



KRONOSPAN, CHIRK

**NORTH ACCESS ROAD INTO THE KRONOSPAN FACILITY,
LORRY PARK, WEIGHBRIDGES AND WEIGHBRIDGE
BUILDING, WEIGHBRIDGE CAR PARK AND FACILITIES
BLOCK, ROUNDWOOD STORAGE AREAS, 132KV
SUBSTATION, AND ANCILLARY WORKS**

**ENVIRONMENTAL STATEMENT CHAPTER 6.0 – HISTORIC
ENVIRONMENT**

REV A - JULY 2023



Chester Office | Well House Barns | Chester Road | Bretton | Chester | CH4 0DH

South Manchester Office | Camellia House | 76 Water Lane | Wilmslow | SK9 5BB

t 0844 8700 007 | **e** enquiries@axisped.co.uk

CONTENTS - CHAPTER 6.0

6.0	HISTORIC ENVIRONMENT	1
6.1	Introduction.....	1
6.2	Planning Policy, Legislation and Guidance	1
6.3	Assessment Methodology.....	3
6.4	Baseline Environment.....	16
6.5	Development Design and Impact Avoidance Measures	23
6.6	Assessment of Potential Effects.....	24
6.7	Inter-Relationship of Potential Effects	31
6.8	Further Mitigation, Monitoring and Enhancement.....	31
6.9	Summary of Potential Residual Effects	33
6.10	Cumulative Effects.....	34
6.11	Conclusions	35
6.12	References	36

Figures (Volume 2 – Bound Separately)

Figure 6.1	HER Records within Study Area
Figure 6.2	Designated Heritage Data within Study Area
Figure 6.3	World Heritage Site Buffer Zone
Figure 6.4	Geophysical Survey - Results
Figure 6.5	Geophysical Survey – Results Annotated
Figure 6.6	Field Evaluation – Trench Layout
Figure 6.7	Field Evaluation – Feature 5003 Trench Plan and Section
Figure 6.8	Field Evaluation – Feature 5003 Photographs
Figure 6.9	Designated Historic assets discussed with Cadw
Figure 6.10	Chirk Castle RPG Viewpoint

Appendices (Volume 3 – Bound Separately)

Appendix 6.1	Heritage Desk Based Assessment
Appendix 6.1	Heritage Setting Assessment (Annex 1 of Appendix 6.1)
Appendix 6.1	Heritage Impact Assessment (Annex 2 of Appendix 6.1)
Appendix 6.2	Geophysical Survey
Appendix 6.3	Written Scheme of Investigations – Field Evaluation
Appendix 6.4	Archaeological Field Evaluation
Appendix 6.5	Limekiln Archival Research Report

6.0 HISTORIC ENVIRONMENT

6.1 Introduction

Introduction

- 6.1.1 This chapter of the Environmental Statement (ES) addresses the potential effects of the Proposed Development during construction and operation with respect to archaeology and heritage. A description of the Proposed Development is provided in **ES Chapter 4.0 (Description of the Proposed Development)**.
- 6.1.2 This chapter has collated details of the known archaeological and historic sites and features and considered the potential for the presence of unknown or unrecorded historic assets.
- 6.1.3 This chapter considers the likely significant effects of the Proposed Development on all of these historic assets, including archaeological sites, features and artefacts, historic buildings and historic landscapes. Both potential 'direct' and 'indirect' effects on the historic environment are considered. Where likely significant adverse effects are identified, mitigation measures to prevent, reduce, or offset them are proposed, and likely residual effects remaining after mitigation are determined.
- 6.1.4 This chapter has been informed by the results obtained during the production of a Heritage Desk Based Assessment (DBA (**Appendix 6.1**), Heritage Setting Assessment (**Appendix 6.1, Annex 1**), Heritage Impact Assessment (**Appendix 6.1, Annex 2**), Geophysical Survey (**Appendix 6.2**) and Archaeological Field Evaluation (**Appendices 6.3 - 6.4**).

Competence

- 6.1.5 This chapter has been prepared by Dr Susan Stratton, Archaeological Consultant at Archaeology Wales (henceforth AW). Susan has worked in UK commercial archaeology for over eight years. AW is a Registered Organisation with the CIfA.

6.2 Planning Policy, Legislation and Guidance

National Planning Policy

- 6.2.1 National policies relevant to this assessment include:
- Planning Policy Wales (Edition 11, 2021) Section 6.1.

- Technical Advice Note (TAN) 24: The Historic Environment, 2017. Particularly, Sections 3,4 and 7.

Local Planning Policy

- 6.2.2 Local Planning Policies relating to archaeology and cultural heritage include the following: Wrexham Unitary Development Plan (UDP) 1996 – 2011, Policy EC7, EC9 and EC11; and Wrexham Local Development Plan 2013 – 2028 Deposit Plan (March 2018), Policy SP10 Conserving, Protecting and Enhancing the Historic Environment and Pontcysyllte Aqueduct and Canal World Heritage Site (WHS).

Legislation and Guidance

- 6.2.3 Legislation relevant to this assessment includes:

- Ancient Monuments and Archaeological Areas Act 1979.
- Planning (Listed Buildings and Conservation Areas) Act 1990.

Guidance

- 6.2.4 This ES chapter has been informed by the following documents:

- DMRB Volume 11 Section 3 LA 106 Revision 1 Sustainability and environment. Appraisal. Cultural heritage assessment (formerly HA 208/07, HA 60/92, HA 75/01). Revision 1. Published by the UK Government on behalf of the Highways Agency, Transport Scotland, Welsh Assembly Government (Llywodraeth Cynulliad Cymru) and the Department for Regional Development Northern Ireland (2020)
- Guidance and toolkit for impact assessments in a World Heritage Site Context (UNESCO et al 2022)
- ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (2011)
- Setting of Historic Assets in Wales (Cadw 2017)
- Standard and Guidance for Historic Environment Desk-Based Assessment, published by the Chartered Institute for Archaeologists (CIfA; October 2020)
- Sustainable Management of the Historic Environment in Wales (Conservation Principles) (Cadw 2011)

- The Register of Landscapes of Outstanding Historic Interest in Wales (Cadw, CCW & ICOMOS 1998)
- Pontcysyllte Aqueduct & Canal – Local Planning Guidance Note
- Pontcysyllte Aqueduct & Canal. Supplementary Planning Notice (2012)
- Pontcysyllte Aqueduct and Canal World Heritage Site Management Plan 2019-2029 (ARCADIS 2019)
- Research Framework for the Archaeology of Wales (2017)

6.3 Assessment Methodology

Consultation

Pre-Application 1

- 6.3.1 A request for pre-application advice dated 14th February 2020 was submitted by the Applicant to Wrexham County Borough Council (WCBC) for the development of a new private road leading from Holyhead Road to the existing Kronospan facility.
- 6.3.2 With respect to heritage, the first pre-application response from WCBC (reference ENQ/2020/0044, dated 07 January 2022) states that the Proposed Development area is located within the Buffer Zone of Pontcysyllte Aqueduct and Canal WHS, and within 600m of the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB). The Proposed Development can also represent an urban intrusion into the rural surrounding landscape surrounding Chirk, potentially impacting on the setting of the WHS and AONB.
- 6.3.3 The pre-application response has been addressed with the production of this ES chapter, a Heritage DBA (**Appendix 6.1**), followed by a Heritage Setting Assessment (**Appendix 6.1, Annex 1**) and a Heritage Impact Assessment (**Appendix 6.1, Annex 2**) as requested by Cadw and Clwyd Powys Archaeological Trust – Development Control (CPAT-DC).

Pre-Application 2

- 6.3.4 A subsequent request for pre-application advice (dated 02 November 2021) was submitted by the Applicant to WCBC for several development proposals to develop and improve the existing industrial facility at Kronospan Limited, Holyhead Road, Chirk. The development proposals subject to the pre-application advice request included the Proposed Development plus other development proposals that have

either had planning applications submitted or granted. Further details of the other development proposals (aside from the Proposed Development) are provided in the Planning Statement and **ES Chapter 1.0 (Introduction)**.

- 6.3.5 With respect to heritage, the second pre-application response from WCBC (reference ENQ/2021/0315, dated 07 January 2022) states that the Proposed Development area is located within the Buffer Zone of Pontcysyllte Aqueduct and Canal WHS, and within 600m of the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB). The Proposed Development is also likely to impact the rural landscape surrounding of Chirk, and it is unlikely to be adequately mitigated by landscaping.
- 6.3.6 The pre-application response was addressed through an iterative process by which the Development Design was informed by the results of the desk-based assessment, Setting Assessment, and a Heritage Impact Assessment. Furthermore, the likelihood and severity of the impact of the Proposed Development on heritage matters was reassessed considering several mitigation options. A geophysical survey (**Appendix 6.2 and Figures 6.4 – 6.5**) and a targeted field evaluation (**Appendices 6.3 - 6.4 and Figure 6.6**) was also carried out to assess the presence/absence, significance and condition of any remains that might be present within the Site.

