

Archaeology Wales

Goat Mill Road, Merthyr Tydfil

ASIDOHL2



By
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Summary

In May 2020 Archaeology Wales was commissioned to carry out an ASIDOHL2 study to determine the potential impact of the proposed development of a plastic recycling and processing facility at Goat Mill Road, Merthyr Tydfil. The proposed development lies within the Merthyr Tydfil Landscape of Outstanding Historic Interest in Wales. There are also a number of historic assets within 1km of the site, which include Grade II listed buildings and conservation areas to the north and west. Within 2km of the site there are several Scheduled Ancient Monuments, the proposed development site currently comprises a brown field site, formerly part of the Dowlais Great Tip, lying between the A4060 trunk Road and the A4102. The site is currently used on a regular basis for informal recreation.

The ASIDOHL has been carried out in five stages. Stage 1, the introduction, identifies contextual information regarding the site. It describes the current understanding of the form and appearance of the development along with relevant planning policies. Previous assessments of the area have been undertaken by GGAT. These include an assessment of Archaeologically Sensitive Areas in the region which identified that the northern tip of the site lies within ASA6: Dowlais Ironworks; Supporting Infrastructure; Dowlais Gas; GGAT also instigated the Southeast Wales Industrial Ironworks Landscapes Project to assess the current state of survival/preservation of the ironworks landscapes of the northern coalfield rim of South East Wales. GGAT also undertook an archaeological desk-based assessment in advance of the East Merthyr Land reclamation scheme. Phase II of this reclamation scheme (Dowlais Great White Tip) incorporated the proposed development site and identified two existing archaeological sites within the development area, no longer visible.

Stage 2 considers the direct, physical impact of the proposed development, assessed in absolute, relative terms and landscape terms. This development lies within HLCA 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-y-Waun. The overall magnitude of the direct physical impact on this HLCA is considered to be Slight. The potential for sub-surface archaeological remains is low following open cast mining over much of the site and the East Merthyr Landscape Reclamation Scheme.

Stage 3, assesses the indirect impacts of the proposed development, in terms of indirect, physical impacts, and indirect (non-physical) visual impacts. These indirect impacts affect a wider area and surrounding HLCAs are considered. Due to the fact that the entire proposed development area was re-landscaped during the East Merthyr Land Reclamation Scheme; and no physical or visual traces of its former historic character survive above ground; the overall magnitude of indirect impact on HLCA 078 was scored as Slight.

Stage 4, forms an evaluation of the relative importance of the HLCA, and the parts within them that are affected by the proposed development. This assesses the overall value of HLCA 078 to be Moderate.

Stage 5, forms an assessment of the overall significance of the impact. The impact of the development and the reduction in the value of the HLCA on the Register, combined with the relative values of the HLCAs, scores the impact on HLCA 078 as Slight.

Crynodeb

Ym mis Mai 2020 Cafodd Archaeoleg Cymru ei gomisiynu i gynnal astudiaeth ASIDOHL2 i weld beth fyddai effaith bosibl y datblygiad arfaethedig o gyfleuster ailgylchu a phrosesu plastig yn goat Mill Road, Merthyr Tudful. Mae'r datblygiad arfaethedig yn gorwedd o fewn tirwedd o ddiddordeb hanesyddol eithriadol Merthyr Tudful yng Nghymru. Mae nifer o asedau hanesyddol hefyd o fewn 1km i'r safle, sy'n cynnwys adeiladau rhestredig gradd II ac ardaloedd cadwraeth i'r Gogledd a'r gorllewin. O fewn 2km i'r safle ceir nifer o henebion cofrestredig, ar hyn o bryd mae safle'r datblygiad arfaethedig yn cynnwys safle tir llwyd, a arferai fod yn rhan o domen Dowlais Great, sy'n gorwedd rhwng Cefnffordd yr A4060 a'r A4102 Ar hyn o bryd, defnyddir y safle yn rheolaidd ar gyfer gweithgareddau hamdden anffurfiol.

Mae'r ASIDOHL wedi'i gynnal mewn pum cam. Mae cyfnod 1, y cyflwyniad, yn nodi gwybodaeth gyd-destunol am y safle. Mae'n disgrifio'r ddealltwriaeth bresennol o ffurf ac ymddangosiad y datblygiad ynghyd â'r polisiâu cynllunio perthnasol. Cynhaliwyd asesiadau blaenorol o'r ardal gan GGAT. Mae'r rhain yn cynnwys asesiad o Ardaloedd Archeolegol Sensitif yn y rhanbarth a nododd fod domen ogleddol y safle o fewn ASA6: Gwaith Haearn Dowlais; Seilwaith Ategol; Nwy Dowlais; Roedd GGAT hefyd wedi sefydlu prosiect tirweddau gwaith haearn diwydiannol De-ddwyrain Cymru i asesu cyflwr cyfredol goroesi/cadw tirweddau'r gwaith haearn ar ymyl maes glo y Gogledd yn ne-ddwyrain Cymru. Hefyd cynhaliodd GGAT asesiad desg archeolegol cyn cynllun adfer tir Dwyrain Merthyr. Ymgorfforodd cam II y cynllun adfer hwn (tip o Dowlais Great White domen) y safle datblygu arfaethedig a nododd nad oedd dau un o'r safleoedd archeolegol presennol yn yr ardal ddatblygu wedi'u gweld mwyach. Mae cyfnod 2 yn ystyried effaith uniongyrchol, ffisegol y datblygiad arfaethedig, wedi'i asesu mewn termau absoliwt a thermâu cymharol a thirwedd. Mae'r datblygiad hwn yn perthyn i HLCA 078 Dowlais Great tip, Trecatti, Trehir a Thwyn-y-Waun. Mae maint cyffredinol yr effaith ffisegol uniongyrchol ar yr HLCA hwn yn cael ei ystyried yn gymedrol. Fodd bynnag, mae'r asesiad wedi'i seilio'n sylweddol ar elfennau anhysbys ar hyn o bryd megis ansawdd a goroesiad olion archeolegol ar yr is-wyneb yn dilyn cynllun adfer tirwedd Dwyrain Merthyr.

Mae cam 3 yn asesu effeithiau anuniongyrchol y datblygiad arfaethedig, o ran effeithiau anuniongyrchol, ffisegol ac effeithiau gweledol (nad ydynt yn ffisegol) anuniongyrchol. Mae'r effeithiau anuniongyrchol hyn yn effeithio ar ardal ehangach ac ystyrir yr HLCAs o'i hamgylch. Oherwydd bod yr holl ardal ddatblygu arfaethedig wedi'i hail-dirlunio yn ystod Cynllun Adfer Tir Dwyrain Merthyr; ac nid oes unrhyw olion ffisegol na gweledol o'i hen gymeriad hanesyddol yn goroesi uwchben y ddaear; sgoriwyd maint cyffredinol yr effaith anuniongyrchol ar HLCA 078 fel Môn.

Cyfnod 4, yn ffurfio gwerthusiad o bwysigrwydd cymharol yr HLCA, a'r rhannau ynddynt y mae'r datblygiad arfaethedig yn effeithio arnynt. Mae hwn yn asesu gwerth cyffredinol HLCA 078 i fod yn gymedrol.

Cam 5, yn ffurfio asesiad o arwyddocâd cyffredinol yr effaith. Mae effaith y datblygiad a'r gostyngiad yng ngwerth yr HLCA ar y gofrestr, ynghyd â gwerthoedd cymharol yr HLCAs, yn sgorio'r effaith ar HLCA 078 fel mân.

1 Introduction

1.1.1 In May 2020 Archaeology Wales Ltd (AW) was commissioned by Sirius Planning to carry out an ASIDOHL2 study to investigate the possible impact on the historic environment of the proposed development of a plastic recycling and processing facility with associated office accommodation, external storage area, car parking and weighbridge, at Goat Mill Road, Merthyr Tydfil (Figure 1). The proposed development lies within the Merthyr Tydfil Landscape of Outstanding Historic Interest in Wales (HLW (MGL) 2). There are also several historic assets within 1km of the site, which include Grade II listed buildings and conservation areas to the north and west. Within 2km of the site there are Scheduled Ancient Monuments, namely the Ynys Fach Iron Furnaces (GM331) to the south-west and the Deserted Iron Mining Village (GM496) and Sarn Howell Pond and Watercourses (GM494) to the south-east). As such an ASIDOHL2 (Assessment of the Significance of the Impact of Development on the Historic Landscape) was requested by the Local Planning Authority to help inform the planning decision on the proposed development. AW was commissioned by Sirius Planning Ltd. The AW project number is 2803.

1.2 ASIDOHL Layout

1.2.1 In assessing the impact of the proposed development, guidelines are laid out in 'Guide to Good Practice on Using The Register Of Landscapes Of Historic Interest In Wales In The Planning And Development Process' (Revised 2nd Edition) which includes revisions to the assessment process (ASIDOHL2). This guidance lays out a process for assessing the impacts, based on five stages.

- **Stage 1** consists of gathering the contextual information and provides the introduction to the report.
- **Stage 2** is an assessment of the direct physical impacts of the proposed development, in absolute terms, relative terms and landscape terms. Within this, tables are provided to quantify these impacts and their magnitude.
- **Stage 3** is an assessment of the indirect impacts of the development, in terms of both indirect, physical impacts and also indirect (non-physical) visual impacts. Again, tables are provided to quantify these impacts and their magnitude.
- **Stage 4** is an evaluation of the relative importance of the Historic Character Area directly and/or indirectly affected by the proposed development. This is done in relation to the whole of the Historic Character Area concerned and the whole of the historic landscape area on the Register, followed by an evaluation of the relative importance of the Historic Character Area concerned in the national context.
- **Stage 5** is an assessment of the overall significance of the impact. This combines stages 2 and 4 to produce an assessment of the overall significance of the impact of the proposed development and the affect that altering the Historic Character Area has on the whole of the historic landscape area on the Register. This stage also includes an examination of mitigation or positive benefits and a concluding statement.

2 ASIDOHL STAGE 1

2.1 The Proposed Development (Figures 2 & 3)

- 2.1.1 The proposed development comprises plans for a plastic recycling and processing facility with associated office accommodation, external storage area, car parking, weighbridge and surface water pond. The development area totals approximately 14.6 hectares.
- 2.1.2 The proposed development is in the pre-application stages, nevertheless some details of the proposed layout and construction details have been provided (Figure 2). The site will comprise 2 large warehouse buildings and office space on two floors, hardstanding covering an area of 74,720m², a fire tank, surface water lagoon to the south of the complex, and 193 plastic bale storage groups each measuring 11m x 11m x 3m high. The site will be surrounded by woodland on three sides (east, south and west), with the entrance to the north joining the Phoenix Industrial Estate. The site will be further shielded visually from the east by virtue of its being situated at the foot of a steep embankment running along its eastern boundary. Substantial ground works may be required to excavate the surface water lagoon and potentially to achieve a formation level. The ground is currently thought to comprise made ground following the restoration of the site in the late 1990's when it was used as an open cast mine on the site of the former Dowlais Great White Tip. Geotechnical trial pits may be required to confirm the depth and nature of the made ground (Sirius Geotechnical, 2020) with the nature of the foundations dependent on the results of the trial pits.
- 2.1.3 The construction phase of the development will include landscaping groundworks, the construction of large portal framed warehouse buildings, services and drainage works. The site is reasonably well screened with trees and vegetation, particularly along the majority of the western and eastern boundaries, which helps limit the views into the site from the nearby highways. However, the site would remain quite visible from the Phoenix Industrial Estate to the north (plate 4) where there are a number of informal tracks used by pedestrians/dog walkers. Taking into account the topography of the area, the existing landscaping and the intervening buildings it is expected that the development would have limited inter-visibility with the surrounding historic assets (plates 11-17).
- 2.1.4 The Local Planning Authority is the Merthyr Tydfil County Borough Council (MTCBC).

