

**Land off Elm Tree Grove,
Twynyrodyn, Merthyr Tydfil**

**Assessment of the Significance
of the Impact of Development
on Historic Landscapes
(ASIDOHL2)**

Date: November 2022
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Client: Persimmon Homes Ltd
Project Code: RR0727
Pl. App. No.: 21/0358
GGAT Ref: MTY0204



**Red River
Archaeology**

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Rev Number	Description	Undertaken	Approved	Date
1.0	Client draft	ESJB	RM	18/11/2022

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1. EXECUTIVE SUMMARY

This report outlines the results of an Assessment of the Significance of the Impact of Development on Historic Landscape (ASIDOHL2), undertaken by Red River Archaeology on behalf of Persimmon Homes, on a proposed residential housing development on land off Elm Tree Grove, Twynnyrodyn, Merthyr Tydfil. The Site lies within the Merthyr Tydfil registered historic landscape (HLW (MGI) 2) which consists of 13 Historic Character Areas (HCAs), 2 of which, Cwm Blacks and Ysgubor Newydd, fall within the Site boundary. The western boundary of the Ironworks Landscape (IW016-018) also incorporates the Site.

The majority of the Site falls within the Cwm Blacks HCA, a large area of reclaimed 19th century mine workings which ceased production c.1898 and is currently primarily amenity scrubland and a large modern transport corridor. Approximately 16% of Cwm Blacks would be impacted by the development, however the results of the ASIDOHL2 have determined that the overall impact on this HCA would be Moderate.

Ysgubor Newydd is a mid-20th century housing estate built on former agricultural land, of which just over 2% would be impacted by the proposed development. The results of the ASIDOHL2 have determined that the overall impact on this HCA would be Very Slight.

The HCA of Clyn-Mil, Pencoedcae and Trebeddau abuts Cwm Blacks to the east and is bisected by the transport corridor. This area consists primarily of a mix of 18th/19th century agricultural and industrial land, however the portion which abuts the eastern Site boundary consists of 20th century housing. The results of the ASIDOHL2 have determined that proposed development would have a Slight indirect impact on this HCA. The remaining HCAs which make up the Merthyr Tydfil registered historic landscape would remain unaffected by the proposed development.

Overall, this ASIDOHL2 has calculated that the proposed development would have a Very Slight to Moderate impact on the HCAs. The majority of impacts are local with a Very Slight degree of national impact due to the contribution of the area to the Ironworking history of Wales. Overall, the historic meaning and coherence of the impacted HCAs, the Ironworks Landscape and the registered historic landscape of Merthyr Tydfil would remain comprehensible and legible.

CRYNODEB GWEITHREDOL

Mae'r adroddiad hwn yn amlinellu canlyniadau Asesiad Arwyddocâd Effaith Datblygu ar Dirwedd Hanesyddol (ASIDOHL2), a gafodd ei gynnal gan Red River Archaeology ar ran Persimmon Homes, ar ddatblygiad tai preswyl arfaethedig ar dir oddi ar Elm Tree Grove, Twynnyrodyn, Merthyr Tudful. Lleolir y Safle o fewn tirwedd hanesyddol gofrestredig Merthyr Tudful (HLW (MGI) 2) sy'n cynnwys 13 o Ardaloedd Nodweddion Hanesyddol (HCA), ac mae

dwyr o'r rhain, sef Cwmlacs ac Ysgubor Newydd, o fewn ffiniau'r Safle. Mae ffin orllewinol Tirwedd y Gweithfeydd Haeam (IW016-018) hefyd yn rhan o'r Safle.

Mae'r mwyafrif o'r Safle wedi'i leoli o fewn Ardal o Nodweddion Hanesyddol Cwmlacs, sy'n ardal enfawr o weithfeydd pyllau glo adferedig o'r 19^{eg} ganrif a roddodd y gorau i gynhyrchu tua 1898 ac sydd bellach yn goridor trafndiaeth modern enfawr a phrysgdir amwynder yn bennaf. Byddai tua 16% o Gwmlacs yn cael ei effeithio gan y datblygiad, ond er hynny, mae canlyniadau'r ASIDOHL2 yn dangos mai Canolig fydd yr effaith cyffredinol ar yr Ardal o Nodweddion Hanesyddol hon.

Stad o dai a gafodd ei hadeiladu yng nghanol yr 20fed ganrif ar hen dir amaethyddol yw Ysgubor Newydd. Ychydig dros 2% o'r ardal hon yn unig fyddai'n cael ei heffeithio gan y datblygiad arfaethedig. Mae canlyniadau'r ASIDOHL2 yn dangos mai Isel Iawn fydd yr effaith cyffredinol ar yr Ardal o Nodweddion Hanesyddol hon.

Mae Ardaloedd o Nodweddion Hanesyddol Clyn-Mil, Pencoedcae a Threbeddau yn ffinio ag ochr ddwyreiniol Cwmlacs ac yn cael ei dwyrannu gan y coridor trafndiaeth. Cymysgedd o dir amaethyddol a thir diwydiannol o'r 18^{fed}/19^{eg} ganrif sydd yn yr ardal hon yn bennaf, ond mae'r rhan sy'n ffinio ag ochr ddwyreiniol y Safle yn cynnwys tai o'r 20^{fed} ganrif. Mae canlyniadau'r ASIDOHL2 yn dangos mai Ychydig o effaith anuniongyrchol y byddai'r datblygiad arfaethedig yn ei chael ar yr Ardal o Nodweddion Hanesyddol hon. Ni fyddai'r Ardaloedd o Nodweddion Hanesyddol eraill sy'n creu tirwedd hanesyddol gofrestredig Merthyr Tudful yn cael eu heffeithio gan y datblygiad arfaethedig.

Ar y cyfan, mae'r ASIDOHL2 hwn wedi dod i'r casgliad mai amrywio o Ychydig Iawn i effaith Canolig fydd yr effaith a achosir gan y datblygiad arfaethedig. Yr ardal leol fydd yn gweld y mwyafrif o'r effeithiau gydag Ychydig Iawn o effaith cenedlaethol oherwydd cyfraniad yr ardal i hanes Gweithfeydd Dur Cymru. Yn gyffredinol, bydd cydlynad ac ystyr hanesyddol yr Ardaloedd o Nodweddion Hanesyddol, y Tirwedd Gweithfeydd Dur a thirwedd hanesyddol gofrestredig Merthyr Tudful a fydd yn cael eu heffeithio yn parhau'n gynhwysfawr a chlir.

2. INTRODUCTION

2.1 Project Background

2.1.1 Red River Archaeology were commissioned by Persimmon Homes to undertake an Assessment of the Significance of the Impact of Development on Historic Landscape (ASIDOHL2) on a proposed residential housing development on land off Elm Tree Grove, Twynnyrodyn, Merthyr Tydfil. This report outlines the results of the ASIDOHL2 using the guidance from the *Guide to Good Practice on using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process* (ASIDOHL2, Cadw 2007). The Site lies within the Merthyr Tydfil (HLW (MGI) 2) registered historic landscape which consists of 13 Historic Character Areas (HCAs) (Table 2.1; Figure 2).

2.1.2 The Site is at land off Elm Tree Grove, Twynnyrodyn, Merthyr Tydfil, centred on NGR SO 05940 05669 (Fig. 1). The HCAs are to be considered in relation to each other and within the landscape as part of the proposed planning application (Pl. App. No: 21/035) for a residential development. The Site lies on the eastern outskirts of Merthyr Tydfil, in an area of scrubland surrounded to the north, northeast and west by residential developments and to the south east by the A4060.

2.1.3 An archaeological deskbased assessment (Red River Archaeology 2019) was undertaken which identified that known heritage assets and Scheduled Ancient Monuments (former Merthyr Tramroad (GM573) to the west and the deserted iron mining village Ffos-y-fran (GM496) to the northeast) within the study area around the Site (1km radius). The Site also lies within the Ironworks Landscapes IW016-018 (Fig. 3) that cover the Dyffryn, Pentrebach and Plymouth Ironworks. An important heritage asset identified for this report, the former mid- to late-19th century brickworks (PRN 05239m), was located at the eastern boundary of Site which historic mapping shows included a rail track along part of the eastern boundary. The Site remained undeveloped through this period.

2.2 Site Location and Description

2.2.1 The Site comprises a single, irregularly shaped piece of scrubland in the east of Twynnyrodyn which is currently laid to grass and crossed with informal paths. The Site is bounded to the east by Elm Tree Grove leading to Oak Tree Rise, to the north by the rear of properties along Penheolferthyr, to the west by the rear gardens of properties along Wallhead Road and Aneurin Close, and to the south by further amenity land. The perimeter of Site is lined by mature trees and shrubs and the A4060 lies beyond the trees to the immediate southeast of site.

2.2.2 The local geology is South Wales Lower Coal Measures Formation – Mudstone, Siltstone and Sandstone formed during the Carboniferous Period (318 to 319 million years ago) in an environment previously dominated by swamps, estuaries and deltas. The superficial deposits

Till, Devensian-Diamicton formed during the Quaternary Period (up to 2 million years ago) in a local environment dominated by ice age conditions (British Geological Survey).

- 2.2.3 Local soils are recorded as seasonally wet acid loamy and clayey with impeded drainage (Soilscales).

