

Archaeology Wales

Kronospan, Holyhead Road, Chirk Engineering Stores

Desk Based Assessment and Site Visit



Jennifer Muller BA (Hons), MA

Report 2069

Archaeology Wales

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Edited by: Irene Garcia Rovira

Signed:



Position: Project Manager

Date: 13.5.22

Authorised by: Irene Garcia Rovira

Signed:



Position: Project Manager

Date: 13.5.22

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Version	Date	Sections Revised	Prepared/Revised by	Checked by
01	23.3.22	Original	Jennifer Muller BA (Hons) MA	Irene Garcia Rovira BA (Hons) MA PhD, MCIfA
02	13.5.22	Section 8	Jennifer Muller BA (Hons) MA	Irene Garcia Rovira BA (Hons) MA PhD, MCIfA

Archaeology Wales Limited

Main Office, Unit D11.6

Treforest Industrial Estate Pontypridd - CF37 5UR

Tel: +44 (0) 2920 020 136

Email: admin@arch-wales.co.uk

Web: arch-wales.co.uk



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Summary

In March 2022 Archaeology Wales was commissioned by Axis to carry out a Desk Based Assessment and site visit to highlight and assess the impact upon standing and buried remains of potential archaeological interest at Kronospan, Maesgwyn Farm, Wrexham LL14 5NT - NGR SJ 28585 38198.

The proposed development is located within an existing industrial estate which occupies more than 70 hectares to the northwest of Chirk. The industrial estate sits within the Pontcysyllte Canal and Aqueduct World Heritage Site (WHS) Essential Setting, a cultural landscape of utmost importance that runs from medieval to post medieval chronologies.

However, the proposed development will only have a very slight to negligible impact on the Essential Setting of the WHS. This is because it is located within an area already heavily developed and also because its design will be in keeping with the pre-existing industrial character of the Kronospan site as a whole.

Crynodeb

1. Introduction

- 1.1 In March 2022 Archaeology Wales (henceforth – AW) was commissioned by Axis to carry out a Desk Based Assessment (DBA) and site visit at Kronospan, Maesgwyn Farm, Wrexham LL14 5NT – NGR SJ 28585 38198.
- 1.2 It is proposed that the development will include the construction of Engineering Stores. The present DBA assesses the impact that the proposals will have on the archaeological resource (Figure 1).
- 1.3 The purpose of the DBA, detailed in the following report, is to provide Clwyd Powys Archaeological Trust – Development Control (henceforth – CPAT-DC), advisors to the local planning authority, Wrexham County Borough Council (WCBC), with the information they are likely to request in respect of the proposed development, the requirements for which are set out in Planning Policy Wales (revised edition 11, 2021), Section 6.1 and Technical Advice Note (TAN) 24: The Historic Environment (2017).
- 1.4 The work is to highlight and assess the impact upon standing and buried remains of potential archaeological interest and to ensure that they are fully investigated and recorded if they are disturbed or revealed as a result of subsequent activities associated with the development.

2. Site Description

- 2.1 The proposed development is located within an industrial estate which occupies more than 70 hectares. The estate is adjacent to Llangollen Canal to the west, to Chirk to the east and south, and is bounded by agricultural fields to the north.
- 2.2 The industrial estate includes multiple structures. A large factory is located to the south of the complex. The proposed development ‘Engineering Stores’ is located immediately south from the main factory. The proposed building is rectangular in plan and will measure some 5,800m² (Figure 2-3). The cladding colours will combine grey and blue.
- 2.3 The underlying geology is comprised of mudstone, siltstone sandstone, coal, ironstone and ferricrete from the Pennine Lower Coal Measures and the South

Wales Lower Coal Measures, formed during the Carboniferous Period. This is overlain by superficial deposits of Till- Diamicton, formed during the Quaternary Period (BGS 2022).

3. Methodology

- 3.1 The primary objective of this Desk Based Assessment is to assess the impact of the development proposals on the historic environment. This will help inform future decision making, design solutions and potential mitigation strategies. The aim is to make full and effective use of existing information in establishing the archaeological significance of the site, to elucidate the presence or absence of archaeological material, its character, distribution, extent, condition and relative significance.
- 3.2 The work includes a comprehensive assessment of regional context within which the archaeological evidence rests and aims to highlight any relevant research issues within national and regional research frameworks.
- 3.3 This report provides information of sufficient detail to allow informed planning decisions to be made which can safeguard the archaeological resource. Preservation in situ has been advocated where at all possible, but where engineering or other factors could result in the loss of archaeological deposits, preservation by record has been recommended.
- 3.4 This assessment considers the following:
 - A. The nature, extent, and degree of survival of archaeological sites, structures, deposits and landscapes within the study area through assessment of various readily available primary sources:
 - Collation and assessment of all relevant information held in the regional HER at the Clwyd-Powys Archaeological Trust, within a 0.5km buffer zone around the proposed development area.
 - Collation and assessment of the impact on all Designated archaeological sites (Scheduled Ancient Monuments, Listed Buildings, Historic Parks & Gardens, landscapes, Conservation Areas) within 1km buffer zone around the proposed development area.

