WHARTON
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Preliminary Ecological Appraisal

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Premier Foods Bakery, Carlton, South Yorkshire

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Summary	
Site surveyed	Land at Premier Foods Bakery, Carlton, South Yorkshire National Grid reference SE 37224 09992.
Purpose and brief	Preliminary Ecological Appraisal Commissioned by Terrence O'Rouke
Development proposals	The Proposed Development involves the construction of solar panels within a field to power the adjacent Premier Foods industrial bakery
Methods	Desk study UK Habitat Classification (UKHab) survey of the Site Assessment of likely significant effects as far as can be reasonably known.
Confirmed ecological constraints	None
Potential ecological constraints	**Great crested newt** **Reptiles** **Designated Site** Bats Nesting Birds Hedgehogs
Recommendations/ Further survey works required	Further surveys for great crested newt Production of a method statement for reptiles Precautionary working measures of bats, nesting birds and hedgehogs
Opportunities for ecological enhancement	Native species planting beneath and between solar panels. Hedgerow planting

1. Introduction/Background

1.1 Author

1.1.1 The Principal Author of this report is Byron Humphries BSc (*Hons*) *ACIEEM* (Ecologist). The Principal Author has over four years of experience in ecological consultancy and has worked on projects ranging from large scale national infrastructure developments to residential sites across the country. The Principal Author holds a Class 2 survey licence from Natural England for great crested newt (*Triturus cristatus*) ('GCN'). He is a Associate member of the Chartered Institute of Ecology and Environmental Management ('CIEEM'), he is therefore subject to CIEEM's Code of Professional Conduct.

1.1.2 The detail provided within this report is a true and accurate reflection of both the Site conditions at the time the survey was completed, as well as the professional opinion of the Principal Author.

1.2 Purpose and Brief

1.2.1 Terrence O'Rouke (the Client) commissioned Wharton Natural Infrastructure Consultants Ltd ('Wharton') to undertake a Preliminary Ecological Appraisal ('PEA') of an area of land known as Premier Foods Bakery, Carlton, South Yorkshire (see land within the red line boundary on Appendices 1 and 2), known herein as 'the Site').

1.2.2 The purpose of the PEA (as per CIEEM guidance (CIEEM, 2018) is to inform the design of the Proposed Development. The key objectives of a PEA are to:

- Identify the likely ecological constraints associated with the Proposed Development.
- Identify any mitigation measures likely to be required, following the '*Mitigation Hierarchy';*
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and,
- Identify the opportunities offered by the Proposed Development to deliver ecological enhancement.

1.2.3 The PEA report is not intended to be submitted to accompany a planning application; it is intended to inform the design of the Proposed Development.

1.3 Description of Site and Local Area

1.3.1 The Site is located to the east of Fish Dam Lane in Carlton. It is centred approximately at National Grid reference SE 36682 09839.

1.3.2 The Site comprised an area of grassland with areas of scrub and hedgerow on the borders. The Site is bordered to the north by a main road with agricultural land beyond. The Site is bordered to the east by residential buildings and allotments, a small area of scrub and the Premier Foods industrial bakery building. The Site is bordered to the south by grassland and agricultural land. The Site is bordered to the west by a small road with an area of scrubland beyond which appears to have previously been the site of a quarry.

1.3.3 The Site is relatively well connected from an ecological perspective due to grassland and scrub to the south and east of the Site. However, the railway c.0.44km east of the Site could act as a dispersal barrier for wildlife beyond this point.

1.3.4 Wildlife corridors are present in the local area, such as the Barnsley Canal c.0.2km north of the Site, however the Site is not well ecologically connected to any significant wildlife corridors and does not contribute to their functionality.

1.4 The Proposed Development

1.4.1 The Proposed Development involves the construction of solar panels within the existing field to power the adjacent Premier Foods industrial bakery.

1.4.2 The proposals detailed above will be referred to throughout this report as the 'Proposed Development'.

2. Relevant Planning Policy & Legislation

2.1 Relevant Legislation

2.1.1 National and international legislation relevant to the Proposed Development is summarised below in Table 1.

Table 1. Legislation Relevant to the Proposed Development

Legislation*	Relevance to the Proposed Development
The Conservation of Habitats and Species Regulations 2017 (HMSO, 2017) ***Amended by***[1] **The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (HMSO, 2019)**	Affords protection to species listed under Schedules 2 and 5 and gives provision for the allocation and protection of European protected sites.
The Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981)	Affords protection to species listed under Schedule 5 of the Act and gives provision for the allocation of statutory wildlife sites.
The Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006)	Places a duty on planning authorities to consider habitats and species of principal importance in planning applications.
The Protection of Badgers Act 1992 (HMSO, 1992)	Offences under the Act include damaging, destroying or obstructing access to a badger sett, disturbing a badger when it is occupying a badger sett, and killing or injuring a badger.