2.3 Registered Historic Landscape of Merthyr Tydfil (HLW (MGI) 2)

- 2.3.1 Until the mid-18th century, Merthyr Tydfil was a small farming community. However, the presence of iron ore, limestone, timber, charcoal and plentiful water sources made the location ideal for ironworking, and during the Industrial Revolution Merthyr Tydfil became the centre of the South Wales iron industry (Ince 1993).
- 2.3.2 The Site falls within the Merthyr Tydfil Registered Historic Landscape HLW (MGI) 2 which retains the industrial landscape character which identified Merthyr Tydfil as the most important town in South Wales during the Industrial Revolution. Numerous relict features are still retained within the landscape, despite some intensive reclamation in areas, which reflect the significant exploitation of the mineral wealth within the surrounding hinterland during the 18th and 19th centuries. The remains include significant and pioneering former ironworks (Fig. 2) with associated coal mining, water power, transport links, terraced housing and Cyfarthfa Castle, built for the Crawshay family who were one of the most prominent owners of the ironworks (CADW).
- 2.3.3 The majority of the Site falls within the Historic Character Area of Cwm Blacks (Merthyr Tydfil 048) which is characterised as reclaimed 19th century coal workings. The area was used in the late 18th and early 19th century for extraction of ironstone and coal associated with the Plymouth Ironworks during the time it was owned by Anthony Hill. The Historic Landscape Characterisation records the area was the location of iron mines by 1813 and by 1826 including a network of tramroads and inclines connecting to the Plymouth Ironworks. By the 1st edition OS map the area had been intensively worked and mining seems to have ended, presumably with the closure of the Plymouth Ironworks, although numerous tracks were still extant within the study area reflective of the earlier tramroads (GGAT).
- 2.3.4 The western edge of Site lies within the Historic Character Area of Ysgubor Newydd (Merthyr Tydfil 037) which is characterised by 20th century council housing built over former agricultural land (GGAT).
- 2.3.5 The surrounding HCAs differ to east, north and west. Those areas west of Site are characterised as largely connected with the settlement and residential expansion of Merthyr Tydfil during the early Industrial and later periods, generally as ribbon development along the transport network followed by later in-fill development with varying degrees of historical integrity. To the east of Site, the landscapes are characterised as broadly more associated with the extraction

industries connected with the ironworks along with associated infrastructure and varying degrees of retained agriculture. To the north, the landscape was characterised as formerly industrial in nature, due to the influence of the nearby Dowlais Ironworks, and included a transport corridor and housing along with a reclaimed extractive landscape (GGAT).

Table 2.1. HLCAs within the 1km of the proposed development boundary

HLCA No.	Landscape Character Area Name	Distance from edge of Site Boundary and Direction
48	Cwm Blacks	Within
37	Ysgubor Newydd	Within (west)
22	Clyn-Mil, Pencoedcae and Trebeddau	0 (east) and 0.4 (south)
1	Merthyr Tydfil: Historic and Commercial Core	0 (north and northwest)
38	Mountain Hare	0 (northeast)
40	Incline Top	0.1 (north and west)
36	Thomas Town (East) and Penyard	0.2 (northwest)
21	Clyn-Mil and Wernlas Opencast Area	0.3 (southeast)
39	Ffos-y-fran	0.3 (east)
23	Clyn-Mil Workings	0.3 (east and southeast)
6	Merthyr Tydfil, South: Plymouth Street Area	0.3 (southwest)
19	Penydarren Tramroad Corridor Street Area	0.3 (west), 0.4 (south) and 0.5 (northwest)
78	Dowlais Great Tip, Trecatti, Trehir and Twyn-y-Waun	0.5 (northeast)

2.4 Ironworks Landscape

- 2.4.1 The Site lies within the Ironworks Landscapes IW016-18 which cover the Dyffryn, Pentrebach and Plymouth Ironworks respectively. These landscapes cover the core location of each Ironworks, and only part of the Plymouth Ironworks is included within the inner study area, however all three Ironworks were part of the same company, so they are all included as one entity. The areas which contained the former Dyffryn, Pentrebach and Plymouth Ironworks were reclaimed during the 1970s and contained no standing remains of the ironworks except the Merthyr Tramroad Tunnel, although it is thought the Dyffryn and Plymouth sites could hold buried remains.
- 2.4.2 Four ironworks were constructed in Merthyr Tydfil from the mid-18th century, the earliest being at Dowlais in 1759 (c.2km northeast of site) which manufactured wrought iron. The Plymouth Ironworks (c.550m southwest of site) was constructed in 1763, the Penydarren Ironworks (c.1km north of site) in 1784, and the Cyfarthfa Ironworks in 1765 (c.2.25km northwest site). The Plymouth Ironworks is of national and international significance due to pioneering development by Isaac Wilkinson, John Guest and Richard and Anthony Hill, and a later association with the first steam-powered rail journey by Richard Trevithick.

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- 2.4.3 The southwest of the study area incorporates the Historic Ironworks Landscapes 016-018 which cover the Dyffryn, Pentrebach and Plymouth Ironworks respectively. The Dyffryn and Pentrebach Ironworks were both established as subsidiaries to the Plymouth Ironworks in 1819 and 1803 respectively and so the landscapes associated with the three Ironworks are considered together. The Dyffryn Ironworks contained some of the largest furnaces at the time including two out of the only four horizontal engines used for furnace blowing in South Wales. The Pentrebach Ironworks was established as a purpose-built puddling and milling complex, and in 1869 consisted of seventy-four puddling furnaces, four forges and seven rolling mills. Due to the continued use of technologies which were becoming obsolete, the Dyffryn Ironworks became unviable in the 1880s and was dismantled in 1883 (GGAT 2005).
- 2.4.4 Dowlais continued to expand and by 1830 had become the largest ironworks in South Wales with twelve blast furnaces which produced 32,611 tons of iron (Ince 1993). As Dowlais expanded further a subsidiary ironworks, the Ivor Ironworks with four blast furnaces, was constructed nearby in 1839. By 1845 Dowlais was the largest ironworks in the world with eighteen blast furnaces. During the 1870s greater amounts of foreign ore were brought in to fuel the expansion of Dowlais, however this eventually led the owners to build a new works in Cardiff in 1891 to minimise transport costs. The two ironworks worked in tandem until the 1930s when iron production ceased at Dowlais (Ince 1993).
- 2.4.5 The Plymouth Ironworks mostly supplied the Cyfarthfa Ironworks with pig iron. Additional furnaces were built at the subsidiary site of Dyffryn Ironworks in 1819 which were some of the largest in South Wales. Both sites continued to expand during the 19th century and by 1862 eleven furnaces operated between the two sites. Output reduced during the 1860s and 1870s and in 1875 the Aberdare and Plymouth Ironworks Company collapsed. No buyer was found for the site and in 1883 the buildings were dismantled (Ince 1993).
- 2.4.6 The Penydarren Ironworks supplied Robert Stephenson between 1826-30 and maintained a stationary engine and locomotive of his within the works (the Eclipse which was used on the Penydarren Tramroad). The Ironworks was one of the first to begin supply of the wrought iron rail trade, in 1830, which fuelled the subsequent expansion of the ironworks to seven blast furnaces by 1845. The company appeared to have run into trouble during the mid-1850s and was put up for sale in 1859. It was bought by the Aberdare Iron Company in 1865 who undertook some repairs, but the furnaces were not re-lit. After the collapse of the company the plant was sold off in 1883 (Ince 1993).
- 2.4.7 The Cyfarthfa Ironworks expanded during the early 19th century to become the largest in the area (with seven blast furnaces in 1872), and initially manufactured cannon (later rail and merchant iron bar). A subsidiary ironworks was constructed at Ynysfach in 1801 to facilitate the expansion. Cyfarthfa Ironworks was slowly run down during 1874-5, and after a period of
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closure and modernisation the site reopened as a steel works in 1885. Production continued at the site until 1919 (Ince 1993).

- 2.4.8 The Scheduled Monument of Ffos-y-fran Deserted Iron Mining Village (GM496) lies c.900m east of Site. The village probably grew up as a squatter settlement on the common during the early 19th century to provide labour for the associated ironworks. The outlines of at least fifteen cottages and gardens remain around the quarry faces and former spoil tips. The village was recorded as abandoned in 1879 (CADW).
- 2.4.9 The Scheduled Monument of Merthyr Tramroad Tunnel (Trevithick's Tunnel) (GM573) is situated c.550m southwest of Site. The tramroad was built in 1793 to connect the ironworks of Merthyr Tydfil to the Glamorganshire Canal at Abercynon. The tunnel initially extended for c.110m underneath the charging area of the blast furnaces of the Plymouth Ironworks and was further extended south by another c.70m. The first passenger carrying locomotive, designed by Richard Trevithick, passed through the tunnel in 1804, although the damage caused by the locomotive to the tram-plates meant the use of the engine on the route was short-lived. The line eventually closed in c.1880 (CADW).

3. AIMS AND OBJECTIVES

3.1 Aims

3.1.1 The principal aim of this ASIDOHL2 assessment is to identify the nature of any direct and indirect affects to the surrounding HCAs in particular the Ironworks Landscapes IW016-018 and brickworks dating to the 19th century that may result from the proposed residential development of the Site. The aims are as follows:

- Summarise the documented archaeology of the study area, including the Historic Character Areas.
- Assess the likely direct physical impacts of the development on the Historic Character Landscape Areas affected.
- Assess the likely indirect impacts of the development on the Historic Character Areas affected.
- Include appropriate mapping of the above based on Ordnance Survey mapping.
- Assess the relative importance of the Historic Character Areas (or parts thereof) affected by the development.
- Assess the overall significance of the impact of the development on the Historic Landscape area.
- To make available to interested parties the results of the investigation subject to any confidentiality restrictions.