- Assessment of all available excavation reports and archives including unpublished and unprocessed material affecting the site and its setting.
 - Assessment of aerial photographic and satellite imagery evidence.
 - Assessment of archive records held at the County Archive, the National Library of Wales (NLW) and the Royal Commission on Ancient and Historical Monuments in Wales (RCAHMW).
 - Records held by the developer e.g. bore-hole logs, geological/geomorphological information, aerial photographs, maps, plans, ztv data.
 - Map regression analysis using all relevant cartographic sources e.g. all editions of the Ordnance Survey County Series, Tithe and early estate maps (as available).
 - Place-name evidence.
 - Historic documents (e.g. charters, registers, estate papers).
- B. The significance of any remains in their context both regionally and nationally and in light of the findings of the desk-based study.
- C. The history of the site.
- D. The potential impact of any proposed development on the setting of known sites of archaeological importance.
- E. The potential for further archaeological remains to be present, which have not been identified in pre-existing archaeological records.
- F. The potential for further work, with recommendations where appropriate for a suitable investigative and/or mitigation methodology.
- 3.5 In assessing the value of archaeological assets, and the potential impacts upon them by the proposed development, the terms and guidance used in the Design Manual for Roads and Bridges, Volume 11, Section 3 (Highways England 2007) has been utilised. Values are given as:

- Very High (World Heritage Sites and other sites of international importance).
- High (Scheduled Monuments, undesignated assets of schedulable quality, assets of National importance that can contribute significantly to acknowledged national research objectives).
- Medium (Designated or undesignated assets of Regional importance that contribute to regional research objectives).
- Low (assets of local importance, assets compromised by poor preservation or poor survival of contextual associations).
- Negligible (assets with little or no surviving archaeological interest).
- Unknown (the importance of the resource has not been ascertained).

3.6 The magnitude of the potential impact on the archaeological assets (which can be either positive or negative), is given as:

- Major (change to most or all key archaeological materials, such that the resource is totally altered; comprehensive changes to setting).
- Moderate (changes to many key archaeological materials, such that the resource is clearly modified; considerable changes to setting that affect the character of the asset).
- Minor (changes to key archaeological materials, such that the asset is slightly altered; slight changes to setting).
- Negligible (very minor changes to archaeological materials or setting).
- No Change.

3.7 This work conforms to the Standard and Guidance for Historic Environment Desk-Based Assessment, as produced by the Chartered Institute for Archaeologists (CIfA 2020).

4. Archaeological and Historical Background

4.1 A HER search within a 500m radius of the proposed development has

retrieved fourteen records (Figure 4), four of which are listed buildings and will be listed in that section below. No records are located within the area of the proposed Engineering Stores; however, some of the HER entries are recorded in nearby locations. The results are presented here within a brief history of development of Chirk (PRN 1425411) and its surroundings.

Prehistoric: Palaeolithic (c.450,000 - 10,000 BC), Mesolithic (c.10,000 - 4000 BC), Neolithic (4000 BC - 2300 BC), Bronze Age (2300 BC - 700 BC) & Iron Age (700 BC - AD 43)

4.2 No records of prehistoric date are documented in the HER within 500m and 1km) of the development area.

Roman (AD 43 - c. AD 410)

4.3 No records of Roman date are documented in the HER within 500m of the development area.

Early Medieval (c. AD 410 - AD 1086), Medieval (1086 - 1536)

4.4 Chirk (PRN142411) originates from the Norman conquest of the 11th and 12th centuries¹. The latter saw the invasion of Norman lords into the Welsh territory. Following Roger Montgomery's son rebellion, his lands were returned to the crown and subsequently given to William Perceval of Dover who built a number of motte and bailey castles at Whittington, Ellesmere and Chirk (PRN 101109; DE117; NPRN 307013)²

4.5 Two records of medieval date are located within the assessment area; however, one seems to be in the wrong location. This is PRN 28338 - Offa's Dyke - known to run approximately 1.5km west of the proposed development.

4.6 PRN 70674 documents a sepulchral slab originally from Chirk Castle, currently in private hands.

4.7 During the 13th century King Edward I granted land at Chirkland to Roger

¹ PRN 142411 highlights the possible maedref predating the conquest based on toponyms (Silvester 2015)

² See Scheduled Monuments and World Heritage Sites for further details

Montgomery of Wigmore. The Montgomery's built a new castle between 1295 and 1310 (PRN 101107; LB 598; NPRN 145757).

- 4.8 By the 14th century however, Chirk was in hands of Edmond Fitzalan Earl of Arundel. It was during this time that the town was carefully planned. In 1234 Chirk obtained a market charter. However, the prosperity of Chirk ceased with the turmoil triggered by the campaigns of Owain Glyndwr and later by the War of the Roses.

Post Medieval (1536 - 1899) & Modern (1900 - present day)

- 4.9 The castle of Chirk was Thomas Myddleton property by the 17th century. He had a strong role during the Civil War. His sympathies with the Parliamentarians led to the castle being taken from him by Colonel Ellis of Wrexham. However, he recovered the stronghold some time after. At this point Myddleton changed alliances in favour of the crown. As result the castle of Chirk was badly damaged.
- 4.10 The HER records highlight a number of buildings known to have existed within the search area as documented in cartographic sources - PRN 126304 - 8. Furthermore, it also records an isolated find - PRN 122124 - a cast lead cloth seal.
- 4.11 As it will be noted in the section below (Scheduled Monuments), the area changed substantially with the onset of the Industrial Revolution. During the 18th and 19th centuries, the landscape surrounding Chirk was exploited for coal, slate, limestone and clay. Furthermore, this period saw the development of infrastructures such as the Llangofen Canal (DE175) and Chirk aqueduct (PRN 102925; LB 618; DE175). Details regarding these developments are provided below as they have been granted a number of heritage designations.
- 4.12 Evidence dating to this period of development within the search area includes ridge and furrow, PRN 19771, and a listed milestone, PRN 42859.

Scheduled Monuments and World Heritage Sites (Figures 5-6)

- 4.13 The industrial estate, within which development is proposed, is bounded to the west by the remains of the Glyn Valley Tramway, and by Llangofen Canal

(DE175). The canal is designated both as a Scheduled Monument (DE175), and also a World Heritage Site (WHS) alongside Pontcysyllte Aqueduct. The latter is located some 1km south of the proposed Warehouse Extension site. Furthermore, it is worth noting that the industrial complex falls within the Essential Setting of the WHS.

