundwater). **Possible costs incurred c. £70 000.**<br>• Possible workings within coal seams may require remediation. Recommended works would include a drill and grout investigation beneath the development footprint (dependent on findings of initial SI). **Possible costs incurred c. £30-£40 /m2.**<br>• Unrecorded mine shafts may be present. Recommended works would include treatment to include drilling and pressure grouting and capping. In addition multiple shafts are recorded to have been treated, further research is required to confirm these have been remediated to a suitable standard. **Possible costs incurred c. £10 000 per shaft.**<br>• Ground gas may be present due to the former landfilling activity. Recommended works would include the installation of gas protection measures vents and/or membranes. **Possible costs incurred c. £10 /m2 of building footprint.**<br>• A piled foundation solution is likely to be required for any proposed development. Costs dependent on further site investigation to confirm the extent of these works.<br>• Grubbing out and backfilling may be needed to remediate in-situ sub-structures left from the previous brick works and or spelter works. **Possible costs incurred c. £35 000.**<br>• For remediation of contaminated soil it is recommended that a human health risk assessment be undertaken. **Possible costs incurred c. £5 000.**<br>• In addition there may be a requirement to provide clean cover for landscaped areas. **Possible costs incurred c. £14 000.**<br>• It is possible removal of contaminated soils may be required. **Possible costs incurred c. £200 /m3 removed from site.**<br>• For groundwater contamination it would be recommended to undertake a ground water risk assessment (if required). **Possible costs incurred c. £7 500**<br>• Groundwater clean-up. **SI information required.**<br>Remediation costs may therefore be in excess of £450,000.<br>**NOTE: Costings above for comparison purposes only – not definitive costs which can only be confirmed following further site investigation.** |
| 8a | **Conclusions – Scheme 2 –** what are your views on the likely viability and deliverability of the approved Scheme 2 (13/0725/WA) in the light of the issues identified in 1 – 7 above? | Systematic with the feedback gained from the applicant of Scheme 2 (BH Energy Gap LLP) it is considered that there is good indication of the deliverability of Scheme 2. It seems that many of the constraints have been overcome:<br>• The Scheme 2 development has been granted planning permission.<br>• BH Energy Gap are looking to commence development sometime in 2015, hopefully between April and June.<br>• An Environmental Permit Application has been submitted to the Environment Agency<br>• A remediation strategy has been discussed with the Environment Agency<br>• Unless any issues arise through the permit application that cannot be resolved and it is refused then it would seem that the development would be implemented. |

| | | |
|---|---|---|
| | | There are factors to consider that could impact on the continued development of the Scheme 2, as follows:<br>• The cost of implementing the site remediation strategy outlined in the Environmental Statement accompanying the planning application, could prove too costly with the added risk that unexpected additional costs may arise as a result of the outcomes of the site investigation phase.<br>• There is the concern of competition from existing waste to energy facilities as well as other schemes within the area in the development pipeline i.e. land at Willenhall Lane ref. pyrolysis plant. |
| **8b** | **Conclusions – Alternative Waste Management Development** - what are your views on the likely viability and deliverability of an alternative waste management development to Scheme 2, in the light of the issues identified in 1 – 7 above, and what types of operation are most likely to be viable? | With the existing recognised Scheme 1 and Scheme 2 already having been granted planning permission a positive precedent has already been established for waste management use. Alternative options might include<br>• Variations on the process used for waste to energy, such as incineration, pyrolysis, Anaerobic Digestion (AD) or similar. These options could have an associated CHP unit attached or may consider the potential for cleaning of gas to allow it to be supplied to the national grid. Gas to grid is a new technology and to date has not been widely exploited. Plants producing electricity and heat for use locally or for supply to the National Grid are however a well established technology.<br>• A range of MRFs could be considered for development, allowing either a "dirty" MRF to extract recyclable materials from mixed waste/residual waste or a "clean" MRF to refine separately collected or co-mingled recyclate and produce a high quality raw materials for re-processors.<br>• It may be possible to manufacture an RDF or SRF on site for use in an energy to waste facility or co-incineration facility elsewhere.<br>• Open windrow composting would not be considered suitable, due to local receptors for odour and bioareosols that include nearby housing and neighbouring industrial premises. However in-vessel composting could be considered as an option for treating degradable garden and food wastes. |
| **8b** | **Conclusions – Industrial Development** - what are your views on the likely viability and deliverability of an industrial development, in the light of the issues identified in 1 – 7 above? | The Fryers Road site could also be considered as a suitable location for industrial development, falling within Use Classes B1b, B1c, B2 or B8. The reasons for this consideration are as follows:<br>• The site is already located in an area of industrial and commercial use with factories and industrial units on Fryers Road and Willenhall Lane, mostly occupied by engineering, warehousing and storage uses, which places the site in an area that offers good opportunities for industrial development (falling within Use Classes B1b, B1c, B2 or B8).<br>• The site has good access off Fryers Road, giving access routes to Junction 9 of M6 via Leamore Lane, Green Lane (A34) and Walsall Town Centre Ring Road (A4148). Access and parking arrangements have already been agreed in principle by Local Highway Authority, as part of the BH Energy Gap LLP, Scheme 2 permission, subject to conditions.<br>• A development of small business units may be considered more favourable than the waste management use, purely due to the fact that it is less likely to impact on the amenity of local residents by noise, odour and dust.<br>• In light of the issues raised in 1-7 above there will still be a likely requirement to undertake a ground remediation works that may be necessary following detailed site |

| | | |
|---|---|---|
| | | investigation works. |
| 9 | **Overall Conclusions -** please provide an overall conclusion on the site's general suitability for waste management development, for example, "not suitable for waste development", "suitable for waste development" or "suitable but with constraints." Where the site is considered suitable, please explain what types of waste development the site could support. | It is considered that the Fryers Road site is "suitable for waste development". |
| 10 | **Alternative Land Use Options** – what other types of development could be delivered on this site, having regard to the issues identified in 1 – 9 above, and current local plan policy? | An industrial and or commercial development may also be suitable at this location. |

# Appendix 4 – Letter from Black Country Authorities to the Department for Communities and Local Government regarding EU Waste Framework Directive


Communities and Local Government
Eland House
Bressenden Place
London
SW1E 5DU

4 February 2011

F.A.O. Charlotte Palmer

Dear Sir/ Madam,

**The EU Waste Framework Directive**

We are writing on behalf of the four Black Country Authorities (Dudley MBC, Sandwell MBC, Walsall Council and Wolverhampton City Council), in response to the letter of 10 January 2011 from the Chief Planner regarding the above.