Statutory Pre-Application Consultation

- 6.3.7 The Town and Country Planning (Development Management Procedure) (Wales) Amendment Order 2016 (DMPO 2016) requires the Applicant to consult the public and statutory consultees prior to submitting a planning application for major development. The consultation period was between 14 October 2022 and 11 November 2022 with an extended period until 18 November 2022 agreed with Natural Resources Wales (NRW).
- 6.3.8 A series of responses from consultees including Cadw, the Canal and River Trust (CRT), and the National Trust (NT) received in November 2022 identified issues relating to historic environment matters, as set out in **Table 6.1** below. Full consultee responses (and how each has been addressed) is provided in the Pre-Application Consultation (PAC) Report.

Table 6.1: Summary of Statutory Pre-Application Consultation Responses

Consultee	Summary of response	How response has been addressed in the ES (or elsewhere in the planning submission)
Cadw	Alternative site for development outside WHS Buffer Zone	Addressed In Section 3.2 of ES Chapter 3.0 (Alternatives) as well as the Heritage Impact Assessment (Appendix 6.1, Annex 2)
Cadw	Request for further information regarding lime kiln revealed during field evaluation	Archival research will be undertaken during determination of the planning application including archives held at National Library Wales, Northeast Wales Archives and Canal and River Trust Archives. The detailed design of the Proposed Development will take into account the presence of the lime kiln; a 2m buffer (to be confirmed with Cadw) will be enforced during any works to ensure preservation in situ.
Cadw, NT CRT	Amend HIA and ES Chapter using UNESCO document Guidance and Toolkit for Impact Assessments in a World Heritage Context (2022)	Heritage Impact Assessment (Appendix 6.1, Annex 2) revised following new guidance
NT and CRT	Information requested regarding sense of arrival to the WHS	Information provided within Heritage Impact Assessment (Appendix 6.1, Annex 2)
Cadw and NT	Lighting impact assessment	The assessment of night-time landscape and visual effects set out in ES Chapter 5.0 Landscape and Visual Effects (Section 5.6) has been revised to specifically address effects on these assets. The Heritage Impact Assessment (Appendix 6.1, Annex 2) and ES Chapter 6.0 (Historic Environment) (Section 6.6) have been revised to ensure potential night-time effects upon setting are assessed.
CRT	Archaeological Evaluation - canal planting	A Written Scheme of Investigation for a Trenched Evaluation has been produced and discussed with CPAT-DC who confirmed that such works would not be required in this location (unlikely for planting to impact on below ground archaeology in this location, any archaeology likely already disturbed due to construction of railway and canal). CRT agreed with this approach – no further action.
Cadw	Further assets to be assessed.	The following assets have been assessed in the Heritage DBA (Appendix 6.1), Heritage Setting Assessment (Appendix 6.1, Annex 1) and the Heritage Impact Assessment (Appendix 6.1, Annex 2) following Cadw's pre-application response (10 th November 2022): - DE117 Castell y Waun Castle Mound, - DE133 Offa's Dyke: Caeau-Gwynion Section,

Consultee	Summary of response	How response has been addressed in the ES (or elsewhere in the planning submission)
		○ DE134 Offa's Dyke: Chirk Castle Section extending NE from Castle Mill, ○ DE135 Offa's Dyke: Chirk Park Section extending NE from the Lake, ○ DE138 Offa's Dyke: Section N & S of Plas-Offa ○ DE140 Offa's Dyke: Section N & S of Tan-y-Cut ○ DE198 Offa's Dyke: Chirk Park Section extending 340m NE of Home Farm ○ DE223 Darland Wood Round Barrows ○ DE288 The Holyhead Road: the Chirk Embankment and earlier trackways, ○ PGW(C)15(WRE) Brynkinalt ○ PGW(C)42(WRE) Argoed Hall, ○ PGW(C)64(WRE) Wynnstay.

Other Engagement with Stakeholders

- 6.3.9 Ongoing consultation has been undertaken with relevant stakeholders as required to ensure that key issues were identified and discussed prior to the completion of the EIA. A summary of the stakeholder responses and how they have been addressed are provided in **Table 6.2** below.

Table 6.2: Summary of Other Stakeholder Engagement

Consultee	Date	Summary of Response	How Response has been addressed in the EIA
CPAT-DC Archaeology Planning Department	December 2021	Request for Scope	A 500m buffer around the red line boundary was applied in relation to non-designated sites and a 1km buffer was applied in relation to designated sites to collect baseline data.
CPAT-HER	January 2021	To obtain baseline heritage data within the 0.5km500m study area from the regional HER.	Information used in producing baseline
CPAT-DC Archaeology Planning Department	May 2022	Guidance on mitigation based on DBA results. Geophysical survey during pre-application and production of HIA	A geophysical survey (Appendix 6.2 and Figures 6.4 – 6.5) was carried out in June 2022 across the site
Cadw	May 2022	Request for Scope	Heritage Impact Assessment (Appendix 6.1, Annex 2) and Heritage Setting Assessment (Appendix 6.1, Annex 1) carried out in August 2022
CPAT-DC Archaeology Planning Department	August 2022	Request for field evaluation	Written Scheme of Investigation (WSI) (Appendix 6.3) carried out in August 2022
CPAT-DC Archaeology	August 2022	WSI Approval	Archaeological Field Evaluation (Appendix 6.4 and Figure 6.6)

Consultee	Date	Summary of Response	How Response has been addressed in the EIA
Planning Department			
CPAT-DC Archaeology Planning Department	October 2022	Consultation regarding mitigation measures	Proposed watching brief for an approximate 40m x 40m area around feature 5003
Cadw	November 2022	Consultation regarding mitigation measures for lime kiln	Further information regarding the lime kiln to be extrapolated through archival research Preservation in situ – redesign (at detailed design stage) of access road to leave a 2m buffer around the lime kiln

Post-Submission Statutory Consultation Responses

Overview

- 6.3.10 During the statutory post-submission consultation stage undertaken by WCBC, several consultation responses have been received by WCBC and subsequently issued to the Applicant for further consideration and comment.
- 6.3.11 All consultation responses have been collated together as **Appendix 1.1** which details how account has been taken of each response (including points of further clarification, where the Proposed Development design was amended, or further information provided in the planning application documents). **Appendix 1.1** also includes consultation responses with respect to the historic environment.

Alternatives

- 6.3.12 Some of the consultation responses received were with respect to further consideration of alternatives to minimise impact on the surrounding landscape and

historic environment; the most notable of which were provided by Cadw (see References 9 and 10 of **Appendix 1.1**).

6.3.13 The Applicant and Cadw held a meeting on 20 April 2023 to discuss alternatives in greater detail. The discussion included further clarification of the key design parameters considered (of the various components) during the development of the Proposed Development and the desire to achieve, on balance, a proposal that has the least environmental impact, with particular regard given to consideration of the historic environment, the landscape and visual impacts, local amenity (noise, vibration and air quality), and impacts on the local highway network. A summary of the key discussion parameters discussed with Cadw is provided in **ES Chapter 3.0 (Alternatives)**.

6.3.14 The discussion continued to understand the extent to which it would be possible to amend the design of the Proposed Development to reduce impacts on the historic environment (without creating additional environmental impacts elsewhere e.g. noise and vibration, landscape), with a particular focus on reducing/removing the extent of new development located towards the northern extent of the red line boundary. An outline sketch of an alternative Proposed Development layout was produced to address this objective which Cadw later agreed would likely assist with reducing the impact of the Proposed Development on the historic environment. This sketch was subsequently looked at in greater detail by the Applicant to develop a workable alternative layout for subsequent formal submission to WCBC. The key changes implemented during the development of the alternative layout are discussed in more detail at **ES Chapter 3.0 (Alternatives)** but are summarised below.

- Weighbridges, weighbridge building, and weighbridge car park moved approximately 20m to the south.
- Lorry park footprint reduced by approximately 50% (previously 91 HGV spaces, now 45 HGV spaces) and moved further south.
- Area at the northern extent of the Proposed Development Site now vacated by the reduced lorry park is proposed as further wildflower grassland.
- Roundwood storage areas reduced in size (around 21% collectively) to accommodate the above.
- Additional land on the western boundary of the western roundwood storage proposed for additional new woodland planting.
- The bund along the eastern boundary of the Site amended to a height of approximately 4m adjacent to the proposed lorry park, and to a height of

approximately 7m north of the proposed lorry park (when measured from the adjacent internal platform/road level of the Proposed Development) to provide appropriate noise mitigation for the residential receptors at Offa/Wern. This would provide similar noise effects to the original (and now superseded) Proposed Development layout.