- 4.14 The canal was proposed in 1771 by a group of industrialists, who owned coal and iron mines within the landscape surrounding Ruabon. They wanted to establish better routes to export goods whilst also being able to exploit new centres of industry that had emerged around the Welsh border. In 1793, they obtained an Act of Parliament, subsequently founding the Ellesmere Canal Company. The civil engineer William Jessop and Thomas Telford, acting as the General Agent, were involved in the construction of the canal.
- 4.15 Between 1795 and 1805 the Hurleston to Llangollen section was built. This section was particularly challenging due to the mountainous nature of the landscape. To resolve it, Jessop and Telford cut two tunnels (PRN79832; DE175), and constructed an aqueduct to carry the canal across the River Dee.
- 4.16 In 1958 the aqueduct was designated as a Scheduled Monument. However, this designation did not include the canal and other associated infrastructure. It was subsequently revisited to encompass the entire length of the Llangollen Branch (including the weir at the Horseshoe Falls and the Pentrefellin Aqueduct), Trevor Basin and the heavily engineered canal section south of Pontcysyllte (including the Froncysyllte Embankment; the Chirk Tunnel and Whitehouse Tunnel; the Canal Wood Cutting and Irish Bridge Cutting; and the Chirk Basin and Aqueduct).
- 4.17 In 2009, the UNESCO declared the monument a World Heritage Site. The decision document notes that:

The Pontcysyllte Canal is a remarkable example of the construction of a human-engineered waterway in a difficult geographical environment, at the end of the 18th century and the start of the 19th century. It required extensive and boldly conceived civil engineering works. The Pontcysyllte Aqueduct is a pioneering masterpiece of engineering and monumental architecture by the

famous civil engineer Thomas Telford. It was constructed using metal arches supported by tall, slender masonry piers. The Pontcysyllte Aqueduct and Canal are early and outstanding examples of the innovations brought about by the Industrial Revolution in Britain, where they made decisive development in transport capacities possible. They bear witness to very substantial international interchanges and influences in the fields of inland waterways, civil engineering, land-use planning, and the application of iron in structural design.

Criterion (i): The Pontcysyllte Aqueduct is a highly innovative monumental civil engineering structure, made using metal arches supported by high, slender masonry piers. It is the first great masterpiece of the civil engineer Thomas Telford and formed the basis of his outstanding international reputation. It bears witness to the production capacities of the British ironmaking industry, which were unique at that time.

Criterion (ii): The intensive construction of canals in Great Britain, from the second half of the 18th century onwards, and that of the Pontcysyllte Canal in particular in a difficult region, bear witness to considerable technical interchanges and decisive progress in the design and construction of artificial waterways.

Criterion (iv): The Pontcysyllte Canal and its civil engineering structures bear witness to a crucial stage in the development of heavy cargo transport in order to further the Industrial Revolution. They are outstanding representatives of its new technical and monumental possibilities.

4.18 Two more Scheduled Monuments fall within the search area: DE117 Castell Y Waun Castle Mound, and DE288 Holyhead Road Embankment.

4.19 A brief mention of the motte has been given in the previous section (see PRN101109), noting that the castle was constructed by William Perceval of Dover, being central to the area until the Montgomery's built a new castle some 2km west from the position of the motte. Cadw's scheduling description highlights that:

The monument comprises the remains of a motte and usually a ditch, dating to the medieval period (c. 1066 -1540 AD). A motte is a large conical or pyramidal mound of soil and/or stone, usually surrounded by either a wet or dry ditch, and surmounted by a tower constructed of timber or stone. Chirk Motte is a circular flat-topped mound about 30m in diameter and 5.7m high, but with no trace of a ditch. This is identified as a castle mound, specifically the Castell-y-Waun mentioned in 1165 and 1212. It is located in the planned borough of Chirk, occupying a prominent corner plot facing the church. The borough received its first charter in 1324 and can be associated with the later, greater castle 2km to the west. The mound was the central feature of the ornamental garden to the rear of The Mount, a mid-eighteenth-century house. As depicted on the Ordnance Survey County series 1st edition (Denbigh. XL.10 1872) the mound was set within what appears to be a sub-rectangular enclosure or platform, roughly 50m across. Other than this there are no traces of other castle earthworks.

The monument is of national importance for its potential to enhance our knowledge of medieval defensive practices. The monument is well-preserved and an important relic of the medieval landscape. It retains significant archaeological potential, with a strong probability of the presence of both structural evidence and intact associated deposits.

The scheduled area comprises the remains described and areas around them within which related evidence may be expected to survive.

4.20 The London to Holyhead Road - Chirk embankment (DE288, PRN 79833) is one of the most significant traces of post-medieval activity in the area.

4.21 At the beginning of the 19th century, the ferry crossing from Holyhead to Dublin gained importance, which resulted in the need to upgrade the road network to make Holyhead more accessible. Thomas Telford presented a new road design to the Parliament in 1811, with the funds for the design being made available four years later (Garcia Rovira 2021). The section of this road scheduled as DE288 is detailed within Cadw's scheduling description as:

In 1810, Thomas Telford surveyed and recommended the route for the

Holyhead Road through north Wales, some 83 miles, with work beginning in 1815 and completed in 1826. Construction of the Holyhead Road was not only the pinnacle of Thomas Telford's engineering achievements, it was also a landmark event in the history of British engineering, being the first major civil engineering project directly funded by parliament. The embankment was one of the major works on the Holyhead Road. The monument comprises the Chirk Embankment, a substantial straight and evenly sloped earthen embankment; and the steep and irregular sections of turnpike road and earlier trackways that the embankment replaced. The gradually rising earthen embankment carries the road for a length of about 200m as it approaches from the SE before the road dog-legs gently towards the E and traverses the slope of the hill. The grass-covered braided trackways and route of the earlier turnpike are situated on the hill slope to the SE of the upper section of road.

The monument is of national importance for its potential to enhance our knowledge of post-medieval/early industrial transport systems. The monument forms an important element within the wider context of the post-medieval development of Wales and the structure may contain well preserved archaeological evidence concerning chronology, layout and building techniques.

The scheduled area comprises the remains described and areas around them within which related evidence may be expected to survive.