*Full legislative text should be referred to as table text is a summary only.
1 - The Conservation of Habitats and Species Regulations 2017 provides safeguards for European Protected Sites and Species (as listed in the Habitats Directive). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 which continue the same provision for European protected species, licensing requirements, and protected areas now the UK has left the European Union.

2.2 Relevant Planning Policy

2.2.1 Planning policies which are relevant to the Proposed Development are summarised below in Table 2.

Table 2. Planning Policy Relevant to the Proposed Development

Planning Policy	Relevance to the Proposed Development
National Planning Policy Framework (Department for Communities and Local Government, 2021)	Section 180a and 180c (respectively) of the NPPF state: *"if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused".* *"Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists."*

*Full policy text should be referred to as table text is a summary only.

2.2.2 The Barnsley Local Plan (Barnsley Metropolitan Borough Council, 2019) has been reviewed and an excerpt of the relevant ecological policies is provided in Appendix 4.

3. Methods & Methodology

3.1 Desk Study & Consultation

3.1.1 A desk study was carried out to gather background ecological data, and the following resources were used for the data search:

- Multi Agency Geographic Information for the Countryside (MAGIC) Interactive (DEFRA, 2022) map was used to determine the presence of granted European Protected Species Mitigation licences at and within 500m of the Site.
- Google Earth Pro (Google Earth Pro, 2022) aerial and historic imagery were used to assess the ecological connectivity at the Site as well as its historic use to assess suitability of habitats locally for foraging and commuting wildlife.
- Biological records have been obtained from Sheffield Biological Records Centre (SBRC, 2022) from a 1km radius of the central grid reference provided in paragraph 1.3.1, for statutory wildlife sites, non-statutory wildlife sites and legally protected and notable species.

3.2 Field Survey

3.2.1 A UK Habitat Classification (UKHab) survey (comprising the methods detailed below) was carried out on 13th September 2022 by the Principal Author.

3.2.2 Weather conditions at the time of survey were warm, clear and still.

3.3 UK Habitat Classification (UKHab) Survey

3.3.1 A UK Habitat Classification (UKHab) Survey (Butcher, Carey, Edmonds, Norton, & Treweek, 2020) was carried out at the Site and provides a comprehensive habitat classification system for the UK. UKHab enables details in relation to the presence of notable (such as Habitats of Principal Importance) or protected habitats (such as Annex I habitats) to be obtained.

3.3.2 The UK Habitat Classification Version 1.1 was used for assessment of the Site, using the *Professional Edition Hierarchy*. Habitats were classified to Level 5 unless otherwise stated.

3.3.3 Based on the characteristics of the Site, the habitats it supports (as assessed from remote aerial imagery during the desk study), and other information from the desk study such as biological records, the Site was assessed for its suitability to support the following species during the Site survey:

- Badger (*Meles meles*);
- Bats (*Chiroptera* spp.);
- Great crested newt GCN (*Triturus cristatus*) and other amphibians;
- Reptiles
- Hedgehog (*Erinaceus europaeus*);
- Invertebrates;
- Wild birds; and
- Protected plants;.

3.3.4 Species for which the Site was deemed to be unsuitable or where impacts are unlikely to occur

due to the Site location, a lack of nearby suitable habitat and/or a lack of biological records include:

- Hazel dormouse (*Muscardinus avellanarius*);
- Otter (*Lutra lutra*);
- Water vole (*Arvicola amphibius*);
- White-clawed crayfish (*Austropotamobius pallipes*);
- Freshwater fish; and
- Marine flora & fauna;.

3.3.5 Habitats at the Site were identified and mapped; they are illustrated on the UK Habitat Classification Plan in Appendix 2. Where appropriate, target notes have been used to identify areas on the plan that require further detail, and this has been included in the report.

3.3.6 Plant names (common and scientific) within this report follow 'New Flora of the British Isles' (Stace, 2010).

3.4 Preliminary Roost Assessment ('PRA')

3.4.1 The PRA and subsequent assessment of suitability of the trees at the Site for roosting bats followed current best practice guidance (Collins, 2016).

3.4.2 The trees were inspected by the Principal Author from ground level, for their suitability to support roosting bats.

3.4.3 The trees were classified according to the criteria set out in Table 3 below in accordance with standard guidance (Collins, 2016). With respect to roost type, the assessments in this report are made irrespective of species conservation status, which is established after presence is confirmed.

Table 3. Bat Roost Suitability Descriptions (taken from Collins, 2016)

Suitability	Description of Roosting Habitats
Confirmed Presence	Presence of roosting bats within the building or tree confirmed by the survey
High	A building 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.
Moderate	A building 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.
Low	A building or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable for maternity or hibernation).
Negligible	Trees or buildings that appear unsuitable for roosting bats due to a clear lack of roosting spaces and/or absence of suitable access points, such as voids, small crevices etc, cracked limbs, rot holes, woodpecker holes, limb tear outs etc.

