



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 7.0 – BIODIVERSITY
AND NATURE CONSERVATION**

DECEMBER 2022



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CONTENTS - CHAPTER 7.0

7.0	BIODIVERSITY AND NATURE CONSERVATION.....	3
7.1	Introduction.....	3
7.2	Planning Policy, Legislation and Guidance	3
7.3	Assessment Methodology.....	6
7.4	Baseline Environment.....	17
7.5	Development Design and Impact Avoidance Measures	26
7.6	Assessment of Potential Effects.....	28
7.7	Inter-Relationship of Potential Effects	35
7.8	Mitigation, Monitoring and Enhancement.....	35
7.9	Summary of Potential Residual Effects	37
7.10	Cumulative Effects.....	38
7.11	Enhancement	39
7.12	Conclusions	39

Figures	(Volume 2 – Bound Separately)
----------------	--------------------------------------

Figure 7.1	Site Location
Figure 7.2	Statutory Designated Sites for Nature Conservation
Figure 7.3	Non-Statutory Designated Sites for Nature Conservation
Figure 7.4	Habitat Plan
Figure 7.5	Breeding Bird Survey Results Plan
Figure 7.6	Pond Plan
Figure 7.7	Confidential Badger Survey Plan
Figure 7.8	Otter and Water Vole Survey Plan

Appendices	(Volume 3 – Bound Separately)
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Appendix 7.1	Baseline Ecology Report
Appendix 7.2	Breeding Bird Survey Report
Appendix 7.3	Great Crested Newt eDNA Surveys
Appendix 7.4	Otter and Water Vole Survey

7.0 BIODIVERSITY AND NATURE CONSERVATION

7.1 Introduction

Introduction

- 7.1.1 This chapter of the Environmental Statement (ES), along with the accompanying Figures and Appendices, addresses the potential effects on biodiversity and nature conservation during the construction and operation of the Proposed Development. A description of the Proposed Development is provided in **ES Chapter 4.0 (Description of the Proposed Development)**.

Competence

- 7.1.2 This chapter has been prepared by J. Stevens *BSc (Hons)* of Avian Ecology Ltd., a suitably qualified ecologist with over six years' experience as a professional ecologist including extensive experience of Environmental Impact Assessment (EIA) developments.
- 7.1.3 The chapter has been reviewed by N. Robinson *MSc BSc (Hons) ACIEEM* of Avian Ecology Ltd., who has over 12 years' experience in the undertaking of impact assessment upon ecological and ornithological receptors.

7.2 Planning Policy, Legislation and Guidance

National Planning Policy

- 7.2.1 The following national planning policies are relevant to the assessment:

Future Wales - The National Plan 2040

- 7.2.2 Policy 9 of Future Wales is concerned with resilient ecological networks and green infrastructure.

Planning Policy Wales

- 7.2.3 Section 6 of Planning Policy Wales is concerned with distinctive and natural places, with Section 6.4 focusing on Biodiversity and Ecological Networks. Section 6.4.5 concerns the Biodiversity and Resilience of Ecosystems Duty. This is supplemented by Technical Advice Note 5: Nature Conservation and Planning.

Local Planning Policy

Wrexham UDP

7.2.4 The following policies within the Wrexham Unitary Development Plan (UDP) are considered of relevance to the assessment:

- Policy PS2: Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment.
- Policy PS11: Encouragement will be given to proposals which improve the biodiversity value of sites and to the establishment of local nature reserves where the nature conservation and landscape interest of the land will be protected and enhanced.
- Policy EC4: Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted

Wrexham Local Development Plan

7.2.5 The following policies contained within the Deposit Wrexham Local Development Plan (LDP) are considered of relevance to the assessment:

- Policy SP15 – Natural Environment
- Policy SP20 – Green Infrastructure
- Policy NE1 – International and Nationally Designated Nature Conservation Sites
- Policy NE2 – Locally Designated Sites of Nature Conservation and Geological Importance
- Policy NE3 – Trees, Woodlands and Hedgerows

Local Planning Guidance Notes

7.2.6 Local planning Guidance Note number 32: Biodiversity and Development provides additional guidance to the policies contained within the Wrexham UDP. The

guidance note specifically deals with the information requirements, avoidance measures and mitigation, compensation and enhancement measures that should support any planning application.

Legislation and Guidance

7.2.7 Reference has been made to the following key pieces of legislation and guidance:

International

- Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 ('the Ramsar Convention)
- Convention on the Conservation of European Wildlife and Natural Habitats 1979 ('the Bern Convention)
- UNESCO convention on the protection of the World Cultural and Natural Heritage (1972)

National

- The Conservation of Habitats and Species Regulations 2017 (as amended)
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
- The Wildlife and Countryside Act 1981 (as amended)
- Environment (Wales) Act 2016
- The Environment Act 2021
- Countryside and Rights of Way Act 2000
- Protection of Badgers Act 1992
- Hedgerow Regulations 1997
- Natural Environment and Rural Communities (NERC) Act 2006
- 'Birds of Conservation Concern 5' (Stanbury et al., 2021)¹
- The UK Post – 2010 Biodiversity Framework²
- The Bat Conservation Trust (BCT) - Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.)³
- Planning Policy Wales (PPW11, 2021)
- The Nature Recovery Plan for Wales

¹ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747. Available online at <https://britishbirds.co.uk/content/status-our-bird-populations>.

² <https://jncc.gov.uk/our-work/uk-post-2010-biodiversity-framework/>.

³ Collins et al. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3rd edition, BCT: London.

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- BS 42020:2013 Biodiversity – Code of Practice for Planning and Development; and
 - Biodiversity Net Gain. Good practice principles for development⁴

7.3 Assessment Methodology

Consultation

Pre-Application 1

7.3.1 A request for pre-application advice (dated 14 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 Kronopsan facility.

7.3.2 With respect to biodiversity, the first pre-application response from WCBC (Reference ENQ/2020/0044, dated 07 January 2022) states that:

“A formal application would need to be accompanied by an ecological assessment. In addition to assessing and, where necessary, mitigating for impacts upon protected species the proposals will need be accompanied by a comprehensive scheme demonstrating net biodiversity gain in order to comply with paragraph 6.4.5 of Planning Policy Wales.”

7.3.3 This chapter presents an assessment of the Proposed Development upon biodiversity, including important ecological and ornithological receptors. It identifies the potential for significant effects and outlines mitigation measures requires to avoid and/or minimise such effects.

Pre-Application 2

7.3.4 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)**.

⁴ <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>

With respect to biodiversity, the second pre-application response from WCBC (reference ENQ/2021/0315, dated 07 January 2022) states that:

“A formal application would need to be accompanied by an ecological assessment. In addition to assessing and, where necessary, mitigating for impacts upon protected species the proposals will need be accompanied by a comprehensive scheme demonstrating net biodiversity gain in order to comply with paragraph 6.4.5 of Planning Policy Wales.”

- 7.3.5 This Chapter presents an assessment of the Proposed Development upon Biodiversity, including important ecological and ornithological receptors. It identifies the potential for significant effects and outlines mitigation measures requires to avoid and/or minimise such effects.

Statutory Pre-Application Consultation

- 7.3.6 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).
- 7.3.7 A series of responses from consultees including the Canal and River Trust (CRT), and NRW received in November 2022 identified issues relating to biodiversity matters, as set out in **Table 7.1** below. Full consultee responses (and how each has been addressed) is provided in the Pre-Application Consultation (PAC) Report.

Table 7.1: 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)
CRT	Require additional confirmation on length of hedgerow planting to allow assessment of biodiversity gains.	References to hedgerow lengths have been updated. A quantitative approach to biodiversity net gain is currently not required by national or local planning policy in Wales; the qualitative assessment undertaken is considered sufficient, given the low biodiversity value of modified grasslands that dominate the Application Site.
CRT	We consider that the application ought to have been informed by a bat survey.	Impacts to bats have been assessed following a precautionary approach and with reference to current guidance.