Listed Buildings and Conservation Areas (Figure7)

4.22 There are thirty-nine listed buildings within the assessment area. No listed buildings are located within the boundary of the proposed Engineering Stores. Thirty-two listed structures are located within Chirk Conservation Area:

Table 1 Listed Buildings within Chirk Conservation Area

NUMBER	NAME	GRADE
1290	Chirk Furniture and Carpet Centre and Dwelling	II
1298	Hand Hotel	II
20202	War Memorial	II*

20203	Lychgate outside Church of St Mary	II
20204	Sundial in churchyard of the Church of St Mary	II
20205	Ward Monument in churchyard of the Church of St Mary	II
20206	Chirk Lodge, Brynkinallt Park	II
20207	Gates, Piers and Railings to the W Gate of Brynkinallt Park	II
20208	Trevor Mausoleum in churchyard of the Church of St Mary	II
20209	Chirk Tunnel, including the N and S Portals, and Chirk Basin.	II*
20210	Railway Viaduct over River Ceiriog	II*
20212	Milestone	II
20215	Chirk Town Council Offices	II
20216	1,Hand Terrace,Chirk,Wrexham,LL14 5EU	II
20217	2,Hand Terrace,Chirk,Wrexham,LL14 5EU	II
20218	3,Hand Terrace,Chirk,Wrexham,LL14 5EU	II
20219	4,Hand Terrace,Chirk,Wrexham,LL14 5EU	II
20220	5,Hand Terrace,Chirk,Wrexham,LL14 5EU	II
20221	6,Hand Terrace,Chirk,Wrexham,LL14 5EU	II
20222	7,Hand Terrace,Chirk,Wrexham,LL14 5EU	II
20228	North Gate Piers to Chirk Town Council Offices	II
20229	South Gate Piers to Chirk Town Council Offices	II
20249	Bryn Coed	II
20255	Bryn Eglwys	II
20256	Chirk Surgery	II
20257	1,Castle Road,Chirk,Wrexham,LL14 5BS	II
20259	Whitewalls	II
20274	St Michael's Nursing Home	II
615	Church of St Mary	I
616	The Mount, with front garden railings and gate	II
617	Trevor House	II
618	Chirk Aqueduct (continued into England)	II*

4.23 Chirk Conservation Area was designated in 1975 although its boundaries have been altered in two occasions (1997 and 2014). The village sits in a shallow valley bounded to the west by the Clywdian Range and Dee Valley AOSB. This area is partly occupied by Chirk Estate and Castle. Brynkinallt Estate borders the valley to the east.

4.24 The protected area integrates the historic core and encompasses the medieval settlement around the Church of St Mary (PRN 101108; LB 615), extending

west to Station Avenue and Castle Road, to include the WHS aqueduct and viaduct.

- 4.25 The character of the Conservation Area is diverse, resulting from the many influences over its history of development. The area within and around Church Street is largely commercial and has respected to a large degree its historic pattern. Other regions of the Conservation Area such as Castle Road and Trevor Road are dominated by a sense of peace and tranquillity. Overall, the Conservation Area still reflects its original medieval plan.
- 4.26 Construction within the Conservation Area is predominantly in brick and sandstone. The latter is more prominent for prestigious structures such as the Church of Saint Mary (PRN 101108; LB 615). Chirk viaduct and aqueduct (PRN 102925; LB 618; DE175) are also constructed in yellow sandstone.
- 4.27 The topography of Chirk is defined by a flat plain enclosed by two ridges which give the area a sense of enclosure and views over the landscape which are constitutive of the setting of the Conservation Area. The Clywdian Range and the Dee Valley are located to the west whilst the Ceiriog Valley is found immediately south of Chirk.
- 4.28 The listed buildings located within the Conservation Area give distinctiveness to the village. Many acts as landmarks and therefore provide key views of the Conservation Area. The Hand Hotel (LB 1298) and The Mount (LB 616) are good examples of this.
- 4.29 A number of listed structures are also found outside the Conservation Area. These are largely associated with Chirk Castle and Brynkinalt Estate, and also include a number of structures of agricultural origin.

Table 2 Other Listed Buildings within search area

NUMBER	NAME	GRADE
1315	Chirk Castle Gates, Screen and Piers	I
20211	Llwyn-y-cil Lodge	II
20236	Milestone	II
20254	Town Reservoir	II
20258	Chirk Mill	II
623	Nos 6 & 7 Coed-derw	II

The Historic Landscape (Figure 8)

- 4.30 The proposed development site does not fall within any Registered Historic Landscape. However, it is within the Essential Setting of the Pontcysyllte Aqueduct and Canal WHS (Figure 5). The latter is an extensive Buffer Zone which ensures that the site is protected and appreciated within its landscape setting.
- 4.31 Within the stretch running N/S west of Chirk, the WHS designation focuses on the ten-span aqueduct; a project completed by 1801 and seen as a complement to the parkland at Chirk Estate which includes the visual setting of the water meadows of the Ceiriog.
- 4.32 The Essential Setting includes Telford's embankment, the viaduct for the railway, an area of worker houses, the canal tunnels as well as Chirk Castle and its estate grounds. It is therefore characterised by the imprint of post-medieval developments which blend into the more rural landscape to the west; one replete with historic elements echoing the historic development of the area from medieval times. The industrial complex within which Kronospan is located also forms part of the Essential Setting of the WHS within this stretch, although perhaps providing a negative visual impact on its picturesque surroundings.
- 4.33 The Registered Park and Garden of Chirk Castle – PGW (C) 63 is located within the search area. Some details regarding the castle itself have been presented when outlining the history of development of Chirk.
- 4.34 Its origins date to the 14th century with the Mortimer family who built the castle and the associated deer park. It is known that by 1391 the park included 10 acres of woodland.
- 4.35 By the Civil War, the Myddelton's cleared the woods, and it was only during the Restoration Period when replanting occurred again. In 1675, the park was extended to hold a further 500 deer.
- 4.36 A depiction of the park exists and dates to 1742. The depiction documents a

baroque formal garden. This layout was superseded by changes dating to 1760. The remnants of the baroque layout are still found on the park southern road (now a drive) and the lake.