3.5 Limitations and Caveats

3.5.1 This report is based solely on the Site conditions on the 13th September 2022 and provides a 'snapshot' of Site conditions at this time only.

3.5.2 September is a sub-optimal time of the year for botanical survey to be undertaken. Due to the common and widespread nature of the species present at the time of the survey, it is unlikely that important plant species requiring further detailed botanical survey are present at the Site. This limitation is therefore not considered to be significant.

3.6 Evaluation of Ecological Features

3.6.1 The potential of the Site to support legally protected or notable species was determined through a review of field observations and desk study information.

3.6.2 The CIEEM EcIA guidelines (CIEEM, 2018) state that "*the importance of an ecological feature should be considered within a defined geographical context".* The suggested frames of reference within the CIEEM EcIA guidelines have been appropriately adapted, appropriate to the Site and Proposed Development. These frames of reference are:

- International and European
- National (England)
- Regional (Yorkshire and the Humber)
- County (South Yorkshire)
- Local (Barnsley)

4. Ecological Baseline and Assessment of Impacts and Effects

4.1 Zone of Influence

4.1.1 The Zone of Influence (ZoI) for the Proposed Development is the area within which significant ecological impacts could occur to ecological features.

4.1.2 The ZoI differs for each ecological feature, and the ZoI has been clearly stated in the baseline assessment of each ecological feature below.

4.1.3 The ZoI has been stated for every ecological feature except those where there is clearly a lack of suitable habitat at or adjacent to the Site, and therefore no pathways by which impacts could occur to the feature.

4.1.4 Where a ZoI has been provided for a species that has subsequently been scoped out of further assessment, the ZoI relates to the area considered as part of the initial scoping assessment for that ecological feature (i.e. the area within which potential impacts to the feature have been considered).

4.2 Statutory Wildlife Sites

ZoI

4.2.1 The ZoI for statutory wildlife sites is considered to be 1km from the Site boundary. This is due to the relatively good ecological connectivity of the Site from the wider area.

Baseline and Assessment of Impacts and Effects

4.2.2 There is one statutory wildlife sites within 1km of the Site which is a Site of Special Scientific Interest (SSSI).

Dearne Valley Wetlands SSSI

4.2.3 An area of wetland along the River Dearne c.1km east of the Site. It is an important site for birds including gadwall (*Mareca strepera*), shoveler (*Spatula clypteata*) willow tit (*Poecile montanus*), black-headed gull (*Chroicocephalus ridibundus*) bittern (*Botaurinae sp*), garganey (*Spatula querquedula*), lapwing (*Vanellus vanellus*), redshank (*Tringa tetanus*) and avocet (*Recurvirostra sp*).

4.2.4 Given the nature of the proposed development, it does fall within the impact risk zone for the SSSI, meaning that the Local Planning Authority should consult Natural England for advice on how impacts might be avoided or mitigated.

4.2.5 The effect of solar farms on bird populations is currently very poorly understood and requires more research to fully understand their relationship. When considering site selection for solar developments it is generally agreed that protected areas should be avoided due to the potential risk of disturbance, displacement, barrier effects and habitat loss (Natural England, 2017). It is also recommended that solar panel developments should not be built near protected areas as sensitive species are not restricted to the geographical boundaries of protected areas. However, there has been no research into quantifying the effects of nearby solar developments on protected areas as a function of distance, and this is required to be able to produce guidance on the placement of these developments. Given the current lack of research and published guidance in relation to this, it is recommended that the Local Planning Authority (LPA) is consulted for advice regarding the matter.

4.2.6 As outlined below, the Proposed Development, from what is understood from a purely habitat loss and alteration standpoint, is not expected to have a significant impact on the SSSI.

4.2.7 While areas of scrub are present on Site, these areas are small and not considered important nesting habitat for bird species due to the extensive presence of larger, more favourable nesting

areas in the local area. The bird species listed of importance in relation to the SSSI also rely largely on wetland habitat, which is notably absent from the Site, and so it is not expected that the Proposed Development will have an impact on bird populations associated with the SSSI.

4.2.8 The area of grassland on Site is not considered important nesting habitat for lapwing due to the tall nature of the sward and the extensive presence of more favourable nesting and foraging areas, both within the SSSI and in its surrounding agricultural land.

4.2.9 While the habitats on Site are not considered to be locally important to the bird species associated with the SSSI, the Proposed Development may still have an impact on individual birds nesting on Site. Recommendations to take any impact on nesting birds to a negligible level are included in section 4.5.

4.2.10 As far as can be reasonably assumed, no significant effects to statutory wildlife sites are likely to arise as a result of the Proposed Development. However, given the lack of significant research and guidance on the nature of the development and its impact on protected areas, consultation with the LPA is recommended.