4. SCOPE AND METHODOLOGY OF WORKS

4.1 Methodology

- 4.1.1 The ASIDOHL2 will be undertaken in accordance with the Guide to Good Practice on Using the Register for Landscapes of Historic Interest in Wales in the Planning and Development Process (Cadw 2007). The study area for this assessment of the Historic Character Landscapes is a zone of 1km surrounding the Site (Fig. 1).
- 4.1.2 The principal source of information which were consulted to provide information about Historic Character Areas within the study area was the Historic Environment Record (HER) for southeast Wales maintained by GGAT.
- 4.1.3 A field visit to assess the Historic Character Areas within the study area was undertaken and a written record produced. This identified landscape features, significant historic or archaeological features, current land use, areas of disturbance, areas of potential colluvial or alluvial deposits etc. The setting of the site within the surrounding historic landscape was also noted.
- 4.1.4 The results of the archaeological work will form the basis of a full archive to professional standards, in accordance with current Historic England guidelines (English Heritage, 2008; Historic England, 2015), and comply with RCAHMW guidelines of Wales (RCAHMW, 2015), the Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) (2018) and the ADS digital records (archaeologydataservice.ac.uk/advice).
- 4.1.5 A photographic record was made, which consisted of digital photographs taken at high resolution (12 megapixels and above). The photographic record includes photographs of Historic Character Areas, appropriate groups of features and structures, and any identified potential areas of impact.
- 4.1.6 Digital archives will be submitted to RCAHMW. The project archive, which includes photographs, plans and site notes, will be deposited with the relevant Museum or other agreed body. It will be integrated into the archive of any subsequent fieldwork.
- 4.1.7 A copy of the final report will be submitted to the regional HER in accordance with the guidelines set out in the Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) (2018).

4.2 ASIDOHL2: Five Stages

- 4.2.1 The ASIDOHL2 guidance breaks down the Register for Landscapes of Historic Interest in Wales in the Planning and Development Stage Assessments Process into 5 stages:
- Stage 1 Compilation of an introduction of essential, contextual information

- Stage 2 Description and quantification of the direct, physical impacts of development on the Historic Character Area(s) affected.
- Stage 3 Description and quantification of the indirect impacts of development on the Historic Character Area(s) affected.
- Stage 4 Evaluation of the relative importance of the Historic Character Area(s) (or part(s) thereof) directly and/or indirectly affected by development in relation to:
- (a) the whole of the Historic Character Area(s) concerned, and/or
 - (b) the whole of the historic landscape area on the Register, followed by
 - (c) an evaluation of the relative importance of the Historic Character Area(s) concerned in the national context, and a determination of the average overall value of all the Historic Character Areas (or parts thereof) affected.
- Stage 5 Assessment of the overall significance of impact of development, and the effects that altering the Historic Character Area(s) concerned has on the whole of the historic landscape area on the Register.

4.3 Stage 1: Contextual Information

4.3.1 Regarding this assessment, this section will incorporate the essential contextual information concerning the Site and development including:

- The location of the Site and its boundaries including a map (Fig 1), the HCAs the development may affect including on the Site and those surrounding up to a 1km radius (Fig 2) and a brief description of the development planned;
- Mention and summary of related assessments, in this case the archaeological desk based Assessment (ADBA) completed in 2019 (Red River Archaeology);
- An outline of the planning policies relevant including Cadw guidance, Welsh Assembly government planning guidance and any Local Development Plans etc.;
- An explanation of which elements of the ASIDOHL2 stages were undertaken and why, this assessment aims to mainly focus on HCAs in relation to the proposed development within a 1km radius;
- The HCAs affected along with their descriptions with other supporting maps, photographs will either be referred to in text and included in the appendices as plates;

4.4 Stage 2: Description and quantification of the direct, physical impacts of development on the Historic Character Area(s) affected

4.4.1 This section will describe and quantify the direct impact the development will have on HCAs in the proposal area. For the purposes of this assessment a map of the HCAs around will also be provided (Fig 2), the other elements within the proposal area (Scheduled Monuments, Listed Buildings, Conservation Areas, Historic Environment Records (including PRN numbers) etc.)

are all addressed in the ADBA (Red River Archaeology 2019). The quantification of direct, physical impacts can be described in three ways from the ASIDOHL2 guidance:

In absolute terms

- 4.4.2 A percentage of the HCA which will be lost due to the development will be calculated;

In relative terms

- 4.4.3 A percentage of any known elements, such as archaeological features (ditches, spreads etc.), which will be permanently lost due to the development will be calculated;
- 4.4.4 Both absolute and relative terms will be quantified as follows (including scores):

Table 4.1. Scoring on the direct, physical magnitude of impact

Percentage Affected	Level of direct, physical impact	Score
75-100%	Very Severe	6
50-74%	Severe	5
30-49%	Considerable	4
15-29%	Moderate	3
5-14%	Slight	2
0-4%	Very Slight	1

- 4.4.5 There are then five categories which are used to assess the element (eg. HCAs, features etc.) importance, these are (including scores):

Table 4.2. Scoring on the Site category assigned

Site Category	Score
Category A Sites and Monuments of National Importance	4
Category B Sites and Monuments of Regional Importance	3
Category C Sites / Features of Local Importance	2
Category D Minor and Damaged Sites / Features	1
Category U Sites / Features Needing Further Investigation	1

In landscape terms

- 4.4.6 This section means to take into consideration a HCAs intrinsic importance, thereby bringing together all of the elements, which make up the character of the HCA as a whole. This creates a measure of the extrinsic and intrinsic character of the HCA and how at a landscape level the proposed development may affect it in its entirety. There are two groupings, those of 'Group Value' elements with similar morphology, chronology and function. Whereas those with

‘Extrinsic Importance’ are elements which do not have the aforementioned characteristics in common however do share a past clear interconnectivity. The extrinsic interconnectivity should bare the biggest weight on a landscape value.

- 4.4.7 This assessment comprises two parts. In the first part the value or importance of each feature or characteristic is assessed in terms of the contribution it makes to the area as a whole. This is done in accordance with the following scale:

Table 4.3. Contribution an element makes on an area as a whole

Landscape Value	Score
Very High	6
High	5
Considerate	4
Medium	3
Low	2
Very Low	1

- 4.4.8 Following this definition of the value of each feature, the extent to which these features would be affected by the development is also assessed on the following scale:

Table 4.4. Scoring on the landscape value effect

Landscape Value Effect	Score
Lost	6
Substantially Reduced	5
Considerably Reduced	4
Moderately Reduced	3
Slightly Reduced	2
Very Slightly Reduced	1

- 4.4.9 The scores for each of the abovementioned parts (Category + Magnitude + Landscape value + Landscape Value Effect) are added together to produce a combined total and then divided by the number of parts to produce an average. This average score is then added to the absolute impact score. The final number produced is thereby the overall magnitude of direct, physical impact on the HCAs. These are then grade as follows:

Table 4.5. Overall magnitude of direct, physical impacts

Overall Score	Impact
24–28	Very Severe
19–23	Severe
14–18	Considerable
9–13	Moderate
4–8	Slight
0–3	Very Slight

4.5 Stage 3: Assessment of indirect impacts of developments

- 4.5.1 This section addresses the potential impact the development will have on HCAs in the surrounding area. This includes the fragmentation of the HCA, visual intrusion and

encroachment which could potentially devalue the historic landscape. This section aims to describe and quantify the indirect impacts of the development on the HCAs surrounding the site, these can be separated as either physical or visual.

- 4.5.2 There are two factors to consider when reviewing the setting surrounding the proposed development, the first is of the immediate, thereby closest setting, the second is the wider environment. These two impacts will be scored using the following:

Table 4.6. Magnitude of indirect, physical and visual impact scoring

Grading	Score
Very Severe	6
Severe	5
Fairly Severe	4
Moderate	3
Slight	2
Very Slight	1

Indirect, physical impacts

- 4.5.3 Within a HCA these can occur as a result of:
- The proposed development causing increased risk of disturbance, erosion, flooding, dereliction, reduced access, destruction of habitats, decay, exposure etc.
 - The fragmentation of a HCA causing gaps between features or elements within the landscape such as field systems, historic hedgerows etc.
 - Breaks in land which can cause a change in any historic use, additionally if access is affected the use of the land for the public may be impaired or removed reducing its amenity use.
- 4.5.4 Scores for each of the abovementioned parts (Category + Magnitude) are added together to produce a combined total and then divided by the number of parts to produce an average. This average score is then added to the absolute impact score. The final number produced is thereby the overall magnitude of indirect impacts on the HCAs.

Indirect (non-physical) visual impacts

- 4.5.5 A combination of factors due to the development can cause indirect impacts on HCAs, only those which are relevant to this assessment will be mentioned and quantified, examples are:
- The developments impact on any HCA which can be visually seen, such as key historic viewpoints and any essential setting which may affect the Sites original character and function including the publics appreciation of the areas historic character.
 - Visual obstruction of linked elements within the landscape, such as the defensive positions of Iron Age hillforts etc.
 - Visual connections that would alter the impact of the landscape and take the historic character out of context.

- Visual impact of the development on any HCAs form and appearance.

4.5.6 This section aims to assess the visual intrusion or encroachment on any HCAs. Similar to Stage 2, this section aims to take into consideration a HCAs intrinsic importance, thereby within the study area bringing together all of the elements which make up the settings of the HCAs in the study area including magnitude of impact and scores (See Stage 2).

4.5.7 Scores for each of the abovementioned parts (Category + Magnitude) are added together to produce a combined total and then divided by the number of parts to produce an average. This average score is then added to the absolute impact score. The final number produced is thereby the overall magnitude of indirect impacts on the HCAs.

Table 4.6. Overall magnitude of indirect impacts

Score	Grading
24–28	Very Severe
19–23	Severe
14–18	Considerable
9–13	Moderate
4–8	Slight
0–3	Very Slight

4.6 Stage 4: Evaluation of the relative importance of the Historic Character Area(s) (or part(s) thereof) directly and/or indirectly affected by development in relation to

4.6.1 This section aims to evaluate the relative importance of the HCA affected by the development both directly or indirectly, in relation to:

- The whole of the HCA affected by the development,
- The whole of the HCA on the Register,
- Evaluating of the national relevance of the HCA.

4.6.2 The level of evaluation undertaken in this section depends wholly on the scale of the development and its relation to the HCAs surrounding.