- 6.3.15 Cadw requested that a photomontage of the Proposed Development was prepared from an elevated location within Chirk Castle Registered Park and Garden (RPG), close to the north-western boundary of the designation, to help understand potential effects on setting. This land is not publicly accessible but is in the ownership of the Applicant. Photographs were taken from a series of locations in this area and forwarded to Cadw for their view as to which would be the most suitable for the photomontage. The photomontage displayed on **Figure 6.10** reflects Cadw's chosen location. For a methodology describing photomontage production, refer to **ES Chapter 5.0 (Landscape and Visual Effects)**.

Formal Submission of Amended Planning Drawings and EIA Regulation 24

- 6.3.16 The finalisation of the alternative Proposed Development layout represents a clear change to the original planning application made to WCBC. Therefore, several of the original planning documents have been revised and formally submitted to WCBC for further consideration (and formal consultation). This includes an updated ES in accordance with Regulation 24 of the EIA Regulations, including this chapter.
- 6.3.17 A full schedule of the updated planning documents submitted to WCBC because of the revised Proposed Development layout is provided at **Appendix 1.2**.

Study Area

- 6.3.18 Study areas for both designated and non-designated assets were established to ensure the inclusion of appropriate data to understand the historic environment character of the area and its archaeological potential.
- 6.3.19 In agreement with CPAT–DC, data for all designated heritage assets was obtained for the Site and a surrounding 1km buffer area. In addition, after consideration of the ZTV produced by the LVIA for this project and in consultation with Cadw, a further 13 assets that lie outside the 1km buffer area have been included. These are:
- DE117 Castell y Waun Castle Mound;
 - DE133 Offa's Dyke: Caeau-Gwynion Section;

- DE134 Offa's Dyke: Chirk Castle Section extending NE from Castle Mill;
- DE135 Offa's Dyke: Chirk Park Section extending NE from the Lake;
- DE138 Offa's Dyke: Section N & S of Plas-Offa;
- DE140 Offa's Dyke: Section N & S of Tan-y-Cut;
- DE198 Offa's Dyke: Chirk Park Section extending 340m NE of Home Farm;
- DE223 Darland Wood Round Barrows;
- DE288 The Holyhead Road: the Chirk Embankment and earlier trackways;
- LB598 Chirk Castle;
- PGW(C)15(WRE) Brynkinalt;
- PGW(C)42(WRE) Argoed Hall; and
- PGW(C)64(WRE) Wynnstay.

6.3.20 Data on non-designated assets was obtained for the Proposed Development from a 500m buffer area, again in agreement with CPAT-DC.

Scope of Assessment

6.3.21 Baseline conditions for the study area were established through a desk-based assessment, a walkover survey, a geophysical survey and field evaluation, a Heritage Impact Assessment, and a Setting Assessment. In total, 88 cultural historic assets were assessed, these comprise:

- Ten Scheduled Monuments (one of which is also a WHS);
- 18 Listed Buildings;
- One Conservation Area;
- Five Registered Park and Gardens; and
- 55 non-designated historic assets.

6.3.22 These form the cultural heritage baseline described fully in **Appendix 6.1**, with a precis included below.

6.3.23 The following sources of archaeological and historical information were utilised:

- Collation and assessment of all relevant information held in the regional HER at the Clwyd Powys Archaeological Trust (CPAT-HER), within a 0.5km buffer zone around the Site.
- Collation and assessment of the impact on all designated archaeological sites (Scheduled Ancient Monuments (SM), Listed Buildings (LB), Historic Parks &

Gardens, landscapes, Conservation Areas) within a 1km buffer zone around the Site.

- Assessment of all available excavation reports and archives including unpublished and unprocessed material affecting the site and its setting.
- Assessment of aerial photographs (AP) 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.
- 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).
- LIDAR Data.
- Zones of Theoretical Visibility mapping (ZTV).
- Online sources: British Geological Survey (BGS), additional historic mapping providers.
- Site visit.

Assessment of Significance/Assessment Criteria

- 6.3.24 The following assessment criteria are based on the guidance provided in the Principles of Cultural Heritage Impact Assessment in the UK (IEMA, IHBC and CIFA, 2021) and Guidance on Heritage Impact Assessment for Cultural World Heritage Properties (ICOMOS 2011). It is also in line with the requirements of Planning Policy Wales, Ed 11, 2021, Technical Advice Note 24 (TAN24) The Historic Environment (Cadw and Welsh Government, 2017) and Heritage Impact Assessment in Wales (Cadw, 2017).

Assessing Value (Heritage Significance)

- 6.3.25 Determining heritage significance is a professional judgment made with reference to Conservation Principles (Cadw 2011).

Table 6.3: Value Criteria

Value	Description
Very high	Assets of acknowledged international value. Assets that strongly convey the outstanding universal value of the WHS
High	Nationally designated assets. Assets that contribute to national research objectives
Medium	Assets that contribute to regional research objectives. Assets with lower levels of preservation
Low	Assets of local importance. Includes locally listed buildings and assets of limited value or poor preservation
Negligible	Assets with little surviving archaeological, architectural, or historic interest
None	Assets with no heritage interest or value

Assessing Magnitude of Impact

- 6.3.26 Impacts can be either direct (including physical impacts to an asset resulting in its modification or destruction and impacts arising from development within the settings of historic assets) or indirect (for example, impacts arising from changes in hydrology).

Table 6.4: Magnitude Criteria

Magnitude	Description
Major	<u>Adverse</u> Total loss or substantial harm to key elements of the heritage interest of the asset or features or characteristics of the baseline (pre-development) conditions such that the adverse impact seriously affects a key element of its special interest of the asset. <u>Beneficial</u> Significant removal of detracting elements or restoration of key elements of special interest strongly contributing to the asset's heritage value.
Moderate	<u>Adverse</u> Partial loss or harm to one or more important elements or features or characteristics of the baseline (pre-development) conditions such that post development character or composition, or attributes of baseline will be significantly changed. <u>Beneficial</u> Partial removal of detracting elements or restoration of key elements of special interest contributing to the asset's heritage value.
Low	<u>Adverse</u>

Magnitude	Description
	Minor loss. Change arising from the loss or alteration will be discernible but underlying character or composition or attributes of the baseline condition will be similar to pre-development circumstances or patterns. <u>Beneficial</u> Minor removal of detracting elements or restoration of elements of special interest contributing to the asset's heritage value.
Negligible	<u>Adverse</u> A slight loss of heritage interest through limited physical impact on the asset's value or a change within its setting that would be barely perceptible and the appreciation and understanding of the historic asset would be largely unchanged. <u>Beneficial</u> Slight removal of detracting elements or restoration of elements of special interest contributing to the asset's heritage value.
None	No loss or alteration Change not distinguishable or does not result in loss of heritage significance. Change does not result in any removal of detracting elements or restoration of elements of special interest.

6.3.27 The impact could be permanent or temporary in nature:

- **Permanent** impacts are where recovery is not possible within a reasonable timescale or where mitigation measures cannot reverse it. This type of impact typically comprises of loss of archaeological features, the effects of which are mitigated by means of on-site recording, change of design, etc.
- **Temporary** impacts are where recovery is possible naturally over a short period of time, or where mitigation measures can be effective at reversing the impact. These impacts typically comprise of visual or other indirect effects but can also include other impacts such as a change of historic land-use. Temporary impacts typically can be reversible if required, although this is not always the case.

6.3.28 Impact timescales are based on the following:

- **Short-term** 0-5 years (typically construction impacts)
- **Medium-term** 5-20 years
- **Long-term** 20 years +

Assessing the Level (Significance) of Effect

- 6.3.29 The level (or significance) of effect is assessed by comparing the value of the resource and the predicted magnitude of impact. The following table outlines the matrix used in this assessment to assign significance.