Consultee	Summary of response	How Response has been addressed in the ES (or elsewhere in the planning submission)
		NRW is satisfied that the potential impact pathway from proposed lighting on Lesser horseshoe bats, a particularly light averse species ⁵ , is adequately addressed (see below).
NRW	The development site is located within 960m of the Chirk Castle and Parkland SSSI, Lesser Horseshoe Bats are a feature of the protected site. Advise that the proposed development is not likely to harm or disturb the bats or their breeding sites and resting places, the potential impact pathway from proposed lighting is adequately addressed through the Environmental Statement.	Noted. No further action required.
NRW	Concerns regarding potential for significant effects on the River Dee and Bala Lake SAC (and underlying River Dee SSSI) resulting from surface water drainage, pollutants and foul water. Request sufficient information is provided to enable the LPA to undertake a HRA	Amendments to the drainage strategy and provision of further information within the Flood Consequence Assessment and Surface Water Drainage Strategy ⁶ (FCR&SWDS) considered sufficient to undertake a HRA.
NRW	Note grassland fungi (waxcaps) special feature of Chirk Castle and Parkland SSSI not identified however have no concerns over direct impacts due to separation distance	Noted. Assessment has been updated to provide specific reference to waxcap fungi species feature of the SSSI.
NRW	The consultee considers that the Proposed Development is not likely to damage the features for which Chirk Castle and Parkland SSSI & Nant Y Belan and Prynella Woods SSSI	Noted. No further action required.
NRW	Request additional information on ponds up to 500m of the Development Site and presence of GCN therein	Assessment and baseline information updated to include waterbodies within 500m of the Proposed Development. No additional survey deemed necessary.

Other Engagement with Stakeholders

⁵ <https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349>

⁶ SLR (2022) Chirk: Flood Consequence Assessment and Surface Water Drainage Strategy. Prepared for Kronospan Limited. Ref: 416.05415.00009

7.3.8 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 7.2** below.

Table 7.2 Summary of Other Stakeholder Engagement

Consultee	Date	Summary of Response	How Response has been addressed in the ES
Natural Resources Wales	01/04/2022	We advise liaison with WCBC ecologist to discuss and agree the scope of any surveys required at this stage. We refer you to our website for further ecology advice.	WCBC were contacted for pre-application advice in relation to the Proposed Development. Their advice in relation to the assessment of biodiversity is summarised in Section 1.3 and has been addressed within this chapter of the ES.

Study Area

7.3.9 Study areas adopted for the Proposed Development, and from which baseline ecological and ornithological information has been obtained, have been defined on the basis of the Proposed Development (planning) red line boundary as shown in **Figure 7.1** and are summarised as follows:

Desk Study

- Statutory designated sites for nature conservation – within 5km of the Proposed Development Site (excluding the landscape mitigation planting area between the railway and canal – see ‘Limitations’ at the end of this section), extended to 10km for internationally designated sites (Special Protection Areas (SPAs) or Special Areas of Conservation (SACs) and Ramsar sites) with mobile qualifying faunal interests (such as birds and bats); and
- Non-statutory designated sites for nature conservation, protected and notable habitats and species (e.g., Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006) Species of Principal Importance and Priority Habitats) – within 2km of the Proposed Development Site (excluding the landscape mitigation planting area referred to above).

Field Survey

- Habitats – Land within the Proposed Development Site (excluding the landscape mitigation planting area referred to above) and immediately surrounding land (where this could be surveyed from publicly accessible land/with third party permission). The surrounding land was described so as to apply appropriate context and value to habitats identified within the Proposed Development Site; and
- Breeding birds – Land within the Proposed Development Site (excluding the landscape mitigation planting area referred to above) and immediately surrounding land (where this could be surveyed from publicly accessible land/with third party permission). Up to 100m from the Proposed Development Site for Schedule 1 Breeding Birds.

Baseline Methodology

7.3.10 Baseline ecological and ornithological information to inform the design and assessment of the Proposed Development has been obtained through desk study and field surveys. Detailed methodologies are provided in the following appendices:

- Appendix 7.1: Baseline Ecology Report.
- Appendix 7.2: Breeding Bird Survey Report.
- Appendix 7.3: Great Crested Newt eDNA Surveys.
- Appendix 7.4: Otter and Water Vole Survey.

Scope of Assessment

7.3.11 The assessment presented within this chapter has been undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) guidance⁷ and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (The EIA Regulations) considers the potential for significant effects upon important ecological and ornithological receptors as a result of the construction and operation of the Proposed Development.

⁷ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1*. Chartered Institute of Ecology and Environmental Management, Winchester

- 7.3.12 CIEEM guidance stipulates that it is not necessary to carry out a detailed assessment of impacts upon ecological or ornithological receptors that are sufficiently widespread, unthreatened and resilient to impacts of a proposed development. As such, the assessment presented considers potential effects upon designated sites for nature conservation and ecological or ornithological receptors which are considered important on the basis of relevant guidance, results of baseline studies and professional judgement.
- 7.3.13 Where ecological or ornithological receptors are not considered sufficiently important as to warrant a detailed assessment, or where they would not be significantly affected on the basis of baseline information, these are 'scoped out' of the assessment. Mitigation measures for such receptors may however, still be outlined as appropriate to reduce and/or avoid any potentially adverse effects or to ensure legislative compliance.
- 7.3.14 A summary of the ecological and ornithological receptors considered for this assessment, and the rationale for scoping each receptor in or out of detailed assessment is provided in **Table 7.3** below.

Table 7.3: Ecological and Ornithological Receptors

Ecological / Ornithological Receptor	Scale of Importance	Potential Effect Pathways and Rationale for Selection of Receptors for Detailed Assessment
Statutory Designated Sites for Nature Conservation	Up to international	Due to the nature of the Proposed Development, no direct effects are anticipated. The potential for indirect effects is considered further. Scoped into the assessment
Non-statutory Designated Sites for Nature Conservation	Regional	Due to the nature of the Proposed Development, no direct effects are anticipated. The potential for indirect effects is considered further. Scoped into the assessment
Notable habitats (including priority and ancient/ irreplaceable habitats)	Regional	Hedgerow priority habitat is located within the Proposed Development Site. A veteran tree is also present within the Proposed Development Site. All are considered further due to potential for direct and indirect effects. Scoped into the assessment
Other on-site habitats	Site	These habitats are located within the Proposed Development Site and are common and widespread locally and regionally. However, protected or notable species may utilise such habitats and therefore, there is potential for these species to be affected. Scoped into the assessment
Breeding birds	Local	Breeding species were typical of lowland rural habitats

Ecological / Ornithological Receptor	Scale of Importance	Potential Effect Pathways and Rationale for Selection of Receptors for Detailed Assessment
		and comprised common and widespread species, however these do include species of conservation concern. Scoped into the assessment on a precautionary basis as potential for temporary displacement during construction depending on timing of work
Bats – roosting	Regional	A single tree suitable only for small numbers of roosting bats and as a roost of lower conservation status was observed Scoped into the assessment
Bats – foraging and commuting	Regional	The Proposed Development Site possesses habitat features that may be used by moderate numbers of foraging and commuting bats Scoped into the assessment
Badger	Local	Badgers are a common and widespread species both locally and nationally and are protected primarily due to persecution and welfare. Scoped out of the assessment as any effect is unlikely to be significant Considered with regards to legal duties only and standard good practice embedded mitigation measures.
Otter	Local	No evidence of otter presence observed during surveys. Scoped out of the assessment
Water vole	Regional	No evidence of water vole presence observed during surveys. Scoped out of the assessment
Amphibians	Local	Great crested newt surveys indicate likely absence. Priority amphibians (toad) may be present within the Proposed Development Site. Scoped out of the assessment as any effect is considered unlikely to be significant. Considered with regards to legal duties only and standard good practice embedded mitigation measures.
Reptiles	Local	Although legally protected, reptiles species potentially present within the Proposed Development Site are likely to be common and widespread across much of the UK and within Cornwall. Scoped out of the assessment as any effect is considered unlikely to be significant. Considered with regards to legal duties only and standard good practice embedded mitigation measures.
Other Mammals	Local	Hedgehog is a declining species classified as vulnerable on the Red List for Britain's Mammals. Brown hare have suffered declines due to modern

Ecological / Ornithological Receptor	Scale of Importance	Potential Effect Pathways and Rationale for Selection of Receptors for Detailed Assessment
		intensive agriculture and are a priority species. Despite population declines, both species are relatively common and widespread Scoped out of the assessment as any effects considered unlikely to be significant.
Invasive non-native species	N/A	No invasive species were recorded within the Proposed Development Site during baseline surveys. Considered with regards to legal duties and standard good practice mitigation measures only.