4.6.3 These considerations correspond to items a), b) and c) in the ASIDOHL guidance. The criteria for determining relative importance is as follows:

4.6.4 **Rarity** - in terms of period or date, and as a component of the landscape. This should be expressed in relation to what survives today, since elements of a once common landscape may now be rare;

Table 4.7. Rarity assessment levels and descriptions

Level	Description
Very High	Sole survivor of its type in the landscape;
High	Only two or three similar historic elements in the landscape;
Moderate	Fewer than five broadly similar elements in the landscape;
Low	More than five broadly similar elements in the landscape;

None	Commonplace throughout the landscape.
------	---------------------------------------

- 4.6.5 **Representativeness** - this should be considered because a landscape that is common can still be of national importance if, in the light of other criteria, it contains a particularly representative range of elements;

Table 4.8. Representativeness assessment levels and descriptions

Level	Description
Very High	Contains all the elements that characterize the landscape;
High	Contains most of the elements that characterize the landscape;
Moderate	Contains about half of the elements that characterize the landscape;
Low	Contains some of the elements that characterize the landscape;
None	Sole example of the element and, therefore, not representative.

- 4.6.6 **Documentation** - the survival of the documentation that increases our understanding of the landscape would raise its importance. Available documentation is summarised in the archaeological desk based assessment (Red River Archaeology 2019);

Table 4.9. Documentation assessment levels and descriptions

Level	Description
Very High	Complete documentary record, or exceptionally important sources available;
High	A considerable quantity of relevant material, or highly important sources available;
Moderate	Some relevant material, or moderately important sources available;
Low	Little relevant material, or only modestly important sources available;
None	No relevant material available.

- 4.6.7 **Group value** - this relates to diversity (or similarity) of elements including the structural and functional coherence, 'group value' is largely addressed in Stage 2. Note that elements that constitute groups are more likely to be labelled under the Register's first and second criteria ('Intensively levelled or extensively remodelled' or 'Period' landscapes);

Table 4.10. Group Value assessment levels and descriptions

Level	Description
Very High	Contains six or more linked elements or groups;
High	Contains four or five linked elements or groups;
Moderate	Contains three or four linked elements or groups;
Low	Contains two or three linked elements or groups;
None	i.e. a single or any number of unlinked elements or groups.

- 4.6.8 **Survival** - relates to the quantitatively degree of survival or elements within the landscape;

Table 4.11. Survival assessment levels and descriptions

Level	Description
Very Good	More than 80% of elements surviving;
Good	Between 60% and 79% of elements surviving;
Moderate	Between 40% and 59% of elements surviving;
Fair	Between 20% and 39% of elements surviving;
Poor	Under 20% of elements surviving.

4.6.9 **Condition** - relates to the condition of elements in the landscape;

Table 4.12. Condition assessment levels and descriptions

Level	Description
Very Good	Elements surviving in very good condition for their class;
Good	Elements surviving in good or above average condition for their class;
Moderate	Elements surviving in moderate or average condition for their class;
Fair	Elements surviving in fair or below average condition for their class;
Poor	Elements surviving in poor condition for their class.

4.6.10 **Coherence** - relates to how well the historic meaning and significance of the landscape is articulated by the historic themes (that is the historical processes and patterns that have created the individual elements within it), including whether the landscape is still used in its original function;

Table 4.13. Coherence assessment levels and descriptions

Level	Description
Very High	Dominant historic theme(s) present — landscape retaining its original function;
High	Dominant historic theme(s) present — landscape of high articulation, but original function has ceased;
Moderate	Historic theme(s) present, — landscape of moderate articulation;
Low	Historic theme(s) present, but weak — landscape of low articulation;
Very Low	Historic theme(s) suppressed by later changes.

4.6.11 **Integrity** - the importance of a landscape may be enhanced by its integrity that relates to the survival of its original character or form;

Table 4.14. Integrity assessment levels and descriptions

Level	Description
Very High	Elements retaining their original character, highly visible and easily understood;
High	Elements retaining much of their original character, visible and fairly easily understood;
Moderate	Elements retaining some of their original character, visible, but not easily understood;
Low	Elements not readily visible and difficult to understand;
Very Low	Elements hardly visible and very difficult to understand.

4.6.12 **Potential** - relates to the potential within the landscape for future historic landscape analysis;

Table 4.15. Potential assessment levels and descriptions

Level	Description
Very High	Wide-ranging scope for future historic landscape study and analysis;
High	Considerable scope for future historic landscape study and analysis;
Moderate	Some scope for future historic landscape study and analysis;
Low	Little scope for future historic landscape study and analysis;
Very Low	Very little scope for future historic landscape study and analysis.

4.6.13 **Amenity** - relates to the potential value of elements to be developed as a public educational and recreational amenity;

Table 4.16. Amenity assessment levels and descriptions

Level	Description
Very High	Wide-ranging scope for elements to be developed as a public educational and recreational amenity;
High	Considerable scope for elements to be developed as a public educational and recreational amenity;
Moderate	Some scope for elements to be developed as a public educational and recreational amenity;
Low	Little scope for elements to be developed as a public educational and recreational amenity;
Very Low	Very little scope for elements to be developed as a public educational and recreational amenity.

4.6.14 **Associations** - a landscape might have important historic associations with particular cultural figures, movements, events or institutions.

Table 4.17. Association assessment levels and descriptions

Level	Description
Very High	a highly significant, authentic and nationally well-known association(s);
High	a significant, authentic and regionally well known association(s);
Moderate	an authentic, but less significant, perhaps locally well-known association(s);
Low	unauthenticated or a little known association(s);
Very Low	no known association(s).

4.6.15 Criteria values in steps (a), (b) and (c) should be scored as follows:

Table 4.18. Evaluation Scores

Criterion Value	Scores
Very High/Very Good	5
High/Good	4
Moderate/Medium	3

Low	2
Very Low/None	1

- 4.6.16 The scores are then aggregated and then converted to a % value to quantify the overall importance of each of the HLCAs according to the following scale:

Table 4.19. Overall importance

Level	Scale (%)
Very High	80-100
High	60-79
Considerable	40-59
Moderate	20-39
Low	5-19
Very Low	1-4

- 4.7 Stage 5: Assessment of the overall significance of impact of development, and the effects that altering the Historic Character Area(s) concerned has on the whole of the historic landscape area on the Register**

- 4.7.1 Stage 5 aims to combine the results from all the previous stages to produce an overall assessment of the significance of effects and impact on the HCAs as a full historic landscape. This is based on a consideration of:

- Impact of Development (Stages 2 and 3);
- Value of Character Areas (Stage 4);
- Reduction of Value of the Historic Landscape Area.

- 4.7.2 In each the value is scored according to the following scale:

Table 4.20. Value scoring

Level	Score
Very High	9 or 10
High	7 or 8
Medium	4, 5 or 6
Low	2 or 3
Very Low	1

- 4.7.3 The assessment scores from Stages 2 to 4 are used only as a guide to professional judgement at this stage referring to the averages and 'Highs' and 'Lows'. The score for the overall significance of impact of development on the historic landscape area, as calculated for each HCA listed, is graded as follows:

Table 4.21. Overall significant impact

Grading	Score
Very Severe	26-30
Severe	21-25
Fairly Severe	16-20
Moderate	10-15

Slight	4-9
Very Slight	0-3

5. STAGE 1: CONTEXTUAL INFORMATION

5.1 Proposed Development

- 5.1.1 Persimmon Homes Residential development and associated engineering, access and landscaping works at the Land off Elm Tree Grove, Twynnyrodyn, Merthyr Tydfil (Planning Application Number.: 21/0358) (Fig 1).

5.2 Legislation and Policy

- 5.2.1 The results of the archaeological work form the basis of a full archive to professional standards, in accordance with current Historic England guidelines (English Heritage, 2008; Historic England, 2015), and comply with RCAHMS guidelines of Wales (RCAHMS, 2015), the Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) (2018) and the ADS digital records (archaeologydataservice.ac.uk/advice).

5.3 Map Regression

- 5.3.1 Map regressions show the majority of Site itself appears to have been otherwise largely undeveloped during the Post-Medieval industrial development of the area, and the industrial waste which still covers the area suggests it may have been used as waste ground from that time.
- 5.3.2 See section 5.9 Cartographic Evidence in the archaeological desk based assessment for details on the map regression of the Site including the maps themselves (Red River Archaeology 2019).

5.4 NWR Consultation (Red River Archaeology 2019)

- 5.4.1 Landmaps compiled by Natural Resources Wales describe the proposed development site as unbuilt land, derelict or waste ground, with land being currently unused or reclaimed (MRTHRVS876). The site also lies within the northern end of the Taff Valley Corridor classified as built environment with settlement, processing, communications and reclaimed land. This is characterised as the main transport and communication corridor which links Merthyr to Cardiff and Barry. Development is generally later industrial settlement (post-1850s) associated with coal extraction, with some fieldscapes at the valley bottom (MRTHRHL012).

5.5 Site Visit (Plates 1-12)

- 5.5.1 The site visit was undertaken 10 October 2022, which confirmed the land as a relatively flat parcel with mature trees surrounding as identified in the archaeological desk based assessment (Red River Archaeology 2019). None of the assets identified in the HER are evident on foot (Brickworks, Stone or Airshaft) (Red River Archaeology 2019). Much of the landscape is covered with industrial material, such as, coal, slate and broken masonry underlying sparse areas of grass, indicative of the earlier use of the Site for mining activity. A dense patch of

vegetation is present towards the centre of the Site. It is evident that there are housing developments on the east and western sides of the site with the historic core to the north. The land opens up to the south looking down Cwm Blacks valley. A small valley to the west separates the Site from an area of modern housing. Within the community of Twynnyrodyn itself the School building located on the 1922 OS maps has been removed and replaced with housing known as Clos Y Ysgol. The Methodist church located on James St. is still present, though it appears to have a different function.