Table 6.5: Level of Effect

Magnitude	Heritage Value					
	Very High	High	Medium	Low	Negligible	None
Major	Major	Major	Major or moderate	Minor	Minor or Negligible	Neutral
Moderate	Major	Major or moderate	Moderate	Minor	Negligible	Neutral
Low	Moderate	Moderate or minor	Minor	Negligible	Negligible or Neutral	Neutral
Negligible	Minor	Minor	Minor or negligible	Negligible or Neutral	Neutral	Neutral
None	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

- 6.3.30 In the above, effects of major significance are equivalent to ‘very large’ and ‘large/very large’ as described in the ICOMOS guidance 2011. Assets of Very High value are those that meet those criteria in their own right, and attributes which strongly convey Outstanding Universal Value (OUV) of the World Heritage Site. Effects assessed as being of a Major or Moderate level are significant in EIA terms, effects assessed as being of a Minor or Negligible level are not significant.

Assessment Assumptions and Limitations

- 6.3.31 There are several limitations to the data sources set out above, generic to any historic environment assessment. For example, due to the buried nature of archaeological assets there is often an element of uncertainty regarding the precise survival, condition and extent of the asset. However, these potential limitations have been taken into account in preparing the baseline assessment, for example by augmenting desk-based material with a site walkover and geophysical survey. The potential for previously unrecorded archaeological assets is taken into account, and a

precautionary approach has been taken in determining heritage value; where value is uncertain the assessment assumes to the higher likely value.

- 6.3.32 A thorough assessment has therefore been made and that on this basis the assessment is believed to be accurate and correct.

6.4 Baseline Environment

Designated Historic Assets

World Heritage Site and Scheduled Monuments

- 6.4.1 There are ten Scheduled Monuments within the extended study area, of which, one is also a World Heritage Site.

- 6.4.2 The Pontcysyllte Aqueduct and Canal World Heritage Site (Scheduled Monument and World Heritage Site) (DE175; PRN124694, NPRN405725) lies c. 150m to the west of the Proposed Development. Although it lies outside the WHS it is within the WHS Buffer Zone. The Pontcysyllte Aqueduct and Canal are considered outstanding examples of innovation in civil engineering and transportation. The WHS Statement of Outstanding Universal Value describes them as:

“...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”.

- 6.4.3 The WHS designation recognises the aqueduct and canal as a heritage asset of international significance and **Very High** heritage value. As the Statement of OUV describes, it has high evidential and historic value as a well-surviving example of innovative engineering associated with the Industrial Revolution. Its aesthetic value is also high, particularly for the aqueducts spectacularly spanning the Dee and Ceiriog Valleys.

- 6.4.4 Castell y Waun Castle Mound (Scheduled Monument) (DE117; PRN 101109; NPRN 30701) is located 1.4km south of the Site on the southern edge of Chirk. The mound was part of a motte and bailey castle built by William Peveral of Dover in the late 11th or early 12th century. It was one of three he built to consolidate his power in the Welsh border area, where he had been granted lands following their confiscation from Roger Montgomery. The castle was central to the area until the construction of Chirk Castle by Roger Mortimer at the turn of the 13th century, after which it was abandoned. It survives as a circular, flat-topped mound around 30m in diameter and 5.7m high. No other earthworks survive, but the motte itself is largely undisturbed and is considered to have high archaeological potential.
- 6.4.5 The London to Holyhead Road – Chirk embankment and earlier trackways (Scheduled Monument) (DE288; PRN 79833) is 100m south-west of Castle Mound. The Holyhead Road was part of an improvement to the road between London and Holyhead. The final part of the route through north Wales presented significant engineering challenges. It was designed by Thomas Telford and built between 1815 and 1826. It is also significant as the first major civil engineering project funded by parliament. The stretch scheduled as DE288 includes Chirk Embankment, a gradually rising earthen embankment which carries the road for about 200m as it approaches Chirk from the south-east before it turns to the east and traverses the slope of the hill. The scheduled area also includes braided trackways and the earlier turnpike.
- 6.4.6 Darland Wood Round Barrows (Scheduled Monument) (DE223) are located 2.7km to the north of the Site. They are the remains of two round barrows, thought to date to the Bronze Age. Both are circular, with rounded profiles. Barrow A has a diameter of 15 – 20m and is around 0.5 – 1m high, despite being reduced by levelling in 1890 and subsequent ploughing. Barrow B is 26m in diameter and between 0.4 and 1.3m high. Despite the levelling disturbance the barrows are likely to be well preserved and have significant archaeological potential. They may contain surviving burial deposits, and environmental and structural evidence.
- 6.4.7 As Scheduled Monuments, Castell y Waun Castle Mound, the London to Holyhead Road – Chirk embankment and earlier trackways, and Darland Wood Round Barrows have **High** heritage value. Both Castell y Waun and Darland Wood have good potential for surviving archaeological deposits and finds and therefore a high potential evidential value. The London to Holyhead Road has high historical value.

6.4.8 Offa's Dyke is the UK's longest linear earthwork, stretching approximately 220km from Treuddyn in north-east Wales to Sedbury Cliffs in south Gloucestershire. The monument is believed to have been constructed during the reign of King Offa as a boundary between the Saxon kingdom of Mercia and the Welsh kingdoms and to date to the late 8th century AD. It is formed of an earthen bank with a ditch on its western side. It survives in varying states of preservation, with some sections surviving as visible earthworks while some have been buried and levelled. Along its best-preserved sections the bank stands to 3.5m high, with excavated sections showing the ditch to be at least 3.5m wide and 1.7m deep (Hill, 2020). Six separate Scheduled Monuments relate to sections of the Dyke within the study area for this assessment:

- DE134 Offa's Dyke: Chirk Castle Section extending NE from Castle Mill measures 400m, running from Castle Mill to Home Farm, within Chirk Castle Registered Park and Garden. It has been truncated in places by the park boundary, access road and buildings but otherwise survives well (Jones, 2017).
- DE198 Offa's Dyke: Chirk Park Section extending 340m NE of Home Farm runs north of DE134 across Chirk Castle Registered Park and Garden. This section has been subject to historic levelling as part of landscaping activity. It survives as a low, wide bank, around 9m wide and 1m high. It has been truncated by an ornamental lake which forms the end of this section. Excavation By CPAT in 2018 just outside the scheduled area to the north-east encountered a 6m wide, 2.8m deep V-shaped ditch with a vertically sided trough at the base, on the west side of the bank (Belford, 2019).
- DE135 Offa's Dyke: Chirk Park Section extending NE from the Lake runs north-north-east from the ornamental lake for 810m, where it is truncated by a road cutting. This section of the monument is well preserved although overgrown and obscured by vegetation.
- DE133 Offa's Dyke: Caeau-Gwynion Section stretches for 650m across Caeaugwynion farm towards Wern Wood. At its southern end it is truncated by a track and a farm track cuts through the centre. The monument is well defined in this section, surviving up to c. 1.5m high.
- DE138 Offa's Dyke: Section N & S of Plas-Offa is a 700m long stretch of the Dyke located just over 1km to the north-west of the Site. It is cut by the A5 in the centre and by the Llangollen Canal to the north.
- DE140 Offa's Dyke: Section N & S of Tan-y-Cut runs for c. 500m north-east from the Llangollen Canal to the River Dee.

- 6.4.9 All the Offa's Dyke sections have high historical value. Their evidential value varies according to the level of survival but is also generally high. Likewise, their aesthetic value, which is primarily incidental and based on their landscape setting, also varies between the sections but is overall high. Their heritage value is therefore considered **High**.

Listed Buildings and Conservation Areas

- 6.4.10 There are 18 listed buildings within the extended study area (see **Table 6.5**). No listed buildings are located within the Site.
- 6.4.11 Chirk Castle (LB598) is a Grade I listed building located 2km to the south-west of the Proposed Development. The castle is thought to have been built around 1295 for the Marcher lord Roger Mortimer. Its location was chosen to guard the Dee Valley to the north and the Ceiriog valley to the south. The original design was rectangular with large towers at the four corners and halfway along the long sides. After the downfall of Mortimer's nephew, also Roger Mortimer, in 1322 the castle was held by a succession of prominent individuals until it was bought by the merchant Sir Thomas Myddelton in 1595. It remained in the Myddelton family until it was transferred to the National Trust in 1981. Despite numerous alterations over the years, the 13th century core of the building remains to the exterior. However, very little of the medieval interior survives, instead they represent the lavish and luxurious changes made by the Myddelton family from the 17th century onwards. Chirk Castle is an exceptional building which has remained in continuous use since its construction in the 13th century. It has high evidential, historical, aesthetic, and communal value, and is considered to have **Very High** heritage value.
- 6.4.12 Six listed buildings lie within Whitehurst Garden Registered Park and Garden. Queen Anne's Cottage (LB1288) is a Grade II* late seventeenth or early 18th century brick building, which is thought to have been a banqueting house. Whitehurst House (LB1287) is a Grade II two storey 19th century stone building that incorporates an earlier building, thought to have been another banqueting house. Also listed are the gatepiers with gates and perimeter garden wall (LB1286) and three fruit garden terraces (LBs20224, 20225 and 20226), all Grade II.
- 6.4.13 Drumore (LB1289) is a Grade II listed 17th century lobby-entry house constructed in rubble stone. It was divided into two properties in the 19th century. It has historic

associations with the Chirk estate, with records showing that in the 18th century it was an alehouse that supplied the castle.