4.3 Non-Statutory Wildlife Sites

ZoI

4.3.1 The ZoI for non-statutory wildlife sites is considered to be 1km from the Site boundary. This is due to the relative ecological connectivity of the Site from the wider area.

Baseline and Assessment of Impacts and Effects

4.3.1 There is one non statutory wildlife site within 1km of the Site which is a Local Wildlife Site (LWS)

Barnsley Canal LWS

4.3.2 A length of disused canal c.0.2km north of the Site with a variety of habitats including hedgerow, woodland, neutral grassland and swamp. It supports a range of important plant species such as least duckweed (*Lemna minuta*), nuttall's pondweed (*Elodea nuttallii*), broadleaved helleborine (*Epipactis helleborine)* and greater stitchwort (*Stellaria holostea*). Other species recorded include reed bunting (*Emberiza schoeniclus*), willow tit and little grebe (*tachybaptus fuficollis*).

4.3.3 A relatively busy suburban road separates the Site from the LWS and there are no waterbodies present on Site which connect with the canal.

4.3.4 No direct or indirect impacts to non-statutory wildlife sites are considered likely to arise because of the Proposed Development.

4.3.5 No further survey or assessment regarding non statutory wildlife sites is required and no significant effects to non-statutory wildlife sites are likely to arise as a result of the Proposed Development.

4.4 Habitats

4.4.1 A plan of the habitats detailed below is provided at Appendix 2.

4.4.2 The assessment of importance within section 4.4 relates solely to the botanical importance of habitats at the Site. It does not take use or possible use by protected species into account as this is addressed within section 4.5

ZoI

4.4.3 The ZoI for habitats in relation to the Proposed Development is the habitats within the Site boundary only. This is because adjacent habitats are of limited ecological importance and impacts to adjacent habitats as a result of the Proposed Development are unlikely to occur.

Neutral Grassland

Baseline and Assessment of Impacts and Effects

4.4.4 Neutral grassland (g3c) was the dominant habitat at the Site. The habitat is largely self-seeded and undergoes mowing annually in late summer/autumn.

4.4.5 The grassland had a somewhat diverse mixture of species, with the most dominant being false oat grass (*Arrhenatherum elatius*), common bent (*Agrostis capillaris*), red fescue (*Festuca rubra*), couch (*Agropyren repens*) and cock's foot (*Dactylis glomerata*). Also present was Yorkshire fog (*Holcus lanatus)*, broadleaved willowherb (*Epilobium montanum*), cow parsley (*Anthriscus sylvestris),* creeping thistle (*Cirsium arvense),* tufted hairgrass (*Deschampsia cespitosa*), ribwort plantain (*Plantago lanceolata*), knapweed (*Centaurea nigra*) and meadow vetchling (*Lathyrus pratensis).*

4.4.6 The neutral grassland is considered to be of low ecological importance.

4.4.7 The majority of the neutral grassland is likely to be retained, however the amount of shading of the field will be significantly increased which may lead to a change in species composition. This will not result in a significant ecological effect.

Mixed Scrub

Baseline and Assessment of Impacts and Effects

4.4.8 An area of mixed scrub (h3h) was present along the southern boundary of the Site. The area consisted of self-seeded unmanaged scrub, with woody species growing to around six metres in height. This was dominated by bramble (*Rubus fruticosa*), goat willow (*Salix caprea*), dog-rose (*Rosa canina*), silver birch (*Betula pendula*), hawthorn (*Cretaegus monogyna*) with common bent, Yorkshire fog, red fescue, gorse *(Ulex europaeus*) and ribwort plantain (*Plantago lanceolata*) also present.

4.4.9 The mixed scrub extended along the south-eastern boundary of the Site becoming more scattered. This consisted of a number of dog-rose, hawthorn shrubs and wild cherry (*Prunus avium*) saplings.

4.4.10 The mixed scrub also extended along the south-western boundary of the Site consisting of goat willow, hawthorn and birch. Much of this scrub lay outside the Site boundary.

4.4.11 The area of mixed scrub is considered to be of low ecological importance due to its small size and relatively undeveloped nature.

4.4.12 The areas of mixed scrub on Site are to be retained under the development plan and so the Proposed Development should not have any significant effect on the habitat.

4.4.13 An area of bramble scrub (h3d) was present along the north-west boundary of the site. This was dominated by dense bramble with some elder (*Sambucus nigra*), broadleaved willowherb (*Epilobium montanum*), creeping thistle (*Cirsium arvense*) and hawthorn, merging into the hawthorn hedgerow on the northern boundary of the Site.

4.4.14 There was also an area of bramble scrub within the grassland to towards the south-west of the Site.

4.4.15 The area of bramble scrub is considered to be of low ecological importance due to its lack of flora diversity and relatively small size.

4.4.16 The majority of the areas of bramble scrub is to be retained under the development plan, with the likely exception of the small area within the grassland to the south-west of site. Due to the very small size of this area of scrub it is not considered that this will result in a significant ecological effect.

