
Kronospan Warehouse
on behalf of Axis PED
Preliminary Ecological Appraisal



Document Control				
Project Name:		Kronospan Warehouse		
Project Number:		AxisL-043-		
Report Title		Preliminary Ecological Appraisal		
Issue	Date	Notes	Prepared	Reviewed
V1	15/04/2021	Draft	S Turner MSc MCIEEM	U Maginn MSc MCIEEM
V2	28/04/2021	Final	S Turner MSc MCIEEM	U Maginn MSc MCIEEM
V3	06/05/2021	Revised Final	S Turner MSc MCIEEM	U Maginn MSc MCIEEM

This report has been prepared in accordance with the terms and conditions of appointment for Ecological Appraisal [on request]. Avian Ecology Ltd. (6839201) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

CONTENTS

1	INTRODUCTION	1
1.1	Background.....	1
1.2	Site Overview.....	1
1.3	Legislative Framework, Planning Policy and Guidance	1
2	METHODOLOGY	3
2.1	Desk Study	3
2.2	Field Survey	3
3	BASELINE	5
3.1	Designated Sites for Nature Conservation	5
3.2	Habitats	6
3.3	Protected and Notable Species	7
4	DISCUSSION.....	10
4.1	Designated Sites	10
4.2	Habitats	10
4.3	Protected and Notable Species	11
5	SUMMARY	14

FIGURES

Figure 1: Statutory Designated Sites

Figure 2: Non-Statutory designated Sites

Figure 3: Extended Phase 1 Habitat Plan

APPENDICES

Appendix 1: Photographs

1 INTRODUCTION

1.1 Background

- 1.1.1 Avian Ecology Ltd. was commissioned by Axis PED on behalf of Kronospan Limited to undertake a Preliminary Ecological Appraisal (PEA) in relation to a proposed commercial warehouse facility (hereafter referred to as the 'Site') located within the existing Kronospan wood product manufacturing plant in Chirk, Wrexham, LL14 5NT.
- 1.1.2 The objectives of this report are to:
- Provide baseline information on the current habitats and ecological features both within the Site and immediate surrounding area;
 - Identify the proximity of any designated sites for nature conservation interest and provide an assessment of any potential effects future development at the Site may have on these; and,
 - Identify the presence or potential presence of any protected species or habitats.
- 1.1.3 The PEA comprised a desk-based study, an Extended Phase 1 habitat survey and preliminary bat roost assessment of buildings and trees within the Site.

1.2 Site Overview

- 1.2.1 The Site is located at the eastern side of the Kronospan manufacturing plant as shown in **Figure 1** and comprises a rectangular area of land alongside the B5070 road.
- 1.2.2 Within the wider surrounding landscape, habitats include agricultural fields, grasslands, hedgerows and woodland to the north and west. Residential housing is located to the south and east of the Kronospan manufacturing plant.

1.3 Legislative Framework, Planning Policy and Guidance

Table 1.1: Key legislation, planning policy 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) • The Environment (Wales) Act 2016 • The Environment Bill (currently being processed through the House of Commons) • Countryside and Rights of Way Act 2000

- Protection of Badgers Act 1992
- Hedgerow Regulations 1997
- Natural Environment and Rural Communities (NERC) Act (2006)
- Planning Policy Wales (PPW11, 2021)
- The Nature Recovery Plan for Wales
- BS 42020:2013 Biodiversity – Code of Practice for Planning and Development
- Biodiversity Net Gain. Good practice principles for development¹

Local

- Wrexham Biodiversity Action Plan²
- Wrexham Local Planning Note No. 32: Biodiversity and Development 2011

1.3.1 The Conservation of Habitats and Species Regulations 2017 (as amended) remains in place following the United Kingdom's (UK's) withdrawal from the European union (EU) with only relatively minor changes coming into force on 31st December 2020, with the 2017 regulations being transposed into national (England and Wales) legislation via the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 which came into force on 31st December 2020.

1.3.2 The 'UK Post-2010 Biodiversity Framework' succeeds the UK Biodiversity Action Plan (UK BAP) and 'Conserving Biodiversity – the UK Approach'. The lists of priority species and habitats agreed under UK BAP still form the basis of much biodiversity work and are therefore considered within this report in the context of the objectives of the Biodiversity Framework. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale. UK BAPs formed the basis for statutory lists of priority species and habitats in Wales. Section 7 of the Environment (Wales) Act requires Ministers to publish and maintain lists of species and habitats in Wales that are regarded as being of 'principal importance' for the purpose of maintaining biodiversity and so are also relevant in the context of this legislation.

¹ <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>

^[9] <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>

² http://old.wrexham.gov.uk/english/planning_portal/biodiversity/wxmbap.htm

2 METHODOLOGY

2.1 Desk Study

- 2.1.1 A desk study was undertaken to identify any known existing features or species of ecological importance within the study area (as defined below).
- 2.1.2 The desk study included a review of relevant policy and guidance and sought to identify any statutory designated sites for nature conservation through a review of the Natural Resources Wales³ and Multi Agency Geographic Information for the Countryside (MAGIC)⁴ websites. A 2km search radius was adopted for all statutory designated sites as shown in **Figure 1**.
- 2.1.3 Biological records data on non-statutory designated sites and records of protected and notable species was requested from North Wales Environmental Information Service (Referred to as Cofnod). A 2km search radius was used from grid reference SJ287389. Records were limited to the last ten years (2010-2020). Non-statutory designated sites are shown on **Figure 2**.
- 2.1.4 Reference was also made to Ordnance Survey (OS) maps of the wider area and online aerial images (www.google.co.uk/maps) in order to determine any features of nature conservation interest in the wider area. This included a search for potential ponds within a 250m radius of the Site, which if present and suitable, could potentially support breeding amphibian species.