7.3.15 For the reasons outlined above and discussed in the relevant baseline sections below, the following ecological receptors have been scoped-out of further assessment:

- Badger.
- Otter.
- Water vole.
- Amphibians.
- Reptiles.
- Other priority mammals.
- Invasive non-native species.

Impact Assessment Methodology

7.3.16 The assessment presented within this Chapter includes the following stages:

- determination and evaluation of important ecological and ornithological receptors;
- identification and characterisation of impacts;
- outline of mitigating measures to avoid and reduce any identified significant effects;
- assessment of the significance of any residual effects after such measures;
- identification of appropriate compensation measures to offset significant residual effects, and
- identification of opportunities for biodiversity enhancement.

Determining Importance

- 7.3.17 Relevant legislation, policy and guidance has been referenced to determine the importance of ecological and ornithological receptors.
- 7.3.18 In addition, importance has also been determined using professional judgement and taking account of the results of baseline field and desk study findings and the functional role of features within the context of the geographical area.
- 7.3.19 It should be noted that importance does not necessarily relate to the level of legal protection that a receptor receives, and receptors may be important for a variety of reasons, such as their connectivity to a designated site, rarity or the geographical location of species relative to their known range.
- 7.3.20 For the purposes of this assessment, the importance (or sensitivity) of an ecological or ornithological receptor is considered within the context of a defined geographical area, ranging from International to Site, as detailed in **Table 7.4**.

Table 7.4: Ecological and Ornithological Importance.

Importance	Definition
International	An internationally designated sites (Special Protection Areas (SPA), Special Areas of Conservation (SAC) and/ or Ramsar sites) or proposed/ candidate site (pSPA or cSAC). Large area of a habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of the larger whole. A regularly occurring, nationally significant population of an internationally important species or site supporting such a species (or supplying a critical element of their habitat requirement) or species listed in Annex IV of the Habitats Directive.
National (UK)	A nationally designated site (e.g. Site of Special Scientific Interest) or a discrete area which meets the selection criteria for national designation. An area of a priority habitat listed under Section 41 (England) of the Natural Environment and Rural Communities Act 2006 or Section 7 (Wales) of the Environment Wales Act which constitutes a significant proportion of the UK resource of that habitat. A regularly occurring, regionally significant population of any nationally important species listed as a UK BAP / Biodiversity List and priority species listed under Section 41 (England) of the Natural Environment and Rural Communities Act 2006, and Species listed under Schedule 1 or Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
Regional	Locally designated sites (Local Nature Reserves, County or Local Wildlife Sites). Areas of priority habitat which constitutes a significant proportion of the County's resource of that habitat. A regularly occurring, locally significant population of any nationally

Importance	Definition
	important species listed as a UK BAP / priority species and priority species listed under Section 41 (England) of the Natural Environment and Rural Communities Act 2006, and Species listed under Schedule 5 of the Wildlife and Countryside Act or Annex II or Annex IV of the Habitats Directive.
Local	Local area around the Proposed Development. For example, areas of priority habitat which are not large enough to meet the criteria for County value, or small but sustainable populations of a protected or notable species
Site	Considered within the context of the Proposed Development Site only.

Characterising Impacts

- 7.3.21 Once identified, potential effects are described making reference to the following characteristics as appropriate: positive or negative, extent, magnitude, duration, timing, frequency, and reversibility. The assessment also identifies areas where no change is anticipated and the resulting effect is described as 'not discernible' or 'none'.
- 7.3.22 The assessment only makes references to those characteristics relevant to understanding the nature of an effect and determining its significant.
- 7.3.23 For the purpose of this assessment, the temporal nature of potential effects are described as follows:
- Short-term effects are defined as 0-3 years;
 - Medium terms effects are defined as 3-15 years; and
 - Long term effects are defined as > 15 years.
- 7.3.24 The magnitude of change effected on ecological receptors is described as set out in **Table 7.5**. The likelihood or probability that an effect will occur is addressed as far as possible based on available information. Whilst it is reasonably straightforward to identify effects that are certain to occur, or conversely will not occur, it is generally more difficult to assign a quantified level to occurrences defined as likely, unlikely or highly unlikely. In these circumstances, professional judgement has been used, with reasoning supported by available evidence

Table 7.5: Magnitude of Impact/Change

Magnitude	Criteria
High	The change may negatively or positively affect the conservation status of a site or species population, in terms of the coherence of its ecological structure and function, that sustains the habitat, complex of habitats and/or the population levels of species of interest.
Moderate	Conservation status of a site or species population will not be negatively or positively affected, but some element of the functioning of the site or population might be affected and the change to the site/ population is likely to be significant in terms of its ability to sustain some part of itself in the long term.
Low	Neither of the above applies, but some minor negative or positive change is evident on a temporary basis, or the change affects extent of habitat or individuals of a species abundant in the local area.
Negligible	No observable effect in either direction

Determining Significance

- 7.3.25 The EIA Regulations⁸ require the description of the 'likely significant environmental effects of the proposed development on the environment' (Regulation 18(3)(b)).
- 7.3.26 To determine the overall significance of each effect, judgements on the importance of the receptor(s) and the magnitude of impact from the Proposed Development are considered together to determine whether or not an effect is likely to be significant. This involves a combination of quantitative and qualitative assessment and the application of professional judgement.
- 7.3.27 For the purposes of this assessment, effects are categorised as significant or not significant in line with the EIA Regulations. The assessment considers effects at different geographic scales i.e. where effects may be discernible at a local scale but are not considered significant in the context of the EIA Regulations. For the purpose of the assessment, moderate and major effects are deemed to be 'significant' in EIA terms unless stated otherwise.
- 7.3.28 A 'significant effect' is considered to be an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general.
- 7.3.29 CIEEM guidelines on ecological impact assessment note that:

⁸ *Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).*

'A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted following EIA procedures.'

- 7.3.30 For ease of reference **Table 7.6** below sets out adapted CIEEM terminology which also shows the equivalent EIA terms as used within this chapter.

Table 7.6: EIA Regulations and CIEEM Terminology.

Effect	Significance	CIEEM Definition
Substantial or Moderate beneficial	Significant	Positive effect on ecological integrity or conservation status at a County, National or International geographic scale
Minor Beneficial	Not significant	Positive effect on ecological integrity or conservation status, discernible/significant in ecological terms at a Local geographic scale only
Negligible or Neutral	Not significant or neutral	No discernible or significant on ecological integrity or conservation status (e.g. species or habitat).
Minor Adverse	Not significant	Adverse effect on ecological integrity or conservation status, discernible/significant in ecological terms at a Local geographic scale only.
Moderate or Substantial Adverse	Significant	Adverse effect on ecological integrity or conservation status at a County, National or International geographic scale.