- 6.4.14 The Lodge (LB626) is a Grade II red brick Late Georgian building. Its name derives from an earlier building on the site, documented in the 17th century but potentially of earlier date, which was the lodge for Black Park, part of the Chirk Castle estate. The current building was either a remodelling or rebuilding carried out by the manager of Black Park Colliery, T.E. Ward at some time in the first half of the 19th century.
- 6.4.15 Ley Farmhouse (LB1297) is a Grade II 16th century cruck framed house with 17th and 20th century alterations.
- 6.4.16 There is a cluster of five listed buildings c. 900m to the south of the Proposed Development, four of which lie within the Chirk Conservation Area. LB20236 is a Grade II listed 19th century milestone on the London to Holyhead Road. Three of the buildings relate to Chirk Town Council Offices, built in 1902 in neo-Jacobean style. The office building (LB20215), North Gate Piers (LB20228), and South Gate Piers (LB20229), are all Grade II listed. To the south of these is the former National Girl's School (LB1290), originally built as a schoolroom and attached residence in 1843-4. Funded by Charlotte Myddelton, it was designed by A.W.N. Pugin in an Elizabethan style.
- 6.4.17 Barc-du, also known as Sawmill Cottage, LB620 is a small, 16th or 17th century timber framed cottage.
- 6.4.18 The 19th century Smithy at Whitehurst and House attached (LB627) is a two storey, L-shaped stone building. It is believed to have been occupied by a smith, Mr. Davies, who was employed by Telford during the construction of the Holyhead Road.
- 6.4.19 Whitehouse Bridge (LB87548) is a stone bridge with elliptical arch over the Ellesmere Canal and towpath. It is thought to be of late 18th century construction.
- 6.4.20 The Grade II and II* listed buildings are all of **High** heritage value.
- 6.4.21 There is one conservation area within the study area. Chirk Conservation Area encompasses the streets of the planned pattern of the medieval settlement, with the 13th century Church of St. Mary at its core. The area extends west to Station Avenue and Castle Road and south to include Chirk aqueduct and viaduct. Significant destruction during both Glyndŵr's campaign and the War of the Roses in the 15th century means little survives of the medieval town. Other than the church the earliest

buildings are Trevor House and a terraced row on Castle Street, which are thought to be of 17th century origin. The majority of the buildings in the Conservation Area date to the late 18th century onwards, as Chirk developed following the construction of the canal, the Holyhead Road, and later the railway. The buildings of the Conservation Area include both commercial and residential buildings (Wrexham County Borough Council, 2014). The Chirk Conservation Area is of **High** heritage value.

Registered Historic Parks and Gardens

- 6.4.22 Five Registered Parks and Gardens are included within the extended study area. None fall within the boundaries of the Proposed Development. Two are within 1km of it.
- 6.4.23 Chirk Castle (PGW(C)63(WRE); NPRN70048) is a Grade I listed park that forms the grounds of Chirk Castle. The park has its origins in the 14th century, when the Mortimer family built a wooden-fenced deer park around the castle that included 100 acres of woodland. The Myddeltons extended the area in the late 17th century and created a Baroque layout with formal gardens and avenues extending across the park it. The remnants of the baroque layout are still found in the route of the southern road (now a drive) and the lake. However, most of this layout was superseded by a new landscape design, created by the English landscape designer William Emes for Richard Myddelton in the late 18th century. His additions included the ha-ha, formal gardens, layout of the grassland, and woodland planting.
- 6.4.24 The park survives in good condition. It is now owned and managed in part by the National Trust and is open to the public. Including the castle itself there are 26 listed buildings within the park, which are all features of the park, such as gates, entrance lodges, formal garden walls and ornaments, and estate workers' cottages. Offa's Dyke runs roughly north – south across the park at its highest point.
- 6.4.25 As an historic landscape that is well preserved and demonstrates high coherence and association with Grade I listed Chirk Castle, the RPG is also considered to have high evidential, historical, aesthetic, and communal value, and to therefore have **Very High** heritage value.
- 6.4.26 Whitehurst (PGW(C)11(WRE); NPRN266506) is a small Grade II* walled garden located c. 200m to the north of the Site. The garden was built by Sir Thomas Myddelton II in 1651 as a place to entertain visitors instead of travelling the additional

3km to Chirk Castle. The pleasure garden included banqueting houses (the Grade II* Queen Anne's Cottage and Whitehurst House), walled gardens, and a series of terraces. It was designed to be productive as well as ornamental and is a rare example of a 17th century ornamental fruit garden (Hankinson, 2018).

6.4.27 The three other Registered Parks and Gardens included in this assessment are:

- Brynkinalt Park PGW(C)15(WRE), a large, landscaped Grade II* park which forms the grounds of Brynkinalt Hall. The estate has a long history, having been associated with the Trevor family since 942, but the current appearance of the park was created by Lady Charlotte Dungannon in the early 19th century.
- Argoed Hall PGW(C)42(WRE) is a Grade II listed Victorian garden consisting of a formal terraced garden around Argoed Hall and stables and woodland on the steep slope down to the River Dee. The woodland is laid out with walks, and steps lead from the Hall to a summer house on the riverbank.
- Wynnstay (PGW(C)64(WRE)) is a large Grade I Park and Garden that originated as a Deer Park created by Sir John Wynn in 1678. An estate map dating to c. 1740 shows that some of the formal landscaping still existing had already been carried out, including a north-west – south-east running avenue. In the late 18th century, Sir Watkins Williams Wynn, 4th Baronet, commissioned major alterations by Richard Woods and later Lancelot 'Capability' Brown, which included a new lake that has not survived.

6.4.28 The Grade II and II* Registered Parks and Gardens are of **High** heritage value.

Non-designated Historic Assets

6.4.29 There are 54 non-designated sites recorded on the HER and NMR within a 500m buffer area of the Proposed Development, and one new site has been identified during archaeological evaluation of the Site. The assets are described in **Appendix 6.1** and are summarised in **Table 2 of Appendix 6.1**.

6.4.30 Three non-designated assets are recorded within the red line boundary. However, PRN132631 refers to The Lodge, Black Park, and is almost certainly in the wrong location, as other assets associated with The Lodge, including the listed building, are located 300m to the east. The other two assets, PRN140789, the turnpike road, and PRN47505, the presumed route of a Roman road following Thomas Telford's Holyhead Road, are both on the route of the existing B5070. The locations of both

routes are assumed, and any surviving physical remains will likely have been destroyed by the construction of the B5070. Their heritage value is Negligible.

6.4.31 Twelve of the sites are part of the WHS, including Whitehouse Tunnel (NPRNs 87008 and 406591), Afon Bradley Limekilns (NPRN405795), and Black Park Collieries Railway Bottom Wharf Dock (NPRN405791). As assets that contribute to the OUV of the WHS they are of Very High heritage value.

6.4.32 In addition, asset KHR01 was identified as an anomaly by a geophysical survey carried out by Archaeology Wales on the Site (**Appendix 6.2**) and was excavated as part of the trenched evaluation (**Appendix 6.4**). It consisted of a large circular pit, 4.5m in diameter and over 4m deep. The natural substrate surrounding the cut was heat-affected. It is interpreted as the subsurface remains of a limekiln which had the brick lining removed before being backfilled. There is no documentary evidence for this limekiln and nothing to indicate whether or not it was related to the construction of the Ellesmere Canal (see **Appendix 6.5**). It is considered to be of Low heritage value.

Future Baseline

6.4.33 Changes to the historic environment baseline conditions could occur as a result of:

- Additional surveys identifying as yet unknown heritage assets within the study area;
- Changes to the designation status of the known assets within the study area; and
- Changes to the condition of the known assets within the study area (for example removal of assets or changes to an asset's setting as a result of other development proposals).

6.4.34 However, there are no anticipated changes to the baseline data as set out above that would materially alter the assessment that follows.

6.5 Development Design and Impact Avoidance Measures

Introduction

6.5.1 The following sets out aspects of the Proposed Development that have been designed at the outset or through the development/design stages to avoid or minimise the potential for significant effects. Further mitigation identified to address

the initial environmental effects of the Proposed Development is described in **Section 6.8** of this chapter.