5.6 Confidence Level

- 5.6.1 The assessment was put together using the information provided from the Historic Environment Record (HER) for South Wales maintained by the Glamorgan Gwent Archaeological Trust (GGAT). The primary source of data on the HCAs was obtained from the character descriptions undertaken by GGAT. Further information on assets, non-designated features, Scheduled Monuments for land within the vicinity of the Proposed Development was also obtained from the Historic Environment Record (HER), maintained by GGAT and sources held at the National Monuments Record (NMR).

6. STAGE 2: ASSESSMENT OF THE DIRECT PHYSICAL IMPACTS

6.1 Affected Historic Character Areas (HCAs)

6.1.1 The Site falls within the Registered Historic Landscape of Merthyr Tydfil (HLW (MGI) 2) which has been assessed by the Glamorgan-Gwent Archaeological Trust (GGAT). In total 13 HCAs have been identified in the 1km study area for the proposed Site. There are 2 HCAs that will be directly physically affected by the development proposed on the Site, these are:

- Cwm Blacks (HCA 048)
- Ysgubor Newydd (HCA 037)

6.1.2 The Site also lies within the Ironworks Landscapes (IW016-18) of the Dyffryn, Pentrebach and Plymouth Ironworks.

6.1.3 The detailed results of Stage 2 are presented in Appendix 1.

6.2 Cwm Blacks (048)

6.2.1 The majority of the Site lies upon Cwm Blacks HCA within the RHL of Merthyr Tydfil (HLW (MGI) 2). The characterisation undertaken by GGAT describes this HCA as:

'A reclaimed area of intensive 19th century coal workings associated with the Plymouth Iron Works. The area currently functions as a transport corridor for the A4060(T).'

'The historic landscape area of Cwm Blacks comprises a reclaimed area of intensive late 18th/early 19th century ironstone and coal workings associated with Anthony Hill and the Plymouth Iron Company.'

'Cartographic evidence of 1813 indicated that Iron Mines were situated just to the north within the Cwm Blacks/Pencoedcae area. By 1826, a network of tramroads and inclines, including the main Clyn Mil/Coedcae Incline System, had been established throughout the area connecting the Plymouth Iron Works with various workings both within and beyond the area; these included ironstone levels and patch workings within Cwm Blacks. The area was part of the Clyn-Mil holding of the estate of Robert Henry Clive, leased to Anthony Hill in 1850.'

'The area had been intensively worked by the publication of the 1875 6-inch OS map, which indicated ironstone and coal levels, at least one shaft, various small 'lobed' and linear tips, and reservoirs and leats arranged along the eastern bank of Nant Cwm Blacks. The Clyn Mil Incline and various tramroads connecting the ironstone/coal workings of the area and the Plymouth Ironworks were also detailed in 1875; numerous other tracks indicated, might suggest that a once far more extensive network of tramways and haul roads previously served the area. The cartographic evidence indicated that mining activity had all but ended in the area between 1875 and 1898, probably with the closure of the Plymouth Ironworks in 1880. The area was subsequently subject to reclamation and road building during the last quarter of the 20th century.' (GGAT 2022)

Absolute direct impact

- 6.2.2 There are no Scheduled Monuments or Listed buildings within the Site and the HCA appears to have been largely used as waste ground since the mid-19th century.
- 6.2.3 Only 1 heritage asset is recorded within the HER, labelled the Brick Works and located at the eastern boundary of Site in Cwm Black HCA. This was identified as being present on the 1st edition OS map surveyed between 1868-75, but not on either the earlier 1850 Tithe map or the later 2nd edition OS map surveyed in 1897-8, so would have been extant for a maximum of 50 years, but likely fewer (Red River Archaeology 2019).
- 6.2.4 A total of 16.6% of Cwm Blacks (048) would be affected through the development of the Site, with the absolute impact anticipated as being Moderate.

Relative direct impact

- 6.2.5 The proposed development on Site may only affect 2 assets within the wider Cwm Blacks HCA. These were identified in the archaeological desk based assessment (Red River Archaeology 2019) and may only be affected due to their close proximity to site:
- Stone 2 (PRN 05245m) was recorded in the HER data as being depicted on the 1st, 2nd and 3rd edition OS maps just south of Site within Cwm Blacks, however only the 3rd edition depicts a stone in this location which is continued in the 1946 and 1951 publication. No stones were observed at any of these locations during the site visit.
 - Airshaft 3 (PRN 05249m) to the south of site was also only visible on the 1st edition OS map. A further airshaft to the east of Site between the brickworks is depicted on the 1st edition OS map and labelled as an 'old shaft' on the 1922, 1946 and 1951 OS maps, but was not recorded in the HER.
- 6.2.6 The proposed residential development would result in the loss of any below ground archaeological remains. The archaeological desk based assessment (Morgan 2019) identified the Site as having a low potential of encountering any buried archaeological remains apart from any which may be associated with the former extraction works or the former brickworks located at the eastern boundary of Site in the late 19th century. The extraction works are likely to have heavily disturbed any earlier archaeological remains which may have been present on Site. Furthermore, the location of the Site surrounded by 20th century development has created a disconnect with other surviving elements of the Ironwork Landscapes, although the Site does contribute in a small way to the overall industrial landscape.

Landscape Terms

- 6.2.7 Within the study area which defines the character of Cwm Blacks HCA none of these assets will affect the landscape as these elements no longer exist according to the OS maps and site

visit. However, the brickworks, while not observed during the site visit or marked on OS mapping, could still have extant below ground remains.

Overall Conclusion

- 6.2.8 By applying the calculations stipulated in the ASIDOHL2 requirements, the direct physical impacts on the Cwm Blacks (HLCA 048) results in a score of 10 which equates to a Moderate impact. The breakdown of these scores is set out in Appendix 1.

6.3 Ysgubor Newydd (037)

- 6.3.1 The proposed development overlaps a very small portion of the Ysgubor Newydd HCA 037 within the RHL of Merthyr Tydfil (HLW (MGI) 2). The characterisation describes this HLCA as:

'A 20th century council housing estate with social and domestic housing, using a variety of materials including prefabricated reinforced concrete.'

'The historic landscape area of Ysgubor Newydd comprises a mid-20th century council housing estate development built over former agricultural land belonging to one William Davies during the mid-19th century.' (GGAT 2022)

Absolute direct impact

- 6.3.2 There are no Scheduled Monuments or Listed buildings within the boundaries of the development. There are no heritage assets or elements within this area of the development.
- 6.3.3 A total of 2.1% of Ysgubor Newydd (037) would be affected through the development of the Site, with the absolute impact anticipated as being Very Slight.

Relative Direct Impact

- 6.3.4 There are no Scheduled Monuments or Listed buildings within the Ysgubor Newydd HCA overall. The proposed development on Site may only affect 2 assets within Ysgubor Newydd, identified in the archaeological desk based assessment (Red River Archaeology 2019). These may only be affected due to their relatively close proximity to site:
- The Penuel Calvinistic Methodist Chapel was located northwest of the school on OS mapping from the 1st edition onwards. A date plaque in the façade records the construction as 1860. The building has been converted to residential dwellings.
 - The Twynnyrodyn Junior School is also present to the west of site which was depicted from the 1st edition OS map until 1951. The school was subsequently demolished in the early 21st century and the site redeveloped.

Landscape Terms

- 6.3.5 There is nothing of note within this HCA or the small percentage which the development covers which will affect the HCA in landscape terms.

Overall Conclusion

- 6.3.6 Within the study area which defines the character of Ysgubor Newydd there are 2 heritage assets in relative proximity to the Site, however one has been redeveloped into modern housing and the other demolished. Therefore, no heritage assets will be directly physically impacted by the development on absolute, relative or landscape scale. By applying the calculations stipulated in the ASIDOHL2 requirements, the direct physical impacts on the Ysgubor Newydd (HLCA 037) results in a score of 5 which equates to a Slight impact. The breakdown of these scores is set out in Appendix 1.

7. STAGE 3: ASSESSMENT OF THE INDIRECT IMPACTS OF DEVELOPMENT

7.1 Merthyr Tydfil Historic Landscape Summary

- 7.1.1 The Taff Valley consists of rolling hills and ridges, within this valley Merthyr Tydfil sits in a natural basin. The town underwent rapid expansion due to the exploitation of the surrounding iron and coal seams from 1850s onwards. The modern landscape has retained a portion of its original industrial landscape however land reclamation has taken place in the area along with the construction of modern housing developments.
- 7.1.2 Within the 1km study area surrounding the site there are 13 HCAs in total. Two which would be directly impacted by the development have already been discussed in Stage 2 (Cwm Blacks 048; Ysgubor Newydd 037). The other 11 HCAs are detailed in the Introduction section of this document Table 2.1.
- 7.1.3 The results of Stage 3 are detailed in Appendix 2.
- 7.1.4 The proposed development is that of a residential development along with associated engineering, access and landscaping. The proposed development does not include construction of any building above two storey height. As stated in the archaeological desk based assessment (Red River Archaeology 2019) that while located on the periphery of the historic Ironworks landscapes (IW016-18), the Site is enclosed to the north by modern development and mature trees, and the A4060 dual carriageway has created a visual separation to the east.
- 7.1.5 Therefore, it has been considered unnecessary in Stage 3 to quantify the indirect impacts on any HCAs that do not border or are not in immediate proximity to the Site as these scores would not be representative of any impact made by the proposed development on the Historic Landscape. The HCAs that maybe indirectly affected by the development are as follows:
- Cwm Blacks (HCA 048);
 - Ysgubor Newydd (HCA 037);
 - Clyn-Mil, Pencoedcae and Trebeddau (HLCA 022);
 - Merthyr Tydfil: Historic and Commercial Core (HCA 001);
 - Mountain Hare (HCA 038);
 - Incline Top (HCA 040).