2.2 Field Survey

Extended Phase 1 Habitat Survey

- 2.2.1 An extended Phase 1 habitat survey of the Site was undertaken on 9th March 2021 by a suitably qualified and experienced ecologist. The survey followed UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology⁵ and with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM), Technical Guidance Series *Guidelines for Preliminary Ecological Appraisal*⁶. The extent of the habitat survey is shown on **Figure 3**.
- 2.2.2 Habitats were mapped and described using a series of 'target notes' (TNs). The survey was extended to include the additional recording of specific ecological features or indicating the presence, or likely presence, of protected species, invasive species and other species of conservation significance.

Preliminary Bat Roost & Habitat Assessment

- 2.2.3 The extended Phase 1 habitat survey included a preliminary roost assessment (PRA) of any buildings present within the Site and any trees recommended for removal in the Arboricultural Impact Assessment report⁷. Suitability for roosting bats was classified as follows (from Collins *et al.*, 2016, Table 4.1⁸):
- Negligible: Negligible habitat features on site likely to be used by roosting bats.

³ <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en>

⁴ <https://magic.defra.gov.uk/>

⁵ JNCC, (2010), Handbook for Phase 1 habitat survey – a technique for environmental audit, JNCC, Peterborough

⁶ CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

⁷ Tree 21 Limited (2021) Arboricultural Impact Assessment

⁸ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

- Low: A structure with one of more potential roost sites that could be used by individual bats opportunistically. Structures do not provide enough space, shelter, protection, appropriate conditions and/or suitability surrounding habitat to be used on a regular basis or by larger numbers of bats. A tree of sufficient size and age to contain potential roost features but with none seen from the ground or with only very limited potential.
- Moderate: A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
- High: A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

2.2.4 At the same time, a habitat assessment was undertaken in order to assess bat commuting/foraging suitability of the habitats within the Site and connectivity with habitats within the wider environment.

2.2.5 As described in the BCT Guidelines, there are four categories of commuting/foraging habitat suitability, these are described below:

- Negligible: Negligible habitat features nearby likely to be used by commuting or foraging bats.
- Low: Habitat that could be used by small numbers of commuting bats, such as gappy hedgerows or un-vegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitats that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
- Moderate: Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
- High: Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees or woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Limitations of Survey

2.2.6 An extended Phase 1 habitat survey does not constitute a detailed botanical survey or faunal species list or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of the site in order to:

- Broadly identify the nature conservation value of a site and assess the significance of any potential impacts on habitat/species recorded; and/or,
- Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site (if any).

2.2.7 The extended Phase 1 habitat survey was completed in March, which is just outside the optimum period (April-September) for undertaking habitat surveys. However, the surveyor was able to accurately classify the habitats present and reasonably assess the Site's potential to support protected and notable species. Therefore, it is considered that the timing of this survey did not present a limitation to the baseline information gathered or to the objectives of the assessment.

3 BASELINE

3.1 Designated Sites for Nature Conservation

- 3.1.1 A review of MAGIC confirmed that the Site is not located within any statutory designated site for nature conservation. The desk study has also identified that the Site does not form part of any non-statutory designated site for nature conservation.
- 3.1.2 The search identified five statutory designated sites within a 5km radius of the Site boundary, and three non-statutory sites within a 2km radius. A summary of designated sites is presented in **Table 3.1**; the location of statutory designated sites, in relation to the Site, is presented in **Figure 2**.

Table 3.1: Statutory and Non-statutory Designated Sites

Designated Site	Approximate distance and direction from Site	Details
Special Areas of Conservation (SACs)		
River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales) SAC	Approximately 1.2km at its nearest point.	This site qualifies under Article 4.2 of the Directive (92/42/EEC) by supporting the following habitats and species listed on Annex 1 and Annex 2 of the Directive: <u>Annex 1 habitats that are a primary reason for selection of the site –</u> 3260 Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. <u>Annex 2 species that are the primary reason for selection of the site –</u> 1106 Atlantic salmon <i>Salmo salar</i> 1831 Floating water-plantain <i>Luronium natans</i> <u>Annex 2 species present as a qualifying feature, but not a primary reason for site selection –</u> 1095 Sea lamprey <i>Petromyzon marinus</i> 1096 Brook lamprey <i>Lampetra planeri</i> 1099 River lamprey <i>Lampetra fluviatilis</i> 1163 Bullhead <i>Cottus gobio</i> 1355 Otter <i>Lutra lutra</i>
Sites of Special Scientific Interest (SSSIs)		
Castell Y Waun A'I Barcdir / Chirk Castle and Parkland SSSI	1km 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 and is 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.
Afon Dyfrdwy / River Dee SSSI	Approximately 1.2km at its nearest point.	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