Construction

- 6.5.2 The targeted field evaluation (see **Appendices 6.3 – 6.4**) identified a limekiln KHR01 of possible medieval or post-medieval date within the Site. To avoid any damage to the feature, the detailed design of the Proposed Development would avoid groundworks within the area of the kiln including within a 2m buffer around it.

Operation

- 6.5.3 The Proposed Development includes the planting of woodland along the farm access road (see the Illustrative Landscape Masterplan at **Figure 4.3a**) to lessen the degree of intervisibility between it and the Afon Bradley Farm Complex (PRNs 145627-31).
- 6.5.4 The Proposed Development includes the planting of new woodland between the canal and the railway (see the Illustrative Landscape Masterplan at **Figure 4.3a**) to lessen the degree of intervisibility between it and the Llangollen Canal Scheduled Monument and World Heritage Site (DE 175; PRN 124694; WHS)
- 6.5.5 Different options have been explored in consultation with Cadw to lessen intervisibility between the Proposed Development and Chirk Castle (LB 598; PRN 101107; NPRN 145757) and the Registered Park and Garden at Chirk Castle (PGW (C 63; NPRN 70048). The layout of the Proposed Development has been amended to reduce the overall built footprint. Additionally, planting at the western edge of the Site would lessen the degree of intervisibility between Grade I Listed Chirk Castle and the Grade I Registered Historic Park and Garden at Chirk Castle and the Proposed Development (see the Illustrative Landscape Masterplan at **Figure 4.3a**).

6.6 Assessment of Potential Effects

Potential Effects during Construction

- 6.6.1 No designated heritage assets are located within or adjacent to the Site. One non-designated asset, KHR01, is located to the eastern edge of the Site (on the western side of the east bund adjacent the B5070). The asset consists of the sub-surface remains of a limekiln of possible post-medieval or medieval date. There is potential for physical damage to the asset during groundworks relating to construction, although the design of the Proposed Development provides mitigation by avoiding

the location of the asset, which will provide preservation in situ. The predicted magnitude and level of effect is therefore neutral.

- 6.6.2 Afon Bradley Farm (PRNs 145627-31) is of local significance and therefore of Low heritage value. During the construction phase it is intended that the farm would be used as the construction compound, including a car park with space for 20 vehicles. There would be no physical effect on the farm complex buildings from this use, but there would be visual and noise impacts (the noise and vibration assessment (**ES Chapter 8.0**) concludes construction noise levels would result in a temporary neutral to minor level of effect). The level of effect during construction would be Moderate, but the impact is considered temporary and short term.
- 6.6.3 The construction phase has the potential to impact the settings of heritage assets. However, these impacts are short-term and temporary and would be fully reversed on completion of the construction phase. Construction phase activities are therefore not significant, however any impacts affecting the contribution made by setting to the value of adjacent historic assets, which begin during the construction phase and continue as a result of the presence of the Proposed Development are described in the operation phase effects, below.

Potential Effects during Operation

- 6.6.4 The operation phase of the Proposed Development has the potential to affect the setting of the heritage assets and impact the contribution setting makes to their heritage value. An assessment of these potential impacts has been undertaken in accordance with *Setting of Historic Assets in Wales* (Cadw, 2017). This guidance details a four-stage approach. Stages 1 and 2 are provided in **Appendix 6.1, Annex 1**.
- 6.6.5 Stage 1, the identification of historic assets likely to be affected by the Proposed Development, examined the baseline data collected in **Appendix 6.1, Annex 1**, and assessed the potential visibility of the Proposed Development from those assets using ZTV mapping and site visit observations. This assessment established that the majority of the assets would be unaffected by the Proposed Development. The magnitude of impact and level of effect in relation to the majority of historic assets recorded above, is therefore neutral.

6.6.6 Seven designated assets were identified as having settings that may potentially be impacted by the Proposed Development and were taken forward to Stage 2. These are:

- Pontcysyllte Aqueduct and Canal WHS and Scheduled Monument DE175;
- Chirk Castle, Grade I Listed Building, LB598;
- Chirk Castle Grade I Registered Historic Park and Garden, (PGW(C)63(WRE));
- Offa's Dyke: Chirk Park Section extending 340m NE of Home Farm, Scheduled Monument DE198;
- Offa's Dyke: Chirk Park Section extending NE from the Lake, Scheduled Monument DE135;
- Offa's Dyke: Caeau-Gwynion Section, Scheduled Monument DE133; and
- Offa's Dyke: Section N & S of Plas-Offa, Scheduled Monument DE138.

6.6.7 The non-designated assets relating to Afon Bradley Farm (consisting of five post-medieval farm buildings, PRNs 145627 – 145631) immediately to the west of the Site are also considered.

6.6.8 Stage 2 analyses the existing settings of the heritage assets to understand how setting contributes to their heritage value. The results of Stage 2 are summarised below, along with an evaluation of the impacts the Proposed Development may have on those contributions (Stage 3).

6.6.9 In relation to the visual change that would occur as a result of the Proposed Development, all conclusions have been made with regards to the findings of the LVIA (**Chapter 5.0 Landscape and Visual Effects**) and the visualisations that accompany it.

Pontcysyllte Aqueduct and Canal WHS and Scheduled Monument

6.6.10 The setting of Pontcysyllte Aqueduct and Canal WHS is integral to its heritage value, as it was the challenging terrain the canal needed to cross that resulted in innovative civil engineering solutions, particularly in the use of iron in construction. The Site is located in an area of historic field systems, which seem to have had their origins in medieval strip farming. The post-medieval agricultural landscape was carved through by the canal, which formed a new, linear feature that largely disregarded earlier assets or anthropogenic landscape features. Instead, the location of the canal depended on practical civil engineering considerations and the local topography.

- 6.6.11 Modern understanding of the canal as a linear feature in this section of the WHS (between Chirk Tunnel and Whitehurst Tunnel) is reduced by adjacent areas of woodland and tree belts. This vegetation cover obscures the line of the canal from the wider landscape. Additionally, the section of the canal north of Chirk Tunnel, to the west and south-west of the existing Kronospan facility lies within a deep cutting, preventing both longer views to the wider landscape and appreciation of the canal from afar.
- 6.6.12 Existing industrial development, including at Kronospan, are a modern element that detract from the canal's acquired character as a place for recreation. Existing structures at Kronospan are prominent from a short stretch of canal immediately to their north-west.
- 6.6.13 The Proposed Development would extend the footprint of development to the north. However, views of the Site would continue to be very well screened by exiting features. There would be no visibility from the section of canal that runs through the wooded cutting north of Chirk Tunnel. Further to the north, as the canal emerges from the cutting, the Proposed Development would be very well screened by the adjacent railway embankment and existing vegetation cover. There would be very limited views of the Proposed Development available from the canal around Chirk Marina in the winter, but these would be entirely screened in summer. Proposed new planting would provide full screening in winter, once vegetation establishes. The Proposed Development would therefore have almost no impact on the setting of the WHS as experienced from the canal or towpath.
- 6.6.14 The contribution of the setting to understanding the canal as a linear feature in the landscape is already low in this part of the canal due to the various areas of well-established vegetation cover around Kronospan, the former golf course and Chirk Castle park. The Proposed Development would therefore not negatively impact this contribution. The understanding of the landscape setting of the canal from views within the wider setting, particularly elevated views, would also be minimally affected, as the Proposed Development would be located close to prominent existing industrial development, and would retain most of the existing field boundaries. Additionally, the northern part of the Site would either be undisturbed or would comprise of new woodland and hedgerow planting, albeit with the new access road running through it.

- 6.6.15 The Proposed Development would have a Negligible magnitude of impact on the WHS/ Scheduled Monument (an asset of Very High value), resulting in a Minor (adverse) level of effect, this would not be significant.

Chirk Castle Grade I Listed Building

- 6.6.16 The setting of Chirk Castle is primarily formed by its surrounding park and garden. The Site lies within historic agricultural land adjacent to the existing Kronospan Facility to the north-east of the park. This aspect of the asset's setting does make a positive contribution to appreciating the wider views available from the Castle, which help to convey its strategically significant location and its symbolic visual prominence over the land it controlled. However, the Site forms only a very small portion of this wider landscape setting. There are very few locations on the castle from which views including the Site can be gained, and these constitute only glimpses. Views of the Castle from the surrounding park that contribute to appreciating its historic value, mainly those from the west and north, may be negatively affected. However, the existing industrial facility already detracts slightly from these views.
- 6.6.17 Site visits and the visualisations (ZTV mapping and photomontages) produced to accompany **ES Chapter 5.0 (Landscape and Visual Effects)** demonstrate that views of the Proposed Development would be available only from a few locations in and around the Castle, comprising the area to the front of the main entrance, some windows with views to the north-west on the north side of the castle, and from the roof of the north side of the castle. These views are framed by existing vegetation, with one small area of the lorry park visible through this vegetation cover. Views in this direction are already affected by the modern housing estates in the north of Chirk Green, which can be seen behind the Site. The Proposed Development would have no effect on the castle's immediate setting (i.e. its relationship with the associated Registered Park and Garden) and the magnitude of impact on the wider setting would be Negligible, having almost no impact on the contribution of the setting to the heritage value of the castle. The Proposed Development would have a Minor adverse level of effect on the Grade I listed building (an asset of Very High value), this would not be significant.