Assessment Assumptions and Limitations

- 7.3.31 Due to the later (immediately prior to pre-application consultation) addition of the area of grassland between the railway and the canal for further landscape planting (see **Figure 4.3a**), baseline data gathering was not undertaken in this location. This area will be subject to habitat creation (tree planting) only, with no discernible negative impacts and therefore this isn't considered a significant limitation to the assessment.
- 7.3.32 Specific limitations associated with the gathering of baseline data are discussed in **Appendices 7.1 to 7.4**.
- 7.3.33 No further limitations have been encountered during the preparation of this assessment.

7.4 Baseline Environment

- 7.4.1 This section provides a summary of baseline ecological and ornithological conditions in relation to:

-
- Designated sites for nature conservation.
 - Habitats and vegetation.
 - Breeding birds.
 - Bats.
 - Amphibians.
 - Reptiles.
 - Badger.
 - Otter and water vole.

7.4.2 Detailed information regarding desk study records and field surveys (including methodologies followed) are presented in the following appendices:

- Appendix 7.1: Baseline Ecology Report.
- Appendix 7.2: Breeding Bird Survey Report.
- Appendix 7.3: Great Crested Newt eDNA Surveys.
- Appendix 7.4: Otter and Water Vole Survey.

Statutory Designated Sites for Nature Conservation

7.4.3 This section should be read with reference to **Figure 7.2**.

7.4.4 The Proposed Development Site does not form part of or is located immediately adjacent to any statutory designated site for nature conservation. **Table 7.7** provides a summary of statutory designated sites with cited ecological and ornithological interests located within 5km of the Proposed Development Site, extended to 10km for those sites with mobile faunal qualifying interests (bats and birds). This includes four internationally designated sites and five nationally designated sites.

7.4.5 Bryniau Clwyd a Dyffryn Dyfrdwy/Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB) is the closest statutory designated site located approximately 450m west of the Proposed Development Site.

Table 7.7: Statutory Designated Sites for Nature Conservation

Site Name	Designation	Distance and Direction from Site	Description
Bryniau Clwyd a Dyffryn Dyfrdwy / Clwydian Range and Dee Valley	AONB	450m west	The Clwydian Range and Dee Valley form a dramatic upland frontier in North Wales, with scenic landscapes, dramatic summits and historic towns and villages.
Chirk Castle and Parkland	SSSI	940m south-west	Designated for being one of the best examples of ancient wood pasture and parkland in Wales. It contains a large number of veteran and ancient trees. It is also of interest for the important invertebrates that the trees support. Breeding roosts of lesser horseshoe bat <i>Rhinolophus hipposideros</i> are present within the castle buildings. One area of grassland supports a diverse assemblage of grassland fungi which is of special interest and of national importance, including 15 species of waxcap <i>Hygrocybe</i> spp.
River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid	SAC	1.26km north	Designated features: - Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. - Atlantic salmon <i>Salmo salar</i> - Floating water-plantain <i>Luronium natans</i> - Sea lamprey <i>Petromyzon marinus</i> - Brook lamprey <i>Lampetra planeri</i> - River lamprey <i>Lampetra fluviatilis</i> - Bullhead <i>Cottus gobio</i> Otter
Afon Dyfrdwy (River Dee)	SSSI	1.26km north	Designated for its range of river habitat types and saltmarsh transition habitats. Supports a diverse flora community including populations of floating water plantain, slender hare's-ear <i>Bupleurum tenuissimum</i> , sea barley <i>Hordeum marinum</i> and hard-grass <i>Parapholis strigosa</i> . Also important for animal species such as otter, salmon, bullhead, brook lamprey, river lamprey, sea lamprey, club-tailed dragonfly <i>Gomphus vulgatissimus</i> and other aquatic invertebrates.
Nant-Y-Belan and Pynela Woods	SSSI	1.60km north-east	Significant area of semi-natural woodland in an area largely affected by replanting with conifers and non-native hardwoods.

Site Name	Designation	Distance and Direction from Site	Description
Lfton Meadows	LNR	2.73km south-east	Former colliery now supporting a variety of habitats including woodland, stream and grassland.
Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains	SAC	5.09km north-west	Features of interest • Hen harrier <i>Circus cyaneus</i> (breeding) • Red kite <i>Milvus milvus</i> (breeding) • Merlin <i>Falco columbarius</i> (breeding) • Peregrine <i>Falco Peregrinus</i> (breeding) • Golden plover <i>Pluvialis apricaria</i> (breeding) • Short eared owl <i>Asio flammeus</i> (breeding)
Johnstown Newt Sites	SAC	5.68km north-east	Designated for its great crested newt (GCN) population.
Berwyn	SPA	9.09km west	Features of interest • Blanket bog • Plants in crevices in base-rich rocks • Dry heath • Dry grasslands and scrublands on chalk or limestone • Wet mires ('quaking' surfaces)

Non-statutory Designated Sites for Nature Conservation

- 7.4.6 This section should be read with reference to **Figure 7.3** in Volume 2 of the ES.
- 7.4.7 The Proposed Development Site does not form part of or is not located immediately adjacent to any non-statutory designated site for nature conservation.
- 7.4.8 There are four non-statutory designated sites are located within 2km of the Proposed Development Site. The nearest such site is the Coed Y Camlas/Canal Woods Local Wildlife Site (LWS) is the closest non-statutory designated site, located approximately 200m south-west of the Proposed Development Site.
- 7.4.9 **Table 7.8** provides a summary of non-statutory designated sites with cited ecological and ornithological interests located within 2km of the Proposed Development Site.

Table 7.8: Non-Statutory Designated Sites for Nature Conservation

Site Name	Designation	Distance and Direction from Site	Description
Coed Y Camlas/Canal Woods	LWS	200m south-west	Semi-natural broad-leaved woodland on embankments either side of the canal. The canopy is dominated by sycamore <i>Acer pseudoplatanus</i> , but ash <i>Fraxinus excelsior</i> is abundant and sessile oak <i>Quercus petraea</i> and birch <i>Betula sp.</i> are frequent. In the understorey hawthorn <i>Crataegus monogyna</i> is frequent with hazel <i>Corylus sp.</i> , elder <i>Sambucus sp.</i> and elm <i>Ulmus Ulex sp.</i>
Barracks Field	LWS	730m east	Tall coarse semi-improved neutral grassland dominated by cock'sfoot <i>Dactylis glomerata</i> , with abundant tall oat grass <i>Arrhenatherum elatius</i> and scattered gorse <i>Ulex sp.</i> scrub, black knapweed <i>Centaurea nigra sp.</i> and nettles <i>Urtica dioica sp.</i>
Ty Mawr and Tan y Cut Wood	LWS	1.45km north-east	No information available
Bolas dingle	LWS	1.78km east	No information available.

Priority and Notable Habitats

- 7.4.10 Hedgerow priority habitat is located within the Proposed Development Site while the Afon Bradley also forms the western and northern boundaries of the Proposed Development Site.
- 7.4.11 A veteran sycamore *Acer pseudoplatanus* is also present within the Proposed Development Site.
- 7.4.12 No other ancient or irreplaceable habitats were identified within or in close proximity to the Proposed Development Site. Blocks of restored and semi-natural ancient woodland are located in the wider area with the nearest block located over 150m from the Proposed Development Site. Numerous veteran trees are located within Coed Y Camlas/Canal Woods LWS and the Chirk Castle and Parkland Site of Special Scientific Interest (SSSI).

Other On-Site Habitats

- 7.4.13 The Proposed Development Site primarily comprises three modified grassland pasture fields that were grazed by sheep at the time of the survey. The fields border the B5070 road, and all incorporate an approximately 10m wide fenced off

area of grassland adjacent to the eastern field boundary hedgerow containing rows of recently planted hawthorn *Crataegus monogyna*.