Designated Site	Approximate distance and direction from Site	Details
		lamprey, sea lamprey, club-tailed dragonfly <i>Gomphus vulgatissimus</i> and other aquatic invertebrates.
Nant-Y-Belan and Prynella Woods SSSI	2.5km north east	Significant area of semi-natural woodland in an area largely affected by replanting with conifers and non-native hardwoods.
Local Nature Reserve (LNR)		
Ifton Meadows LNR	2.8km east	Former colliery now supporting a variety of habitats including woodland, stream and grassland.
Wildlife Sites (WS)		
Coed y Camlas / Canal Wood WS	300m west	Semi-natural broadleaved woodland on the canal embankments containing a diverse range of trees and ground flora.
Barracks Field WS	1km north east	Semi-improved neutral grassland.
Bola's Dingle	1.75km east	Semi-natural broad-leaved woodland, with many wet flushes occurs on the banks of this stream valley.

- 3.1.3 Habitats of Principal Importance (also known as priority habitat) under Section 7 of the Environment (Wales) Act 2016 (S7), Section 42 of the NERC Act 2006 (NERC) and/or listed on the UKBAP within or adjacent the Site include hedgerows and lowland deciduous woodland. The MAGIC website provided information on priority habitats within 2km of the Site as presented **Table 3.2** below, where numerous records of a particular habitat were recorded, only the closest record to the Site has been provided, in order to provide context for the Site and surrounding area.

Table 3.2: Priority Habitats

Priority habitat name	Designation	Distance from site
Wood pasture and parkland	NERC, UKBAP	1.1km south east
Deciduous woodland	NERC	1.4km south

3.2 Habitats

- 3.2.1 This section should be read in conjunction with the Phase 1 Habitat Plan presented as **Figure 4**, and photographs presented in **Appendix 1**.
- 3.2.2 The majority of the Site consists of hardstanding and bare earth/ gravel used for storage of logs, machinery and plant. The proposed development will also require cutting into and the removal of part of the constructed bund that runs alongside the road to the east. The bund consists of steeply mounded earth and rubble, deposited at different times, with some material at the northern end deposited within the last three years.
- 3.2.3 The west side and top of bund consists of a mosaic of bare earth, ephemeral short perennial, tall ruderal and scrub, with greater amounts of scrub present to the southern end.
- 3.2.4 The east side of bund facing the road, which is anticipated to be retained, and the area adjacent to the road consist of semi-mature plantation screening woodland, predominantly broadleaved

species, the ground flora is of low diversity and botanical interest comprising common and widespread species.

3.3 Protected and Notable Species

Birds

- 3.3.1 Bird records provided by Cofnod contained 206 records split between 55 species within a 2km search radius. The records included eleven species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).
- 3.3.2 The habitats within and adjacent to the Site, including trees, scrub and plantation woodland may provide opportunities for a range of common and widespread nesting bird species during the main breeding season, however the narrow corridor of land involved much of which is disturbed operation land with hardstanding and bare ground, is not likely to be used by anything other than small numbers of birds. The habitats within the Site are not considered suitable to support Schedule 1 bird species.

Bats

- 3.3.3 The Cofnod data returned no records of bat species within 2km of the Site for the period 2010 to 2020. An extended search of the records for the period 2005 to 2009 returned 123 records of at least seven different species. Records included lesser horseshoe bat (34), soprano pipistrelle *Pipistrellus pygmaeus* (50), common pipistrelle *Pipistrellus pipistrellus* (21), Natterer's bat *Myotis nattereri* (7), noctule *Nyctalus noctule* (6), Daubenton's bat *Myotis daubentonii* (1), brown long-eared bat *Plecotus auritus* (1), *Myotis* spp. (1), *Pipistrellus* spp. (3) and unknown bat (4); with the majority of the records located within Chirk Castle and Parkland SSSI. Chirk Castle supports a lesser horseshoe maternity roost; this is part of the reason for the site's designation as Castell Y Waun A'l Barcdir / Chirk Castle and Parkland SSSI.
- 3.3.4 A single mature oak *Quercus* sp. within the proposed development footprint is considered to have moderate bat roost potential, with small rot holes, split limbs and lifted bark. Otherwise, the relatively small number of individual trees indicated for possible removal in the Arboricultural Impact Assessment⁹ (on the top and west side on the bund), are assessed to have negligible bat roost potential.
- 3.3.5 Trees located with the woodland adjoining the Site to the east are generally semi-mature with negligible bat roost suitability.
- 3.3.6 A series of mature ash *Fraxinus Excelsior* which may have bat roost suitability are present along the northern boundary next to the existing emergency access gate. It is understood that the proposed development does not require removal or works to these trees, but should this change, these would be subject to a preliminary roost assessment and further confirmatory roost survey if required.
- 3.3.7 The majority of the Site (hard standing/bare ground) is of negligible suitability for foraging and commuting bats. The plantation woodland outside the Site offers higher suitability, providing connectivity to more suitable foraging and roosting habitats present in the wider landscape.

Badger

- 3.3.8 There are three records of badger *Meles meles* within 2km of the Site; with the closest approximately 1km east.