The four authorities have jointly prepared a Core Strategy covering the whole of the Black Country. We are pleased to inform you that the Black Country Core Strategy is a "sound" plan, as is confirmed by the Inspectors' Report published in October 2010. The Inspectors' recommendations have now been incorporated into the Core Strategy, and it was adopted by the four authorities on Thursday 3 February 2011.

The Black Country Core Strategy identifies the following:

- Existing strategic waste management sites whose capacity will be protected, maintained and enhanced where feasible;
- Specific strategic waste infrastructure proposals which are expected to be delivered within the lifetime of the plan;
- Broad locations where other new waste infrastructure may be developed within the Black Country.

(Continued…)

Dudley Metropolitan Borough Council · Sandwell Metropolitan Borough Council · Walsall Council · Wolverhampton City Council

The locational guidance contained within the Core Strategy is also compliant with the requirements of the Directive, and may be used to identify and assess options for site allocations brought forward through other DPDs. The evidence informing the Core Strategy confirms that the overall supply of employment land in the Black Country is sufficient to accommodate the demand for new waste management facilities identified in the policies.

The attached table summarises the main content of the "waste management plan" as required by the Directive, and explains how the Black Country Core Strategy complies with the requirements. However, we feel we should point out that not all elements of the "waste management plan" will be delivered through Development Plan Documents such as the Core Strategy.

Some elements of the "waste management plan" will be delivered through national policy (either through regulation or through the national waste strategy), and other elements at a local level may be delivered through municipal waste management strategies.

The adopted version of the Black Country Core Strategy is now available on the Core Strategy website, incorporating all the changes recommended by the Inspectors in their binding report. This can be downloaded from the Black Country Core Strategy website – here is the link as requested:

http://blackcountrycorestrategy.dudley.gov.uk/.

We consider that the Black Country Core Strategy is a Directive-compliant strategic plan. Any outstanding non-strategic issues (such as site allocations, where required) will be addressed through other DPDs.

A number of Land Allocations DPDs and Area Action Plans are already being progressed to the timetables set out in the authorities' Local Development Schemes. Although not all of these will be in place by 2012, in our view, the essential requirements of the Directive have already been met through the Core Strategy.

I trust that we have provided the information requested regarding compliance with the Directive but if you have any queries or require any further information please contact the officer indicated below.

Yours faithfully,

Helen Martin
Head of Planning
Dudley MBC

Nick Bubalo
Area Director – Regeneration and Economy
Sandwell MBC

David Elsworthy
Head of Planning and Building Control
Walsall Council

Richard Walsall
Head of Strategic Housing, Planning Policy and Sustainability
Wolverhampton City Council

On behalf of the Black Country Authorities

For further information please contact:

Dawn Harris
Principal Planning Officer
Planning Policy Team
Walsall Council
Tel: 01922 652482
Email: harrisdawn@walsall.gov.uk

## Black Country Core Strategy – Compliance with Waste Framework Directive (WFD)

| Waste Management Plan: WFD Required Content | Black Country Core Strategy | |
|---|---|---|
| | Included? | Comments on Compliance |
| **Analysis of waste management situation** in the area and the measures proposed to improve waste management (Article 28 (2)) | ✓ | Provides overview of situation at a strategic level. Local perspective to be set out in other DPDs if required. |
| **Technical information** on waste arisings and management, cross-boundary movements of waste, existing waste management capacity and future requirements for recovery and disposal (Article 28 (3)) | ✓ | Includes best available technical information on waste, and identifies key requirements. There are some gaps which may need to be addressed in other DPDs, of which the main one is construction and demolition waste. |
| **Locational guidance** for the development of new waste recovery and disposal infrastructure (Article 28 (3)) | ✓ | Includes guidance and criteria for assessing potential waste sites for allocation in other DPDs. |
| **General waste management policies** including planned technologies/ methods of management, and policies for waste posing specific management problems (Article 28 (3)) | ✓ | Includes a suite of five waste policies covering waste technologies currently available, and addressing specific problems identified. This may be refined and added to in other DPDs, where local requirements are identified. |
| **Packaging and Packaging Waste -** chapter on management and measures to encourage prevention and re-use (Article 28 (5)) | ✓ partly | Encourages waste prevention and re-use generally. Otherwise addressed at a national level through national waste strategy and through regulation. |
| **Landfill Diversion –** strategy for diversion of biodegradable municipal waste, waste liquids and other proscribed wastes away from landfill (Article 28 (5)) | ✓ partly | Two of the four Black Country Authorities are already managing more than 80% of their municipal waste through energy recovery or recycling. The municipal waste landfill diversion targets for the other two authorities are consistent with the authorities' LATS targets. Diversion of other proscribed wastes away from landfill is addressed at a national level through regulation. |
| Must also reflect the following objectives:<br>• Management of waste in accordance with the **waste hierarchy;**<br>• Application of waste hierarchy in ways that will deliver **best overall environmental outcome;**<br>• Management of waste **without endangering human health or causing harm to the environment;**<br>• Management of waste in accordance with the principles of **self-sufficiency** and **proximity**.<br>(Articles 1, 4, 13, 16) | ✓ | Spatial strategy, strategic objectives for waste and the environment, and the waste and environment policies reflect all of these objectives. |

# Appendix 5 – CIL Questionnaire

# Community Infrastructure Levy Viability Assumptions

# 1 Introduction

Community Infrastructure Levy (CIL) is a discretionary tariff introduced by the 2008 Planning Act which local authorities can charge on each net additional sq. m of development (above a minimum scheme of 100 sq. m). CIL is the mechanism for securing funding for local infrastructure projects.