7.2 Cwm Blacks (HCA 048)

- 7.2.1 See Stage 2 Section 6.2.1 for full description of Cwm Blacks HCA. The principal historic landscape character elements are:
- A reclaimed area of 18th-19th century coal workings;
 - Urban green space;

- Modern transport corridor for the A4060(T);
- Industrial waste which still covers the area which suggests it may have been used as waste ground from the Post-Medieval period;
- A number of tracks are indicated which suggests that a once far more extensive network of tramways and haul roads previously served the area.

7.2.2 Cwm Blacks is characterised as reclaimed 18th to early 19th century ironstone and coal workings. Topographically the Site was depicted on the 1st Edition OS map as more varied than the earlier Tithe map would suggest, with the centre-east of Site around the brickworks being a level plateau crossed with paths. This drops off to the south of Site towards the Cwm Blacks stream and also to the west and northwest which still retained some woodland. Apart from the other side of the Cwm Blacks valley to the south of Site and Ironstones Levels to the southeast, the land in the immediate area around Site appeared to remain farmland up until Post-Medieval to modern developments began to become established.

Indirect Physical Impacts

- 7.2.3 The proposed development on the northern end of Cwm Blacks HCA would indirectly physically impact the area as whole, where a section of land would be affected which is associated with the nationally important Ironworking landscape of the Ironstones Levels. However, the majority of land across Cwm Blacks has been determined as unbuilt land, derelict or waste ground, with land being currently unused or reclaimed (MRTHRVS876) (Landmaps – Natural Resources Wales).
- 7.2.4 The Cwm Blacks area of ironstone and coal levels, includes at least one shaft, various small 'lobed' and linear tips, and reservoirs and least. The development would encroach on the northern portion of Cwm Blacks within the Ironworks Landscapes IW016-018 that cover the Dyffryn, Pentrebach and Plymouth Ironworks.
- 7.2.5 No further indirect physical impacts are anticipated.

Indirect Visual Impacts

- 7.2.6 The proposed development Site is located on the southeast outskirts of Merthyr Tydfil within an area of largely 20th century residential development and is bounded to the southeast by a major trunk road which divides the Site from the landscapes to the east. The proposed development is located at a high point of Cwm Blacks with the valley sloping towards the south.
- 7.2.7 There are no listed buildings across Cwm Blacks HCA and no Scheduled Monuments or heritage assets that will be visually affected by the development.

Overall Conclusions

7.2.8 As set out in Table Appendix 2 the indirect impacts on Cwm Blacks HLCA 048 score was 3 meaning the impact would be Very Slight in indirect physical and visual terms.

7.3 Ysgubor Newydd (HCA 037)

7.3.1 See Stage 2 Section 6.3.1 for full description of Ysgubor Newydd HCA (Plate 4). The principal historic landscape character elements are:

- 20th century housing estate;
- Former agricultural land.

7.3.2 The two assets recorded in the HER of any note within Ysgubor Newydd HCA were discussed above in Stage 2 (para 6.3.4). These are no longer extant and have been replaced by housing.

Indirect Physical Impacts

7.3.3 No indirect physical impacts are anticipated.

Indirect Visual Impacts

7.3.4 There are no listed buildings across Ysgubor Newydd HCA and no Scheduled Monuments or heritage assets that will be visually affected by the development.

Overall Conclusions

7.3.5 There would be no indirect, physical or visual impacts predicted to occur as a result of the proposed development. This is due to the modern date of Ysgubor Newydd HCA, the lack of historic features or heritage assets and the residential nature of the proposed development. This stage of the assessment has therefore been omitted for Ysgubor Newydd HCA.

7.4 Clyn-Mil, Pencoedcae and Trebeddau (HCA 022)

7.4.1 This HCA is bisected by Cwm Blacks including the corridor of the A4060. A small portion of this HCA abuts up to the eastern boundary of the Site. This HCA comprises a mix of 18th/19th century agricultural and industrial land (Plate 2 and Plate 9). The land was utilised for coal and iron ore workings, with associated transport and water management features. A degree of reclamation has occurred however there is the potential for the survival of features associated with transport, the principal characteristics of this HCA are:

- Agricultural land;
- Late 18th/19th century coal and iron working;
- Transport network including tramways associated with mineral extraction;
- Water management features
- Limited land reclamation;
- Post-Medieval farmland.

- 7.4.2 The area is marked in the previous 18th century estate maps as having been part of the St Fagans estate, this was later the Plymouth Iron Company. The cartographic evidence of this HCA mentioned the farmstead of Lower Clyn-Mil which appeared to have had an industrial farm set up (Red River Archaeology 2019) This farm no longer exists.
- 7.4.3 Like the rest of the surrounding area around the Site, this HCA makes up a part of the Ironworks Landscapes (IW016-18). The minerals found in the HCA were exploited during the 18th century during the founding of the Plymouth Ironworks. Various iron mines and collieries are documented throughout this wider landscape these subsequently required transport links which was primarily achieved through a network of tramways. This HCA contained two iron mines of note: Clyn-Mil No. 1 and New Pits near Cwm Blacks which were connected by these tramways. These mines were in operation in the mid to late 19th century along with a massive tip connected by tramroad to Clyn-Mil No. 1. These mines have ceased operation by the beginning of the 1900s and their state is currently unknown.

Indirect Physical Impacts

- 7.4.4 The proposed development would contribute to the encroachment of residential housing development across the Ironworks Landscape, however the portion of the HCA which borders the Site has been developed as a modern residential housing estate. No further indirect physical impacts on the remainder of the HCA are anticipated.

Indirect Visual Impacts

- 7.4.5 There are no listed buildings across Clyn-Mil, Pencoedcae and Trebeddau HCA and no Scheduled Monuments or heritage assets that will be visually affected by the development.
- 7.4.6 The proposed development has no tall standing buildings, therefore its visual impact will be minimal on the surrounding areas, however as this HCA is adjacent to the Site there will be a very slight degree of indirect visual impact.

Overall Conclusions

- 7.4.7 There would be very little indirect, physical or visual impacts predicted to occur as a result of the development on the Clyn-Mil, Pencoedcae and Trebeddau HCA.
- 7.4.8 As set out in Table Appendix 2 the indirect impacts on Clyn-Mil, Pencoedcae and Trebeddau HLCA 022 score is 3 which means the impact would be Very Slight in indirect physical and visual terms.

7.5 Merthyr Tydfil: Historic and Commercial Core (HCA 001)

- 7.5.1 This HCA constitutes the Merthyr Tydfil: Historic and Commercial Core (Plate 12) which abuts up to the very northern boundary of the Site and is bisected by the Incline Top HCA corridor northwest of the Site in close proximity.

- 7.5.2 As the title infers this HCA comprises the historic core of Merthyr Tydfil, centred around the Church of St. Tydfil. Activity from the Early Medieval period in the area is represented by an early Christian pillar-stone with ring-cross, dating from 8th-9th century which had been built into the wall of St. Tydfil's Church (RCAHMW 1976c).
- 7.5.3 Located towards the centre of Merthyr Tydfil, St Tydfil's Church is known from documentary sources to be of at least 12th century origin, however the presence of the Early Medieval pillar-stone could suggest an earlier founding. The current church was largely rebuilt in the 19th century (RCAHMW 1976c). The Court House near the town centre is also thought to have Medieval origins, being recorded from at least the early 16th century, although heavily adapted during the 19th century (RCAHMW 1982).
- 7.5.4 These two assets are beyond the 1km study boundary for this document and therefore the indirect physical and visual impact will not be calculated in this document.
- 7.5.5 The primary character of this HCA comes from the urban expansion which began when the first ironworks at the head of the Taff Valley in 1759-65 was established. This caused a boom in development slightly after the ironworks to the south and southwest were in operation.

Indirect Physical Impacts

- 7.5.6 No indirect physical impacts are anticipated.

Indirect Visual Impacts

- 7.5.7 There are no listed buildings across the Merthyr Tydfil Historic Core HCA within 1km of the proposed development Site, and no Scheduled Monuments or heritage assets will be visually affected by the development.

Overall Conclusions

- 7.5.8 No indirect, physical or visual impacts are predicted to occur as a result of the development on Merthyr Tydfil: Historic and Commercial Core HCA as the Site is separated from the HCA by housing development and the nature of the proposed development as infill residential housing. This stage of the assessment has therefore been omitted for Merthyr Tydfil: Historic and Commercial Core HCA.

7.6 Mountain Hare (HCA 038)

- 7.6.1 Mountain Hare HCA sits in close proximity to the north eastern corner of the Site (Plate 10). This HCA is characterised as an industrial settlement of isolated roads and ribbon development to the east of Twynrodyn.
- 7.6.2 One heritage asset from the modern period is recorded within the study area inside the boundaries of the HCA: Dowlais Colliery was recorded to the immediate north of Site and

appeared on a GKN list of Controlled Establishments in 1915. This asset will not be affected by the proposed development.

Indirect Physical Impacts

- 7.6.3 No indirect physical impacts are anticipated.

Indirect Visual Impacts

- 7.6.4 There are no listed buildings across Mountain Hare HCA and no Scheduled Monuments or heritage assets that will be visually affected by the development.

Overall Conclusions

- 7.6.5 There would be no indirect, physical or visual impacts predicted to occur on Mountain Hare HCA as a result of the proposed development. This stage of the assessment has therefore been omitted for Mountain Hare HCA.

7.7 Incline Top (HCA 040)

- 7.7.1 The Incline Top HCA sits in close proximity to the north and north west Site (Plate 11). This HCA was the major industrial transport corridor of the Penydarren Incline and Dowlais Railway associated with the Ironworks. Incline Top HCA also contains early industrial housing. In the modern period industrial housing estates have also started to become established. From 1814 onwards, mapping evidence suggests a whole series of networks, tramworks etc. were established across the area along with a number of coal and ironstone pits and levels for mineral extraction.