- 4.37 A new scheme was carried out by William Emes for Richard Myddleton. His work includes the ha-ha around the garden, creating a large bank to obscure views of the park for passing travellers, and an icehouse among other elements. Subsequent developments such as oak planting during the 1800s and 1950s gave shape to the Registered Garden as seen today.
- 4.38 The eastern side of the registered park gently slopes down to the east from the castle, with its boundaries close to the canal. A number of wooded areas such as Deershed Wood protect views from the estate to the industrial complex. Yet the impact of the latter on the setting of the Registered Park is indisputable. It is significant to note that the eastern areas of the park are also included within the WHS Essential Setting.
- 4.39 The Registered Park and Garden of Brynkinalt - PGW (C) 15 is also located within the search area.
- 4.40 The park belongs to Brynkinalt Hall, located at the uppermost region with great views of Chirk as well as toward the Berwyn Hills and Shropshire.
- 4.41 The estate has been associated with the Trevor family since 942. However, the earliest house standing today dates to 1612. The associated park lies to the east of Chirk on rolling ground.
- 4.42 The SW end of the park abuts Telford's embankment (DE288) and runs immediately south of DE117. The Registered Park is bounded to the east by Chirk Conservation Area, and it is also part of the Essential Setting of the WHS.

5. Map Regression

Tithe map of the parish of Chirk in the County of Denbigh 1839 (Figure 6)

- 5.1 By 1839, the area currently occupied by Kronospan was defined by a series of medium size fields with some evidence for parliamentary enclosure as suggested by the combination of irregular and straight boundaries. These fields are largely associated with farms owned by Charlotte Myddleton,

daughter of Richard Middleton of Chirk Castle.

- 5.2 Llangollen canal is already depicted to the west of the proposed site at this time – plot 775 – and defined as canal and slopes of plantations from Fradley Wharf above Chirk tunnel. The railway to the east of the canal was not yet constructed, however, Telford's Road is already depicted running N/S, east of the proposed development.

OS County Series 1874 1.2500

- 5.3 This map edition documents several changes. Within the area currently occupied by Kronospan, the fields, with a few exceptions, remain identical. The wooded area to the north-east of the proposed Engineering Stores is at this point labelled as 'Chirk Green'. Furthermore, following the road that crosses the present A5 to the east, leads to a Methodist chapel adjacent to Plas y Waen.
- 5.4 This map edition depicts the route of the Great Western Railway following the eastern bank of the canal. Chirk Station was open in 1848. Initially horses hauled the trains on the narrow gauge of the Glyn Walley. By 1873, the tramway was used to move goods such as slate and granite from the nearby quarries. It, however, became a passenger train by 1874. The trams were exchange for steam locomotives by 1888.

OS County Series 1892 1.2500

- 5.5 The most significant change observed on this map edition relates to Glyn Valley Tramway. A series of sidings offshoot from the railway running toward Chirk Green – at this point labelled Maes-Gwyn wood. The sidings then turn SE toward Brynkinalt colliery. The latter is surrounded by worker houses and other structures of industrial nature.

OS plan 1963

- 5.6 From the 1890 to the 1960, the only changes observed within the examined area correspond to the development of Chirk. By the 1960s, the tramways and sidings are labelled as disused and the area surrounding the former colliery has expanded substantially.

6. Aerial Photographs and Lidar

Aerial Photographs

- 6.1 Aerial photographs from 1970 to the present day have been examined, the full list of examined photographs is included in the bibliography.
- 6.2 1971 71127 OS71-478 431: this is a black and white vertical photograph centred in the area now occupied by the factory complex. The picture documents the factory, at this point owned by Mondelez, Chirk, bounded by the former railway and Llangollen Canal. A series of woodland and other natural features belonging to Chirk Castle grounds are observed further west. Furthermore, the former sidings providing movement from and to the railway and the colliery are still visible on the ground to the north of the complex.
- 6.3 1973 7370 OS 73_220 004: this is a black and white vertical photograph taken at a high altitude. It therefore not only documents the setting of the factory but also its surroundings, including Chirk Castle and Chirk itself. This image documents the main building at Kronospan, established in 1972.
- 6.4 1985 8534 JAS 5484 067: this is a black and white vertical photograph also taken at a high altitude. No major changes are observed other than the expansion of the Kronospan main structure. A similar situation is observed in all other subsequent images of the site.

LiDAR

- 6.5 LiDAR 1m DTM was processed (Hillshade) for this report (Figure 9). Given the nature of the built-up area within which the development is proposed, the LiDAR did not offer any information of archaeological interest. Nevertheless, the image produced enhanced the observation of the character of the surrounding landscape.

7. Site Visit (Plate 1-6)

- 7.1 A site visit was undertaken in December 2021. Conditions were dry and visibility was good.

- 7.2 The area proposed for the development fits within the current location of a rectangular piece of land on which disused machinery parts are stacked amongst skips and through which a paved road runs, connecting the southwest and southeast ends of the factory. This area forms the southwest boundary of the complex, though is separated from the factory by an upraised band of earth lined with trees.
- 7.3 Views to the E toward the canal are present however only the upper regions of the woodland area surrounding it are visible. It is worth noting that some further factories exist (e.g. Archwood) closed to the canal, acting as visual barriers.
- 7.4 Views from and to the Conservation Area are limited as the Mendelez factory is located immediately south of the proposed development. Yet, views from the northern end of the Conservation Area might exist, even though the main factory is already impacting it.
- 7.5 The proposed development area is likely to have been partly disturbed (topsoil strip) in the past. However, no other sets of evidence suggest a heavier impact which may have affected possible sub-surface remains.