DTZ is appointed by Walsall Council to develop the viability evidence base for Community Infrastructure Levy (CIL) in Walsall, in particular to undertake comprehensive cost analysis of development viability and to ensure that any rates of CIL that are set for the Borough would not make development unviable.

As part of the viability evidence that DTZ is producing we are consulting on the approach and viability assumptions that are being used. This document therefore outlines the details of our approach and assumptions and seeks comments/feedback.

In parallel to this work on CIL, DTZ is also undertaking viability work to deliver the Site Allocation Document and the Town Centre Area Action Plan.

We would be grateful if you could review this paper and provide your responses in the boxes provided and return the questionnaire no later than **Friday 5 December 2014**, via post or email to:

Stephanie Hiscott
DTZ
St Paul's House
23 Park Square South
Leeds
LS1 2ND
Stephanie.hiscott@dtz.com
0113 246 1161

As you are aware, the Council is hosting a Stakeholder event at St Paul's, Upper Room, The Crossing, Darwall Street, Walsall this **Friday 28 November between 11.30 – 13.30**. The event will give you the opportunity to discuss the emerging work and give us your comments, so that we are able to take this into consideration in the development of the viability evidence base for CIL.

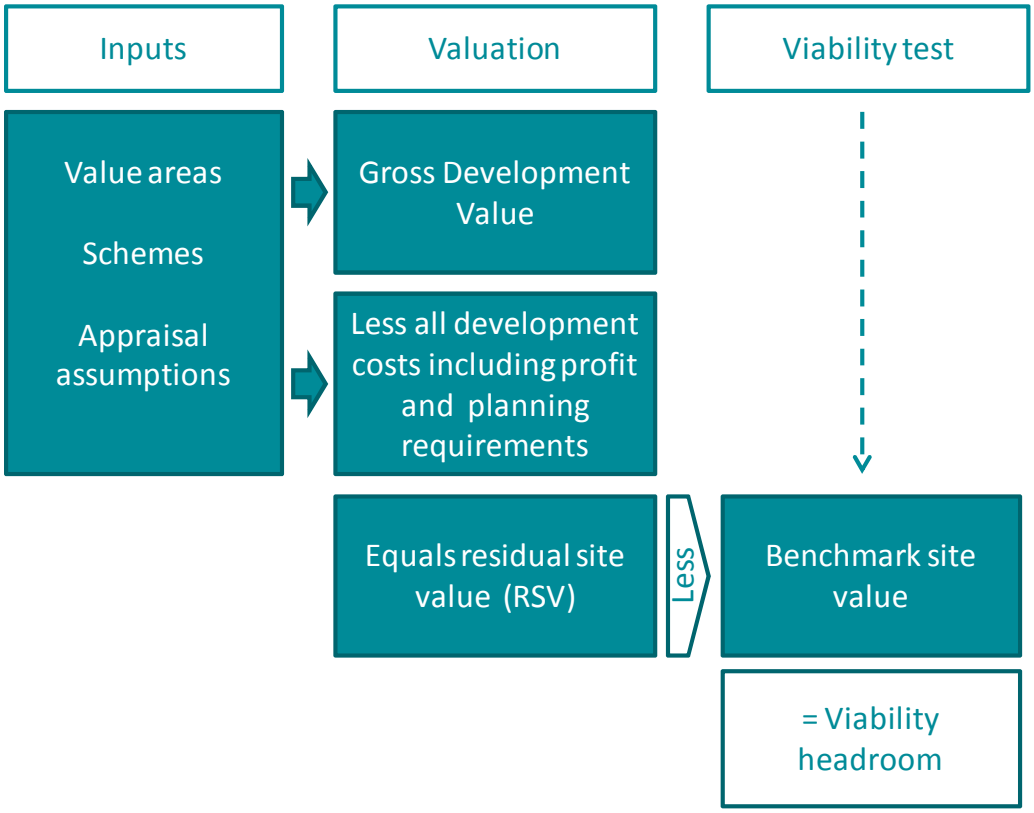
# 2. Approach to viability

There are various approaches to viability such as those set out in HCA and BNP Paribas work for PAS. We propose to use the approach set out in the RICS guidance document *Financial Viability in Planning* (2012):

"An objective financial viability test of the ability of a development project to meet its costs including the costs of planning obligations, while ensuring an appropriate site value for the land owner and market risk adjusted return to the developer in delivering the project" (para 2.1)

DTZ's viability model involves the analysis of a selection of hypothetical development schemes to reflect the wide range of circumstances in which development is anticipated to come forward across the Borough of Walsall. DTZ has developed a spreadsheet based economic viability model that allows a large number of development sites to be tested, including sensitivity testing of key variables. The model is as follows:

- Determination of value areas, scheme and viability assumptions
- A residual appraisal is then carried out subtracting all anticipated development costs from the scheme's Net Development Value to arrive at a residual site value
- The residual site value is then benchmarked against a site value threshold to determine the 'headroom' available for CIL/other planning requirements