Hedgerows

Baseline and Assessment of Impacts and Effects

4.4.17 There is a hedgerow (h2a) which extends along the Site boundary on the east and northern edges. The hedgerow was c.2 – 3m tall and unmanaged, consisting of hawthorn with the occasional bramble, dogrose, blackthorn (*Prunus spinosa*) and wild cherry.

4.4.18 As a priority habitat, and so a material consideration in planning applications under the Natural Environment and Rural Communities (NERC) Act, as well as the Hedgerow Regulations (HMSO, The Hedgerow Regulations, 1997), hedgerows are ecologically important.

4.4.19 All of the hedgerow on Site is to be retained under the development plan and so the Proposed Development should not have any significant effect on the habitat.

4.5 Species Baseline and Assessment of Impacts and Effects

4.5.1 Biological records have been provided by Sheffield Biological Records Centre (SBRC, 2022). The data will be licensed for use by Wharton and the Client for a 12-month period, it is not owned by Wharton or the Client and ownership of the data remains with the data provider.

4.5.2 Only data from the biological records centre that is considered relevant to this assessment has been included within this report. There may be records of species in the wider area that have not been included as they are either very old records (usually 25+ years) or there is no ecological connectivity to the record.

4.5.3 Where a species/species group has been scoped out of further assessment below, no significant effects (adverse or otherwise) to this species are anticipated as a result of the Proposed Development, and no legislative breach in respect of the species legal protection is anticipated.

Badger

ZoI

4.5.4 The ZoI for badgers is considered to be the Site and 30m outside of the Site boundary only. No important habitats for badgers are considered to be affected outside of the Site boundary by the Proposed Development.

Baseline and Assessment of Impacts and Effects

4.5.5 There are two records of badger within 1km of the Site. The closest record was c.0.2km southwest of the Site in 2012.

4.5.6 No evidence of badger was identified at the Site. The hedgerow on the eastern and northern boundary of the Site provides some suitable habitat for sett making however the habitat will not be removed or modified to facilitate the Proposed Development.

4.5.7 The risk of a breach of legislation in respect of badger from the Proposed Development is considered to be negligible.

Bats

ZoI

4.5.8 The ZoI for bats is considered to be the Site only. No important habitats for bats are considered to be affected outside of the Site boundary by the Proposed Development.

Baseline and Assessment of Impacts and Effects - Roosting Habitat

4.5.9 There are no records for roosting bats within 1km of the Site, provided by the biological records centre.

4.5.10 There are no records of European Protected Species Mitigation Licenses (EPSML) for bats within 1km of the Site on MAGIC Maps (DEFRA, 2022).

4.5.11 No buildings are present at the Site.

4.5.12 Trees (including an early mature ash, labelled as TN1 on the Habitat Plan in Appendix 2 and any trees comprising the hedgerow and scrub habitats on site) at the Site have negligible suitability for roosting bats, no suitability for or evidence of roosting bats was identified during the PRA of trees at the Site.

4.5.13 The Site is unlikely to be ecologically important for roosting bats owing to the lack of suitable roosting features.

Baseline and Assessment of Impacts and Effects - Commuting and Foraging Habitat

4.5.14 There are 11 records of commuting and foraging bats within 1km of the Site. Species include noctule (*Nyctalus noctula),* common pipistrelle (*Pipistrellus pipistrellus*), and daubenton's (*Myotis daubentonii*). The closest records were for common pipistrelle and daubenton's c.0.39km west and southwest of the Site in 1999 and 1998.

4.5.15 The areas of scrub and boundary hedgerows offer some suitable habitat for commuting bats, provided by the biological records centre. The hedgerow along the northern boundary could provide some connection to the habitats to the east, however, does not extend to the west, so is unlikely to be an important commuting corridor, especially given its high level of disturbance situated adjacent to a relatively busy road. The hedgerow and scrub running along the western and eastern boundary provides some connectivity to habitats to the south, however the road to the north makes it unlikely that this will be an important commuting corridor. The area of scrub on the southern boundary offers some connectivity between the areas of scrub both east and west of the site, however the area of scrub to the west is small and immediately adjacent to the Premier Foods industrial bakery, so it is unlikely that this will be an important commuting corridor for bats.

4.5.16 The Site offers low levels of suitability for foraging bats, associated with the Site boundaries only. This is because of the relatively low botanical species diversity (which would affect abundance of invertebrate prey) throughout the Site and the extensive presence of more favourable foraging habitat to the south and east.

4.5.17 The habitats (hedgerows) which are beneficial for commuting and foraging bats are to be retained and even enhanced under the Proposed Development and so it is not expected that any significant effects to commuting or foraging bats will occur as a result.

4.5.18 Low levels of disturbance to commuting and foraging bats on Site may occur during the construction phase if lighting is used, however, precautionary measures have been recommended to reduce the likelihood of potential impacts occurring to a negligible level.