⁹ Tree 21 Limited (2021) Arboricultural Impact Assessment

- 3.3.9 No badger setts were found within the Site during the survey; however, possible badger paths and snuffle holes were noted on the bund and in the nearby woodland, with possible prints at the north end near the emergency access. However no sett entrances were noted within 50m of the proposed development, and setts are considered unlikely to be created in the bund which contains significant amounts of rubble which makes it difficult to dig into.
- 3.3.10 The evidence of mammal tracks and suitable habitats within the local area suggests badgers may occasionally visit the Site from surrounding more suitable land, however the active operational nature of the Kronospan facility with regular noise, lighting and human activity means it is unlikely that badgers are regularly present or likely to establish setts within the Site.

Otter and water vole

- 3.3.11 Cofnod returned three records (dated within the last 10 years) of otter *Lutra lutra* and no records of water vole *Arvicola amphibius* within 2km. All three otter records related to the Llangollen Canal, located approximately c. 300m west of the Site at the nearest point. No watercourses/waterbodies are present within or adjacent to the Site.
- 3.3.12 Due to the lack of watercourses/waterbodies and other suitable habitat within or adjacent the Site, otter and water vole are not considered likely to be present or affected by the proposed development. Otter and water vole are therefore not considered further in this report.

Hazel Dormouse

- 3.3.13 No records of dormouse *Muscardinus avellanarius* were returned within the Cofnod dataset.
- 3.3.14 Potential habitat for hazel dormouse is limited to the bund trees and nearby hedgerows and woodland. With low habitat suitability, lack of high value foraging or refuge opportunities, regular disturbance (from human activity, lighting) combined with the restricted distribution of the species in north Wales, it is considered unlikely that dormice would be present within or adjacent to the Site. This species is not therefore considered further in this report.

Amphibians & Reptiles

- 3.3.15 The data provided by Cofnod returned two records of grass snake *Natrix helvetica* and one record of great crested newt *Triturus cristatus*, both located within a garden approximately 1km north east of the Site. Other amphibian records within 2km of the Site consisted of common frog *Rana temporaria* (1), common toad *Bufo bufo* (1), palmate newt *Lissotriton helveticus* (2) and smooth newt *Lissotriton vulgaris* (3).
- 3.3.16 No waterbodies are present within or immediately adjacent to the Site. Three operational lagoons are present within 200m of the Site, north-west of the Kronospan site. These are understood to be used for water settlement / treatment. Lagoons 1 and 2 were observed to have through flow of water on a daily (ie flushed through every 24hour) basis. Water remains longer in Lagoon 3 but this features receives runoff from the processing/storage facility and the water was observed to be black in colour and odorous, with ammonia present and unlikely to be suitable to support great crested newts. These waterbodies are not considered likely to support amphibians due to their operational functioning.
- 3.3.17 The scrub, woodland and earth/rubble bund within the Site offer potential suitable habitat for reptiles and amphibians, if present, and may provide places of shelter and refuge.

Other Notable Species

- 3.3.18 The data provided by Cofnod returned twelve records of hedgehog *Erinaceus europaeus*, two records of polecat *Mustela putorius* and one record of brown hare *Lepus europaeus* within 2km of the Site.
- 3.3.19 The woodland provides limited suitable habitat for hedgehog; the habitats have negligible suitability for brown hare and polecat.

Invasive Non-native Species

- 3.3.20 The data provided by Cofnod returned records of plant and animal species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) within 2km of the Site. Records included American mink *Neovison vison* (2), Himalayan balsam *Impatiens glandulifera* (3), Japanese knotweed *Fallopia japonica* (3), giant hogweed *Heracleum mantegazzianum* (1), Japanese rose *Rosa rugosa* (1), montbretia *Crocsmia x crocosmiiflora* (2) and variated yellow archangel *Lamiastrum galeobdolon argentatum* (2).
- 3.3.21 No non-native invasive species were observed within or adjacent to the Site during the extended Phase 1 habitat survey.

4 DISCUSSION

4.1 Designated Sites

- 4.1.1 The Site does not form part of any statutory or non-statutory designated site for nature conservation. The nearest statutory designated site is Castell Y Waun A'I Barcdir / Chirk Castle and Parkland SSSI located approximately 1km west of the Site and River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales) SAC is located approximately 1.2km from the Site is its nearest point. The Afon Dyfrdwy / River Dee SSSI, Nant-Y-Belan and Prynella Woods SSSI and Ifton Meadows LNR were also identified within 5km of the Site.
- 4.1.2 The proposed development will not directly impact on any statutory designated sites and due to the very restricted nature and extent of the proposed works, separation distance and absence of clear pathways for effects, indirect impacts are also considered unlikely. Standard measures to ensure runoff control and pollution prevention will be implemented during construction and operation of the proposed warehouse. Specifically, surface water runoff and drainage management will be designed and implemented to safeguard downstream habitats and associated species.
- 4.1.3 The potential for the proposed development to affect functionally linked land used by lesser horseshoe bats, a qualifying species of the Castell Y Waun A'I Barcdir / Chirk Castle and Parkland SSSI is separately discussed in Section 4.3.
- 4.1.4 The desk study identified three non-statutory designated sites with 2km of the Site, notified for their habitats. Due to the location of the proposed development mainly within operational land and hardstanding, separation distance, and absence of clear pathways for effects and additionally with standard good practice pollution prevention measures, no direct or indirect impacts are anticipated.