- 7.4.14 Fields are mostly bounded by a combination of post and wire fencing and species-poor hedgerow.
- 7.4.15 Two northern fields bordering the eastern Proposed Development Site boundary contain a small area of mixed deciduous woodland plantation dominated by immature and semi-mature trees.

Birds

- 7.4.16 A total of 341 recent records of birds were provided by Cofnod and comprised of 73 species. Of these, eight species are listed on Schedule 1 of the Wildlife and Countryside Act, twelve were BOCC5 Red List species and nine were BOCC5 Amber List, as well as 14 species listed under Section 7 of the Environment (Wales) Act 2016.
- 7.4.17 The breeding bird assemblage recorded within the Proposed Development Site comprised a narrow range of common and widespread species typical of the lowland farmland and suburban fringe habitats present.
- 7.4.18 Five breeding Notable Species were recorded breeding within the Proposed Development Site, consisting of four BOCC5 Amber List species (wood pigeon *Columba palumbus*, whitethroat *Sylvia communis*, wren *Troglodytes troglodytes* and dunnock *Prunella modularis*), and one BOCC5 Red List species (greenfinch *Chloris chloris*). Of these, one species is listed as rare and most threatened species under Section 7 (S7) of the Environment (Wales) Act (2016) (dunnock). The number of breeding territories of these species were typically low (≤ 2 territories), with the exception of wren (up to 6 territories). Indicative breeding territories are shown on **Figure 7.5** in Volume 2 of the ES.

Bats

- 7.4.19 No recent records of bats were returned by Cofnod within 2km of the Proposed Development Site.

Roosting

- 7.4.20 During the extended habitat survey, a veteran sycamore tree (TN1 as shown on **Figure 7.4** in Volume 2 of the ES / T116 as shown in the Arboricultural Impact

Assessment at **Planning Statement Appendix C**) with several holes and cracks was detected within the Proposed Development Site bordering the Afon Bradley. The tree was considered to have moderate bat roost potential in accordance with best practice guidance.

Foraging and Commuting

- 7.4.21 In line with the guidance provided in Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed)⁹, the grazed, modified grassland fields of the Proposed Development Site are considered to provide negligible value for foraging and commuting bats. Field boundary habitats within the Proposed Development Site, together with hedgerows, treelines, watercourses and woodland adjacent to the Proposed Development Site, do however provide higher value for foraging and commuting bats.
- 7.4.22 Habitats in the wider area including the Chirk Castle Parkland and Llangollen canal also provide high quality foraging and commuting habitats for bat species.

Amphibians

- 7.4.23 No recent records of great crested newt were identified during the desk study within 2km of the Proposed Development Site. A total of ten recent amphibian records within 2km were returned, including one of common toad *Bufo bufo*, two of common frog *Rana temporaria*, three of palmate newt *Lissotriton helveticus*, two of smooth newt *Lissotriton vulgaris* and two of unidentified *Lissotriton* genus newts (palmate or smooth newt).
- 7.4.24 eDNA surveys of lagoons within the existing Kronospan Facility returned negative results for great crested newt. No other waterbodies are present within 250m of the Proposed Development Site. One additional pond is present between 250m and 500m, within the former Chirk golf course, separated from the Site by the Llangollen canal. The pond has an obvious inflow and outflow from aerial imagery and is therefore likely to be unsuitable for breeding GCN.
- 7.4.25 The Proposed Development Site is generally unsuitable to support common species of amphibian being comprised of grazed agricultural grassland with little variation in vegetation structure. The fenced grassland area along the eastern

⁹ <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-3rd-edition>

boundary may provide more suitable habitat due to the more rank sward found here.

Reptiles

- 7.4.26 One recent record of slow worm *Anguis fragilis* was identified within 2km of the Proposed Development Site during the desk study.
- 7.4.27 The Proposed Development Site is generally unsuitable to support common species of reptile being comprised of grazed agricultural grassland with little variation in vegetation structure. The fenced grassland area along the eastern boundary may provide more suitable habitat due to the more rank sward found here.

Badger

- 7.4.28 The desk study identified four recent records of badger within 2km of the Proposed Development Site. Of these, three records included observations (including roadkill), whereas one record involved badger field signs. An adult badger roadkill was returned within the Proposed Development Site along the B5070 during 2021, whereas the three other badger records were outside of the Proposed Development Site boundary.
- 7.4.29 A single disused badger sett was identified within the Proposed Development Site during the habitat survey in January 2022 as shown on confidential **Figure 7.7**. However, no other evidence to suggest badger presence within the Proposed Development Site was recorded. Due to the presence of a disused badger sett and the known presence of the species in the wider area, it is possible that badgers may occasionally utilise the Proposed Development Site.

Otter and Water Vole

- 7.4.30 A total of four recent records of otter were returned by Cofnod within 2km of the Proposed Development Site, located on the Llangollen Canal north and south of the Proposed Development Site, as well as the River Dee to the north of the Proposed Development Site.
- 7.4.31 The data search returned no recent records of water vole within 2km of the Proposed Development Site.

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- 7.4.32 During the water vole and otter survey, no field signs or conclusive evidence of otter or water vole was recorded along the watercourse and associated terrestrial habitat.
- 7.4.33 The areas surveyed were assessed as providing varying suitability for water vole, ranging from sub-optimal to optimal.
- 7.4.34 The Afon Bradley was largely unsuitable for breeding and foraging otter due to the relatively shallow water levels, often <50cm in depth. Otter have potential to utilise the watercourse for commuting purposes as it connects the Llangollen Canal and River Dee, which both have previous records of otter, however the watercourse has multiple culverts along its length, including under the B5070 and under the Afon Bradley Farm access track which may act as a barrier for otter.

Additional Species

- 7.4.35 The Proposed Development Site is potentially suitable for range of other notable species, including notable mammal species polecat *Mustella putorius*, brown hare *Lepus europaeus* and hedgehog *Erinaceus europaeus*.
- 7.4.36 The habitats within the Proposed Development Site are not considered to be of a floristic or structural quality which could support significant assemblages of notable invertebrate species

Future Baseline

- 7.4.37 The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (Schedule 4) require 'a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.'
- 7.4.38 The Proposed Development Site will continue in its current agricultural land use up until the construction period begins, and therefore no significant changes to the baseline are anticipated between this assessment and the commencement of works.
- 7.4.39 In the absence of the Proposed Development, it is assumed for the purposes of assessment that current agricultural practices would similarly likely continue for the

foreseeable future, resulting in no significant change to the habitats present within the Proposed Development Site, their condition or the species they support.

7.5 Development Design and Impact Avoidance Measures

Introduction

- 7.5.1 The following sets out aspects of the Proposed Development that have been designed at the outset or through the earlier development/design stages to avoid or minimise the potential for significant effects upon ecological and ornithological receptors.
- 7.5.2 Further mitigation identified to address the initial environmental effects of the Proposed Development is described at **Section 7.8** of this chapter.

Construction

- 7.5.3 Where possible, existing high value boundary features including hedgerows and the Afon Bradley have been retained and will be protected throughout works with a suitable buffer zone enforced. These features will be integrated into the proposed Illustrative Landscape Masterplan and retained throughout operation of the Proposed Development.
- 7.5.4 The Proposed Development will adhere to regulatory and best practice guidance relating to pollution prevention, including the Guidelines for Pollution Prevention¹⁰ (GPP) and CIRIA guidance on the Control of Water Pollution from Construction Sites¹¹ and Environmental Good Practice on Site¹². Through the adherence to these measures pollution resulting from dust emissions, runoff and spills will be controlled.
- 7.5.5 A construction phase wildlife sensitive lighting design will also be implemented to ensure that impacts on the surrounding environment are minimised
- 7.5.6 Such measures will be outlined within a Construction Environmental Management Plan (CEMP) (or similar).