GCN and other Amphibians

ZoI

4.5.19 The ZoI for GCN is the Site and ponds within 250m of the Site.

4.5.20 The ZoI for other amphibians is the Site only.

Baseline and Assessment of Impacts and Effects

4.5.21 There are no records for GCN within 1km of the Site provided by the biological records centre.

4.5.22 There are no records of EPSML or licence returns for GCN within 1km of the Site on MAGIC Maps (DEFRA, 2022).

4.5.23 There are no ponds within the boundary of the Site.

4.5.24 There are two ponds within 250m of the Site (See Appendix 3 for a location plan for these ponds in relation to the Site):

- Pond 1 (P1) is located 10m west of the Site within a residential garden area.
- Pond 2 (P2) is located c.245m north of site within an agricultural field.

4.5.25 A Habitat Suitability Index (HSI) Assessment was undertaken on P1 during the Site visit from within the boundary of the Site.

Table 4. P1 -Results of the Habitat Suitability Index for Great Crested Newts

Factor	Result	HSI Score
Location	A	1.00
Area	100m2	0.20
Permanence	Dries Annually	0.10
Water Quality	Moderate	0.67
Shade	20%	1.00
Waterfowl	Absent	1.00
Fish	Absent	1.00
Pond Count	16	1.00
Terrestrial Habitat	Moderate	0.67
Macrophytes	20%	0.50

4.5.26 The HSI for Pond 1 returned a score of 0.58 with **below average** suitability to support GCN.

4.5.27 Access to P2 was not permitted during the survey. The pond is located on the edge of the 250m radius from the Site and is poorly connected to the Site with a busy road between, so it is not considered the Proposed Development will have any significant impact on this waterbody and any populations of GCN associated with it. This pond has therefore not been brought forward for further assessment.

4.5.28 The Site supports suitable habitat for GCN and other amphibians via the hedgerow and scrub. Although it is considered sub-optimal to support GCN, given the close proximity of P1 to the Site there is potential for GCN and other amphibian species to be utilising these habitats on Site (if present within P1).

4.5.29 The habitats with suitability to support GCN are to be retained and even enhanced under the Proposed Development with the exception of the very small area of bramble scrub within the grassland. It is not expected that any significant effects to GCN populations will occur as a result of the Proposed Development.

4.5.30 While it is unlikely to have a significant effect on GCN populations, the construction phase of the Proposed Development may have an adverse effect on individuals utilising the Site.

4.5.31 There is risk of breach of section 9 of The Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981) in relation to the killing or injury and/or destroying, obstructing access to or disturbing an animal while in, a structure used for shelter or protection. There is also risk of breach under

section 3 of The Conservation of Habitats and Species Regulations 2019 (HMSO, 2019) in relation to killing, injury, disturbance and/or damaging or destroying a breeding or resting site of a protected species.

4.5.32 Further surveys are recommended to ascertain whether GCN are present within P1, and mitigation measures will be recommended in a separate report as necessary.

Hedgehog

ZoI

4.5.33 The ZoI for hedgehog is considered to be the Site only as this is the only likely area where impacts to hedgehog may occur as a result of the Proposed Development.

Baseline and Assessment of Impacts and Effects

4.5.34 There are nine records for hedgehog within 1km of the Site. The closest records were c.0.8km northwest and southeast of the Site, recorded in 2019 and 2015.

4.5.35 The Site supports suitable foraging and shelter habitat for hedgehog. It is unlikely that important populations of hedgehog are present at the Site due to the small areas of suitable habitats. The Site is therefore unlikely to be ecologically important for hedgehog.

4.5.36 The Proposed Development has the potential to adversely affect individual hedgehog that may use the Site via direct impacts from machinery or becoming trapped in excavations. This effect is unlikely to be significant, however precautionary measures have been recommended to reduce the likelihood of potential impacts occurring to a negligible level.

4.5.37 The edge habitat (hedgerows and the majority of the scrub) is to be retained and even enhanced as part of the Proposed Development, therefore, there will be no overall loss of suitable hedgehog habitat in the local area.

Invertebrates

ZoI

4.5.38 The ZoI for invertebrates is considered to be the Site only as this is the only likely area where impacts to invertebrates may occur as a result of the Proposed Development.

Baseline and Assessment of Impacts and Effects

4.5.39 There are no records for protected or notable invertebrates within 1km of the Site.

4.5.40 The Site supports relatively low botanical species diversity, and whilst common invertebrate species likely use the plant species present at the Site as food, larval and egg-laying plants, the likelihood of red data book species or other notable species being present at the Site is negligible.

4.5.41 The Site is therefore unlikely to be important for invertebrates.

Reptiles

ZoI

4.5.42 The ZoI for reptiles is considered to be the Site only as this is the only likely area where impacts to reptiles may occur as a result of the Proposed Development.