Chirk Castle Registered Park and Garden

- 6.6.18 The main elements of Chirk Castle Registered Park and Garden's setting that contribute to understanding its heritage value are its relationship with Chirk Castle itself and its prominent location within a wider picturesque landscape. The Site forms

a small part of the surrounding rural landscape that makes a positive contribution to its heritage value. Some of the structures at the existing Kronospan Facility are visible in some significant views, particularly from the New Hall entrance and from the eastern end of the formal gardens. Visibility from the New Hall entrance is reducing considerably as recent planting implemented by the Applicant is successfully establishes. Views of some of the existing structures are also available from some locations of the eastern, northern, and north-western parts of the RPG, sometimes comprising only the top of the stacks and emission plumes, and sometimes comprising more extensive visibility of industrial structures (refer to **Figure 6.10** for existing views from the north-western part of the RPG). Both the existing Kronospan Facility and the 20th century housing development at Chirk Green have a negative impact on the contribution to heritage value provided by the view of the wider landscape.

- 6.6.19 The Proposed Development would extend approximately 600m to the north of the existing Kronospan Facility. The northern half of the Site would comprise retained vegetation and new planting, with the new access road running through this. As such, new structures would be concentrated in the southern half of the Site, closer to the existing Kronospan Facility.
- 6.6.20 The Proposed Development would be visible from several locations in the RPG, including a very narrow area immediately to the north-east of the castle itself, from a short section of the permissive path that runs through the parkland east of the castle, from the relatively open east facing slopes to the south of the New Hall entrance, and the higher areas to the north-west of the park. With the exception of the location immediately north of the castle, all of these locations are already impacted by views of the existing Kronospan facility and by the modern housing to the east of the Site. The scale of the proposed structures is significantly smaller than the existing factory complex and hence they would be less intrusive. The location of the proposed access road along the western extent of the Site maximises the screening afforded by proposed woodland planting in that part of the Site. The reduced development footprint would mean that the northern area of the Site would continue to be seen as a largely undeveloped area. The Proposed Development would have no impact on any of the Registered Park and Garden's designated significant views. The Proposed Development would have a Negligible magnitude of impact on the Grade I Registered Park and Garden (an asset of Very High value), resulting in a Minor (adverse) level of effect, this would not be significant.

Offa's Dyke Scheduled Monument

- 6.6.21 The landscape setting of Offa's Dyke makes a significant contribution to understanding its heritage value as a linear earthwork constructed to provide views westwards into Wales. In the designated sections of the Dyke included in this assessment there has been some reduction of these views caused by elements such as hedgerows, but wider views to the west generally survive. The importance of views to the east, which includes the Site, in understanding heritage value is not as high but they do contribute to its wider setting in a rural landscape. The existing Kronospan Facility makes a negative contribution to the heritage value of the asset, particularly to section DE133, where it is prominent in views across the lowland areas to the east. The contribution of setting to the heritage value of DE198 has already been significantly diminished by 18th century landscaping of the park and the presence of the modern car park.
- 6.6.22 Landscape and existing vegetation mean that there would be extremely limited views of the upper parts of the substation and weighbridge building on sections DE198, DE135, and DE138. Section DE133 is more open to the east and is already impacted by the existing Kronospan Facility. There are views from this section towards the Site. These are mainly of the northern half of the Site, while the southern half is well screened by existing vegetation. This means that majority of the Proposed Development that would be visible would be the northern part which would chiefly comprise retained vegetation and new planting. The ability to understand the contribution made by the surrounding landscape to the heritage values of Offa's Dyke Scheduled Monument would be unchanged and the Proposed development would therefore have no impact on the Scheduled Monument. The level of effect would be neutral.

Non-designated Historic Assets

- 6.6.23 Afon Bradley Farm Complex (PRNs 145627-31) comprises a group of agricultural buildings of local interest and low heritage value. The farm buildings are currently experienced in the context of surrounding farmland which makes a positive contribution to the appreciation of their historic value as buildings closely associated with the land farmed from them. The Proposed Development would introduce new woodland along the farm access road to the south-east of the buildings and would also reduce the amount of farmland currently seen in views of and from the buildings. The topography and existing mature trees and hedges in the land between the asset

and the Site would reduce the degree of intervisibility between the farm and the Proposed Development. A moderate magnitude of impact is predicted in relation to an asset of low value, resulting in a level of effect that is Minor (adverse), this is not significant.

6.7 Inter-Relationship of Potential Effects

- 6.7.1 The historic environment effects, and any works that are carried out to mitigate those effects, are not likely to lead to effects on other topics considered in the ES technical chapters. Potential effects (and mitigation works) for other environmental topics interact with the historic environment as follows:
- 6.7.2 The Illustrative Landscape Masterplan presented on **Figure 4.3a** and described in **ES Chapter 4.0 (Description of the Proposed Development)** and **ES Chapter 5.0 (LVIA)** includes measures to reduce the effects upon the setting of historic assets including Pontcysyllte Aqueduct and Canal WHS (DE175; PRN124694; NPRN124694) and Buffer Zone, Chirk Castle (LB598; PRN101107; NPRN145757), the Registered Park and Garden of Chirk Castle (PGW(C)63), and Offa's Dyke DE133 and DE135. **ES Chapter 5.0 (Landscape and Visual Effects)** has considered the effects of the proposed revised lighting scheme; that assessment has been cross referred to and lighting effects are not considered to significantly contribute to the assessed effects resulting from changes to the settings of heritage assets.
- 6.7.3 **ES Chapter 6.0 (Noise and Vibration)** was consulted to determine whether additional effects were likely to contribute to changes with the settings of heritage assets. Largely that assessment concluded neutral to minor adverse effects and neutral to moderate beneficial effects in relation to night-time road traffic noise. These effects do not contribute to the assessed effects resulting from changes to the settings of heritage assets, although the temporary effects at Afon Bradley Farmstead are noted above.

6.8 Further Mitigation, Monitoring and Enhancement

Construction Mitigation

- 6.8.1 The targeted field evaluation (see **Appendices 6.3 – 6.4**) identified a limekiln of possible medieval or post-medieval date within the Proposed Development area. To avoid any damage to the feature, the detailed design of the Proposed Development would avoid any groundworks within the area of the kiln, including within a 2m buffer

(full extent to be agreed with Cadw) around the feature. In addition, the exact position of the feature will be marked out during the construction period and fenced off to avoid impacting into a feature.

- 6.8.2 The results of the archaeological works within the Site (field evaluation and watching brief) will be appropriately reported and relayed to the CPAT - Historic Environment Records (CPAT-HER) for their inclusion in the HER database. The results will also be examined and analysed accordingly, following the aims set within the Research Framework for the Archaeology of Wales (2017). If the archaeological works reveal finds/features of significance, these results will be made publicly available through a number of outreach activities.

Operational Mitigation

- 6.8.3 The predicted effect assessed during the operational phase of the Proposed Development takes account of the embedded mitigation described in Section 6.5 above, and no further mitigation is proposed.

Enhancement

- 6.8.4 A Minor adverse (not significant) effect is predicted in relation to the impact of the Proposed Development on the Pontcysyllte Aqueduct and Canal World Heritage Site as a result of development within the WHS Buffer Zone. The predicted effect takes into account the mitigation embedded into the design of the Proposed Development, and no additional mitigation measures have been identified, or are deemed necessary.
- 6.8.5 However, enhancement measures could be implemented to offset the predicted (less than significant) adverse impact to the WHS, given the very high value of this asset as recognised through its inscription on the list of world heritage sites.
- 6.8.6 A Conservation Management Plan (CMP) is proposed for land within the Applicant's ownership where that coincides with the WHS and Buffer Zone. This land is outside of the Site, but a CMP would offer enhancement measures in relation to the WHS through setting out relevant positive management proposals. The CMP could be delivered via a suitably worded planning condition, or a Section 106 Agreement/Unilateral Undertaking and the scope would be determined in consultation with Cadw and other relevant stakeholders including the National Trust, as appropriate.