**Question 2.1 Do you agree with the viability testing methodology listed above?**

YES ☐ NO ☐

**If you have answered no to the above please detail your comments below:**

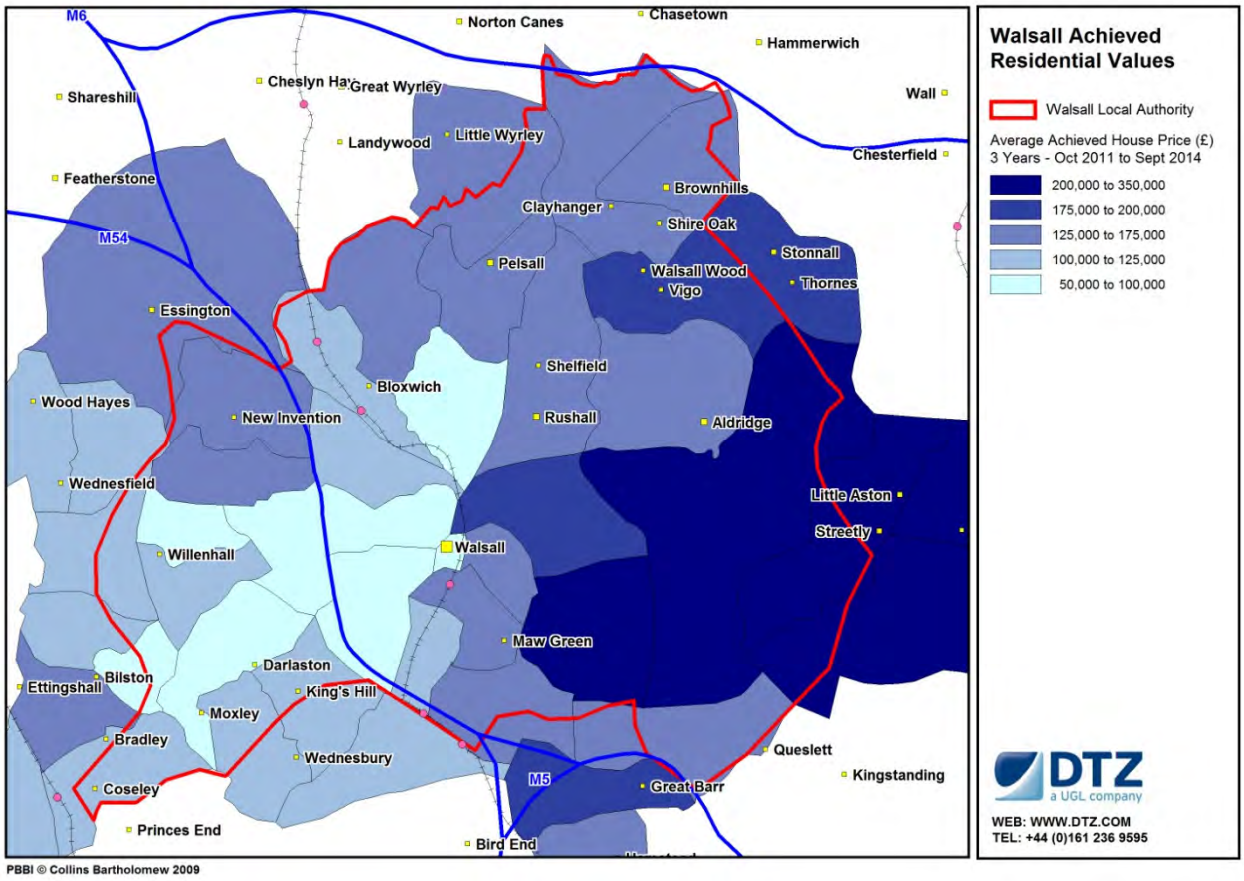
# 3. Residential Development Assumptions

## Value areas and site selection

Five differential value bands have been selected as geographical zones for viability testing of CIL on residential development:

- HV1 - £200,000 to £350,000 average house price band
- HV2 - £175,000 to £200,000 average house price band
- HV3 - £125,000 to £175,000 average house price band
- HV4 - £100,000 to £125,000 average house price band
- HV5 - £50,000 to £100,000 average house price band

These zones are based on average achieved house prices for all postcode sectors in Walsall over the 3 year period October 2011 to September 2014.




**3.1 Do the above value areas adequately cover the range of market areas currently in the Borough?**

YES ☐ NO ☐

The following schemes will be tested on the range of site sizes, mix and densities set out below:

| | Developable area | | | | Housing mix % | | | | | | Built floor area | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Net developable area (Ha) | acres | Development density (DPH) | No units | 1 bed flat | 2 bed flat | 2 bed house | 3 bed house | 4 bed house | 5 bed house | Sq m | Sq ft | Sq m per ha | Sq ft per acre |
| Scheme 1 | 0.50 | 1.24 | 35 | 18 | 0% | 0% | 20% | 50% | 25% | 5% | 1,618 | 17,413 | 3,235 | 14,093 |
| Scheme 2 | 0.50 | 1.24 | 60 | 30 | 50% | 50% | 0% | 0% | 0% | 0% | 2,299 | 24,750 | 4,599 | 19,960 |
| Scheme 3 | 1.00 | 2.47 | 35 | 35 | 0% | 0% | 20% | 50% | 25% | 5% | 3,235 | 34,825 | 3,235 | 14,093 |
| Scheme 4 | 1.20 | 3.00 | 35 | 42 | 0% | 0% | 20% | 50% | 25% | 5% | 3,882 | 41,790 | 3,235 | 13,930 |
| Scheme 5 | 2.50 | 6.18 | 35 | 88 | 0% | 0% | 20% | 50% | 25% | 5% | 8,088 | 87,063 | 3,235 | 14,093 |
| Scheme 6 | 5.00 | 12.36 | 35 | 175 | 5% | 5% | 20% | 40% | 25% | 5% | 15,547 | 167,344 | 3,109 | 13,545 |
| Scheme 7 | 10 | 24.71 | 35 | 350 | 0% | 0% | 20% | 50% | 25% | 5% | 32,354 | 348,250 | 3,235 | 14,093 |

### 3.2 Does the selection of site sizes, dwelling mixes and densities reflect an appropriate range for the Borough?

YES ☐ NO ☐

**If you have answered no to either 3.1 or 3.2 above or have any general comments, please respond below. If you consider there are other market areas not considered which you feel should be incorporated in this study, please state them.**

## Unit sizes

The following unit sizes are proposed for inclusion:

| House type | Size (sq m) | (Sq ft) |
|---|---|---|
| 1 bed flat | 46 | 500 |
| 2 bed flat | 58 | 625 |
| 2 bed house | 70 | 750 |
| 3 bed house | 88 | 950 |
| 4 bed house | 111 | 1200 |
| 5 bed house | 130 | 1400 |

**3.3 Do you agree with our size assumptions in the above table?**

YES ☐ NO ☐

**If you have answered no to question 3.3, please could you provide your views on what dwelling sizes should be assumed for the assessment.**

| House type | Size (sq. m) | (Sq ft) |
|---|---|---|
| 1 bed flat | | |
| 2 bed flat | | |
| 2 bed house | | |
| 3 bed house | | |
| 4 bed house | | |
| 5 bed house | | |