2.2 The Site

- 2.2.1 The site is located on the eastern fringe of the modern town of Merthyr Tydfil. It lies partially within the community of Dowlais and partly with the Merthyr Town community. It occupies the SW end of a former industrial waste tip known as the Dowlais Great Tip which covered an area of approximately 1000m x 750m by the latter part of the 18th century. The Dowlais Ironworks were established in 1759 and continued in production until the 1930's and at one time represented the foremost ironworks in the Country, specialising in rail production. The Great Tip dominated the town of Merthyr for decades, finally being progressively removed from the 1970's. The site and

surrounding area were affected by coal and ironstone mining during the Nineteenth Century and first half of the Twentieth Century, with several mine entries, spoil heaps, mineral railways and reservoirs present. A large ironworks slag heap (The Great White Tip) was also present on the northern half of the site. Opencast coal mining was undertaken on the majority of the site in 1996; this removed The Great White Tip and probably the majority of former mining features. The opencast was backfilled upon completion, with the site restored to its current condition, and a road embankment constructed in the eastern part of the site. The extent of opencast mining covers the majority of the site boundary, with the exceptions on the extreme southern and south-western margin, and a significant part of the western and north-western parts of the site. The total thickness extracted was 65m, including 24.9m of overburden (the former Dowlais Great White Tip) (Sirius Geotechnical, 2020, 11-15). The opencast was backfilled in 500mm deep compacted layers, tested using a nuclear density gauge. The backfill ranges in thickness from 0m along the western limit of coal extraction (which does not coincide with the western site boundary), to 15m along the eastern limit of the development area. However, there are also variations along the length of the opencast, being 10-20m deep at the northern and southern ends of the site, and as little as 5m deep in the central area. The backfill material generally comprises reworked mudstones and siltstones, with localised areas of recompacted ironstone, ash and slag, up to 5m deep, in areas where modern, large-scale opencasting exposed historical small-scale ironstone opencast extractions (ibid, 24).

- 2.2.2 Within the footprint of opencast coal mining, historical underground mine workings and mine entries may still remain within depths below the base of the opencast. There are also potentially shallow mine workings within several ironstone and coal seams in the western and northern parts of the site, outside the former opencast. Dependent on the depth, thickness and position in relation to the proposed development, historical underground mine workings may require stabilisation prior to construction e.g., by drilling and grouting. It is possible that there are additional unrecorded mine entries within the site (ibid, 11-15).
- 2.2.3 The proposed scheme is located some 1.3km to the east of Merthyr Tydfil town centre, 600m south of the suburb of Dowlais, and some 4.7km to the west of Rhymney. The scheme is centred on NGR SO 06253 06964 and covers approximately 14.6 ha. The area comprises a brown field site, formerly part of the Dowlais Great Tip and now used as an informal recreation area.
- 2.2.4 The proposed development site lies within the Merthyr Tydfil Landscape of Outstanding Historic Interest in Wales (HLW (MGL) 2). Merthyr Tydfil occupies a natural basin at the head of the Taff valley. High hills and ridges reach 450m above OD on all sides, with development constrained to the basin floor and smaller tributary valleys of the Taff, which itself provides the only natural route out of the basin to the south east. The town is a potent example of an internationally renowned industrial landscape of the 18th and 19th centuries. The present appearance of the landscape within the historic landscape area is largely due to the rapid growth of the iron and coal industries in the region during the 19th century. This comprises numerous relict elements and foci. These individual elements consist of the remains of large ironworks, remnants of the associated coal mining industry, water power leats, an early iron bridge, communication systems, including early tramroads, tips, terraced industrial housing, and the ironmasters house,

Cyfarthfa Castle. At the Dowlais Ironworks the remains include the great stables and the blast-engine house, which have been restored. Locally, early communication systems survive, though to varying degrees. (Cadw, 1998; Avent & Kelly, 2017).

- 2.2.5 The Merthyr Tydfil Landscape of Outstanding Historic Interest in Wales (HLW (MGL) 2) is subdivided into smaller Historic Landscape Character Areas (HLCAs). The proposed development site lies within HLCA 078: Dowlais Great Tip, Trecatti, Trehir and Twyn-y-Waun. This is described as a Reclaimed industrial landscape; since subject to reclamation, opencast and landfill, or combinations thereof. It is the former site of multi-period extractive and drainage features associated with the Dowlais Ironworks. It is also the former site of industrial and post-medieval upland settlements and of a regionally important Medieval Fair/market (Avent & Kelly, 2017).
- 2.2.6 The site lies at approximately 300-270m above OD. The solid Geology comprises Mudstone, Siltstone and Sandstone of the South Wales Lower Coal Measures Formation; a Sedimentary Bedrock formed approximately 318 to 319 million years ago in the Carboniferous Period. This is overlain by glacial till; superficial Deposits formed up to 2 million years ago in the Quaternary Period (BGS, 2020).

2.3 Previous Assessments

- 2.3.1 The area is included in the Merthyr Tydfil Landscape of Outstanding Historic Interest in Wales (HLW (MGL) 2) within the Register of Landscapes of Historic Interest in Wales, published by Cadw, CCW and ICOMOS UK in 1998. The site and the area around it have been assessed as within Historic Landscape Character Area 78: Dowlais Great Tip, Trecatti, Trehir and Twyn-y-Waun (Figure 3). The area has also been assessed as part of LANDMAP, which includes an assessment of the Historic Landscape. The site lies within the East Merthyr Landmap Historic Landscape Character Area - MRTHRHL008). This area is assessed as being of overall outstanding historic value, largely due to its surviving industrial heritage.
- 2.3.2 Glamorgan Gwent Archaeological Trust (GGAT) have undertaken an assessment of Archaeological Sensitive Areas (ASA) within the region. The northern tip of the proposed site lies within one of these areas: ASA6: Dowlais Ironworks; Supporting Infrastructure; Dowlais Gas. This area is described as comprising a nationally and internationally important ironworks, in operation between 1759 and 1930; including surviving standing structures. The Dowlais Ironworks was the most important of the four 18th century ironworks in Merthyr Tydfil (GGAT, 2017). GGAT also instigated the Southeast Wales Industrial Ironworks Landscapes Project (GGAT Project no. 80) for Cadw, which ran from 2005-7. The stated aim of the project was to assess the current state of survival/preservation of the ironworks landscapes of the northern coalfield rim of South East Wales, and inform conservation, protection and management requirements through providing recommendations for the proactive and long-term management the ironwork areas (Roberts and Jones, 2007).
- 2.3.3 GGAT undertook an archaeological desk-based assessment in advance of the East Merthyr Land reclamation scheme (Page, 1993). Phase II of this reclamation scheme (Dowlais Great White Tip) incorporated the proposed development site. Due to the survey area being quarried and subsequently used as a spoil tip, all surface traces of

pre-industrial archaeology had already been removed. Cartographic and documentary searches revealed that prior to the intensive industrialisation, which began during the post-medieval period, the area had largely been rough pasture. Several features identified dating to the 19th century industrial working of the area, collectively form an important part of the wider industrial landscape of the area. Additionally, spoil tips may mask remaining archaeological features (ibid).

- 2.3.4 Several other archaeological assessments and investigations have been undertaken in the wider area. These include a desk based assessment undertaken by GGAT in advance of the proposed construction of a three industrial units on Goat Mill Road, Merthyr Tydfil (NGR: SO 06616 07558). The area lay within the historic centre of the Dowlais Ironworks and was located immediately adjacent to the Goat Mill, constructed in 1857. The study showed that some form of structure has existed on the site from at least 1832. The OS maps of 1875 and 1882 show further development on the site indicating the presence of forges, rolling mills, a fitting shop and goods station. All the buildings were associated with the Dowlais Ironworks and probably the Goat Mill in particular. The 2nd and 3rd edition OS maps of 1900 and 1919 show the expansion of the Goat Mill. All four OS maps indicate industrial buildings ancillary to the Goat Mill. It was concluded that an archaeological watching brief should accompany any development on the site (Dunning, 2007).

No features or deposits of archaeological significance were observed during the subsequent watching brief. The only features observed were a brick culvert and walls which relate to modern factory buildings that post-dated the site's use as ironworks (Rouse 2008).

- 2.3.5 A number of other archaeological investigations have been undertaken by GGAT, between 2004-2009, in association with the Ffos-y-Fran land reclamation scheme centred on NGR: SO 07800 06400, immediately east of the site. This scheme incorporated the surface extraction of coal. As one of the most important industrial landscapes in the world, the archaeological investigations, provided an opportunity for a significant and holistic analysis of an internationally important industrial landscape. The post-excavation assessment, indicated that further analysis of the site archive, finds and environmental assemblage would be required, and a staged programme of post-excavation and reporting was proposed (Hart R and Tuck M, 2011).
- 2.3.6 several archaeological investigations have taken place in the Penydarren area of Merthyr Tydfil, approximately 1km west of the site. Significantly four of these have involved the excavation of elements of Penydarren Roman Fort; a Roman auxiliary fort built on a spur of ground overlooking the Morlais Valley in Penydarren Park. Remains were first found at the end of the 18th century when workmen were digging the foundations for Penydarren Place. Further excavations were carried out in 1902 and 1905 during the construction of a football ground which largely destroyed the remains of the fort and again as recently as 1957. Foundations of timber and stone buildings have been found within the fort, as well as fragmentary remains of a bath building outside the ramparts. More recently further investigations have been carried out by GGAT in the area. These include watching briefs within the football ground and clubhouse, an evaluation on the ramparts of the fort, an excavation on the road leading out of the fort and a further watching brief on the rampart/road area. The fort appears

to have been founded towards the end of the first century and was occupied during the early part of the second century, probably up until c140 AD (RCHMW. 1976, No. 732).

- 2.3.7 A further cluster of archaeological investigations have been undertaken within the historic core of Merthyr town centre, approximately 1.5km WSW of the site. Archaeology Wales undertook a watching brief at Castle Cinema during 2013 in which remains of the 18th century Castle Inn were recorded (Hadley & Smith, 2013). GGAT also undertook a building survey and Conservation Plan of the Old Town Hall during 2012 (Tuck 2012).
- 2.3.8 Analysis of registers of historic assets maintained by Cadw show that there are 3 Conservation Areas (Figure 3) located within 1km of the site (Dowlais, Thomastown and Town Centre, Merthyr Tydfil); 18 listed buildings within 1km of the site (two grade II* and the remainder grade II); and 6 Scheduled Ancient Monuments within 2km of the site (Figure 4). <https://cadw.gov.wales/advice-support/cof-cymru/search-cadw-records>
- 2.3.9 During March 2020 Sirius Geotechnical carried out a preliminary geotechnical appraisal of the site. This report utilised historic mapping, published geological information and mine abandonment reports to establish the mining history of the site. The site and surrounding area were affected by coal and ironstone mining during the Nineteenth Century and first half of the Twentieth Century, with several mine entries, spoil heaps, mineral railways and reservoirs present. A large ironworks slag heap (The Great White Tip) was also present on the northern half of the site. Opencast coal mining was undertaken on the majority of the site in 1996; this removed The Great White Tip and probably the majority of former mining features. The opencast was backfilled upon completion, with the site restored to its current condition. Within the footprint of opencast coal mining, historical underground mine workings and mine entries may still remain within depths below the base of the opencast at which future collapses could affect stability at the surface. There are also potentially shallow mine workings within several ironstone and coal seams in the western and northern parts of the site, i.e., outside the former opencast. The report concluded that it is possible that there are additional unrecorded mine entries within the site. Any identified mine entries with potential to affect the proposed development should be investigated and stabilised, e.g., by filling, grouting and capping. Further Geotechnical test pitting was recommended in order to establish the nature of the made ground on the site and to establish the most appropriate method of foundation construction for the proposed development (Sirius Geotechnical, 2020).