4.2 Habitats

- 4.2.1 The proposed warehouse building will require the removal of part of the bund to the east and north, with a retaining structure put in place to support the retained bund feature. The west side and top of bund consist of a mosaic of bare earth, ephemeral short perennial, tall ruderal and scrub, with greater amounts of scrub to the southern end. The east side of bund, which will largely remain, and area adjacent to the road consist of semi-mature plantation screening woodland, predominantly broadleaved, the ground flora is of no particular interest.
- 4.2.2 The habitat loss from development affects widespread and commonly occurring vegetation (ephemeral, ruderal and scrub), formed on an artificially created bund structure from natural regeneration and some tree planting. Some trees will be removed to facilitate the development, however these are largely semi-mature or young specimens.
- 4.2.3 The retained trees and scrub/hedgerow vegetation outside the development footprint will be protected in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations*.
- 4.2.4 Standard measures to ensure runoff control and pollution prevention will be implemented during construction and operation of the proposed road. Specifically, surface water runoff and drainage management will be designed and implemented to safeguard nearby habitats.

4.3 Protected and Notable Species

Birds

- 4.3.1 All wild birds, their nests and eggs are, with few exceptions, protected under the Wildlife and Countryside Act 1981 (as amended). Schedule 1 of the Act, confers special protection with increased penalties for certain species.
- 4.3.2 Some parts of the Site (bund) and surrounding trees and hedgerows have potential to support nesting birds; these are likely to be common widespread species associated with the habitats in the region. Hardstanding and bare ground areas are considered too subject to disturbance and activity to support ground nesting species.
- 4.3.3 Ideally, vegetation removal should be undertaken outside of the breeding bird season in so far as reasonably practical. The breeding bird season is generally considered to be 1st March to 31st August inclusive. If any vegetation clearance for construction is proposed during the breeding bird season, a suitably experienced ecologist should be appointed to undertake a pre-site commence nesting bird check, to identify the presence of any wild bird nests being built or in use. In the event a nest is confirmed, a temporary species-specific works exclusion zone and other mitigation measures as advised by the ecologist will need to be implemented to ensure that no legislative offences occur.
- 4.3.4 Bird boxes can be provided at suitable locations around the wider landownership to enhance nesting opportunities.

Bats

- 4.3.5 All species of British bat are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are further protected under the Habitats Regulations. The Act and Regulations make it an offence to kill, injure or take any wild bat; damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection and intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection.
- 4.3.6 A single mature oak *Quercus* sp. within the proposed construction footprint is considered to have moderate bat roost potential with small rot holes, split limbs and lifted bark. Otherwise, the individual trees indicated for removal in the Arboricultural Impact Assessment¹⁰ (on the top and west side on the bund) have negligible bat roost potential. If additional trees are identified for removal these will also require a preliminary roost assessment and potentially further survey to confirm the absence of bat roosts before they can be removed..
- 4.3.7 Trees with moderate bat roost suitability require one dusk emergence survey and one dawn re-entry survey, undertaken between May and September, with at least one of the surveys undertaken between May and August. Trees with low bat roost suitability do not require further survey but should be soft felled in sections under an ecological watching brief. Inspections at height can sometimes rule out the requirement for dusk/dawn surveys, if on close inspection features are found to be unsuitable for bats, or if bats or evidence of bat presence is confirmed.
- 4.3.8 The tree identified for removal will be subject to confirmatory roost surveys in line with published guidance before any works on the tree take place. If bats are confirmed to be roosting within this or any tree to be impacted by proposed works, the data gathered would be used to support a licence application to Natural Resources Wales to destroy/disturb the bat roost and to inform potential mitigation measure to reduce and/or avoid impacts if appropriate.

¹⁰ Tree 21 Limited (2021) Arboricultural Impact Assessment

- 4.3.9 Chirk Castle located approximately 1km west of the Site is known to support a lesser horseshoe maternity roost; this is one of the special interests of Castell Y Waun A'I Barcdir / Chirk Castle and Parkland SSSI. The Chirk Castle maternity roost is of national importance and Bronygarth or Ceiriog cave located approximately 600m south of the castle is used by hibernating bats, including lesser horseshoe bats. The SSSI designation therefore incorporates the flight lines and feeding areas of the lesser horseshoe bats as they move between the castle maternity roost and the cave.
- 4.3.10 Overall, the Site is considered to be of low suitability for foraging and commuting bats, however the plantation woodland does provide some (albeit limited) connectivity to other more favourable habitats in the wider landscape, including the Llangollen Canal and broad-leaved woodland approximately 300 m west of the Site.
- 4.3.11 The proposed development is not considered likely to have a discernible effect on commuting and foraging bats, in particular those associated with the SSSI, due to the current levels of disturbance (e.g. lighting from Kronospan and adjacent road/residential area), higher value and preferable flight and foraging corridors nearby, and the minimal amount of tree removal required. Bat boxes can be provided at suitable locations around the wider landownership to enhance roosting opportunities.
- 4.3.12 The development will include a lighting strategy that avoids or minimises light spill on adjacent habitats. This can be achieved in a number of ways, including the use of low-level lighting and use of hoods and careful selection of lighting (further information is provided in BCT guidance (2018) *Bats and Lighting in the UK: Bats and the Built Environment Series*¹¹).