## Sales values

Capital revenues (net of incentives) are used in the model on the basis of £ per sq. m. 'Current sales values' will form the base viability testing for CIL testing purposes. The sales revenue assumptions are as follows:

| | Current sales values assumptions | |
|---|---|---|
| | £psm | £psf |
| Value band 1 | 2,422 | £225 |
| Value band 2 | 2,260 | £210 |
| Value band 3 | 1,991 | £185 |
| Value band 4 | 1,776 | £165 |
| Value band 5 | 1,668 | £155 |

**3.4 Do you agree with the sales value assumptions?**

YES ☐ NO ☐

**If you have answered no to question 3.4, please provide your views on current sales values.**

| | Current Sales Values Assumptions | |
|---|---|---|
| | £ per sq. m | £ per sq. ft |
| Value band 1 | | |
| Value band 2 | | |
| Value band 3 | | |
| Value band 4 | | |
| Value band 5 | | |

## Build costs

Build costs for flats and houses are based on BCIS with an added 12% for external works.

| | Build cost | | Plus 12% uplift for external works | |
|---|---|---|---|---|
| | £psm | £psf | £psm | £psf |
| **Schemes less than 40 units** | | | | |
| Houses | £915 | £85 | £1,025 | £95 |
| Flats | £1,023 | £95 | £1,145 | £106 |
| **Schemes greater than 40 units** | | | | |
| Houses | £807 | £75 | £904 | £84 |
| Flats | £969 | £90 | £1,085 | £101 |

**3.5 Do you agree with our cost assumptions?**

YES ☐ NO ☐

**If you have answered no to question 3.5 or have any general comments, please expand below.**

| | Build cost | | Plus 12% uplift for external works | |
|---|---|---|---|---|
| | £psm | £psf | £psm | £psf |
| **Schemes less than 40 units** | | | | |
| Houses | | | | |
| Flats | | | | |
| **Schemes more than 40 units** | | | | |
| Houses | | | | |
| Flats | | | | |

## Other development costs

| Other development costs | |
|---|---|
| Sensitivity for abnormals | 10% uplift on build costs |
| Site specific section 106 | £1,000 per unit |
| Professional fees (inc planning) | 6% on construction costs |
| Contingencies | 5% on construction costs |
| Marketing, sales agent and legal fees | 3.5% of sales revenue |
| Purchaser's costs | 5.8% on purchase price |
| Finance | 6.5% on negative balance |
| Developer's profit | 20% on market units 6% on affordable (blended rate to be determined) |

**3.6 Please detail below whether you agree and disagree with the assumptions proposed and whether any other consideration should be taken.**

## Policy standards

For the purposes of CIL viability testing, the following assumptions have been applied relating to the stated policy standards in the Black Country Core Strategy Policy HOU3:

| Affordable housing | % of all units | Threshold | % of Open Market Value |
|---|---|---|---|
| 25% of new housing developments should be affordable (100% of which affordable rent). Onsite/Offsite contribution payable. | 25% | 15 units + | Social Rented - 40%<br>Affordable Rent - 50% |

**3.7 Please detail below where you agree and disagree with the assumptions proposed and whether any other consideration should be taken.**

# 4. Retail Development Assumptions

## Scheme selection

Five hypothetical schemes ('archetypes') have been selected for viability testing. Below are the details of the archetypes, floor area and site coverage.

These archetypes will be tested in the following locations in accordance with the town centre hierarchy set out in the Walsall UDP:

- Town Centre
- Edge of Town Centre
- District Centre
- Edge of District Centres
- Local Centres
- Out of Centre

Variations to the appraisal assumptions will be applied based on market research of each location.

In considering the floor area, the following definitions are applied:

**Gross Floorspace** is defined as "*The area of a building measured to the internal face of the perimeter walls at each floor level*[34]".

**Net Floorspace** is defined as "*The internal floor area of the shop unit used for selling and displaying goods and services. It comprises the floor area to which customers have access, counter space, checkout space, window and other display space, fitting rooms and space immediately behind counters.*

*Lobbies, staircases, cloakrooms and other amenity rooms are excluded. It is measured from the internal faces of walls and partition*[35].

| | | Gross Internal Areas | | Net Internal Areas | | Site area | |
|---|---|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Shopping centre | 5,000 | 53,820 | 3,500 | 37,674 | 1.25 | 3.09 |
| Scheme 2 | Retail warehousing (bulky goods) | 3,000 | 32,292 | n/a | n/a | 0.75 | 1.85 |
| Scheme 3 | Supermarket large | 5,000 | 53,820 | n/a | n/a | 2.00 | 4.94 |
| Scheme 4 | Supermarket mid | 1,500 | 16,146 | n/a | n/a | 0.60 | 1.48 |
| Scheme 5 | Supermarket small | 400 | 4,306 | n/a | n/a | 0.16 | 0.40 |

[34] Royal Institute of Chartered Surveyors, Code of Measuring Practice.

[35] The Unit for Retail Planning Information Ltd Information Brief 85/7. Note, this is different from net sales floorspace

**4.1 Do the above hypothetical schemes adequately cover the necessary range of retail development likely to come forward in Walsall?**

YES ☐ NO ☐

**Sales values**

Below are our base values which will feed in to the appraisals:

| | | Rental value (£) | | | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Yield | Rent free (months) |
| Scheme 1 | Shopping centre | 221.00 | 20.53 | 9.00% | 18 |
| Scheme 2 | Retail warehousing (bulky goods) | 215.29 | 20.00 | 7.50% | 18 |
| Scheme 3 | Supermarket large | 177.61 | 16.50 | 5.50% | 6 |
| Scheme 4 | Supermarket mid | 112.00 | 10.40 | 5.50% | 6 |
| Scheme 5 | Supermarket small | 112.00 | 10.40 | 5.50% | 6 |

**4.2. Do you agree with these value assumptions?**

YES ☐ NO ☐

**If not, please state alternative figures:**

| | | Rental value (£) | | | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Yield % | Rent free (months) |
| Scheme 1 | Shopping centre | | | | |
| Scheme 2 | Retail warehousing (bulky goods) | | | | |
| Scheme 3 | Supermarket large | | | | |
| Scheme 4 | Supermarket mid | | | | |
| Scheme 5 | Supermarket small | | | | |