2.4 Planning Policy Context

2.4.1 National Policies relating to archaeology and cultural heritage include the following:

- Ancient Monuments and Archaeological Areas Act 1979.
- Planning (Listed Buildings and Conservation Areas) Act 1990.
- Planning Policy Wales – Edition 11, Section 6, February 2021.

- Technical Advice Note (TAN) 24: The Historic Environment, 2017.

2.4.2 There are a number of elements within the adopted Merthyr Tydfil Replacement Local Development Plan (LDP) 2016 – 2031 of relevance to the historic environment in this area. One of the key objectives of the Replacement LDP; Objective 9 (Heritage and Cultural Assets); is to protect, enhance and promote all heritage, historic and cultural assets. This is intended to be achieved through two main strategic policies, of which Strategic policy CW 1 is of relevance to the proposed development area.

2.4.3 **Strategic Policy (CW) 1 Historic Environment** promotes the conservation, enhancement and management of recognised sites within the historic environment within all development proposals. The registered landscape of Outstanding Historic Interest is specifically mentioned, as well as the Archaeologically Sensitive Area (ASA). The policy states:

“The integrity of our historic environment assets will be conserved and enhanced. Development proposals will only be permitted where it can be demonstrated they would preserve or enhance the architectural quality, character or the historic or cultural importance of our designated historic environment assets. Development affecting undesignated historic environment assets including, Locally Listed Buildings or structures, Landscapes of Outstanding Historic Interest in Wales, Urban Character Areas and Archaeologically Sensitive Areas should have regard to their special character and archaeological importance.”

2.4.4 Other policies not directly related to the historic landscape, but still of relevance to the historic environment include SW11 Sustainable design and placemaking, SW13 Protecting and Improving Local Community Facilities, EnW5 Landscape Protection and EcW7 Tourism, Leisure and Recreation Development.

2.5 Limitations

2.5.1 This ASIDOHL2 study was carried out by John Davey MCIfA, Project Manager at Archaeology Wales, using the guidelines and methodology set out in the *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process Revised 2nd edition* (Cadw and CCW 2007).

2.5.2 Open access was available to the majority of relevant locations and viewpoints within the affected HLCAs, which were visited on 4th June 2020 by James Evans PCIfA (AW archaeologist). The timing of the visit meant vegetation levels were relatively high. Good visibility was achieved during the visits.

2.5.3 A plan showing LiDAR data has also been produced (Figure 5), in order to help enhance and interpret features visible on the ground. Information from the site visits and LiDAR is used in preference to the ZTV due to low lying and sub-surface nature of the potential historic assets on site.

2.5.4 The Historic Landscape is described in the Register of Landscapes of Historic Interest in Wales, published by Cadw, CCW and ICOMOS UK in 1998, and the relevant HLCAs have

been subject to a detailed characterisation exercise, described in detail by Glamorgan-Gwent Archaeological Trust at the following website:

http://www.ggat.org.uk/cadw/historic_landscape/main/english/historical.htm

- 2.5.5 Confidence levels for this ASIDOHL are therefore high in most respects. The only caveat being the unknown condition and survival of potential sub-surface archaeological deposits on site following landscaping associated with the East Merthyr Landscape reclamation Scheme.

3 ASIDOHL Stage 2 – Assessment of direct, physical impacts of development

3.1 Introduction

3.1.1 This section comprises a description and quantification of the direct physical impacts of development on the Historic Character Area(s) affected by the proposed development.

3.1.2 The description and quantification are considered in three ways:

- a) In absolute terms, *i.e.* the proportion of the surface area of the HLCA affected
- b) In relative terms, *i.e.* the proportion of each of the key historic landscape characteristics (as identified in the Historic Landscape Characterisation report) that will be permanently lost or removed by the proposed development.
- c) In landscape terms, the contribution that the affected elements of the key historic landscape characteristics make to the value of the Historic Character Area as a whole.

3.1.3 In each case, the physical impacts are assigned a score, and the overall scores for the impacts on the individual Historic Character Area are used to produce a quantified expression of the overall magnitude of direct impact on a 24 point scale. For each Historic Landscape Character Area these are presented as a table; each table is supplemented with qualifying statements and background information.

3.2 Impact Assessment

3.2.1 The proposed development lies within the Historic Landscape Character Area HLCA 078: Dowlais Great Tip, Trecatti, Trehir and Twyn-y-Waun. The northern tip of the proposed development also lies within the Archaeological Sensitive Area (ASA) 6: Dowlais Ironworks; Supporting Infrastructure; Dowlais Gas. However, ASIDOHLs are intended to assess the impact of a development on Historic Landscape Character Areas. Therefore, only HLCA078 will be assessed for direct, physical, impacts.

HISTORIC LANDSCAPE CHARACTER AREA 078 – DOWLAIS GREAT TIP, TRECATTI, TREHIR AND TWYN-Y-WAUN

3.2.2 This area is characterised by its reclaimed industrial landscape, an area since subject to reclamation, opencast and landfill, or combinations thereof. It includes the former site of multi-period extractive and drainage features associated with the Dowlais Ironworks; the former site of industrial and post-medieval upland settlements; and the former site of a regionally important Medieval Fair/market.

3.2.3 HLCA 078 comprises an extensive area of reclaimed industrial land, part of which has been subjected to opencast operations. The area encompasses the sites of Longtown (Trehir), Trecatti and Twyn-y-waun, the latter being the former site of a medieval market mentioned in numerous documentary sources.

3.2.4 The area formed part of the extensive coal and ironstone workings associated with Dowlais Ironworks, part of which survives within the adjacent HLCA 039. The workings of the area spanned from the latter half of the 18th century, through the hey days of

iron production associated with railway construction during the 1840s, and the conversion of Dowlais to steel production during the 1860s. With conversion to steel production the area's mineral workings declined, being all but abandoned by the early 1870s; a result of coal and iron ore imports from northern Spain, the local ore, rich in phosphorous and sulphur being unsuitable for steel production. By 1879, most if not all the pits and levels within the area, were probably already defunct.

A – In Absolute Terms

- 3.2.5 The entire development area within the HLCA consists of 7.6% (c.14.6 hectares) of the area of the HLCA (193.4 hectares). The proposed development is likely to entail extensive landscaping works to excavate a surface water lagoon at the southern end of the site and potentially across the entire development site prior to the establishment of a formation level. Once this has been achieved hard standing will be created across much of the site. The large warehouse buildings are likely to be of portal construction with minimal foundations supporting a steel frame.
- 3.2.6 The direct physical impact of the development scheme is difficult to fully assess at this pre-application stage. Nevertheless, the initial groundworks, if necessary, may entail the reduction of the level of the Dowlais tip and as such are unlikely to directly impact upon any sub-surface archaeological remains associated with the Dowlais Iron works or earlier mining activity. The Dowlais tip was largely cleared in the area of the development site through open cast mining during the 1990s, prior to the construction of the A4060 road. The open cast area was subsequently backfilled and stabilised. The backfill ranges in thickness from 0m along the western limit of coal extraction (which does not coincide with the western site boundary), to 15m along the eastern limit of the development area, and from 10-20m deep at the northern and southern ends of the site, to as little as 5m deep in the central area. Foundations for the warehouse buildings will be located in the western part of the site, largely outside of the former open cast area and so may also have an impact upon earlier remains. However, this western part of the site was occupied by the Great White Tip and has also been much altered subsequently. Furthermore, the embankment alongside the A4060 will remain untouched and the proposed development will at most affect 13.5ha or 7% of the HLCA, which is considered a *Slight* impact.

Table 1. A - Assessment of Direct, Physical Impacts on Historic Character Area 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun

Absolute Impact (loss of area)	Magnitude and Score
c.13.5ha, 7% area	Slight – 2

B – In Relative Terms

- 3.2.7 The present appearance of the landscape within the Merthyr Tydfil historic landscape area is largely due to the rapid growth of the iron and coal industries in the region during the 19th century. Most of the sites are directly associated with coal and ironstone extraction and the transport system which developed alongside it. While there is significant evidence of earlier industrial activity from the surrounding region dating back to the Middle Ages, such evidence appears to have been largely removed or obscured by the later intensive industrial land use. There are 33 Category A assets within the Merthyr Tydfil Registered Historic Landscape Area. These include 22 Scheduled Ancient

Monuments, 2 grade I listed buildings and 9 grade II* listed buildings. There are also 180 category B assets (grade II listed buildings). Figure 4 shows listed buildings within 1km of the site and Scheduled Ancient Monuments within 2km of the site.

- 3.2.8 The Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun Historic Landscape Character Area (HLCA 078) is the individual subdivision of the Merthyr Tydfil Registered Historic Landscape within which the proposed development site is located. Characteristically it comprises a reclaimed industrial landscape; an area of industrially altered upland Common. Formerly the site of multi-period extractive and drainage features associated with the Dowlais Ironworks and of industrial and post-medieval upland settlements. The area encompasses the sites of Longtown (Trehir), Trecatti and Twyn-y-waun, the latter being the former site of a medieval market mentioned in numerous documentary sources. There are no category A or B assets within this Historic Landscape Character Area.
- 3.2.9 The characteristic historic features of the HLCA have been removed from the proposed development area; formerly part of the Dowlais Great Tip, the tip was removed and levelled during the 1990s, first through open cast coal mining and then as part of the East Merthyr Phase II (EMII) (Great White Tip) reclamation scheme. The Land is now earmarked for development. However, it should be noted that nothing of historic interest existed above ground in this Character Area when the tip was in existence. The potential for the survival of subsurface archaeological features is low.
- 3.2.10 The proposed development site will not affect any known Category A assets, although two specific Category B archaeological assets were noted within the bounds of the development area within this HLCA. The first is a group of cottages called Pwll y Hwaid (numbers 16, 17 and 17a) centred on NGR SO06310673 (Page, 1993). These cottages are first depicted on the 1882 OS 1:2500 map. They do not appear on the Merthyr tithe map of 1846. However further groups of cottages to the south and north, associated with this settlement, and formerly situated within the proposed development area, do appear on the Tithe Map. They include a group of terraced cottages to the south known as 13, 14, 15 and 20 Pwll y Hwaid on the 1963 OS plan but called Penydarren on the Tithe Map. Another cottage known as Penydarren on the Tithe map to the north is associated with Ton Y ffald coal pit on subsequent maps and is marked as a ruin on the 1963 map. All these cottages form part of a larger linear settlement stretching along the old road from Mountain Hare to Dowlais, originally extending to the north east beyond the proposed development site. This settlement was known as Penydarren on the Tithe map but subsequently became known as Pwll yr Hwaid. The northern part of this settlement, including an independent meeting house, became subsumed under the Dowlais Great Tip by 1900. It appears to have been a mining community and had associated industrial infrastructure such as pits and levels, limekilns and ponds. The name Pwll yr Hwaid means the late pool and refers to a large pool formerly located partly in the NE corner of the development site. It was not shown on the 1846 Tithe Map and had become subsumed under the Dowlais Great Tip by 1900. The settlement was also associated with a field system of enclosed paddocks and meadows alongside a stream which drained the eponymous Pwll. These meadows represented a linear parcel of enclosed land between large areas of unenclosed common. Some of the former field boundaries within the proposed development site, and depicted on the Tithe Map, were associated with a field called Ton Y Ffald. This field partially survived beyond the

southwestern edge of the Dowlais Great Tip, until the advent of the East Merthyr Land Reclamation Scheme in the 1990's. This field also contained shafts and levels and other infrastructure associated with the Ton Y Ffald coal pit during the 19th and early 20th centuries. The above cartographic evidence for settlement, field systems, industrial infrastructure, drainage and pools can all be classified as Category D assets, having been largely destroyed through open cast mining.