Operation

¹⁰ <https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/guidance-for-pollution-prevention-gpps-full-list/> [accessed 24/08/2022]

¹¹ CIRIA (2001) *Control of water pollution from construction sites. Guidance for consultants and contractors* (C532)

¹² CIRIA (2015) *Environmental good practice on site guide* (C741)

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- 7.5.7 The Illustrative Landscape Masterplan is part of the embedded design of the Proposed Development. These will be managed throughout the lifetime of the proposed development and will provide suitable habitats to support a range of ecological receptors, as discussed in the relevant sections below. This includes an area of woodland planting measuring approximately 0.89ha on land east of the Llangollen Canal and west of Afon Bradley Farm. This will complement the Llangollen canal and railway habitat corridors and existing tree planting already implemented under the Kronospan Landscape Strategy, as well as provide habitat enhancements for a range of species, including nesting birds and foraging and commuting bats.
- 7.5.8 The operational lighting design for the Proposed Development has been designed in accordance with Bat Conservation Trust (BCT) and Institute of Lighting Professionals good practice guidance¹³. Specific avoidance and mitigation measures incorporated into the lighting design include the following:
- the use of low level lighting as far as possible to reduce night-time visibility;
 - the use of carefully located directional lighting incorporating light shields/ or full-cut off luminaires to avoid unwanted light spray/ upward light and possible glare/ sky glow effects;
 - digital programmable switches including timers and/ or movement sensors; and avoid unnecessary or unplanned lighting of building façades.
- 7.5.9 The Proposed Development has been designed to ensure that proposed sustainable drainage systems (SuDS) comply with water quality requirements within the SuDS Manual and would cause a deterioration in water quality within the Afon Bradley or other aquatic receptors. In addition, as a precautionary measure an oil interceptor would be installed at the point where drainage discharges into attenuation basins. Further details of the proposed SuDS together with details of all modelling and assumptions made are described in the Flood Consequence Assessment and Surface Water Drainage Strategy (**Planning Statement Appendix B**).

¹³ Bat Conservation Trust and Institution of Lighting Professionals (2018) *Guidance Note 08/18: Bats and artificial lighting in the UK*. Available at: <https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349> [accessed: 19/08/2022]

7.6 Assessment of Potential Effects

Potential Effects during Construction

7.6.1 Potential construction phase effects upon ecological and ornithological receptors associated with the Proposed Development relate to:

- Direct land take (habitat loss) to accommodate the Proposed Development.
- Temporary disturbance and land take for construction, laydown areas and construction compounds (land restored thereafter).
- Disturbance to, fragmentation or severance of connecting habitat or potential commuting routes within and adjacent to the Proposed Development Site.
- Disturbance and pollution (indirect effects such as noise and vibration, lighting, dust, pollution from surface water run-off) resulting from site clearance and construction, plant and vehicles movements and site workers' activities.

Statutory Designated Sites for Nature Conservation

7.6.2 Construction activity will be contained within the Proposed Development Site boundaries and all statutory designated sites are sufficiently distant to confidently predict no direct effects on habitats or species associated with any statutory designated site. The Proposed Development Site lies within a SSSI IZR relating to the River Dee (England) SSSI where WCBC should consult Natural England in relation to impacts to SSSI resulting from road infrastructure developments.

7.6.3 Given the embedded design measures to implement good practice pollution control measures which will be included in the CEMP for the Proposed Development, the potential for indirect effects on statutory designated site for nature conservation, including the habitats they are designated for, from air or water borne emissions is considered negligible and not significant.

7.6.4 The Chirk Castle and Parkland SSSI citation includes lesser horseshoe bat *Rhinolophus hipposideros* which roost within the castle buildings. This species prefers foraging in woodland edge habitats, which are largely absent from the Proposed Development Site.

7.6.5 In addition, the species core sustenance zone (CSZ), the area from a roost within which habitat availability and quality will have the most influence to a roosting

colony¹⁴, is approximately 2km and therefore the CSZ as measured from the roost at the Chirk Castle building does not include the Proposed Development Site. Higher quality habitats, including extensive areas of parkland and woodland are located within this CSZ and due to their higher quality and better location are assumed to be preferred by lesser horseshoe bats associated with the SSSI.

- 7.6.6 The Chirk Castle and Parkland SSSI citation also includes waxcap grassland fungi, a species sensitive to pollution and changes in soil nutrient levels. Taking into account embedded best practice pollution control measures and the separation distances between the Application Site and the Chirk Castle and Parkland SSSI (Approximately 940m) no effects on the waxcap fungi feature of the SSSI are anticipated as a result of the Proposed Development.
- 7.6.7 Overall, due to the physical separation distances between the Proposed Development Site and statutory designated sites for nature conservation, the embedded pollution control measures and the low value of the Proposed Development Site to mobile features for which the statutory designated sites have been designated the Proposed Development potential construction phase effects upon qualifying interests of such site are considered to be negligible and not significant.

Non-statutory Designated Sites for Nature Conservation

- 7.6.8 Construction activity will be contained within the Proposed Development Site boundaries and all statutory designated sites are sufficiently distant to confidently predict no direct effects on habitats or species associated with any statutory designated site.
- 7.6.9 Given the embedded design measures to implement good practice pollution control measures which will be included in the CEMP for the Proposed Development, the potential for indirect effects on non-statutory designated sites, including the habitats they are designated for, from air or water borne emissions is considered negligible.
- 7.6.10 Overall, due to the physical separation distances between the Proposed Development Site and any non-statutory designated sites for nature conservation and the embedded pollution control measures to be implemented the Proposed

¹⁴

https://cdn.bats.org.uk/uploads/pdf/Resources/Core_Sustenance_Zones_Explained_04.02.16.pdf?v=1550597495

Development potential construction phase effects upon qualifying interests of such sites are considered to be negligible and not significant.

Notable and Priority Habitats

- 7.6.11 A single veteran tree (TN1/T116) is present within the Proposed Development Site. In line with recommendations within the Arboricultural Impact Assessment for the Proposed Development (see **Planning Statement Appendix C**) this tree will be retained and protected throughout works with an appropriate root protection zone enforced.
- 7.6.12 The removal of approximately 750m of hedgerow is required to allow the construction of the Proposed Development/. The landscaping proposals include planting of approximately 1.3km of new hedgerows and which will be of a species rich composition. These hedgerows will be more species rich and of a higher quality than the existing hedgerows within the Proposed Development Site.
- 7.6.13 All other notable habitats, including the Afon Bradley, will be retained and protected throughout construction of the Proposed Development with suitable buffer zones enforced and clearly marked.
- 7.6.14 Overall, it is anticipated that the construction of the Proposed Development will result in minor adverse effects on notable and priority habitats due to the loss of hedgerow priority habitat changing to minor beneficial as hedgerow planting included in the Illustrative Landscape Masterplan establishes throughout operation of the Proposed Development.

On-site Habitats

- 7.6.15 Habitats within the Proposed Development Site (other than those discussed above) consist predominantly of agriculturally modified grassland, which is generally of low ecological value and is common and widespread both locally and nationally.
- 7.6.16 Approximately 8.44ha of modified grassland habitat and 0.43ha of woodland will be lost because of the Proposed Development. The Illustrative Landscape Masterplan includes proposals for approximately 2.15ha of new woodland planting, 3.47ha of wildflower grassland and 0.36ha of wetland which would be designed and managed to achieve a habitat type similar to rush pasture.

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- 7.6.17 Overall, while reduced in extent, with appropriate management and once established these newly created habitats are considered to be of higher value to biodiversity and will result in a minor beneficial effect.