## Development cost and phasing assumptions

The following build and development cost assumptions will be used:

| | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Shopping centre | 852.00 | 79.15 | 979.80 | 91.03 |
| Scheme 2 | Retail warehousing (bulky goods) | 572.00 | 53.14 | 657.80 | 61.11 |
| Scheme 3 | Supermarket large | 819.00 | 76.09 | 941.85 | 87.50 |
| Scheme 4 | Supermarket mid | 1,311.00 | 121.80 | 1507.65 | 140.07 |
| Scheme 5 | Supermarket small | 1,052.00 | 97.73 | 1209.80 | 112.39 |

| Other development costs | |
|---|---|
| Sensitivity for abnormals (% uplift in build costs) | 10% |
| Site specific S106 costs | £30 per sq m |
| Professional fees as % of construction costs | 10% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 10% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 15% |

| Phasing assumptions | |
|---|---|
| Lead in | 6 months |
| Construction period (retail warehousing and supermarket) | 12 months |
| Construction period (others) | 18 months |
| Sale | On practical completion |

### 4.3 Do you agree with the development cost and phasing assumptions?

YES ☐ NO ☐

**If not, please explain below stating any suggested alternative assumptions:**

# 5. Office Development Assumptions

Two hypothetical schemes ('archetypes') have been selected for viability testing of CIL. Below are the details of the archetypes, floor area and site coverage.

**Scheme selection**

| | | Floor area (GIA) | | Floor area (NIA) | | Site area | |
|---|---|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Town centre, over two floors | 3,000 | 32,292 | 2,550 | 27,448 | 0.38 | 0.93 |
| Scheme 2 | Out of town, over two floors | 3,000 | 32,292 | 2,550 | 27,448 | 0.38 | 0.93 |

### 5.1 Do you agree with the scheme assumptions?

YES ☐ NO ☐

**Value and phasing assumptions**

| | | Rental value (£) | | Yield | Rent free |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | % | (months) |
| Scheme 1 | Town centre, over two floors | 129.17 | 12.00 | 8.75% | 30 |
| Scheme 2 | Out of town, over two floors | 129.17 | 12.00 | 8.75% | 30 |

### 5.2 Do you agree with the sales value and phasing assumptions?

YES ☐ NO ☐

**Build cost, development costs and phasing assumptions**

| | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Town centre, over two floors | 1,571.53 | 146.00 | 1,807.26 | 167.90 |
| Scheme 2 | Out of town, over two floors | 1,291.67 | 120.00 | 1,485.42 | 138.00 |

| Other development costs | |
|---|---|
| Sensitivity for abnormals (% uplift on build costs) | 10% |
| Site specific S106 costs | £0 |
| Professional fees as % of construction costs | 12.5% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 15% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 15% |

| Phasing assumptions | |
|---|---|
| Lead in | 6 months |
| Construction period | 12 months |
| Sale | On practical completion |

**5.3 Do you agree with the development cost and phasing assumptions?**

YES ☐ NO ☐

**If you have answered no to questions 5.1 or 5.2, or have any general comments, please expand below.**

# 6. Industrial

Based on experience of other Local Authorities viability studies and CIL Charging Schedules along with preliminary viability testing of CIL in the Black Country, it is unlikely that industrial development will be able to support any level of CIL rates in Walsall. We would appreciate your views on this and would still like to ask you a few questions.

Three hypothetical schemes have been selected for viability testing of CIL. Illustrated below are the names of the archetypes, approximate size and site coverage

**Scheme selection**

| | | Floor area (GIA) | | Floor area (NIA) | | Site area | |
|---|---|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Small industrial /warehouse | 2,500 | 26,910 | 2,500 | 26,910 | 0.71 | 1.77 |
| Scheme 2 | Medium industrial / warehouse | 5,000 | 53,820 | 5,000 | 53,820 | 1.43 | 3.53 |
| Scheme 3 | Large industrial /warehouse | 10,000 | 107,639 | 10,000 | 107,639 | 2.86 | 7.06 |

### 6.1 Do you agree with the scheme assumptions?

YES ☐ NO ☐

**Value and phasing assumptions**

| | | Rental value (£) | | Yield | Rent free (months) |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | % | |
| Scheme 1 | Small industrial / warehouse | 61.89 | 5.75 | 6.75% | 6 |
| Scheme 2 | Medium industrial / warehouse | 59.20 | 5.50 | 6.75% | 6 |
| Scheme 3 | Large industrial / warehouse | 56.51 | 5.25 | 6.75% | 9 |

| Phasing assumptions (development delivered in a single phase) | |
|---|---|
| Lead in | 6 months |
| Construction period | 12 months |
| Sale | On practical completion |

### 6.2 Do you agree with the sales value and phasing assumptions?

YES ☐ NO ☐

## Build cost and development cost assumptions

| | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|
| | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Small industrial / warehouse | 830.00 | 77.11 | 807.29 | 75.00 |
| Scheme 2 | Medium industrial / warehouse | 458.00 | 42.55 | 526.70 | 48.93 |
| Scheme 3 | Large industrial / warehouse | 426.00 | 39.58 | 489.90 | 45.51 |

| Other development costs | |
|---|---|
| Allowance for abnormals (% uplift on build costs) | 10% |
| Site specific S106 costs | £0 |
| Professional fees as % of construction costs | 10% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 15% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 15% |

### 6.3 Do you agree with the build cost and other development cost assumptions?

YES ☐ NO ☐

### 6.4 Do you agree that industrial development is unlikely to be able to support any level of CIL rates?

YES ☐ NO ☐

### If you have answered no to any of the above questions, please expand below.

# 7. Other Commercial Sectors

The following other commercial sectors will be tested in order to determine whether they are able to support any level of CIL rates in Walsall.