8. Impact Assessment

Assessment of Archaeological Potential and Importance

- 8.1 The proposed development lies within a large industrial complex mainly occupied by the works at Kronospan. The compound dominates the landscape, which is defined by a mix of rural and urban areas.
- 8.2 The proposed development site and its associated industrial complex is surrounded by a landscape heavily imprinted by past human activity going back to at least medieval chronologies. These remains not only help record the history of development of Chirk and its surroundings but, given their integrity and significance, are key to the constitution of the landscape character of the area. This landscape and its attributes are protected with a number of designations which, at times overlap and act to protect the sense of place.

- 8.3 The proposed development is circumscribed by two Registered Parks and Gardens - PGW (C) 15 and 63 - by Chirk Conservation Area, and by the World Heritage Site canal and aqueduct. What is more significant is that these designations are also contained within the WHS Essential Setting. The protection of the latter is of utmost importance as it ensures that the WHS is appreciated in its landscape setting. The proposed development falls within the buffer of the WHS.

Previous Impacts

- 8.4 The proposed development site is located on the southwest end of the main factory. The area selected for development currently serves as both a driveway and storage site for disused machinery parts, and has done so since at least 2006, according to Google Earth. Examination of cartographic sources note that this area was associated with Maes Gwyn farm prior to the 1970s. Notwithstanding, it is assumed that even the undeveloped regions of the plot may have been impacted by subsurface services associated with the main factory.
- 8.5 It is also significant to highlight the presence of previous indirect impacts associated with the arrival of the Kronospan and Mondelez factories. This is highlighted on the Chirk Conservation Area and Character Assessment Management Plan (2014) which states that 'the continued investment and growth in both industries has helped support the town, however the huge height and scale of the factories has unfortunately detracted from the wider landscape setting of Chirk and impacts significantly on the approach into the Conservation Area'.

Proposed Development

- 8.6 Figure 3 outlines details of the proposed development. As noted, the proposed development will sit immediately south of the existing factory in the southwest corner of the factory site. The building will sit slightly higher than the existing factory buildings and will be dug partially into an existing bund, which will be left high to the south to act as soft screening along the majority of the length of the building, tapering down to the east. The new building's

elevation will be higher than the farmhouse, which sits adjacent to the east. An access road will run between the section of bund left high and the new building. Its gross external area will be 5844m². The building's cladding will be light grey, blending in with the factory.

Possible Impacts on non-designated assets

- 8.7 No recorded sites fall within the proposed development area. As noted, a small portion of the site has remained undeveloped. However, the possibility of encountering subsurface remains during groundworks seems unlikely given its proximity to a large factory. Furthermore, it is likely that topsoil stripping activities have been carried out at the site associated with the construction of an access track.

Possible Impacts on scheduled monuments

- 8.8 Three scheduled monuments are located within the search area: the motte (DE117), Llangollen canal (DE175), and Telford's embankment (DE288). The value of these assets is High. However, the proposed development will not directly or visually affect these assets. Notwithstanding, it is necessary to highlight that the proposed development will impact the setting of Chirk Conservation Area and of the World Heritage site, and the abovementioned assets are key to their setting.

Possible Impacts on listed buildings

- 8.9 Thirty-nine listed buildings are located within the search area. Thirty-two listed structures lie within Chirk Conservation Area. No building will be directly affected by the proposed development. The listed structures are largely protected from views toward the site by existing tree cover delimiting the factory area. Nevertheless, slight views may be gained when viewing the site from the SE edges of the development. The magnitude of the impact is lessened when considering that the Engineering Stores are adjacent to the main factory.

Possible impacts on Historic Landscapes

- 8.10 Two Registered Parks and Gardens – PRG (C) 15 and 63 – are located within the search area. The proposed development will not directly or indirectly

affect Brynkinalt Registered Park and Garden. However, the proposed development may be visible from certain areas of Chirk Castle Registered Park and Garden.

- 8.11 This report has highlighted that the proposed development area falls within the Pontcysyllte Canal and Aqueduct WHS Essential Setting. The Essential Setting protects the landscapes from within which the WHS is experienced. The following elements form part of the landscape attributes that accompany the WHS throughout its course in Chirk.
- 8.12 From south to north, the Essential Setting of the WHS includes the region below the canal and Chirk aqueduct and it goes as far east as to the A5. Moving northwards, it integrates Chirk Conservation Area and the eastern slopes of Chirk Castle Park as well as the western slopes of Brynkinalt Park. It also integrates the flat plain where Kronospan is located.
- 8.13 This situation highlights that the majority of heritage assets considered for this report are constitutive of the landscape of the WHS and they should therefore be protected from the possible impacts of development. However, in this particular case, the development of the Engineering Stores will not trigger any direct impacts as the area has been already heavily impacted resulting from previous development. Notwithstanding, the development will add a visual impact to the Setting of the WHS. Judging from the design proposals, it is possible to affirm that the magnitude of the impact will be Minor to Negligible. It is expected that the development will blend in with its pre-existing surroundings, limiting any visual impact to those that already exist and affect the Conservation Area, the WHS and the Registered Parks and Gardens.

9. Mitigation and conclusion

- 9.1 The present DBA has assessed the impact that the proposed development may have on the archaeological /historic resource. During the production of the report, it has become clear that the industrial estate within which Kronospan is included is circumscribed by a cultural landscape of utmost importance that runs from medieval to post medieval chronologies.

- 9.2 This landscape helps to constitute the Essential Setting from which the WHS is experienced in and around Chirk, and therefore its integrity should be protected.
- 9.3 The proposed development will have a very slight to negligible impact on the Essential Setting of the WHS. This is because it is located within an area already heavily developed and also because its design will be in keeping with the pre-existing industrial character of the Kronospan site as a whole.
- 9.4 No mitigation is recommended for the proposed development. Notwithstanding, it is noted that any other future development proposal within the complex that triggers any direct/indirect impact will have to be accompanied by a Heritage Impact Assessment and a Settings Assessment to further evaluate the impact that development may have on the WHS Buffer.