Baseline and Assessment of Impacts and Effects

4.5.43 There are five records for reptiles within 1km of the Site. Species include grass snake (*Natrix natrix*) and slow worm (*Anguis fragilis*). The closest record was for grass snake c.0.7km northwest of the Site in 2011.

4.5.44 The mixed scrub, bramble scrub and areas of the neutral grassland where the sward height is relatively tall and somewhat tussocky, provides suitable habitat for common reptiles. The majority of the site consist of the neutral grassland, with areas of scrub restricted to the borders. Given the historical management strategy of mowing the grassland annually preventing a more complex and varied habitat to form, and effectively returning its suitability for reptiles to negligible, it is not expected that the habitat on Site is suitable to support a significant population of reptiles.

4.5.45 The habitats with suitability to support common reptiles are to be retained and even enhanced under the Proposed Development with the exception of the very small area of bramble scrub within the grassland. The inclusion of the solar panels will result in an increased level of shading on Site, however this is restricted to the grassland in the centre of the Site and it is not expected that it will have a significant effect on reptiles ability to bask. It is not expected that any significant effects to common reptile populations will occur as a result of the Proposed Development.

4.5.46 While it is unlikely to have a significant effect on reptile populations, the construction phase of the Proposed Development may have an adverse effect on individuals utilising the Site.

4.5.47 Production of a method statement for common reptiles is required in order to outline methods to avoid the killing and/or injury of individual reptiles during the construction phase of the Proposed Development.

Wild birds

ZoI

4.5.48 The ZoI for wild birds is the Site only, as this is the only area where impacts to wild birds may occur as a result of the Proposed Development.

Baseline and Assessment of Impacts and Effects

4.5.49 There are 788 records for birds within 1km of the Site. Species include:

- Barn owl (*Tyto alba*)
- Corn bunting (*Miliaria calandra*)
- Curlew (*Numenius arquata*)
- Fieldfare (*Turdus pilaris*)
- Grasshopper warbler (*Locustella naevia*)
- Greenfinch (*Carduelis chloris*)
- House martin (*Delichon urbica*)
- Lapwing
- Lesser redpoll (*Acanthis cabaret*)
- Linnet (*Carduelis cannabina*)
- Mistle thrush (*Turdus viscivorus*)
- Skylark (*Alauda arvensis*)
- Spotted flycatcher (*Muscicapa striata*)
- Starling (*Sturnus vulgaris*)

- Swift (*Apus apus*)
- Tree pipit (*Anthus trivialis*)
- Tree sparrow (*Passer montanus*)
- Whinchat (*Saxicola rubetra*)
- Willow tit
- Yellow wagtail (*Motacilla flava*)

4.5.50 The closest record was for willow tit c.0.28km west of the Site in 2019.

4.5.51 The Site supports suitable nesting habitat for wild birds via neutral grassland, hedgerows, mixed scrub and associated trees. Two active pigeon nests (Labelled TN2 and TN3 on the habitat plan in Appendix 2) were observed during the Site visit in a single hawthorn tree within the neutral grassland and the area of mixed scrub at the south-west of the Site.

4.5.52 The Site is unlikely to support important populations of wintering, breeding or migratory bird species due to the type of habitats present, the presence of more favourable habitat in the surrounding area (especially to the east), and the relatively small size of the Site.

4.5.53 There is a risk of a breach of Section 1 of the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981) in relation to damage to/destruction of bird nests and their eggs if mixed scrub vegetation removal is undertaken during the nesting bird season. Mitigation measures have been proposed to reduce the risk of a breach of legislation to a negligible level.

4.5.54 It is unlikely that the Proposed Development will result in significant adverse ecological effects to wild birds, however the potential for a breach in legislation will require mitigation which is detailed within this report.

Protected plants

ZoI

4.5.55 The ZoI for protected plants is the Site only, as this is the only area where impacts to protected plants may occur as a result of the Proposed Development.

Baseline and Assessment of Impacts and Effects

4.5.56 There are no records of protected or notable plants within 1km of the Site.

4.5.57 Due to the habitats on Site, it is not likely to support protected or notable plant species. No protected or notable plant species were observed at the Site during the field survey.

Invasive Species

4.5.58 There are records of invasive species within 1km of the Site. Species include:

- Japanese knotweed (Fallopia japonica)
- Himalayan balsam (*Impatiens glandulifera*)
- Cotoneaster sp
- Signal crayfish (*Pacifastacus leniusculus*)
- Mink (*Neovison vison*)

4.5.59 No invasive non-native species were observed on Site during the survey.

4.5.60 It is unlikely, given the habitats at the Site, the mink or signal crayfish would be present within or

adjacent to the Site.

4.5.1 It is an offence to plant or otherwise cause to grow invasive non-native plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (HMSO, 1981). If any of the above species of plant should be found to have spread to the Site advice should be sought from a competent ecologist and the plant species appropriately and legally removed and disposed of.