- 3.2.11 The second Category B asset recorded within the proposed development site is the GWR and Rhymney Joint Railway Zig Zag branch (Page, 1993; EM7). One arm of this line ran through the central southern part of the proposed development site, from SE to NW in a sweeping curve, demolishing the southernmost part of the pre-existing settlement of Pwll Yr Hwaid and crossing the old road from Mountain Hare to Dowlais by means of a bridge. The joint railway opened in 1876, although the historic maps suggest that the zig zag branch was not constructed until the 1890s and was dismantled by 1973. It ran along an embankment through the site with an incline of 1:35 and switchbacks in order to gain height and link Goat Mill and the lower parts of the Dowlais Ironworks with the main section of the GWR and Rhymney Joint Railway.
- 3.2.12 All surface evidence of the above assets was removed during the East Merthyr Land Reclamation Scheme in the 1990s. It is unlikely that sub-surface archaeological remains survive following open cast mining, although it is possible that some of the deeper features such as mine shafts and pools may have partial survival. The impact of the proposed development on these potential sub surface remains is currently unknown and will depend on: to what extent they survive; and how close they are to the surface following landscaping works associated with the East Merthyr Land Reclamation Scheme. It is considered most likely however, considering that the Zig Zag branch of the GWR and Rhymney Joint Railway was raised on an embankment of which no trace is now visible above ground, that sub-surface remains of this asset will be negligible.

Table 2. B - Relative and Landscape Impacts (Loss of Known Elements or Characteristics) & Scores

Element / % Loss	Magnitude	Category	Landscape Value	Landscape Value Effect
Sub surface remains of field pattern/ Less than 10%	Very Slight - 1	D - 1		
Sub-surface remains of early industrial infrastructure (shafts, levels, limekilns, drainage pools/ Less than 10%	Very Slight - 1	D- 1		
Sub-surface remains of settlement Pwll Yr Hwaid 02759m/ Less than 10%	slight - 2	B - 3	Very low – 1	Very Slightly Reduced – 1
Sub surface remains of GWR & Rhymney Joint Railway Zig Zag Branch 06366m/ Less than 1%	Very Slight - 1	B - 3	Very low – 1	Very slightly reduced – 1
Total score (2+3+1+1) + (1+3+1+1) / 4 = 3				

Table 3. Overall Magnitude of Direct Physical Impacts on Historic Character Area 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun

Score	Grading
2+ 3 = 5 (rounded to nearest whole number)	Slight

4 ASIDOHL Stage 3 – Assessment of indirect impacts of development

4.1 Introduction

4.1.1 This section comprises a description and quantification of the indirect impacts of development on the Historic Character Areas affected (Figures 3 & 3A).

4.1.2 A clearly defined area will be directly or physically affected by the development, but a much greater area could be indirectly affected due to fragmentation or changes to the setting of features in the landscape. Changes to views of, or views from, a landscape feature are also important potential impacts. This stage is divided into two categories: the first (A) assesses the indirect physical impacts, the second (B) the indirect (non-physical) visual impacts.

4.1.3 A – indirect, physical impacts

The principal types of indirect physical impact listed in the Guide to Good Practice are:

- (i) An increased risk of exposure, erosion, disturbance, decay, dereliction or any other detrimental physical change to elements, during or consequent to development.
- (ii) Related to (i), the likelihood of increased management needs to maintain elements as, for example, through altered habitats, water levels, increased erosion, new access provision etc., during or consequent to development.
- (iii) The severance, fragmentation, dislocation or alteration of the functional connections between related elements, for example, a field system becomes ‘severed’ from its parent farmstead by an intervening development.
- (iv) The frustration or cessation of historic land use practices, for example, it becomes more difficult or impossible to manage an area in a traditional manner as a result of development.
- (v) The frustration of access leading to decreased opportunities for education, understanding or enjoying the amenity of elements, during or consequent to development.

4.1.4 B – indirect (non-physical) visual impacts

The principal types of indirect (non-physical) visual impact listed in the Guide to Good Practice are:

- (i) Visual impacts on elements from which a development can be seen (considered up to its maximum height). The impact might be on ‘views to’ or ‘views from’ these elements, and it should be assessed with reference to key historic viewpoints and essential settings. These should be considered in relation to a site’s original character and function, as well as to the vantage points and visual experience of a visitor today.

- (ii) Impact on the visual connections between related elements, by occlusion, obstruction, etc.
- (iii) Conversely, the creation of inappropriate visual connections between elements not intended to be inter-visible originally.
- (iv) Visual impact of the development itself in relation to the existing historic character of the area considering:
 - its form — the scale, number, density, massing, distribution etc.
 - its appearance — the size, shape, colour, fabric etc. of its constituent features

4.1.5 There are eight HLCAs directly bordering the HLCA078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun in which the site is located. Of these, three have both a direct historical relationship with the former industrial character of the site as well as a close physical proximity to the site. These are HLCA008 Dowlais Ironworks Area; HLCA039 Ffos Y Fran; and HLCA040 Incline Top. The proposed development will only have a very slight impact in a physical way on any of them. This is largely because the physical historic character of the site only survives below ground and physical links to the surrounding landscape have already been lost. Nevertheless, the potential loss of elements of the sub-surface archaeology arising from the development may result in the loss of information that could help inform these related character areas and they will be assessed below.

4.1.6 The overall magnitude of indirect physical impacts arising from the proposed development is therefore assessed as Slight or Very Slight.

4.1.7 The site is overlooked by higher ground on the east and north sides meaning that there is the potential for the development to have a non-physical (visual) impact on the neighbouring HLCAs mentioned above as well as HLCA 007 – Dowlais. However, because all above surface visible trace of the historic character of the site was removed during the East Merthyr Land Reclamation Scheme in the 1990s then the historic visual character of the site has already been lost. The only exception to this occurs in the southern part of the site where a short 75m section of late 19th century field boundary ditch survives (Plate 5; Figure 5). However, this feature has been modified during the late 20th century East Merthyr Land Reclamation Scheme. Furthermore, according to current proposals, it will not be directly impacted by the development. Therefore, it is considered that the proposed development will only have a slight or very slight indirect visual impact on neighbouring HLCAs. Furthermore, the proposed development site is effectively screened from the surrounding HLCAs by a wooded embankment on its east side and a band of mature trees running along the west and southern sides (plates 3,6,7,9 & 10). The only part of the site visible from any nearby designated historic assets is the tree covered embankment on the eastern boundary of the site (plates 14-17). However, this embankment will remain unaffected by the proposed development.

4.1.8 The overall magnitude of indirect (non-physical) visual impacts arising from the proposed development is therefore assessed as Slight or Very Slight.

4.2 Impact Assessment

HISTORIC CHARACTER AREA 007 Dowlais

- 4.2.1 This area comprises an historic Industrial settlement owned by the Iron Company. It has both a regular and evolved element to the layout consisting of an initial 18th century ribbon development and unplanned irregular dispersed settlement of the 'squatter-type' at Cwm Rhyd-y-Bedd. This was supplemented by linear grid planned core which was already partly in place by 1814 and largely complete by 1878. The area contains public, educational and religious buildings as well as extensive 20th century redevelopment and transport corridor.
- 4.2.2 At its closest point, the character area lies approximately 300m north of the proposed development site. It contains the Dowlais Conservation Area and 9 listed buildings, all grade II, apart from the grade II* Former Guest Memorial Library (LB 11490). It is situated on slightly elevated ground to the north of the development site, although views towards the site are obscured by intervening mature trees and urban development. The only part of the site that is clearly visible from Dowlais is the tree covered embankment on the east side of the site, which will remain undeveloped. Historically the two HLCAs; 007 Dowlais and 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun are linked by their association with the Dowlais Ironworks.
- A (i): There is not considered to be an increased risk of exposure, erosion, disturbance, decay, dereliction or any other detrimental physical change to any heritage assets or historic characteristics of HLCA 007, during or consequent to development. The site is separated from Dowlais by a busy main road and an industrial estate and will be entirely in keeping with the character of the surrounding area.
- A (ii): Related to (i), there is considered to be no likelihood of increased management needs to maintain historic character elements within HLCA 007 during or consequent to development.
- A (iii): Whilst there is an historic functional connection between the site and HLCA007, this connection is once removed as both have a direct but separate historic relationship with the Dowlais Ironworks. Furthermore, the above ground landscape character of the development site has already been removed during the East Merthyr Land Reclamation Scheme. The historic character of the site remains only in its subsurface archaeological potential. The impact of the development on this potential can be mitigated through suitable archaeological investigation in advance of and/or during the groundworks phase of the development.
- A (iv): The historic land use of HLCA007 is that of a residential area associated with adjacent industrial activity. There is the possibility, if local people are employed on the new development site, that the development may serve in some small way to help continue the historic land use practices within Dowlais.
- A (v): The proposed development site is currently open and used as an informal recreational space (dog walking for example). However, this amenity element of the site is not related to its historic character and the development will not

affect opportunities for education, understanding or enjoying the amenity of elements of HLCA007, during or consequent to development.

Table 4. Assessment of Indirect, Physical Impacts on Historic Character Area 007 Dowlais

Impacts	Category & Score	Magnitude & Score
A (iii) Potential fragmentation of sub surface archaeological potential	U - 1	Very slight – 1
Average Score (1+1) / 1 = 2 (rounded up)		

4.2.3 The following indirect non-physical (visual) impacts are laid in relation to the references given in 4.1.4 above:

- B (i):* Topographically HLCA 007 sits on a WSW projecting spur of Pen March. The southern part of the area then would have south facing views over the development site if there were no intervening visual obstacles. The clearest view of the site from key heritage assets within HLCA007 is from the grade II listed building of Dowlais Public Library (LB 27083), which also lies within the Dowlais Conservation Area (plate 14). However, the only part of the proposed development site visible from this point is the tree covered embankment on the east side, an area that will not be affected by the development. The development itself will be screened by intervening buildings and trees. This embankment is also visible from the grade II listed Dowlais Stables House (LB 11477) (plate 16). These views will not be affected by the development.
- B (ii):* Views towards HLCA 007 are also available from the north end of the development site (plate 4), the loss of informal amenity space on the site may have a slight impact on public enjoyment of views towards this historic character area, however, this could be mitigated through enhancing public access to other parts of the site such as the eastern embankment.
- B (iii):* The development does not open up new views.
- B (iv):* The stated historic landscape character of the development site within HLCA 078 is one of a *reclaimed industrial landscape typified by open-cast and landfill operations. It contains nothing of historic interest above ground* (Avent & Kelly, 2017). The visual appearance of the proposed development is therefore in keeping with the character of the parent HLCA. There will therefore be no impact on the historic character of the site as viewed from HLCA007.