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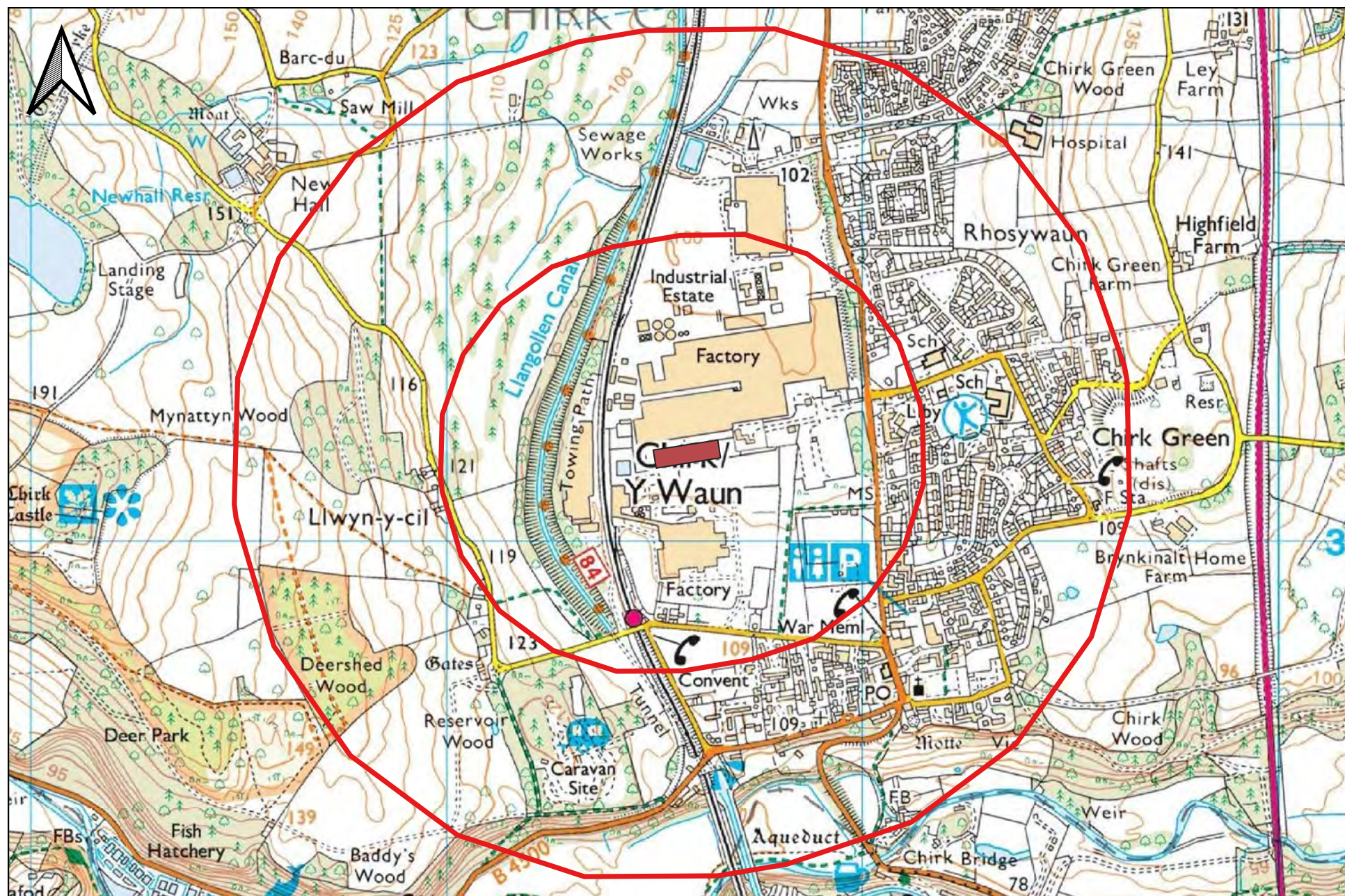
UNESCO WHS listing

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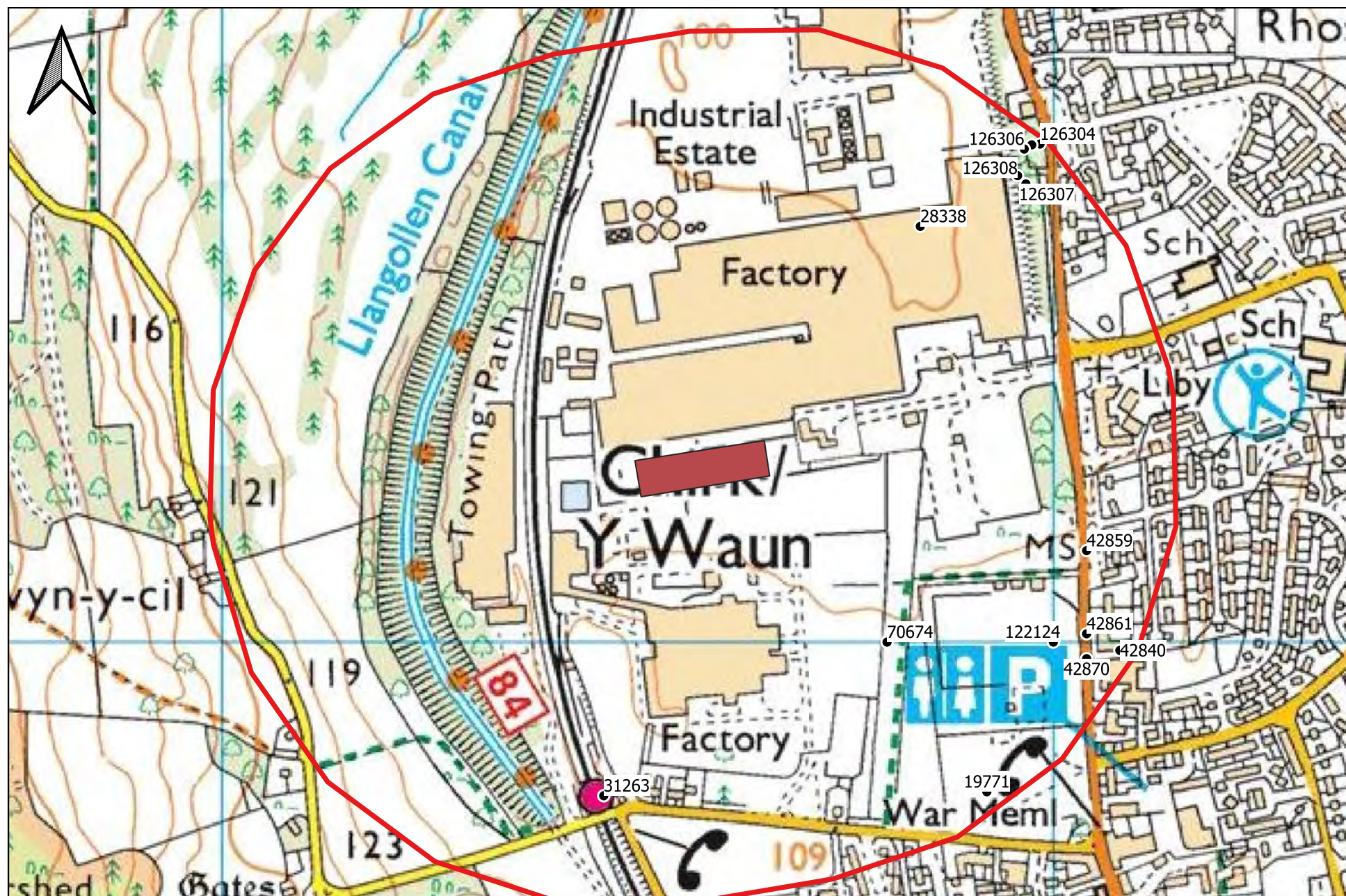