Birds

- 7.6.18 The breeding bird assemblage recorded within the Proposed Development Site was primarily associated with boundary habitats. The Proposed Development will result in the removal of approximately 750m of hedgerow and 15 trees. In the absence of mitigation there is the potential for destruction of nests during site clearance activities if these are undertaken within the nesting bird season. In addition, noise generated throughout the construction period has the potential to cause disturbance to nesting birds.
- 7.6.19 The proposed Illustrative Landscape Masterplan (part of the embedded design of the Proposed Development) includes the creation of approximately 1.3km of new hedgerow and the planting of approximately 84 specimen trees. As such, construction phase effects to breeding birds will be a temporary and low magnitude effect and overall, the Proposed Development during the operational phase will result in a minor beneficial effect to breeding birds through the creation of increased nesting opportunities.
- 7.6.20 Mitigation is proposed in relation to site clearance activities to enable legislative compliance with regards breeding birds.

Bats

- 7.6.21 A singular veteran tree (TN1/T116) with bat roosting potential is located within the Proposed Development Site. In line with recommendations within the Arboricultural Impact Assessment for the Proposed Development (see **Planning Statement Appendix C**) this tree will be retained and protected throughout works.
- 7.6.22 Noise generated during the profiling of the attenuation ponds has the potential to cause disturbance to roosting bats where these are present. A root protection zone of 15m will be enforced in which no works or plant movements will occur.
- 7.6.23 There is currently no published information regarding the levels of noise required to constitute disturbance to certain species of bat. The veteran tree is likely to be used only as a day roost (if used at all) and which is not of high conservation significance and therefore temporary disturbance is not considered to cause significant levels of

disturbance to bats in such a way that would impair their ability to breed, reproduce or survive or affect their conservation status.

- 7.6.24 Approximately 750m of hedgerow is proposed to be removed will be removed to allow construction of the Proposed Development which could result in fragmentation impacts to bat foraging and commuting routes. The Afon Bradley, likely the most valuable commuting feature within the Proposed Development Site, will be retained and protected throughout works preserving this commuting route. Works will largely be confined to daylight hours (07.30 – 18.00 weekdays and 08.00 – 14.00 on Saturdays) reducing the potential for disturbance to foraging bats.
- 7.6.25 The proposed Illustrative Landscape Masterplan (part of the embedded design of the Proposed Development) includes the creation of approximately 1.3km of new hedgerow and extensive tree planting which will serve to ensure that commuting routes are preserved
- 7.6.26 In addition, the Illustrative Landscape Masterplan includes areas of wetland habitat and species rich grassland habitat which would provide an increased foraging resource for foraging bats in the area.
- 7.6.27 Overall, it is considered that in the absence of mitigation the construction of the Proposed Development would result in a minor adverse effect on foraging and commuting bats due to loss of hedgerow commuting habitat, changing to minor beneficial as the landscaping establishes during operation. Construction may result a short term and temporary minor adverse effect on roosting bats due to noise disturbance.

Potential Effects during Operation

- 7.6.28 Potential operational phase ecological effects associated with the Proposed development are considered to relate to:
- Disturbance resulting from noise generated during use of the Proposed Development and light spill.
 - Collisions to fauna from vehicular movements within the Proposed Development Site.
 - Air and water borne pollution as a result of vehicle emissions, dust generated and fuel spillages.

Statutory Designated Sites for Nature Conservation

- 7.6.29 The Proposed Development Site is considered sufficiently distanced from any statutory designated sites of nature conservation that pollution impacts resulting from emissions from road traffic are considered to be negligible and not significant.
- 7.6.30 Embedded mitigation measures have been included within the design of the Proposed Development to safeguard aquatic habitats, including the River Dee SSSI. These embedded measures include designing SuDS to ensure there is deterioration in water quality within aquatic receptors and the installation of an oil interceptor at the point where drainage discharges into attenuation basins. Full details are provided within the Flood Consequences Assessment and Surface Water Drainage Strategy at **Planning Statement Appendix B**.
- 7.6.31 The Proposed Development would introduce new connections to the Kronospan foul sewer network for toilet and welfare facilities; the foul connection is to public sewer. The overall loading to sewer (once the Proposed Development is operational) would not increase as the Proposed Development is facilitating a change to existing operations with no additional employees i.e. any loading from the Proposed Development would be offset by a reduced load on the main site connection at the existing Kronospan Facility
- 7.6.32 As discussed in the construction section above, it is not considered likely that the Proposed Development Site is of importance to lesser horseshoe bats associated with Chirk Castle SSSI due to largely unsuitable habitats and lying outside the CSZ for the roosting colony.
- 7.6.33 Therefore, no impacts to statutory designated sites are anticipated beyond those experienced during construction of the Proposed Development.

Non-statutory Designated Sites for Nature Conservation

- 7.6.34 The application site is considered sufficiently distanced from any non-statutory designated sites of nature conservation that pollution impacts resulting from emissions from road traffic or surface runoff are considered to be negligible and not significant.
- 7.6.35 Therefore, no impacts to non-statutory designated sites are anticipated beyond those experienced during construction of the Proposed Development.

Notable and Priority Habitats

- 7.6.36 The single veteran tree (TN1/T116) will be retained throughout the operation of the Proposed Development with no additional impacts to notable or priority habitats anticipated beyond those experienced during construction.

On-site Habitats

- 7.6.37 There will be negligible operational impacts on on-site habitats beyond those experienced during construction of the Proposed Development.
- 7.6.38 Created habitats will be managed to be of value to wildlife in accordance with the methods detailed within the Illustrative Landscape Masterplan (considered part of the embedded design of the Proposed Development).

Birds

- 7.6.39 The Illustrative Landscape Masterplan will include approximately 1.3km of new hedgerow and approximately 84 new trees providing suitable nesting and foraging habitat for common species of bird throughout operation of the Proposed Development.
- 7.6.40 Overall, the operation of the Proposed Development is anticipated to have negligible impacts on breeding birds beyond those experienced during construction.

Bats

- 7.6.41 The single tree with bat roosting potential (TN1/ T116) will be retained throughout the operation of the Proposed Development. The tree is located adjacent to the proposed wetland area located approximately 70m from the operational lorry park and separated by a line of trees. This area will not be routinely lit and it is therefore not anticipated that there will be any direct impacts to the tree or significant levels of disturbance from noise or lighting during operation of the Proposed Development.
- 7.6.42 The lighting design has been designed to be sensitive to bats and will be directed away from sensitive habitats, including foraging and commuting habitat such as the Afon Bradley. Taking into account additional woodland planting, it is not anticipated that there will be additional light spill to these habitats that would prevent their use by foraging and commuting bats.

7.6.43 The Illustrative Landscape Masterplan will include approximately 1.3km of new hedgerow providing suitable foraging and commuting habitat for bats throughout operation of the Proposed Development.

7.6.44 Overall, the operation of the Proposed Development is anticipated to have negligible impacts on roosting or foraging and commuting bats.

7.7 Inter-Relationship of Potential Effects

7.7.1 The effects on biodiversity, and any works that are carried out to mitigate those effects have the potential to lead to effects on environmental factors considered in other ES technical chapters. Potential effects (and mitigation works) for other environmental topics such as lighting and hydrology (SuDS) may also affect biodiversity and have been considered as an inherent part of this assessment (see above). Therefore, the inter-relationship of effects (with respect to biodiversity) is not considered any further.

7.8 Mitigation, Monitoring and Enhancement

General Mitigation

7.8.1 As far as reasonably possible, impacts have been avoided through the design of the Proposed Development, however where negative impacts cannot be avoided additional mitigation may be required as outlined below. This section also includes mitigation measures required to ensure legislative compliance.

7.8.2 The following general measures will be undertaken in addition to those included by design:

- A suitably qualified and experienced ecologist or Ecological Clerk of Works (ECoW) will be appointed prior to the commencement of construction and decommissioning activities and through whom appropriate ecological advice will be provided where required.
- The ECoW will be responsible for undertaking and/or coordinating checks for protected species before construction and decommissioning activities commence. The ECoW (or appointed 'clerk' on behalf of the ECoW) will also maintain a watching brief as necessary throughout the construction and any future decommissioning phase to ensure compliance with relevant legislation.
- The landscape planting and habitat creation as shown on the Illustrative Landscape Masterplan (**Figure 4.3**) along with subsequent management

designed to maintain and encourage biodiversity across the Proposed Development Site throughout the lifetime of the Proposed Development, will create greater structural and species diversity than is currently provided, and will provide favorable habitat conditions for a range of species, including amphibians, small mammals and invertebrates.