- 6.8.7 Subject to more detailed consultation, it is envisaged that the CMP would comprise: an appraisal setting out the extent and boundary of land owned by the Applicant that is also within the WHS or Buffer Zone; an assessment of the heritage interest of that land in relation to the OUV of the WHS; and identification of issues and objectives to positively manage the land in accordance with the wider aims of the WHS management plan.
- 6.8.8 The outcomes of the CMP could then relate to existing initiatives outlined in the WHS management plan, for example WCBC has an existing initiative as part of the Clwyd South Levelling Up programme to, among other things, deliver visitor amenity and public realm improvements at Chirk and to increase connectivity through the WHS through the creation of the Wenffrwd to Llangollen Active Travel Corridor which passes through Chirk. This existing initiative provides an opportunity to support enhancement to the WHS in the vicinity of the Proposed Development that would offset the localised predicted impact.

6.9 Summary of Potential Residual Effects

Introduction

- 6.9.1 A summary of the potential residual effects following the implementation of appropriate mitigation to reduce archaeological and heritage effects during construction and operation phases is provided below.

Construction

- 6.9.2 The significance of effect of the Proposed Development on the non-designated limekiln identified within the site is **neutral** when taking account of the avoidance measures embedded into the design of the Proposed Development and the additional safeguarding measures set out in **Section 6.8** above.
- 6.9.3 The significance of effect of the Proposed Development on the non-designated Afon Bradley farmstead is Moderate adverse during construction, but that effect is temporary and short term and would be reversed on completion of the construction phase, resulting in a Minor adverse residual effect as a result of the ongoing presence of the infrastructure during the operation phase, described below.
- 6.9.4 For the other historic assets, temporary effects that would occur during the construction phase and continue throughout the operation have been assessed as operation effects and the residual effects are described below.

Operation

- 6.9.5 The significance of effect of the Proposed Development on the Pontcysyllte Aqueduct and Canal World Heritage Site is Minor adverse. Additional enhancement measures are set out above, although the residual effect is Minor adverse and is not significant.
- 6.9.6 As no further mitigation measures are proposed, residual (operational) historic environment affects would be as stated in **Section 6.6** above, summarised in **Table 6.6** below.

Table 6.7: Summary of Residual Historic Environment Effects

Historic Asset	Value	Nature of Potential Impact	Magnitude of Impact	Residual Level of Effect (including embedded mitigation described in Section 6.5)
Afon Bradley Farm Complex (PRNs 145627-31)	Low	Permanent, adverse	Moderate	Minor
Pontcysyllte Aqueduct and Canal WHS (DE175; PRN124694)	Very High	Permanent, adverse	Negligible	Minor
Chirk Castle (LB598; PRN101107; NPRN145757)	Very High	Permanent, adverse	Negligible	Minor
Registered Park and Garden of Chirk Castle (PGW(C)63; NPRN 70048)	Very High	Permanent, adverse	Negligible	Minor
Offa's Dyke Sections DE198, DE133, DE135 and DE138	High	Permanent, adverse	Neutral	Neutral

6.10 Cumulative Effects

- 6.10.1 The method for identifying other projects and activities is provided at **ES Chapter 2.0 (EIA Methodology)**; this includes a list of the specific projects and activities

identified, which also takes into consideration the other Kronospan development proposals that are being progressed separately by the Applicant.

- 6.10.2 None of the committed developments identified in **ES Chapter 2.0 (EIA Methodology)** would result in any cumulative effects on the historic assets assessed in this chapter, including the Pontcysyllte Aqueduct and Canal WHS, Chirk Castle Listed Building and Chirk Castle Registered Historic Park and Garden.

6.11 Conclusions

- 6.11.1 This chapter has detailed the potential impacts that the Proposed Development would have on the archaeological and historical resource of the area. To do so, it has been guided by present legislation concerning heritage and archaeology, and by several guidance documents including local, national and international guidelines dealing with the management of WHS.

- 6.11.2 A desk-based assessment, settings assessment and Heritage Impact Assessment has been undertaken to provide an assessment of baseline conditions, and a geophysical survey and trenched evaluation has been undertaken within the site.

- 6.11.3 As a result of the above, baseline conditions for the historic environment comprise:

- No designated heritage assets are located within the Site.
- Within the extended study area there are 10 Scheduled Monuments (of which one is also the Pontcysyllte Canal and Aqueduct World Heritage Site and six relate to sections of Offa's Dyke), 18 listed buildings (including Grade I listed Chirk Castle, 2km to the south-west of the Site), one conservation area and five registered parks and gardens (including the Grade I designed landscape at Chirk Castle).
- There are 54 non-designated historic assets within 500m of the Site (including Afon Bradley farm which is a non-designated historic farm complex to the immediate east of the Site).
- Field surveys identified one new non-designated historic asset within the Site, the remains of a limekiln.

- 6.11.4 The majority of the relevant mitigation measures are embedded into the design of the Proposed Development, or form part of the Illustrative Landscape Masterplan (**Figure 4.3a**), which would reduce or eliminate potentially adverse historic

environment effects. Additional mitigation measures are proposed, comprising safeguarding during construction for the limekiln identified within the Site.

6.11.5 The level of residual effect, after the implementation of the embedded and additional mitigation measures is predicted to be:

- Neutral in relation to the limekiln, as the design of the Proposed Development has been amended to avoid the feature;
- Minor adverse in relation to non-designated Afon-Bradley farm complex, resulting from development within the setting of this asset;
- Minor adverse in relation to Pontcysyllte Canal and Aqueduct WHS/ SM, as a result of limited changes to the setting of the asset;
- Minor adverse in relation to Chirk Castle, Grade I listed building and Chirk Castle Grade I registered park and garden; and
- A neutral effect in relation to Offa's Dyke Scheduled Monument.

6.11.6 None of the predicted residual effects in relation to the historic environment are significant.

6.12 References

ARCADIS, 2019. Pontcysyllte Aqueduct and Canal World Heritage Site Management Plan 2019-2029

Cadw, CCW & ICOMOS UK., 1998. Register of Landscapes of Historic Interest in Wales. Cardiff: Cadw.

Cadw, 2017. Setting of Historic Assets in Wales. Cardiff: Cadw.

Cadw 2011. Sustainable Management of the Historic Environment in Wales (Conservation Principles)

Cadw, the Countryside Council for Wales (CCW) now Natural Resources Wales and the Welsh Assembly Government (now the Welsh Government). Revised 2nd Edition, 2007. Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process

Chartered Institute for Archaeologists. 2021. Standard and Guidance for Historic Environment Desk-Based Assessment

DMRB, Volume 11 Environmental Assessment, Section 3 Environmental Topics, Part 2, Cultural Heritage, which is published by the UK Government on behalf of the Highways Agency, Transport Scotland, Welsh Assembly Government (Llywodraeth Cynulliad Cymru) and the Department for Regional Development Northern Ireland

Garcia Rovira I, 2002a. Kronospan, Holyhead Road, Chirk Access road, lorry park, 132kV substation and other ancillary works. Archaeology Wales Report 2080

Garcia Rovira I, 2002b. Kronospan, Holyhead Road, Chirk Access road, lorry park, 132kV substation and other ancillary works. Setting Assessment, Archaeology Wales Report 2109

ICOMOS, 2011. Guidance on Heritage Impact Assessments for Cultural World Heritage Properties.

Muller, J, 2022. Kronospan, Holyhead Road, Chirk Access road, lorry park, 132kV substation and other ancillary works. Geophysical Survey. Archaeology Wales Report 2102.

Research Framework for the Archaeology of Wales (2017)

Stratton S, 2022. Kronospan, Holyhead Road, Chirk Access road, lorry park, 132kV substation and other ancillary works. Heritage Impact Assessment. Archaeology Wales Report 2109

UNESCO, ICCROM, ICOMOS, IUCN. 2022. Guidance and toolkit for impact assessments in a World Heritage Site Context. Paris UNESCO.

Welsh Government, 2017. Planning Policy Wales. Technical Advice Note (TAN) 24: The Historic Environment, May 2017.

Wrexham CCB, 2011, Wrexham Unitary Development Plan (UDP)

Wrexham CCB, 2012. Pontcysyllte Aqueduct & Canal – local planning guidance note

Wrexham CCB, 2012. Pontcysyllte Aqueduct & Canal. Supplementary Planning Notice

Wrexham CCB, 2018. Wrexham Local Development Plan 2013 – 2028 Deposit Plan