## Scheme selection

| | | | Floor area (GIA) | | Floor area (NIA) | | Site area | |
|---|---|---|---|---|---|---|---|---|
| | | | Sq m | Sq ft | Sq m | Sq ft | Ha | Acres |
| Scheme 1 | Cinema | Leisure park cinema | 6,000 | 64,583 | 6,000 | 64,583 | 1.50 | 3.71 |
| Scheme 2 | Hotel | 60 bed budget | 1,800 | 19,375 | 1,350 | 14,531 | 0.45 | 1.11 |
| Scheme 3 | Restaurant | Leisure park restaurant | 400 | 4,306 | 400 | 4,306 | 0.16 | 0.40 |
| Scheme 4 | Care home | 60 bed care home | 2,586 | 27,835 | 840 | 9,042 | 0.65 | 1.60 |

### 7.1 Do you agree with these scheme assumptions?

YES ☐ NO ☐

**If you have answered no to question 7.1, please expand below.**

## Build costs, other development cost assumptions and phasing

| | | | Build cost (£) | | Build cost inc. 15% uplift for external works | |
|---|---|---|---|---|---|---|
| | | | Sq m | Sq ft | Sq m | Sq ft |
| Scheme 1 | Cinema | Leisure park cinema | 1,183.00 | 109.90 | 1360.45 | 126.39 |
| Scheme 2 | Hotel | 60 bed budget | 1,373.00 | 127.56 | 1579.95 | 146.78 |
| Scheme 3 | Restaurant | Leisure park restaurant | 1,661.00 | 154.31 | 1910.15 | 177.46 |
| Scheme 4 | Care home | 60 bed care home | 1,022.00 | 94.95 | 1175.30 | 109.19 |

| Other development costs | |
|---|---|
| Allowance for abnormals (% uplift on build costs) | 10% |
| Site specific S106 costs | £0 |
| Professional fees as % of construction costs | 10% |
| Contingencies on construction costs | 3% |
| Letting costs (% of rental value) | 10% |
| Letting legal costs (% of rental value) | 5% |
| Investment sale (% of Net Development Value) | 1% |
| Investment sale legal costs (% of NDV) | 0.25% |
| Purchaser's costs (% on purchase price) | 5.80% |
| Finance on negative balance | 6.75% |
| Developer profit (% on cost) | 15% |

| | | | Phasing assumptions |
|---|---|---|---|
| Scheme 1 | Cinema | Leisure park cinema | 6 months lead in, 12 months build, sell on PC |
| Scheme 2 | Hotel | 60 bed budget | 6 months lead in, 12 months build, sell on PC |
| Scheme 3 | Restaurant | Leisure park restaurant | 6 months lead in, 12 months build, sell on PC |
| Scheme 4 | Care home | 60 bed care home | 6 months lead in, 18 months build, sell on PC |

### 7.2 Do you agree with the build cost, other development cost and phasing assumptions?

YES ☐ NO ☐

### If you have answered no to question 7.2, please expand below.

**We would welcome your views on appropriate rental values, yields and incentives for these commercial sectors**

| | | | Rental values (£) | | Yield | Incentives |
|---|---|---|---|---|---|---|
| | | | Sq m | Sq ft | % | Months |
| Scheme 1 | Cinema | Leisure park cinema | | | | |
| Scheme 2 | Hotel | 60 bed budget | | | | |
| Scheme 3 | Restaurant | Leisure park restaurant | | | | |
| Scheme 4 | Care home | 60 bed care home | | | | |

**Please use the box below to provide any other comments you wish to make on assumptions and viability.**

The above questions do not cover all of the assumptions made in the viability model. Through this consultation we are looking to establish the parameters and principles that are considered during the modelling, and allow the opportunity for feedback and amendment prior to the commencement of modelling, in order to make the process as robust and transparent as possible.

In order to keep an accurate record of respondents, please complete the details below. We will not attribute your name, the name of your organisation or the details of any responses above without your express permission.

Many thanks for your comments which are greatly appreciated.

Name:

Position:

Company:

Address:

Postcode:

Contact Telephone:

Email Address:

**May we contact you further in relation to the CIL viability work for Walsall?**

YES ☐ NO ☐

**Would you be interested in participating in any future viability and deliverability work for Walsall?**

YES ☐ NO ☐

Please return your responses by **Friday 5 December 2014 to:**

Stephanie Hiscott of DTZ

By post: DTZ, St Pauls House, 23 Park Square South, Leeds, LS1 2ND

Or by email: **stephanie.hiscott@dtz.com**

# Appendix 6 - CIL Feedback

# Walsall CIL - feedback from developer workshop session 28/11/2014

## General Comments

- Challenge is that there are different characteristics and it is impossible to cater for every eventuality
- Walsall has entrenched abnormal cost issues because of historic mining and industrial uses
- Can charging zones be constructed to recognise geographical concentrations of brownfield land hence enabling viability appraisals which drive the CIL tariffs in these areas to reflect the higher abnormal costs associated? Yes
- One way of looking at it is to assume that abnormal development costs are simply deducted from land value; but even then there may be cases where the level of abnormals reduces the land value below the level that is necessary to incentivise land owners to sell
- Office and industrial schemes not likely to be viable at prevailing rental / capital values
- Generally agree with the assumptions proposed
- Extremely limited new build office market in Walsall
- There is a growing manufacturing industry locally and businesses do require expansion space. Whilst this is likely to drive demand, the pipeline employment sites have significant viability issues.

## Land Values

### Residential

- One agent (LSH) indicated he has recently valued a scheme in Willenhall which indicated a gross land value of £600-£650k per acre (exclusive of abnormals, affordable housing and S106)
- Likely to reduce down to circa £300-350k net per acre
- Differences in land values are not all that significant because of the balancing effect of planning obligations – higher value areas include Pelsall, Willenhall
- Some areas likely to achieve lower land values but risk is that land owner will not bring forward
- Consider £200-250k per acre as a minimum land value, rising to £350k-£400k per acre Borough wide
- One housebuilder (Persimmon Homes and Charles Church) indicated that built floor areas could be higher (15,000 – 16,000 sq. ft per acre) and that 3 bed houses vary between 700 – 100 sq. ft in size in their developments. However he is generally happy with the residential assumptions used in the paper.