Badger

- 4.3.13 Badgers are afforded legislative protection under the Protection of Badgers Act 1992. It is an offence to kill or harm a badger, and to damage an active sett.
- 4.3.14 No badger setts were found within the Site during the survey; however, possible badger paths and snuffle holes were noted on the bund and in the woodland, with possible prints at the north end near the emergency access. However, no entrances were noted within 50 m of the proposed warehouse building, and are unlikely to be created in the bund which contains significant amounts of rubble which makes it difficult to dig into.
- 4.3.15 The evidence of mammal tracks and suitable habitats within the local area suggests badgers may occasionally visit the Site and are likely in the area, however the active operational nature of the Kronospan facility with regular noise, lighting and human activity means it is unlikely that badgers are regularly present or likely to establish setts within the Site.
- 4.3.16 Badger activity can show seasonal patterns of use and badgers can quickly establish new setts, or re-use setts previously thought to be inactive. Considering the highly mobile nature of badgers and the seasonality of their activity, it is recommended on a precautionary basis that a pre-construction badger survey should be completed by a suitable qualified ecologist prior to the commencement of construction to check for any newly constructed setts in and surrounding the Site.
- 4.3.17 It is proposed that standard good practice measures will be adopted during construction that will safeguard badgers as well as other wildlife that may occasionally be present on Site (e.g. foraging during non-operational hours). These will include covering any excavations left open over night or fitting with a means of escape (set no steeper than a 45° angle), and safe storage of materials in secure compounds or stores.

¹¹ Bat Conservation Trust. (2018). *Bats and Artificial Lighting in the UK: Bats and the Built Environment Series Guidance Note 08/18*

Amphibians & Reptiles

- 4.3.18 Great crested newt and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017. The Act and Regulations make it an offence to kill, injure or take a great crested newt; damage, destroy or obstruct access to any place used for shelter or protection; and intentionally or recklessly disturb such species while it is occupying a structure or place that it uses for shelter or protection.
- 4.3.19 Common reptile species namely the common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake and adder *Vipera berus* are protected against killing, injuring and sale under the Wildlife & Countryside Act 1981 (as amended).
- 4.3.20 No waterbodies are located within the Site. Operational lagoons lie approximately 75m west of the Site however these are considered unlikely to be suitable for breeding amphibians, being subject to inputs from the Kronospan facility. The Site does not support any suitable breeding ponds and few foraging resources and much of the area is subject to a high degree of operation disturbance including movement and storage of large logs on the hardstanding. There are some opportunities for refuge with rubble and shelter around and on the bund. The adjacent large Kronospan facility to the west, and the B5070 to the east present at least partial barriers to dispersal into the Site.
- 4.3.21 The likelihood of presence of amphibians or reptiles on Site is considered to be low, however as a precaution, Amphibian and Reptile Reasonable Avoidance Measures (RAMs) will be implemented as part of the construction methodology to protect these species during initial vegetation removal and excavations.

Other species

- 4.3.22 No other species are considered pertinent in relation to the proposed development.

Invasive Non-native Species

- 4.3.23 No invasive non-native plant species were recorded within the Site. However, as a precaution it is recommended that a pre-construction survey is undertaken immediately prior to development commencing to check for any invasive species that may have established subsequent to the baseline survey. Should invasive species such as Japanese knotweed be present, a suitable biosecurity strategy should be implemented to avoid, control and prevent its inadvertent spread.

5 SUMMARY

5.1.1 Table 5.1 summarises the ecological constraints and opportunities associated with the development, and makes recommendations for pre-construction survey work and / or mitigation measures as required to inform planning.

Table 5.1: Ecological Constraints and Opportunities

Feature	Details	
Designated sites for Nature Conservation	Constraints & Opportunities	a. The Site does not form part of any statutory or non-statutory designated site of nature conservation vale. b. The nearest statutory designated site is Castell Y Waun A'l Barcdir / Chirk Castle and Parkland SSSI located approximately 1km west of the Site and the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales) SAC is located approximately 1.6km from the Site is its nearest point. c. Two non-statutory designated sites are located with 2km of the Site; Coed y Camlas / Canal Wood WS is located approximately 260m west of the Site and Barracks Field WS approximately 1km north east of the Site. d. The identified statutory or non-statutory designated sites are primarily noted for their habitats and associated species, and with separation distances and lack of clear pathways for effects, no direct or indirect impacts are anticipated.
	Legislative Compliance – HR**	e. Pollution prevention measures should be implemented to control site runoff during the construction and protect downstream habitats.
Habitats & Flora	Constraints & Opportunities	f. The proposed development would affect mainly bare ground of very low habitat interest and smaller areas of ephemeral/ruderal vegetation and scrub/wooded ground.
	Protection Measures	g. Pollution prevention measures should be implemented to control site runoff during the construction and protect downstream habitats. h. The retained trees and hedgerows outside the development footprint should be protected in accordance with <i>BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations</i>
Birds	Constraints & Opportunities	i. The Site has limited potential to support nesting birds; likely to be restricted to common and widespread species. The Site is unsuitable to support Schedule 1 bird species. Bird boxes can be provided at suitable locations around the wider landownership to enhance nesting opportunities.
	Legislative Compliance – WCA*	j. Vegetation removal should be undertaken outside of the bird breeding season (01 March to 31 August inclusive) if practicable. If works are necessary during the breeding season, suitable nesting habitat should be hand-searched by a suitably experienced ecologist prior to works commencing. Only when the ecologist is satisfied that no offence will occur under the legislation should works be permitted to proceed.
Bats	Constraints & Opportunities	k. One tree directly affected within the Site has moderate potential to support roosting bats. Habitats within the Site were considered to provide low suitability as foraging and commuting habitat for bats. l. Habitat enhancement measures – including the provision of bat roost features would provide a benefit for bats.. Bat boxes can be provided at suitable (dark) locations around the wider landownership to enhance roosting opportunities.