Indirect Physical Impacts

- 7.7.2 No indirect physical impacts are anticipated.

Indirect Visual Impacts

- 7.7.3 There are no listed buildings across the study area boundary of Incline Top HCA and no Scheduled Monuments or heritage assets that will be visually affected by the development.

Overall Conclusions

- 7.7.4 There would be no indirect, physical or visual impacts predicted to occur to Incline Top HCA as a result of the proposed development. This stage of the assessment has therefore been omitted for Incline Top HCA.

8. STAGE 4: EVALUATION OF RELATIVE IMPORTANCE

8.1 Cwm Blacks (HCA 048)

8.1.1 This HCA is a large space of reclaimed 19th century coal workings which is currently primarily green space and a large modern transport corridor. The area of site is rough green space with evidence of coal working dumping identified during the site visit. The Iron Mine activity is documented throughout the OS maps and shows that Cwm Blacks had an extensive network of tramways with at least one shaft, various small 'lobed' and linear tips, and reservoirs and leats arranged along the eastern bank of Nant Cwm Blacks. The coal mining was depicted on the historic mapping from 1813 and ceased around 1898. The drop in activity likely occurred as a result of the closure of the Plymouth Ironworks in 1880.

8.1.2 Cwm Blacks HCA is a part of the wider Ironworking Landscapes (IW016-018).

8.1.3 The results of the Stage 4 evaluation of the relative importance of Cwm Blacks HCA is 32 and Moderate. This is based on evaluation steps (a), (b) and (c). (Appendix 3).

8.2 Ysgubor Newydd (HCA 037)

8.2.1 Very little information was available about the history of this HCA. It is characterised as a 20th century housing estate and the recorded heritage assets within this HCA within the study area are no longer extant.

8.2.2 The area was agricultural land before the housing estate was built.

8.2.3 The results of the Stage 4 evaluation of the relative importance of Ysgubor Newydd HCA is 20 and Moderate. This is based on evaluation steps (a), (b) and (c) (Appendix 3).

8.3 Clyn-Mil, Pencoedcae and Trebeddau (HLCA 022)

8.3.1 This HCA is characterised as 18th to 19th century coal and iron workings much like Cwm Blacks. This was an area of intermixed agriculture with industrial areas. This area was also exploited by the Plymouth Ironworks for mineral extraction by the end of the 18th century with a surge occurring between 1850-1875 through two primary pits Clyn-Mil No. 1 and New Pits near Cwm Blacks. These went out of operation by the early 1900s. The condition of the network of tramways, pits and water reservoirs is largely unknown in the present day.

8.3.2 Clyn-Mil, Pencoedcae and Trebeddau HCA is a part of the wider Ironworking Landscapes (IW016-018).

8.3.3 The results of the Stage 4 evaluation of the relative importance of Clyn-Mil, Pencoedcae and Trebeddau HCA is 44 and Considerable. This is based on evaluation steps (a), (b) and (c) (Appendix 3).

9. STAGE 5: ASSESSMENT OF OVERALL SIGNIFICANCE OF IMPACT

- 9.1.1 In accordance with the ASIDOHL guidance (Cadw 2007), the results of the Stage 2, 3 and 4 assessments have been incorporated into an overall assessment of the effects of the proposed development on the historic landscape of Merthyr Tydfil. The assessment scores derived from Stages 2, 3 and 4 forms the basis of professional judgement as set out in Section 3.5, and the results of the assessment are summarised in Appendix 4. The HCAs discussed range from Very Slight impact to Moderate.

10. CONCLUSIONS

- 10.1.1 In accordance with the ASIDOHL2 guidance, the results of the Stage 2, 3 and 4 assessments have been incorporated into an overall assessment of the effects of the proposed development on the registered historic landscape of Merthyr Tydfil. The assessment scores derived from Stages 2, 3 and 4 forms the basis of professional judgement as set out in Section 3.5, and the results of the assessment are summarised in Stage 5 - Appendix 4.
- 10.1.2 The Site falls within the registered historic landscape of Merthyr Tydfil (HLW (MGI) 2) which consists of 13 HCAs, and also within the western boundary of the Ironworks Landscape (IW016-18). Portions of 2 of the HCAs, Cwm Blacks (048) and Ysgubor Newydd (037), are incorporated within the Site. Much of the former industrial and agricultural aspects of the Merthyr Tydfil registered historic landscape in the immediate vicinity of Site have been reclaimed since the mid-20th century for residential housing and associated developments.
- 10.1.3 The proposed development would consist of infill residential housing between a mid-20th century housing development within the Ysgubor Newydd HCA and a modern housing development within the western part of the Clyn-Mil, Pencoedcae and Trebeddau HCA (022).
- 10.1.4 The results of the ASIDOHL2 have determined that the two HCAs which fall within the Site boundary, Cwm Blacks (048) and Ysgubor Newydd (037), would be directly physically impacted by the proposed development to a Moderate and Slight degree respectively, and Cwm Blacks would be Very Slightly impacted in indirect and visual terms. The archaeological desk based assessment (Red River Archaeology 2019) identified a low potential for the proposed development to encounter buried archaeological remains within the Site or to directly or indirectly impact upon the significance of the heritage assets identified. The ASIDOHL2 determined that no other HCA would be directly physically impacted.
- 10.1.5 The results also determined that of the 4 HCAs immediately bordering the Site, only Clyn-Mil, Pencoedcae and Trebeddau (022) would be Very Slightly impacted in indirect physical and visual terms. There would be no indirect physical or visual impact on the remaining HCAs.
- 10.1.6 Within the wider area, the Scheduled Monuments of the former Merthyr Tramroad lies to the west of Site and the deserted iron mining village Ffos-y-fran lies to the northeast. The development would not affect these Monuments as they are located on the periphery of the historic Ironworks landscapes and the proposed development site is low lying with no direct association or visual connection to either Monument. The Site is enclosed to the north and west by modern development and mature trees, and the A4060 dual carriageway has created a visual separation to the east, thereby screening the Site from both Scheduled Monuments.
- 10.1.7 Overall, the proposed development would have a Very Slight to Moderate impact on the HCAs and Ironworks Landscape. Ground disturbance could impact any potential archaeological

remains, primarily the Brickworks if this asset is found to retain some below ground remains. All impacts are local with a Very Slight degree of national impact due to the importance of the region to the Ironworking history of Wales. Overall, the historic meaning and coherence of the registered historic landscape would remain comprehensible and legible.

11. REFERENCES

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LiDAR data

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Soilscapes

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APPENDIX 1

Stage 2: Assessment of direct, physical impacts on HCAs

CWM BLACKS – HCA 048					
Absolute Impact (loss of area)			Magnitude Score		
4.02ha of 24.20ha – 16.6% of HCA			Moderate - 3		
Relative and Landscape impacts (loss of known elements or characteristics) and scores					
Element / % Loss	Category of element	Magnitude of effect	Landscape Value	Landscape Value Effect	Sum
Brickworks / 100	D - 1	Very Severe - 6	Post Med Brickworks Very Low - 1	Very Slightly Reduced - 1	9
Stone 2/ 0	D - 1	Very Slight – 1	Post Med Stone Very Low - 1	Very Slightly Reduced - 1	4
Air Shaft 3 / 0	D - 1	Very Slight – 1	Post Med Airshaft Very Low - 1	Very Slightly Reduced - 1	4
No of Elements: 3		Average Score: 5.67		Final Overall score: 8.67	
Overall Magnitude: 9			Moderate		
YSGUBOR NEWYDD - HCA 037					
Absolute Impact (loss of area)			Magnitude Score		
0.34ha of 16.14ha – 2.1% of HCA			Very Slight - 1		
Relative and Landscape impacts (loss of known elements or characteristics) and scores					
Element / % Loss	Category of element	Magnitude of effect	Landscape Value	Landscape Value Effect	Sum
Penuel Calvinistic Methodist Chapel / 0	D - 1	Very Slight – 1	Post Med Chapel Very Low - 1	Very Slightly Reduced - 1	4
Twynnyrodyn Junior School / 0	D - 1	Very Slight – 1	Post Med School Very Low – 1	Very Slightly Reduced - 1	4
No of Elements: 2		Average Score: 4		Final Overall score: 5	
Overall Magnitude: 5			Slight		

APPENDIX 2

Stage 3: Assessment of indirect, physical impacts on HCAs

Cwm Blacks – HCA 048					
Indirect Physical Impact					
Impact	Category	Score	Magnitude	Score	Sum
Encroachment of a residential housing development in a section of the Ironworks Landscape IW016-018 that cover the Dyffryn, Pentrebach and Plymouth Ironworks.	C – Local Importance	2	Very Slight	1	3
Average					1.5
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Views obscured by housing development across this part (topographically high point looking down the Cwm Blacks valley to the south) of the Ironworks Landscape IW016-018 that cover the Dyffryn, Pentrebach and Plymouth Ironworks.	C – Local Importance	2	Very Slight	1	3
Development Form		1	Very Slight	1	2
Development Appearance		1	Very Slight	1	2
Average					2.33
Impact Score					3
				Very Slight	

Clyn-Mil, Pencoedcae and Trebeddau - HLCA 022					
Indirect Physical Impact					
Impact	Category	Score	Magnitude	Score	Sum
Encroachment of residential housing development across the Ironworks Landscape IW016-018 that cover the Dyffryn, Pentrebach and Plymouth Ironworks.	C – Local Importance	2	Very Slight	1	3
				Average	1.5
Indirect Visual Impact					
Impact	Category	Score	Magnitude	Score	Sum
Visual impact of housing estate on the HCA which directly abuts up to the Site on the eastern boundary.	C – Local Importance	2	Very Slight	1	3
Development Form		1	Very Slight	1	2
Development Appearance		1	Very Slight	1	2
				Average	2.33
				Impact Score	3
				Very Slight	