Figure 1. Site Location.



0 250 500 m

Figure 2. Applied search areas



0 250 500 m

Figure 4. HERs within the search area.

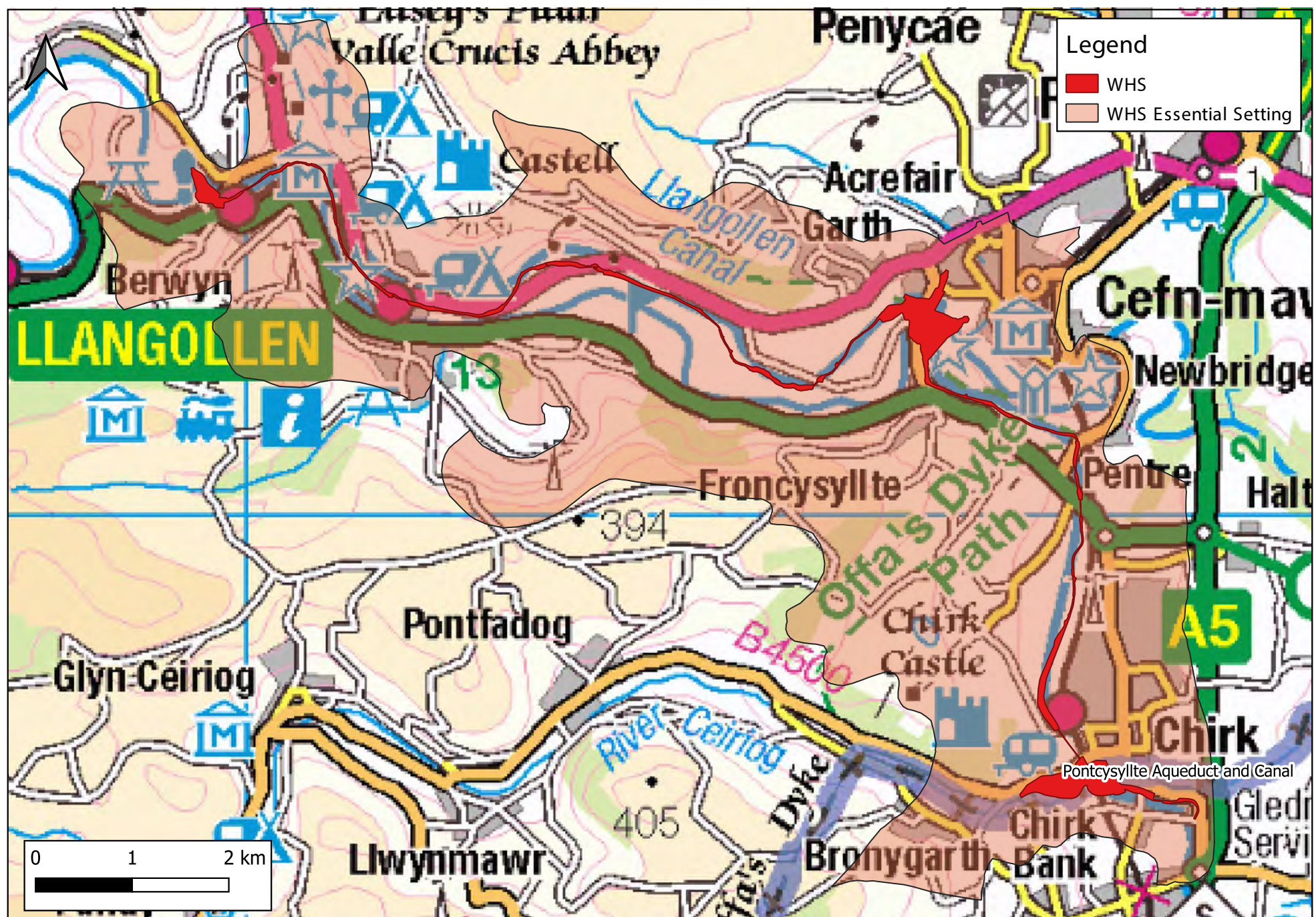


Figure 5. WHS and Essential Setting.