Feature	Details	
	Legislative Compliance – WCA*, HR**	m. Further detailed inspection/survey of all tree scheduled for removal should be undertaken to confirm presence or likely absence of roosting bats before tree work is undertaken. n. If roosting is confirmed, works that would result in the loss, damage of a roost or may disturb roosting bats would require suitable mitigation under an EPS derogation licence from NRW. o. The development avoids or minimises light spill on adjacent habitats (remaining bund) as the east side of the structure will only have emergency lighting fitted.
Badger	Constraints & Opportunities	p. No badger sett was identified during the Extended Phase 1 habitat survey. q. Badger are likely to be present locally.
	Legislative Compliance – PBA***	r. A pre-construction check for badgers should be undertaken; should new evidence of badger presence be identified, suitable protection, avoidance or mitigation measures will need be implemented to ensure legislative compliance. s. Precautionary good practice measures should be adopted during construction to protect badgers and other wildlife such as covering open excavations overnight and securing stored materials.
Hazel dormouse	Constraints & Opportunities	t. Due to the low suitability of habitat on Site for dormouse, a lack of local records and given their restricted distribution of the species in north Wales, it is considered unlikely that dormice would be present within or adjacent to the Site
	Legislative Compliance – WCA*, HR**	u. NA.
Otter ** & Water Vole*	Constraints & Opportunities	v. Due to the lack of suitable habitat on or adjacent to the Site, otter and water vole are not considered likely to be present and are subsequently considered unlikely to be a material consideration at planning. w. The adoption of standard measures to ensure runoff control and pollution prevention will safeguard suitable habitats away from the Site.
	Legislative Compliance – WCA*, HR**	x. NA.
Amphibians	Constraints & Opportunities	y. No waterbodies are located within the Site. z. Two operational lagoons are located approximately 75m west of the Site with low likelihood of supporting amphibians
	Legislative Compliance - WCA*, HR**	aa. Surveys to determine the presence or likely absence of great crested newts may be required to inform the planning application and any required mitigation. bb. Other waterbodies are considered sufficiently distant from the Site to be able to scope out the required for survey. cc. If great crested newts were confirmed present within the waterbodies to the west of the Site, the development would likely require RAMs or a EPS

Feature	Details	
		derogation licence from NRW prior to development works commencing, with suitable mitigation in place to protect amphibians during construction works.
Reptiles	Constraints & Opportunities	dd. The vegetated bund provides some limited habitat for reptile species.
	Legislative Compliance – WCA*	ee. Reasonable Avoidance Measures (RAMs) are recommended during initial vegetation removal and earthworks to safeguard any individual reptiles (or other wildlife more generally) if present.
Invasive species	Constraints & Opportunities	ff. No invasive non-native plant species were recorded within the Site.
	Legislative Compliance – WCA*	gg. A pre-construction check for new colonisation by invasive species is recommended.
Other Species	Constraints & Opportunities	hh. No other species are considered pertinent in relation to the proposed development.

FIGURES

Figure 1: Site Location Plan

Figure 2: Statutory Designated Sites

Figure 3: Non-Statutory Designated Sites

Figure 4: Extended Phase 1 Habitat Plan



Legend

Site

00	15/03/2021		MR	MJR
Rev	Date	Description	De	App

This map contains data from the following sources:
Ordnance Survey (2021)
© Crown copyright. All rights reserved 2021.
1: Licence number 010031673.