Table 5. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 007 Dowlais

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	B - 3	Very Slight – 1
B (ii) Visual fragmentation of landscape coherence	B - 3	Very Slight – 1
Average Score (3+1) + (3+1) / 2 = 4		

Indirect, physical impacts + indirect, non-physical (visual impact): $2 + 4 = 6$

To create number on a 28-point scale - $(6 \times 28) / 20 = 8$

Table 6. Overall Magnitude of Indirect Impacts on Historic Character Area 007 Dowlais

Score	Grading
8	slight

HISTORIC CHARACTER AREA 008 Dowlais Ironworks Area

- 4.2.4 This Character area comprises an historic industrial area: a former ironworks site. It has nationally and internationally important historic, technological, and artistic associations. It contains the site of the ironmaster 's residence, water management features and former power generation sites. The HLCA encompasses the site of the former Dowlais Ironworks, which was founded in 1759, and went on in the 19th century to become the largest ironworks in the world. The area now forms an industrial park with significant standing remains, such as the Blast Engine House, together with buried remains including the base of the Blast Furnaces.
- 4.2.5 The NW boundary of the proposed development borders this HLCA, which includes the northern part of Goat Mill Road. HLCA 008 contains two listed buildings: the grade II* Dowlais Works Blast Engine House and the grade II Mile Post on A4102, as well as part of the Dowlais Conservation Area. Topographically, HLCA 008 is situated on a level with the development site or very slightly below it. Views towards the site from the designated historic assets are obscured by the intervening modern Phoenix Industrial Estate which now occupies a large part of HLCA 008. The only part of the character area that is clearly visible from the development site are the modern industrial units that border the site to the north. Historically the two HLCAs; 008 Dowlais Ironworks Area and 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun are linked by their association with the Dowlais Ironworks.
- 4.2.6 The following indirect physical (visual) impacts are laid in relation to the references given in 4.1.3 above:
- A (i): There is not considered to be an increased risk of exposure, erosion, disturbance, decay, dereliction or any other detrimental physical change to any heritage assets or historic characteristics of HLCA 008, during or consequent to development. The proposed development site is separated from the historic Dowlais Ironworks by a busy main road and a modern industrial estate and will be entirely in keeping with the character of the surrounding area.
 - A (ii): Related to (i), there is considered to be no likelihood of increased management needs to maintain historic character elements within HLCA 008 during or consequent to development.
 - A (iii): There is a direct historic functional connection between the site and HLCA 008. However, the landscape character of the development site has already been removed during the East Merthyr Land Reclamation Scheme. The historic character of the site remains only in its subsurface archaeological potential. The impact of the development on this potential can be mitigated through suitable archaeological investigation in advance of and/or during the groundworks phase of the development.
 - A (iv): The historic land use of HLCA 008 is that of industrial activity. The development is broadly in keeping with both the historic and modern character of the area.
 - A (v): The proposed development site is currently open and used as an informal recreational space (dog walking for example). However, this amenity element

of the site is not related to its historic character and the development will not affect opportunities for education, understanding or enjoying the amenity of elements of HLCA 008, during or consequent to development.

Table 7. Assessment of Indirect, Physical Impacts on Historic Character Area 008 Dowlais Ironworks Area

Impacts	Category & Score	Magnitude & Score
A (iii) Potential fragmentation of sub surface archaeological potential	U - 1	Very slight – 1
Average Score (1+1) / 1 = 2 (rounded up)		

4.2.7 The following indirect non-physical (visual) impacts are laid out in relation to the references given in 4.1.4 above:

- B (i):* Topographically HLCA 008 is on a level and adjacent to the site. However, the part of the HLCA that is closest to the site comprises a modern industrial estate and main road. The key heritage assets are situated on the far side of this modern industrial estate and views towards the site are entirely obstructed by it. The only clear view of the site from HLCA 008 is from the southern edge of the modern industrial estate (plate 1). Whilst this view will clearly be affected by the development, it will not impact on any key heritage assets within HLCA 008. The resulting development will be visually in keeping with the current visual character of this part of HLCA 008.
- B (ii):* Views towards HLCA 008 are also available from the north end of the development site (plate 4), the loss of informal amenity space on the site may have a slight impact on public enjoyment of views towards this historic character area, however, this could be mitigated through enhancing public access to other parts of the site such as the eastern embankment.
- B (iii):* The development does not open up new views.
- B (iv):* The stated historic landscape character of the development site within HLCA 078 is one of a reclaimed industrial landscape typified by open-cast and landfill operations. It contains nothing of historic interest above ground. The visual appearance of the proposed development is therefore in keeping with the character of the parent HLCA. There will therefore be no impact on the historic character of the site as viewed from HLCA 008.

Table 8. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 008 Dowlais Ironworks Area

Impacts	Category & Score	Magnitude & Score
B (ii) Visual fragmentation of landscape	B - 3	Very Slight – 1
Average Score (3+1) / 1 = 4		

Indirect, physical impacts + indirect, non-physical (visual impact): 2 + 4 = 6

To create number on a 28-point scale - (6 x 28) / 20 = 8 (rounded up)

Table 9. Overall Magnitude of Indirect Impacts on Historic Character Area 008 Dowlais Ironworks Area

Score	Grading
8	Slight

HISTORIC CHARACTER AREA 039 FFOS Y FRAN

- 4.2.8 This character area comprises a nationally important Industrial landscape associated with the Dowlais Ironworks. It consists of an industrially altered upland Common: an intensive area of extractive features dating predominantly from the early to mid-19th century. These include coal and ironstone workings, primarily levels and pits, also the remains of early crown pit workings, and patch workings; transport networks; industrial and public rail, drainage features; and industrial settlement. This latter element includes the scheduled Ffos-y-fran Iron Worker's settlement (GM496).
- 4.2.9 At its closest point, the HLCA lies approximately 30m from the SE border of the development area, across the A4060 trunk road. Topographically it lies above the development site to the east with wide views across it towards Merthyr Tydfil. However, due to the special topography of the site, lying below a steep wooded embankment on the east side, the flat area of the proposed development itself is foreshortened and obscured. HLCA 039 does not contain any listed buildings or conservation areas, but it does contain the scheduled monument of Ffos y fran Ironworker's settlement (GM496).
- 4.2.10 The following indirect physical impacts are laid in relation to the references given in 4.1.3 above:
- A (i): There is not considered to be an increased risk of exposure, erosion, disturbance, decay, dereliction or any other detrimental physical change to any heritage assets or historic characteristics of HLCA 039, during or consequent to development. The site is separated from the character area by a steep wooded embankment with a busy trunk road above it. Furthermore, the single designated historic asset within HLCA 039: Ffos y fran ironworkers' settlement (GM496) lies close the SE corner of the HLCA, more than 1km distant from the development site at its closest point.
 - A (ii): Related to (i), there is considered to be no likelihood of increased management needs to maintain historic character elements within HLCA 039 during or consequent to development.
 - A (iii): There is a direct historic functional connection between the site and HLCA 039. However, the landscape character of the development site has already been removed during the East Merthyr Land Reclamation Scheme. The historic character of the site remains only in its subsurface archaeological potential. The impact of the development on this potential can be mitigated through suitable archaeological investigation in advance of and/or during the groundworks phase of the development.
 - A (iv): The development site is disconnected from HLCA 039 by a modern trunk road and will have no impact on the ability to manage HLCA 039.
 - A (v): The proposed development site is currently open and used as an informal recreational space (dog walking for example). However, this amenity element of the site is not related to its historic character and the development will not affect opportunities for education, understanding or enjoying the amenity of elements of HLCA 039, during or consequent to development.

Table 10. Assessment of Indirect, Physical Impacts on Historic Character Area 039 Ffos y fran

Impacts	Category & Score	Magnitude & Score
A (iii) Potential fragmentation of sub surface archaeological potential	U - 1	Very slight – 1
Average Score (1+1) / 1 = 2 (rounded up)		

4.2.11 The following indirect non-physical (visual) impacts are laid out in relation to the references given in 4.1.4 above:

B (i): Topographically HLCA 039 lies above and overlooks the proposed development site. However, the specific topography of the site dictates that only a small part of it is visible, foreshortened behind the eastern embankment. The key heritage asset, scheduled monument GM496) lies over 1km distant and views towards the site are obstructed by the wooded embankment (plate 17). Furthermore, the resulting development will be visually in keeping with the current visual character of neighbouring areas, reducing any visual impact.

B (ii): Views eastwards towards HLCA 039 from the development site are also obscured by the presence of the wooded embankment (plates 7, 9 & 10).

B (iii): The development does not open up new views or visual links.

B (iv): The visual appearance of the proposed development will not affect this specific HLCA.

Table 11. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 039 Ffos y fran

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	A - 4	Very slight – 1
Average Score (4+1) / 1 = 5		

Indirect, physical impacts + indirect, non-physical (visual impact): 2 + 5 = 7

To create number on a 28-point scale - (7 x 28) / 20 = 10 (rounded off)

Table 12. Overall Magnitude of Indirect Impacts on Historic Character Area 039 Ffos y fran

Score	Grading
10	Moderate

HISTORIC CHARACTER AREA 040 INCLINE TOP

- 4.2.12 This character area comprises a major industrial transport corridor, characterised by the route of the Penydarren Incline and the Dowlais Railway. New roads in the area primarily serving the area's industrial estates continue the transport corridor characteristics. The settlement of Incline Top contains early industrial housing as well as the now more prominent recent industrial estate. The area also formerly contained industrial extractive and water management features.

The eastern boundary of HCLA 040 closely follows that of the western boundary of the development site. Topographically, HCLA 040 sits below the site and views between the two are obscured by a band of mature trees running along the western boundary of the site (plate 6). The only position within the site where HLCA 040 is clearly visible is at the western entrance to the site (plate 8).

HLCA 040 does not contain any designated historic assets such as listed buildings, conservation areas or Scheduled Monuments.

- 4.2.13 The HLCA borders the western edge of the development area, but there will be no indirect physical impact on this Character Area by this proposed development.
- 4.2.14 Similarly, there will be no indirect non-physical (visual) impact on this Character Area by this proposed development. This is because the development is fully screened from HLCA 040 apart from in one place (the site entrance), furthermore, the development will be in keeping with the visual character of HLCA 040. Finally, no significant visual historic elements survive above ground in either character area.

HISTORIC CHARACTER AREA 078 DOWLAIS GREAT TIP, TRECATTI, TREHIR AND TWYN-Y-WAUN

4.2.15 This is the historic character area in which the development site is wholly located. Its characteristics are described in sections 2.2.4 & 3.2.2-4 above.

4.2.16 The development site is located close to the southern tip of this character area, and historically, close to the SE end of the Dowlais Great Tip from which the character area is derived. There are no designated historic assets of any kind (including listed buildings, conservation areas of Scheduled Monuments) located within this character area.

4.2.17 The following indirect physical impacts are laid in relation to the references given in 4.1.3 above:

A (i): The historic characteristics of HLCA 078 do not lie above ground because these have all been removed, partly as a result of the East Merthyr Landscape Reclamation Scheme. The historic character of HLCA 078 lies rather in its sub surface archaeological potential. The northern tip of the site lies within an Archaeologically Sensitive Area (ASA6: Dowlais Ironworks; Supporting Infrastructure; Dowlais Gas). However, the sub-surface archaeological potential of the site is assessed as low following open cast mining and the subsequent East Merthyr Landscape Reclamation Scheme. Nevertheless, the north-western and western parts of the site lay outside of the open cast mining area, but not outside the area of the subsequent reclamation scheme. There is therefore a slightly increased risk physical change to the sub-surface archaeological potential of this character area, during and potentially consequent to development.

A (ii): Related to (i), there is considered to be a likelihood of increased management needs to maintain these sub surface historic character elements within HLCA 078 during or consequent to development. This management is likely to take the form of suitable archaeological conditions during the groundworks phase of the development in the western and north-western parts of the site where the ground has not been subjected to open cast mining.

A (iii): There is a direct historic functional connection between the sub surface archaeological potential of the site and the main body of HLCA 078. The archaeological potential is low, although any surviving sub surface archaeological remains will add to the overall knowledge of the history and development of the character area as a whole. Again, the impact of the development on this potential can be mitigated through suitable archaeological condition during the groundworks phase of the development. In fact, such a programme of archaeological investigation should serve to enhance our knowledge of the character area.

A (iv): The development site occupies the southern tip of a south westerly projecting limb of HLCA 078, which is already slightly separate from the main body of the character area. The development may have a theoretical impact on the ability to manage historic land use practices in this southern part of the HLCA. However, in reality such practices ceased with the final closure of the Dowlais

Ironworks in 1987 and the levelling of the site during the East Merthyr Land Reclamation Scheme.

- A (v): The proposed development site is currently open and used as an informal recreational space (dog walking for example). However, this amenity element of the site is not related to its historic character and the development will not affect opportunities for education, understanding or enjoying the amenity of elements of HLCA 078, during or consequent to development. It is possible that Archaeological mitigation works associated with the development could provide enhanced opportunities for education and understanding of the historic character of the site.