### Commercial

- Retail – range of £500k to £1m okay, although more secondary locations could be less e.g. £250k per acre
- Retail – Council has had negotiation with supermarket operator in an edge of centre location with figures of £800-900k per acre discussed.
- Office – recent deal between Council and College in town centre site circa £200k per acre – this accords with general perspective for employment land

# Appendix 7 – Stakeholders invited to participate in workshop and questionnaire survey on CIL viability assumptions

## Developers

| | |
|---|---|
| Abacus Developments | KWB |
| Accord Housing | Lambert Smith Hampton |
| Aecom | Lamonts |
| AEW UK | Leisure Automatics Properties |
| Aldridge Prime Ltd | London and Cambridge Properties |
| Amber Infrastructure | Lovell Partnerships Ltd |
| Andrew Dixon | LPC Living |
| Ashmore Properties Ltd | Lynx Euro Management |
| Ashtenne | Manor Hospital |
| Atkins | Mar City |
| Auriga Estates | MarCity Developments |
| Barratt Homes | Marstons |
| Barratt West Midlands | Mercian Housing Association Ltd |
| Bartlett Property | Michael Tromans |
| Bellway Homes Ltd | Morris Homes (West Midlands) Ltd |
| Bellway Homes, West Midlands | Morrison Construction |
| Benoy | Mott MacDonald |
| Bericote | Mountcity Investments Limited |
| Bond Wolfe | National Grid |
| Boston Fieldgate | Nattrass Giles |
| Bouygues Development | Niken Construction |
| Bovis Homes Ltd | Northern Trust Company Ltd |
| British Land Company PLC | NRS |
| British Waterways | Nurton Developments |
| Bulleys | Office Agents Society |
| Bullock Construction Ltd | O-Gen UK Ltd |
| Bulstrode Investments | Opus Land |
| Burley Browne | Parkhill Estates Ltd |
| Cala Homes (Midlands) Ltd | Pennycuick Collins |
| Caldmore Area Housing Association | Persimmon Homes |
| Cameron Homes Ltd | Persimmons Homes (West Midlands) Ltd |
| Caparo | Peter Clarke |
| Capita Symonds | Phoenix Beard |
| CaterQuotes Ltd | Plot Design Solutions |
| CBRE | Prince Warnes Properties |
| Centro | Priority Sites |
| Chetwynd Developments | Project Delivery Team Ltd |
| Chivers Commercial | Prologis |
| Church Lukas | Quod |
| Clarke Associates | Redrow Homes Ltd |
| Colliers CRE | Residential Developments Agent Society |
| Cooke Rudling | Revelan UK |
| Co-op | RICS |
| Cordwell Property | Robertson Brown Ltd |
| Countryside Properties Plc | Sainsbury's |
| CP Bigwood | Sanctuary Housing |
| Cranford Developments | Savills |
| Curry and Partners | Serco |
| Cushman & Wakefield | Shaylor Developments |
| Darby Keye | Shedkm |
| Darlaston Builders Merchants | Shop Agents Society |

| | |
|---|---|
| David Wilson Estates Land and Planning | Silk Plant Associates |
| David Wilson Partnership | SMC Corstorphine & Wright |
| Davis Langdon | Spring Urban Regeneration |
| Dorchester Land | Springhill Enterprises |
| Dowley Turner | SQW |
| Drolinvestments | St Francis Group |
| DTZ | ST Modwen |
| DVS | Status Associates Ltd |
| DWF | Stonebridge Homes |
| EC Harris | Streamline Construction Ltd |
| eTDE Contracting | Strutt & Parker |
| Firstplan | Tesco |
| Fraser Wood | The Accord Group |
| Freeth Cartwright | The British Land Corporation Ltd |
| Friel Homes LTD | The Retail Group |
| G Purchase Construction | Thomas Lister Chartered Surveyors |
| Galliford Try | Thomas Vale Construction |
| Gazeley | Threadneedle Property Investments |
| George Wimpey Midland Ltd | Topland Group |
| GH Stafford | Total Property Solutions (TPS) |
| Godwin Developments | Trebor Developments |
| Golby Aboyne | Tribal Consulting |
| Goold Estates | TSR Surveyors |
| Gora Developments | Upward Developments |
| GVA Grimley | Urban Splash |
| H&H Holman Properties Ltd | Utopia Clubs Ltd |
| Hansteen | Vail Williams |
| Harris Lamb | Vinci Construction |
| HBJ Gateley Wareing | Walsall College |
| HCA | Walsall Hospital NHS Trust |
| Henry Boot | Wardell Armstrong |
| idplanning | Watmos Community Homes |
| Ikon | West Bromwich Albion Football Club |
| Industrial Agency Society (Shedshifters) | West Midlands Police |
| Invested | West Register (Realisations) Ltd |
| Jessup Developments | Western Trading |
| JLL | WHG |
| JMP | William Davis Ltd |
| Jon Flowith and Partners | Williams Associates |
| Jones Lang LaSalle | Wilmott Dixon |
| JPE Aggregates | Woolley Pritchard |
| Kendrick Homes Ltd | WSP Development and Transportation |
| KGA Chartered Surveyors | WYG Environment |
| Kier Property | |
| King Sturge | |
| Kingston Commercial Property | |
| Kingswood Homes | |
| Knight Frank | |
| KR Hardy | |

## Landowners

| | |
|---|---|
| A Till | |
| B Grant | |
| Mr Jessup | Jessup Developments |
| C Wright | CaterQuotes Ltd |
| D Gault | |
| D Rajania | Walsall College |
| H Dabbs | |
| R Arnold | |
| J Jultla | Darlaston Builders Merchants |
| J Till | |
| P Holme | H&H Holman Properties limited |
| M Reed | British Land Company plc |
| M Smith | Leisure Automatics Properties |
| M Lord | Drol Investments |
| N Winsley | AEW UK |
| P Stafford | GH Stafford |
| P Khosla | |
| A Hill | |
| R McIsaac | AEW UK |
| R Kirby | Manor Hospital |
| R Smith | |
| P Kharabanda | |
| S Pope | Topland Group |
| S Buckley | HCA |
| S Singh | Western Trading |
| S Parkes | |
| L Yates | |
| Mr & Mrs Wollam | |
| Mr & Mrs Yates | |
| J Wilkes | |
| B Thomas | |
| H White | |