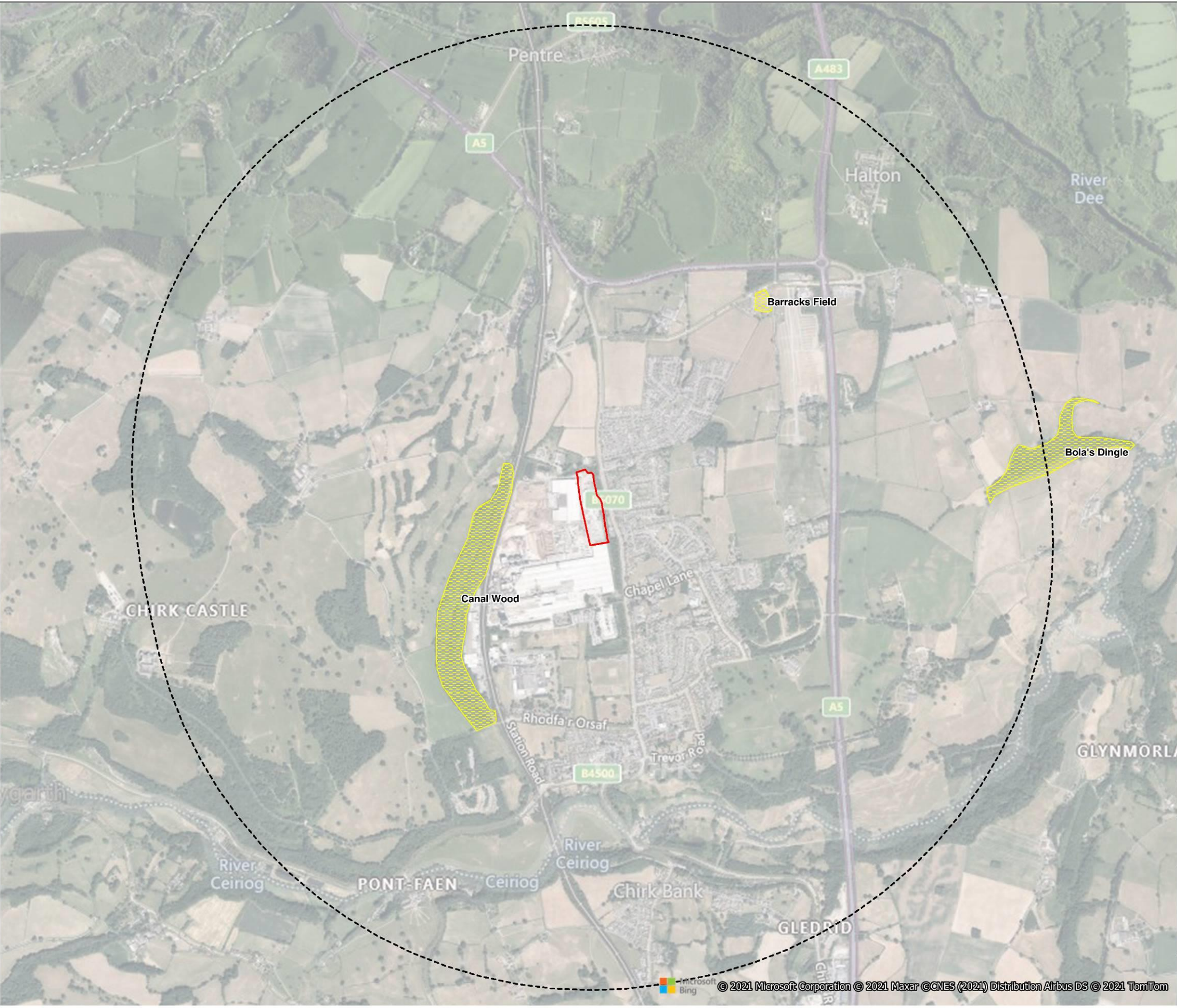
Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Metres

KRONOSPAN

SITE LOCATION

Avian Ecology, Suite 3c Walnut Tree Farm, Northwich Road, Lower Stretton
WA4 4PG
Tel: 0945 506 5116
www.avianecology.co.uk

0 100
metres



Legend

Site

2km buffer

Designated Sites

Wildlife Sites

00	16/04/2021		MR	MJR
Rev	Date	Description	De	App

This map contains data from the following sources:
Ordnance Survey (2021)
© Crown copyright. All rights reserved 2021.
1 licence number 010031673.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Metres

KRONOSPAN WAREHOUSE

NON-STATUTORY DESIGNATED SITES

Avian Ecology, Suite 3c Walnut Tree Farm, Northwich Road, Lower Stretton
WA4 4PG
Tel: 0943 506 5115
www.avianecology.co.uk

0500

metres

N

W

E

S

© 2021 Microsoft Corporation © 2021 Maxar © CNES (2021) Distribution Airbus DS © 2021 TomTom



Legend

Site

⊗ Target note (TN*)

Habitats

Amenity grassland

Bare ground

Broadleaved plantation woodland

Dense scrub

Ephemeral

Hardstanding

Tall ruderals

Fence

● Individual tree

× Scattered scrub

Rev	Date	Description	De	App
00	29/04/2021		MR	MJR

This map contains data from the following sources:
Ordnance Survey (2021)
© Crown copyright. All rights reserved 2021.
1 licence number 010031673.

Co-ordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Metres

KRONOSPAN

PHASE 1 HABITAT PLAN

avianecology

Avian Ecology, Suite 3c, Walnut Tree Farm, Northwich Road, Lower Sprotton
WA4 4PG
Tel: 02475 506 5115
www.avianecology.co.uk

0 50
metres

APPENDIX 1 – PHOTOGRAPHS



Photo 1. View from bund of main area of Site currently used for log storage



Photo 2. View from bund



Photo 3. Trees on top of bund



Photo 4. Bund slope



Photo 5. Edge of bund



Photo 6. Tree to be removed for development with Moderate bat roost potential



Photo 7. Lagoons 1 and 2



Photo 8. Lagoon 3 – Settling and water treatment facility for operational facility