Table 15. Assessment of Indirect, Physical Impacts on Historic Character Area 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun:

Impacts	Category & Score	Magnitude & Score
A (i) detrimental physical change to the sub-surface archaeological potential	U - 1	Slight - 2
A(ii) likelihood of increased management needs to maintain sub surface historic character elements	U - 1	Slight - 2
A (iii) Potential fragmentation of sub surface archaeological potential	U - 1	Slight – 2
Average Score $(1+2)+(1+2)+(1+2) / 3 = 3$ (rounded up)		

4.2.18 The following indirect non-physical (visual) impacts are laid in relation to the references given in 4.1.4 above:

- B (i): Topographically the main body of HLCA 078 lies above and overlooks the proposed development site. However, the specific topography of the site dictates that only a small part of it is visible, foreshortened behind the eastern embankment. The site occupies almost the whole of the southern tip of the HLCA resulting in the main vantage points lying to the north and northeast. Views from the northeast are careened by the wooded embankment on the east side of the site which also continues beyond the site to the north. The site is most clearly visible from the small area of flat ground immediately north of the site which forms part of the Phoenix Industrial Estate (plate 1). The development will clearly impact on this view. However, it should be re-iterated that nothing of the historic character of HLCA 078 survives above ground.
- B (ii): Similarly, views out to the main body of the HLCA from the development site are also limited due to the screening effect of the eastern wooded embankment (plate 4).
- B (iii): The development does not open up new views or links.
- B (iv): The visual appearance of the proposed development will clearly have an effect on this HLCA. However, nothing of the historic character of this HLCA survives above ground. This visual impact may be more aesthetic than historic.

Table 16. Assessment of Indirect (Non-Physical) Visual Impacts on Historic Character Area 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun:

Impacts	Category & Score	Magnitude & Score
B (i) Visual impact on HLCA elements	U - 1	Very Slight – 1
B (ii) Visual fragmentation of surrounding landscape	U - 1	Very Slight – 1
B (iv) Visual appearance of the proposed development	U - 1	Very Slight - 1
Average Score $(1+1) + (1+1)+(1+1) / 3 = 2$ (rounded up)		

Indirect, physical impacts + indirect, non-physical (visual impact): $2 + 3 = 5$

To create number on a 28-point scale - $(5 \times 28) / 20 = 7$ (rounded off)

Table 17. Overall magnitude of indirect impacts on historic character area 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun:

Score	Grading
7	Slight

5 ASIDOHL Stage 4 - Evaluation of relative importance

5.1 Introduction

5.1.1 The following section comprises an 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.

5.1.2 The section (Stage 4) will be completed with a determination of the average, overall value of all the Historic Character Areas (or part(s) thereof) affected.

5.1.3 The evaluation criteria used is that suggested within the *Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process* (Cadw and CCW 2007).

5.2 Evaluation of the relative importance of the part of Historic Landscape Character Areas directly and/or indirectly affected by development.

5.2.1 **HLCA 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun:** The proposed development site comprises 11.2% by area of the entire HLCA, although that part of the site which will be subjected to development is a little smaller at 7% of the entire HLCA. The historic character of the development site is typical of the HLCA as a whole being a reclaimed industrial landscape containing nothing of historic interest above ground. Therefore, rarity is low, but has a good group value. However, as any remaining above ground historic assets were removed during the 1990's, condition and integrity is lower. There is good cartographic evidence for the development site and potentially good documentary evidence relating to the Ton Y Ffald mineworkings as well as the Penydarren and Dowlais Iron works. It is not known what documentary evidence survives for the Pwll Yr Hwaid settlement to support the 19th century cartographic evidence but considering that the entire settlement was owned by either the Penydarren or Dowlais Ironworks, the potential for documentary evidence surviving in company records is good. The potential for future analysis of this area of historic landscape is therefore moderate largely because of the potential for well-preserved documentary and cartographic evidence. The site is currently used by the public for unofficial recreational activities such as dog walking so the potential to develop it partly as a public amenity is moderate.

5.2.2

Table 18. Evaluation of the relative importance of the part of HLCA 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun directly and/or indirectly affected by development.

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:	a) Whole of Historic Character Area					b) Whole of Historic Landscape Area on the Register				
Criterion:										
Rarity			✓						✓	
Representativeness					✓				✓	
Documentation			✓					✓		
Group Value				✓					✓	
Survival					✓					✓
Condition					✓					✓
Coherence					✓					✓
Integrity					✓					✓
Potential				✓				✓		
Amenity			✓						✓	
Associations		✓						✓		

Calculations for the relative importance of the HLCA for:

Step A: (1 x High @ 4) + (3 x Moderate @ 3) + (2 x Low @ 2) + (5 x V Low @ 1) = 22

Step B: (3 x Moderate @ 3) + (4 x Low @ 2) + (4 x V Low @ 1) = 21

5.3 Evaluation of the relative importance in the national context, of the Historic Character Areas directly and/or indirectly affected by the proposed development (Step C)

5.3.1 Three industrial areas within the Welsh Valleys are included in the Register of Landscape of Outstanding and Special Historic Interest: Blaenavon, Rhondda and Merthyr Tydfil. Merthyr Tydfil, however, is the only one that relates directly to the Iron Industry and is of National and international importance. It was probably the largest iron-making town in the world in the early to mid- 19th century, with an output calculated to be a quarter of that of the entire United States of America. The town, and its associated landscape, was rapidly transformed from a modest village in the 1750s to the largest town in Wales by 1801. The Dowlais Ironworks were themselves of National and international importance, becoming the largest ironworks in the world during the 19th century. The rails for the Stockton and Darlington Railway were produced at the Dowlais works in 1821 (Avent & Kelly, 2017).

- 5.3.2 The overall value of the HLCA in the national context is calculated using the same criterion as laid out in Table 19, but applied nationally.

Table 19. Evaluation of the relative importance in the National Context of HLCA 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun Directly And/Or Indirectly Affected

Value	V-High / V-Good	High/ Good	Mod/ Med	Low	V-Low/ Poor
In relation to:	c) Whole of Historic Character Area				
Criterion:					
Rarity			✓		
Representativeness				✓	
Documentation			✓		
Group Value			✓		
Survival					✓
Condition					✓
Coherence					✓
Integrity					✓
Potential				✓	
Amenity				✓	
Associations			✓		

Calculations for the relative importance of the HLCA for:

Step A: (4 x Moderate @ 3) + (3 x Low @ 2) + (4 x V Low @ 1) = 22

- 5.3.3 In order to determine an average overall value for the HLCA on a scale of 1 – 100 the results of each individual step was divided by 55, then multiplied by 100. This was then divided by 3 (the number of steps) and the average overall value is then rounded off and is presented in the table below:

Table 20. Average, overall value of all the Historic Character Areas (or part(s) thereof) affected

HLCA	Calculations	Grading
HLCA 078 – Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun	(40+38+40)/3	39 – Moderate

6 ASIDOHL Stage 5 - Assessment of overall significance of impact

6.1 Introduction

6.1.1 This section comprises an 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. This combines the results of previous stages of the ASIDOHL, with the reasoning behind those results laid out in the relevant sections. Although scoring is used extensively in the previous sections, this does not convert directly into the following table, rather the previous scorings are used to help inform a professional judgement on the value of and impact upon the historic landscape.

6.1.2 Because the impact on the surrounding character areas (HLCA 007, 008, 031, 040) was only measurable for indirect physical and non-physical (visual) impacts, and that these impacts were measured as either slight, very slight or non-existent in every case; the overall significance of the impact of the development on these character areas can be considered as negligible.

Table 21. Summary of the overall significance of the impact of development on Merthyr Tydfil Landscape of Outstanding Historic Interest (HLW (MGL) 2).

HLCA	Value of Historic Character Area (based on Stage 4 results)	Impact of Development (based on Stages 2 & 3 results)	Reduction of Value of the Historic Landscape Area on Register	Overall Significance of Impact
HLCA 078 – Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun	Medium - 5	Very Low – 1	Very Low - 1	5+1+1=7 Slight

7 Conclusion

- 7.1.1 An Assessment of the Significance of Impact of Development on the Historic Landscape (ASIDOHL2) has been undertaken on a proposed development of a plastic recycling and processing facility, at Goat Mill Road, Merthyr Tydfil. The proposed development comprises a plastic recycling and processing facility with associated office accommodation, external storage area, car parking and weighbridge, covering an area of approximately 14.6 hectares. The proposed development lies within the Merthyr Tydfil Landscape of Outstanding Historic Interest in Wales (HLW (MGL) 2). This Landscape is further subdivided into individual Historic Landscape Character Areas (HLCAs). The proposed development lies wholly within HLCA 078 - Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun.
- 7.1.2 The ASIDOHL is laid out in five stages. Stage 1, the introduction, identified the contextual information regarding the site. Details of the proposed development are provided here, as well as the planning policy context. The final design of the development has yet to be decided, although outline potential layout plans, have been provided. Previous assessments of the site include a Desk Based Assessment undertaken by GGAT in advance of the East Merthyr Land Reclamation Scheme (Page, 1993).
- 7.1.3 Stage 2 assessed the direct, physical impact of the proposed development, assessed in absolute, relative terms and landscape terms. This was considered in terms of its impact on HLCA 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun. The overall magnitude of the direct physical impact on the HLCA is considered to be Slight.
- 7.1.4 Stage 3 assessed the indirect impacts of the proposed development, in terms of indirect, physical impacts, and indirect (non-physical) visual impacts. These indirect impacts potentially affect a wider area and several surrounding HLCAs were considered. Due to the removal of all above ground heritage assets within the HLCA 078 (apart for a single short section of field boundary earthwork) during the East Merthyr Land Reclamation Scheme, the proposed development will have a slight or very slight direct or indirect (visual) on any neighbouring HLCA. The indirect impact on HLCA 078 is assessed as slight.
- 7.1.5 Stage 4 formed an evaluation of the relative importance of the HLCA, and the parts within them that were affected by the proposed development. When combined, this considered the overall value of HLCA078 to be Moderate.
- 7.1.6 Stage 5 formed an assessment of the overall significance of the impact. The impact on HLCA 078 Dowlais Great Tip, Trecatti, Trehir and Twyn-Y-Waun is considered to be Slight. The impact of the proposed development will largely be on the potential sub-surface archaeological resource rather than the historic landscape character. The potential scale, character and preservation of this archaeological resource is expected to be low following open cast mining on the site and the subsequent East Merthyr Land Reclamation Scheme. The scale of the impact is uncertain since the final foundation and construction methods are dependent on further intrusive ground investigation works. Nevertheless, the Northern tip of the development site lies within an area

designated as an Archaeologically Sensitive Area (ASA6: Dowlais Ironworks; Supporting Infrastructure; Dowlais Gas). This part of the site was not subjected to open cast mining. Any potential impact on the archaeological resource in the northern and north-western parts of the site could be mitigated through suitable archaeological condition.