- Should any invasive species be encountered on Site prior to or during construction, the advice of a suitably qualified ecologist will be sought and the appropriate measures taken.

Construction Mitigation

Birds

- 7.8.3 To avoid impacts on nesting birds and to ensure compliance with the provisions of the Wildlife and Countryside Act 1981 (as amended), construction and any associated vegetation removal will take place outside of the bird breeding season (March - August inclusive). If vegetation works are necessary during the breeding season, any suitable nesting habitat to be affected by works will be checked by a suitably experienced ecologist prior to works commencing. Works would be permitted to proceed only when the ecologist is satisfied that no offence will occur under the legislation.

Bats

- 7.8.4 Any lighting used during construction will be directed away from valuable habitats for bats, including trees with roosting features (TN1/T116) and valuable foraging and commuting routes such as the Afon Bradley.
- 7.8.5 As a precautionary measure to reduce the potential for noise related disturbance, Heras fencing marking the Arboricultural root protection zone at TN1/T116 will be fitted with acoustic barriers.

Badger

- 7.8.6 A pre-construction badger survey will be undertaken before construction commences. If evidence of badger setts is discovered within 30m of any of the construction areas, suitable protection and avoidance measures will be adopted in line with the advice of an ecologist. If necessary, such works may proceed under a licence to disturb badgers Granted by Natural Resources Wales under the Protection of Badgers Act (1992).

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- 7.8.7 As a precautionary good practice measure, all excavations left overnight will be covered to prevent animals falling in and becoming trapped. If it is not possible to cover them, a suitable means of escape will be provided. This mitigation is beneficial to all terrestrial mammal species including brown hare and hedgehog.

Otter

- 7.8.8 A pre-construction otter survey will be undertaken along accessible lengths of the Afon Bradley before construction commences. If evidence of otter resting sites is discovered suitable protection and avoidance measures will be adopted in line with the advice of an ecologist. If necessary, such works may proceed under a licence to disturb otters granted by Natural Resources Wales.

Amphibians and Reptiles

- 7.8.9 To prevent harm to individual amphibians and reptiles Reasonable Avoidance Measures (RAMs) will be implemented during site clearance activities. These are to include a two-stage cut whereby vegetation should be first cut to approximately 100mm before allowing amphibians and reptile to move away prior to a final cut to ground level at which height it should be maintained for the remainder of the construction period.

Invasive Species

- 7.8.10 No invasive species were encountered within the Proposed Development Site, however if any such species are encountered, a specialist will be employed and suitable measures enforced to prevent the spread of any such species.

Operation Mitigation

- 7.8.11 No additional mitigation is considered necessary during the operation of the Proposed Development to mitigate for any impacts on ecological receptors. Impacts have been addressed as far as reasonably practicable through avoidance and the embedded design of the Proposed Development.

7.9 Summary of Potential Residual Effects

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

Construction

- 7.9.2 No residual effects are anticipated on statutory designated sites or non-statutory designated sites.
- 7.9.3 Due to the initial loss of hedgerow habitat which will be replanted as part of the Illustrative Landscape Masterplan, initial minor adverse effects are anticipated on priority and notable habitats, on-site habitats, breeding birds and foraging and commuting bats changing to a minor positive effect as the landscaping design establishes.
- 7.9.4 Negligible residual effects are anticipated with regards to roosting bats.

Operation

- 7.9.5 No residual effects are anticipated on any ecological receptors as a result of the operation of the Proposed Development.
- 7.9.6 All residual effects are not significant.

7.10 Cumulative Effects

- 7.10.1 There is the potential for the effects of the Proposed Development to interact with the effects of other projects or activities in the surrounding area. These are 'inter-project' cumulative effects and includes projects that have been submitted for consent but have not yet been approved, or that already have planning permission or consent but are not yet operational. Such projects are required to be within a geographical scope where environmental impacts could act together to create a more significant overall effect on a receptor and where sufficient environmental information is available.
- 7.10.2 The method for identifying other projects and activities is provided within **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.
- 7.10.3 Except for the proposed 132kV substation connection, all other projects considered as part of the assessment of cumulative effects are associated with the existing Kronospan Facility and have minimal, if any, impact to semi natural habitats of value to biodiversity. The proposed 132kV substation connection route is confined

almost entirely to existing roads or tracks and therefore is also not anticipated to impact semi-natural habitats.

- 7.10.4 It is assumed that standard pollution prevention measures would be embedded within the construction phases of these projects which would negate the potential for indirect impacts upon habitats and species.
- 7.10.5 No potentially significant residual cumulative effects are anticipated on any ecological and/or ornithological receptors as a result of the Proposed Development, in combination with other projects.

7.11 Enhancement

- 7.11.1 Several areas of off-site landscape enhancements are proposed, including areas of new native woodland planting and improved hedgerow management as shown on **Figure 4.3b** and described in detail in ES **Chapter 5.0 (Landscape and Visual Impact Assessment)**. These will also serve as habitat enhancements for a range of species, including nesting birds and foraging and commuting bats.
- 7.11.2 In addition, a minimum of 10 bird boxes and 10 bat boxes will be installed on suitable trees within the Applicant's land ownership within and in proximity to the Proposed Development Site.

7.12 Conclusions

- 7.12.1 This chapter of the ES, along with the accompanying Figures and Appendices, addresses the potential effects on biodiversity during construction and operation of the Proposed Development. Effects have been assessed in accordance with guidance set out in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1* (2018, Chartered Institute of Ecology and Environmental Management).
- 7.12.2 A series of measures would be enacted during both the construction of the Proposed Development and once operational to mitigate against potentially adverse effects. These measures include:
- Appointment of an Ecological Clerk of Works to ensure that biodiversity and nature conservation issues are managed appropriately during construction.
 - No works to existing trees and hedges during bird nesting season.

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- Protection of retained vegetation during the construction period, including trees with bat roost potential.
 - Pre-construction surveys for protected species including otter and badger.
 - Use of reasonable avoidance measures to prevent harm to reptiles and amphibians.
 - Landscape proposals including the creation of new higher value habitats, which will be managed throughout the lifetime of the Proposed Development.
 - Following best practice guidance to control pollution resulting from dust emissions, run-off and spills during construction.
 - The design and implementation of lighting that is sensitive to the needs of wildlife during construction and once operational.
 - A sustainable urban drainage system to control surface-water run-off from the Site.
 - Provision of bird and bat boxes on Kronospan land.

7.12.3 The construction and operation of Proposed Development would not give rise to any effects on statutory or non-statutory designated sites for nature conservation.

7.12.4 Construction activities would have a minor adverse effect upon priority habitats, due to the loss of approximately 750m of hedgerow. Once operational, approximately 1.3km of new hedgerow would be planted, and this would result in a minor beneficial effect.

7.12.5 Other vegetation within the Site is of low ecological value. As part of the Proposed Development, there would be a net loss in vegetation cover overall. However, the provision of newly created woodland, wildflower grassland and wetland would result in the creation of higher value habitat, and the effects of this would be minor beneficial.

7.12.6 Implementation of the landscape proposals would result in a minor beneficial effect for breeding birds. The overall net gain in tree and hedgerow cover within the Site would provide increased nesting opportunities.

7.12.7 Construction activities would result in a minor adverse effect on foraging and commuting bats due to the loss of vegetation. There would also be a minor adverse effect on roosting bats, due to increased noise levels. Following the implementation of the landscape proposals, effects would be negligible.