APPENDIX 3

Stage 4: Evaluation and relative importance of the part of the HCA directly affected by development

Cwm Blacks – HCA 048										
Value:	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor
In relation to: Criterion	(a) Whole of historic character area					(b) Whole of historic landscape area on the register				
Rarity			X						X	
Representativeness				X				X		
Documentation			X						X	
Group Value				X				X		
Survival					X					X
Condition					X					X
Coherence				X					X	
Integrity					X				X	
Potential					X					X
Amenity					X					X
Associations				X						X
Score	0	0	6	8	5	0	0	6	8	5
Total Score	(19/55) x 100 = 34.55					(17/55) x 100 = 30.91				

Cwm Blacks – HCA 048					
Value:	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor
In relation to: Criterion	(c) National context				
Rarity				X	
Representativeness			X		
Documentation			X		
Group Value			X		
Survival					X
Condition					X
Coherence				X	
Integrity				X	
Potential					X
Amenity					X
Associations					X
Score	0	0	6	6	5
Total Score	$(17/55) \times 100 = 30.91$				
Average of (a)+ (b) + (c)	32 Moderate				

Ysgubor Newydd - HCA 037										
Value:	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor
In relation to: Criterion	(a) Whole of historic character area					(b) Whole of historic landscape area on the register				
Rarity					X					X
Representativeness					X					X
Documentation					X					X
Group Value					X					X
Survival					X					X
Condition					X					X
Coherence					X					X
Integrity					X					X
Potential					X					X
Amenity					X					X
Associations					X					X
Score	0	0	0	0	11	0	0	0	0	11
Total Score	(11/55) x 100 = 20					(11/55) x 100 = 20				

Ysgubor Newydd - HCA 037					
Value:	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor
In relation to: Criterion	(c) National context				
Rarity					X
Representativeness					X
Documentation					X
Group Value					X
Survival					X
Condition					X
Coherence					X
Integrity					X
Potential					X
Amenity					X
Associations					X
Score	0	0	0	0	11
Total Score	$(11/55) \times 100 = 20$				
Average of (a)+ (b) + (c)	20 Moderate				

Clyn-Mil, Pencoedcae and Trebeddau - HLCA 022										
Value:	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor
In relation to: Criterion	(a) Whole of historic character area					(b) Whole of historic landscape area on the register				
Rarity				X					X	
Representativeness			X					X		
Documentation			X					X		
Group Value				X					X	
Survival				X					X	
Condition				X					X	
Coherence				X					X	
Integrity				X					X	
Potential				X					X	
Amenity				X					X	
Associations				X					X	
Score	0	0	6	18	0	0	0	6	18	0
Total Score	(24/55) = 43.64					(24/55) = 43.64				

Clyn-Mil, Pencoedcae and Trebeddau - HLCA 022					
Value:	V. High/V. Good	High/Good	Mod/Med	Low	V. Low/Poor
In relation to: Criterion	(c) National context				
Rarity				X	
Representativeness			X		
Documentation			X		
Group Value				X	
Survival				X	
Condition				X	
Coherence				X	
Integrity				X	
Potential				X	
Amenity				X	
Associations				X	
Score	0	0	6	18	0
Total Score	(24/55) = 43.64				
Average of (a)+ (b) + (c)	44 Considerable				

APPENDIX 4

Stage 5: Historic Landscape Character Overall Assessment Summary

HCA	Value (Stage 4)	Impact (Stage 2 and 3)	Reduction of Value of the Historic Landscape on the register
Cwm Blacks – HCA 048	Reclaimed 19 th century coal working land. Largely an industrial dumping area. Minerals were exploited during the 18 th /19 th century.	16.6% of this HCA will be physically lost to the development. Brickworks asset will also be lost. No evidence of this on the ground.	Reduction of the undeveloped portion of the Ironworks Landscape and encroaching housing development
	Score 3	Score 5	Score 2
Total Score: 10 Overall Significance of Impact: Moderate			
Ysgubor Newydd - HCA 037	None, modern 20 th century housing estate. Assets no longer exist	2.1% of the HCA will be physically lost to the development.	None
	Score 1	Score 1	Score 1
Total Score: 3 Overall Significance of Impact: Very Slight			
Clyn-Mil, Pencoedcae and Trebeddau - HCA 022	Still a mix of agriculture and industrial land. Characterised by 18 th /19 th century iron ore and coal working. Buildings associated with the Plymouth Iron Works. Network features including tramways and pits Clyn-Mil No. 1 and New Pits	Visual impact of housing estate on the HCA which directly abuts up to the Site on the eastern boundary.	Reduction of the Ironworks Landscape size and encroaching housing development
	Score 2	Score 1	Score 2
Total Score: 5 Overall Significance of Impact: Slight			



Figure 1 - Site location.

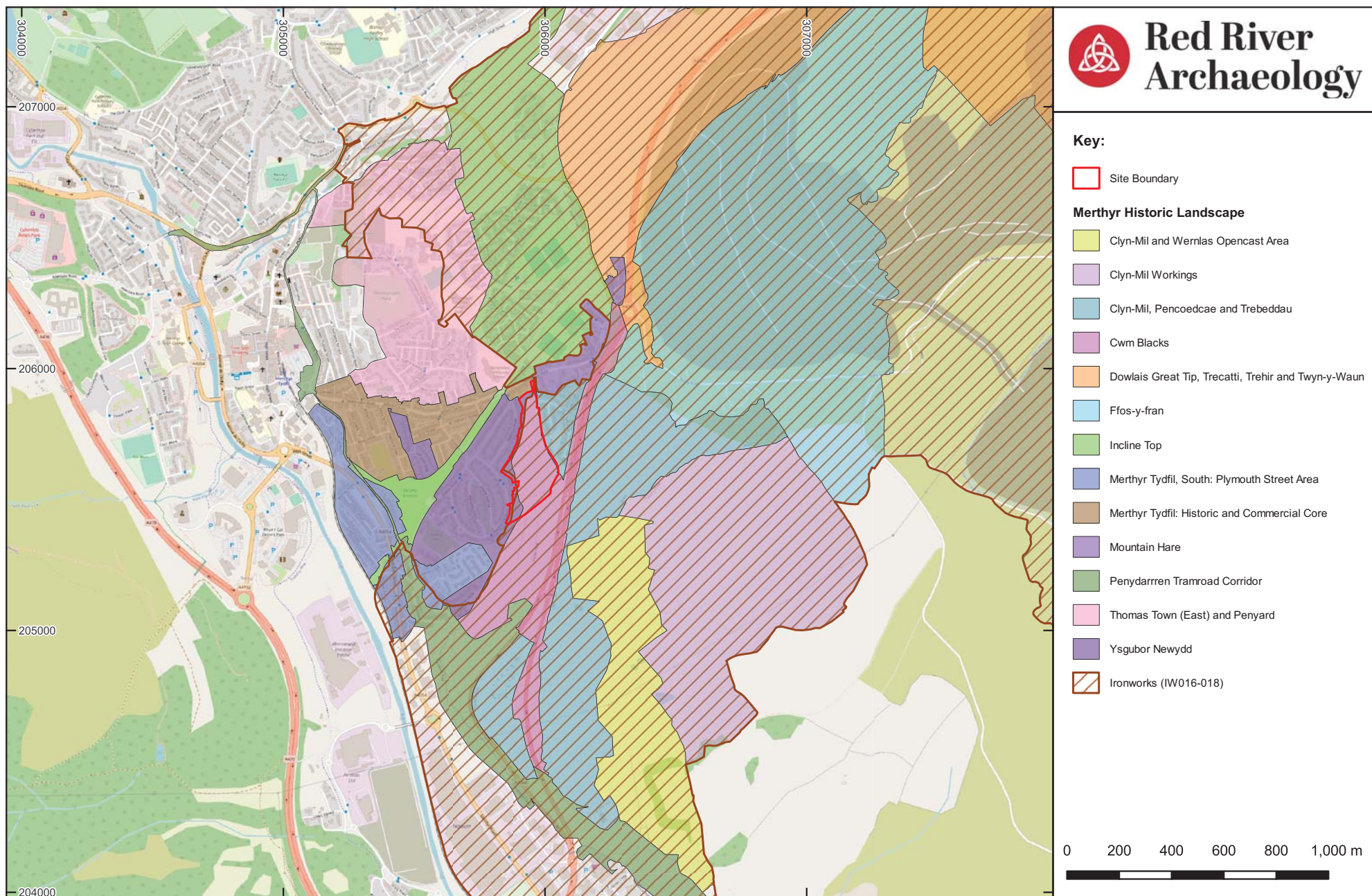


Figure 2 - HCLA data.



Plate 1 - Overview of Site from the northern boundary, looking south



Plate 2 - View across Site towards HCLA Clyn-Mil, Pencoedcae and Trebeddau (HCLA 022), looking east



Plate 3 - Overview of Site from the southeast corner, looking northwest



Plate 4 - Overview of Site towards Ysgubor Newydd (HCLA 036) from the southeast corner, looking west



Plate 5 - Overview of Site from southern entrance, looking southeast



Plate 6 - Entrance paths to Site through southern entrance, looking southeast



Plate 7 - Western entrance to the Site from Ysgubor Newydd (HCLA 036), looking west



Plate 8 - Overview of Site from the eastern boundary, looking southeast



Plate 9 - View past the outer eastern boundary between Site and Clyn-Mil, Pencoedcae and Trebeddau (HCLA 022), looking south



Plate 10 - View of Mountain Hare (038) just beyond the northern corner of Site, looking northeast



Plate 11 - View of Incline Top (040) beyond the northern boundary of Site, looking northwest



Plate 12 - View of Merthyr Tydfil: Historic and Commercial Core (HCLA 001) beyond the northern corner of Site, looking southwest