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Cadw; search Cadw records

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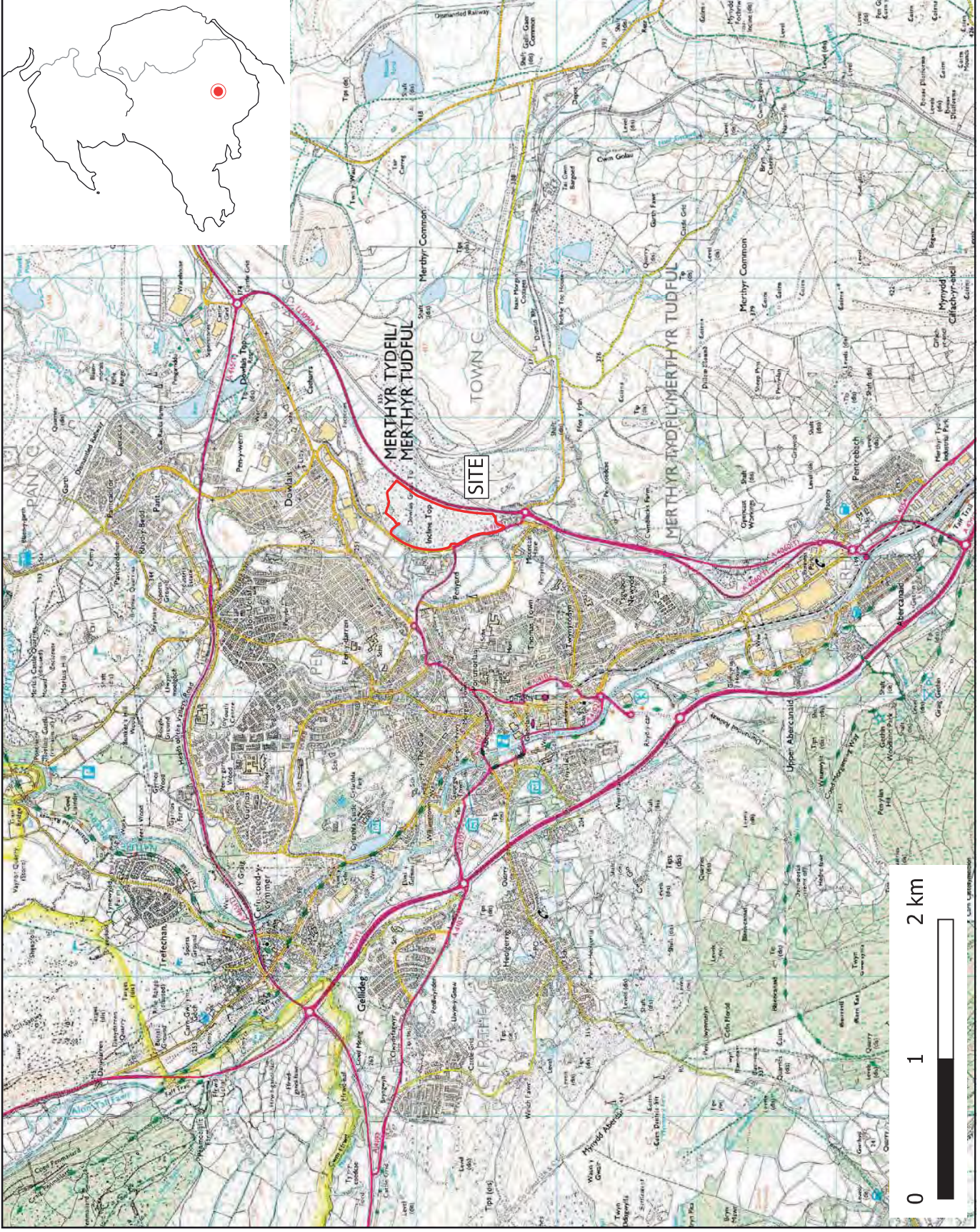


Figure 1: Site Location

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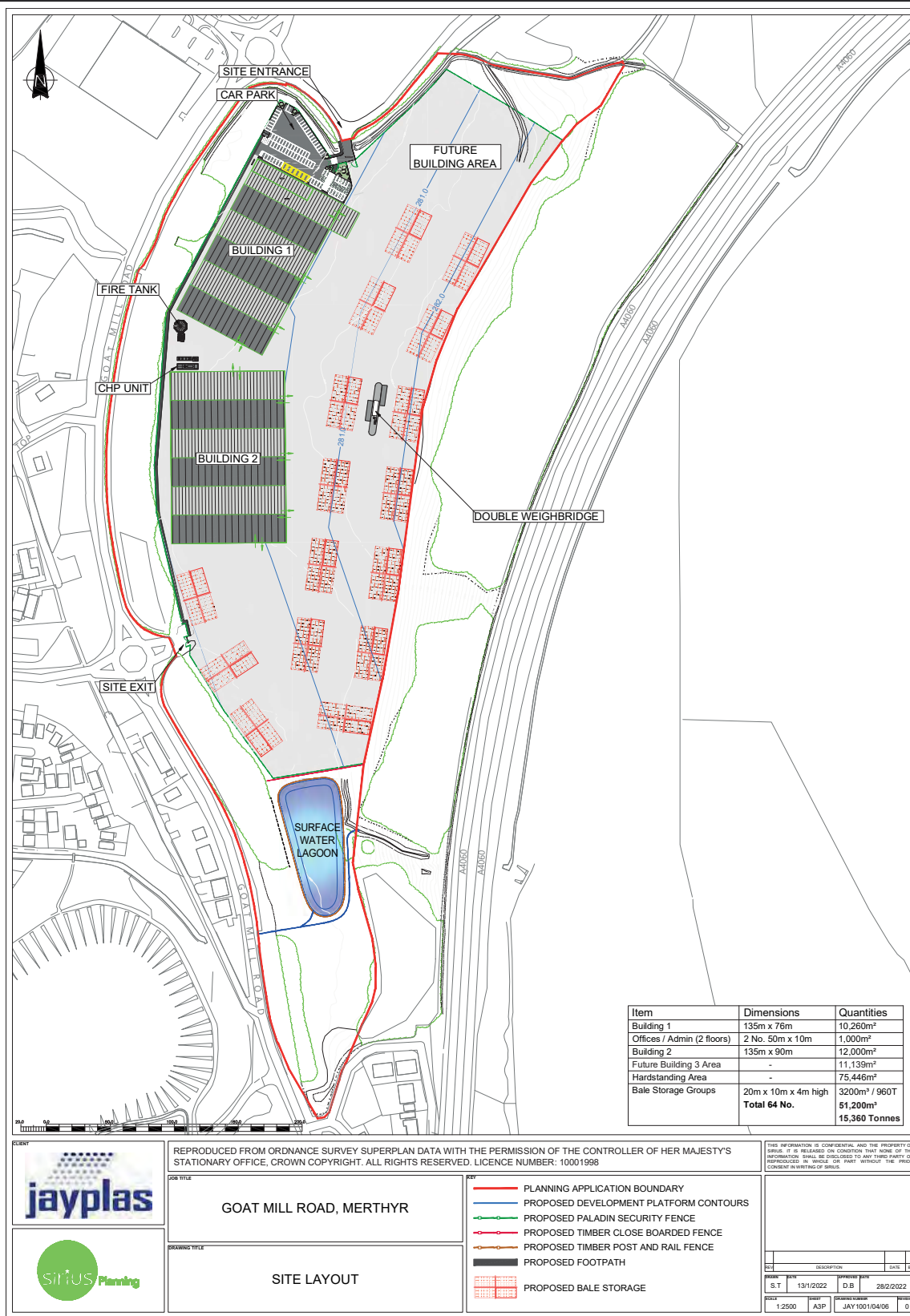


Figure 2
Proposed development plan.

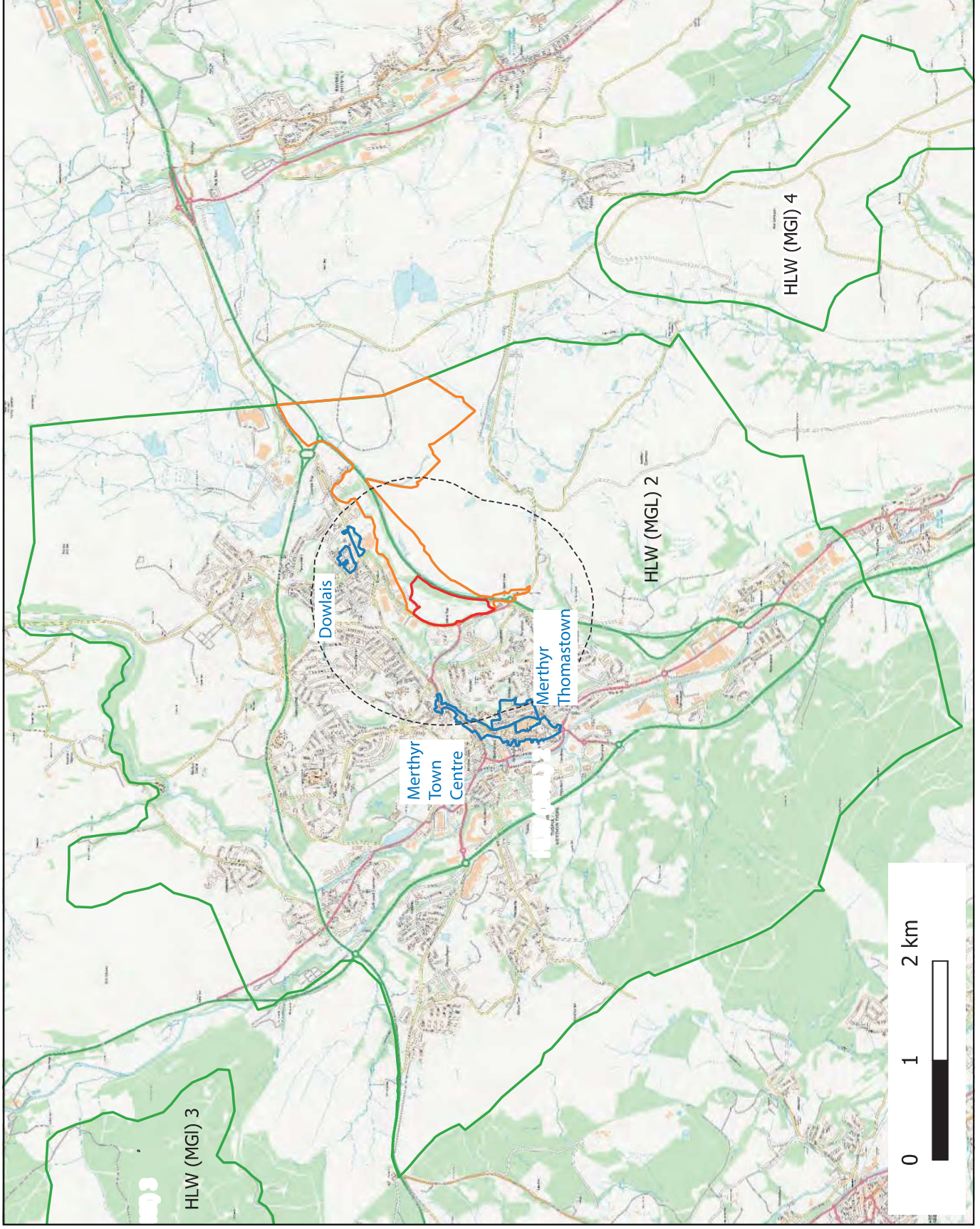
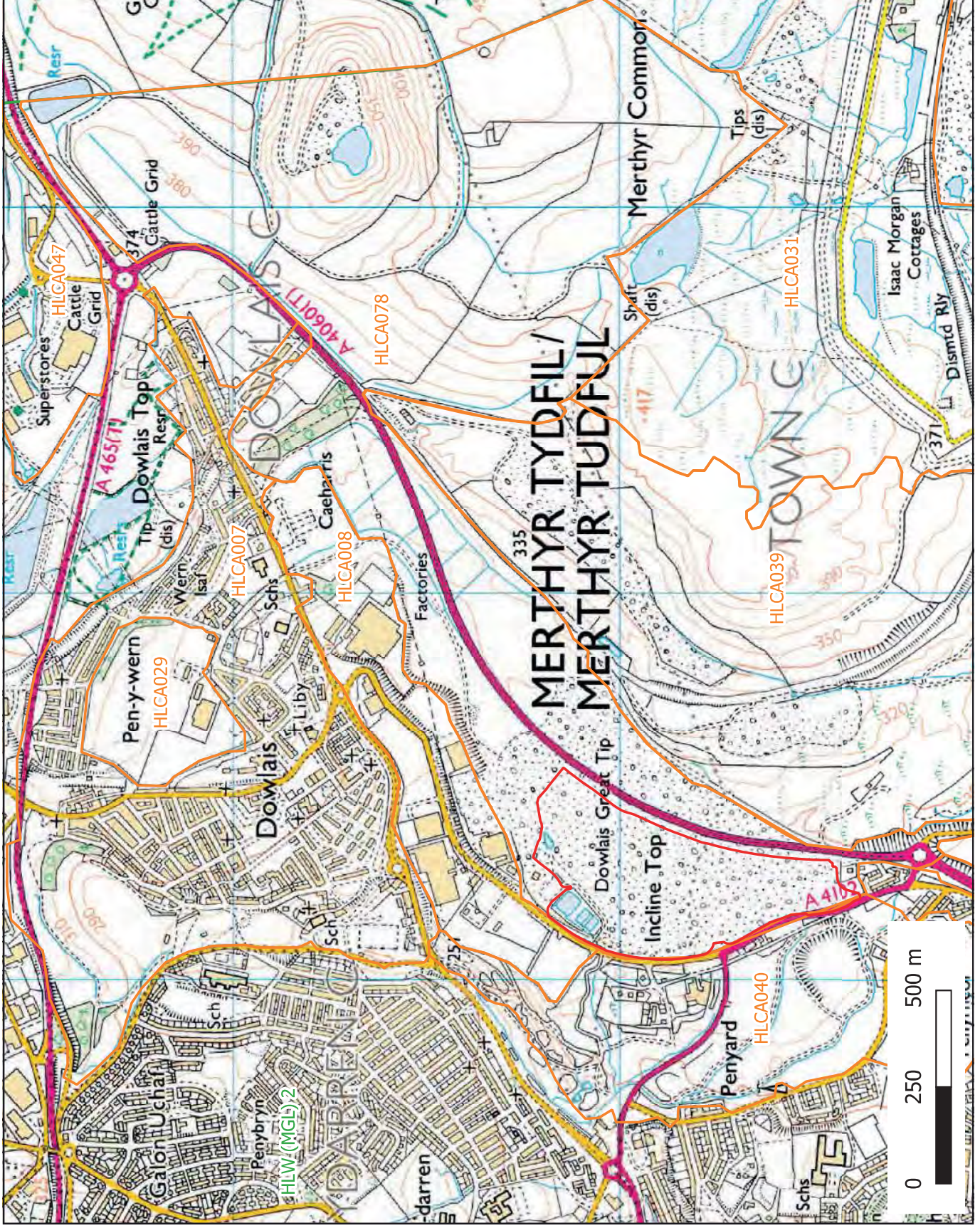


Figure 3: Registered Historic Landscapes

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Site

HLCA

Figure 3A: Historic Landscape Character Areas (HLCA)

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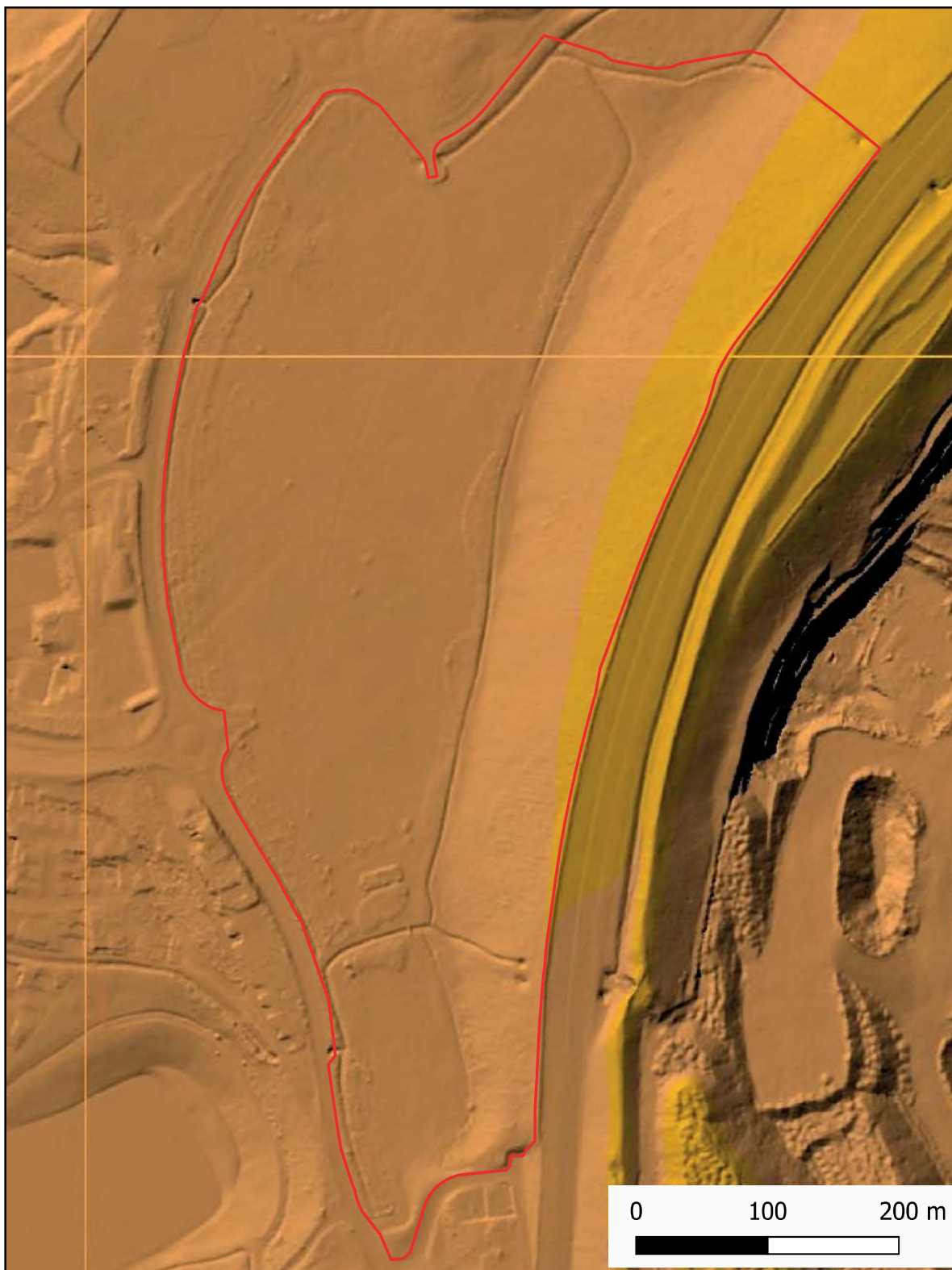
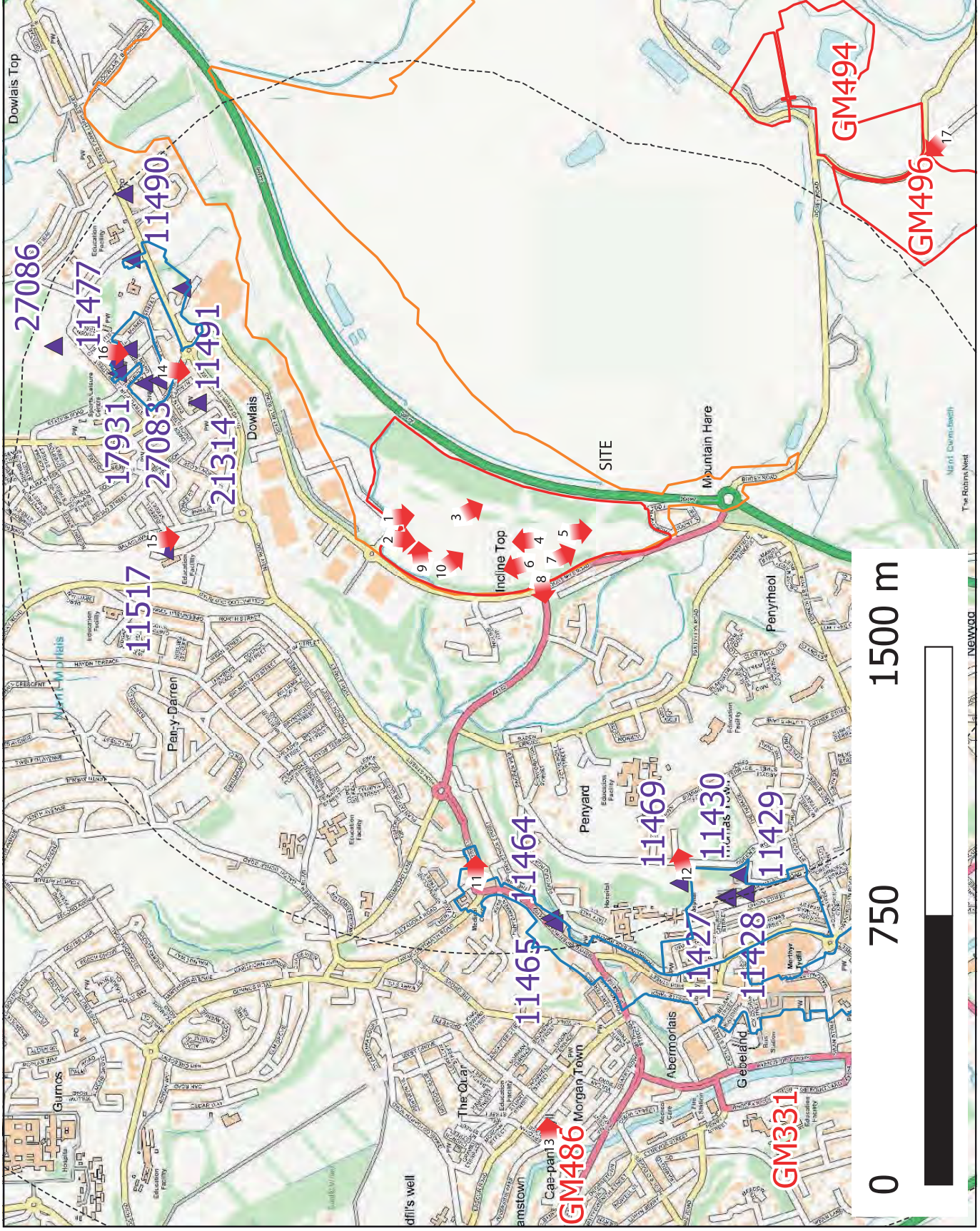


Figure 5
LiDAR (2m DTM).



- 1km buffer
- Site
- Listed Buildings within 1km of site
- HLCA 078
- Conservation Areas within 1km
- Scheduled Ancient Monuments within 2km of site

Figure 6: Photo Location Plan

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Plate 1: View of the site from the North (Phoenix Industrial Estate).



Plate 2: View of the site from the North looking towards the SSW.



Plate 3: View of the site (eastern embankment).



Plate 4: View of the site, looking north towards Dowlais.



Plate 5: Former 19th century or earlier field boundary ditch within the site, view to the south.



Plate 6: View of the western boundary of the site, looking NW



Plate 7: The southern part of the site, view to the south.



Plate 8: View from the Western entrance to the site (Goat Mill Road), looking west.



Plate 9: view of the northern part of the site towards the eastern embankment.



Plate 10: View of the eastern embankment, looking SE.



Plate 11: Obscured view towards the site from Key vantage point in Merthyr Town Centre Conservation Area (High Street), looking east.



Plate 12: Obscured view towards the site from Boer War Memorial (LB 11469) looking east.



Plate 13: Obscured view towards the site from Scheduled Ancient Monument GM486 (Iron Canal Bridge from Rhydycar) looking east.



Plate 14: Obscured view towards the site from Dowlais Public Library (LB 27083). The proposed development site is located below the tree covered embankment in the centre of the shot. looking south.



Plate 15: Obscured View towards the site from St. Illtyd's Church, Dowlais (LB 11517) looking south.



Plate 16: Obscured View towards the site from Dowlais Stables House (LB 11477) looking south.



Plate 17: View towards the site from Scheduled Ancient Monuments GM494 (Sarn Howell Pond and Watercourses) & GM496 (Deserted Iron Mining Village, Ffos-y-fran) looking NW. The site is obscured behind and below the tree line in the middle distance.

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