5. Ecological Constraints and Opportunities

5.1 Key Constraints to Design

5.1.1 Key ecological considerations at the Site, which require further assessment or survey include:

- P1 has *below average* suitability to support GCN but is well connected to suitable terrestrial habitat for GCN on Site which may be impacted during the construction phase of the Proposed Development
- The Site has suitable habitat to support common reptiles which may be impacted during the construction phase of the Proposed Development.

5.2 Further Surveys Required

GCN

5.2.1 P1 has *below average* suitability to support GCN and as such must be subject to a presence/likely absence survey, to comprise an eDNA survey which can be undertaken between mid-April and July.

5.2.2 Further surveys may be required if the eDNA survey shows presence of GCN within P1 comprising of six surveys, between mid-March and June, of the pond to determine population size.

5.2.1 Appropriate measures for avoidance, mitigation and/or compensation should be provided, if necessary, once the surveys have been carried out and the results analysed.

5.3 Other Mitigation Requirements

Reptile

5.3.1 Suitable habitat for common reptiles is present on Site and as such must be subject to production of a method statement for common reptiles is required in order to outline methods to avoid the killing and/or injury of individual reptiles during the construction phase of the Proposed Development.

Hedgehog

5.3.2 It is possible that individual hedgehog may be impacted by Site clearance and excavation works (injury/death and trapping respectively). As a precautionary measure, should mixed scrub be required to be cleared at the Site, this must be checked for hedgehog immediately prior to removal to reduce the likelihood of adverse effects to this species.

Wild Birds

5.3.3 No further surveys for breeding, migratory or wintering birds are required at the Site.

5.3.4 Birds and their nests are legally protected (HMSO, 1981), and many species are listed as Species of Principal Importance (HMSO, 2006). Priority bird species are also afforded protection in planning through national (Department for Communities and Local Government, 2021) and local planning policy.

5.3.5 If the removal of the hedgerows, mixed/bramble scrub and associated trees or neutral grassland is required on Site to facilitate the Proposed Development, it should avoid the nesting bird season (March to September inclusive) or be checked by a suitably qualified ecologist immediately prior to clearance to check for nesting birds if undertaken during the nesting season.

5.3.6 The netting of any suitable bird nesting habitat should be prohibited (CIEEM & RSPB, 2019).

Bats

5.3.1 Any lighting implemented during the construction phase as part of the Proposed Development must be kept to a minimum and directed away from the areas of hedgerow and scrub to avoid any potential impacts to commuting and foraging bats utilising the Site.

5.3.2 Any new lighting required as part of the Proposed Development must be designed in accordance with the Bat Conservation Trust and Institute of Lighting Professionals guidance (BCT, ILP &, 2018).

5.4 Opportunities for Enhancement

5.4.1 The Proposed Development should include the planting of a wide-range of native, shade tolerant species (such as red campion (*Silene dioica*), perennial ryegrass and red fescue), including nectar and pollen-rich species, to attract invertebrate prey for a variety of animals in the local area, which will enhance the Sites biodiversity. An example of a seed mix is the Emorsgate shade tolerant seed mix EW1

5.4.2 The Proposed Development should include the planting of native species-rich hedgerow along the east and south of the Site to further extend this priority habitat and the ecological benefits it provides. Species should consist of native trees including hawthorn, blackthorn, wych elm (*Ulmus glabra),* holly (*Ilex aquifolium*) and hazel (*Corylus avellana*).

6. Conclusion

6.1.1 Further surveys for protected species are considered to be necessary in respect of the Proposed Development and subsequent planning application. These include;

- Presence/likely absence survey for GCN in P1.

6.1.2 Production of a method statement for common reptiles is required in order to outline methods to avoid the killing and/or injury of individual reptiles during the construction phase of the Proposed Development.

6.1.3 Avoidance and good practice construction measures for hedgehogs, bats and nesting birds are necessary to prevent harm to these species and potential breach of legislation.

6.1.4 Planting recommendations have been provided to enhance the biodiversity at the Site post development.; however, specific recommendations will be detailed once robust details of the Proposed Development are available.

References

Barnsley Metropolitan Borough Council. (2019). *Barnsley Local Plan.* Barnsley Metropolitan Borough Council.

BCT, ILP &. (2018). *Bats and artificial lighting in the UK - Bats and the Built Environment series.* London: Bat Conservation Trust and Institute of Lighting Professionals.

Butcher, B., Carey, P., Edmonds, R., Norton, L., & Treweek, J. (2020). Retrieved from The UK Habitat Classification Version 1.1: http://www.ukhab.org/

CIEEM & RSPB. (2019). *CIEEM and RSPB advise against netting on hedges and trees.* CIEEM.

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

CIEEM. (2018). *Guidelines for Preliminary Ecological Appraisal, 3rd Edition.* Winchester: Chartered Institute of Ecology and Environmental Management.

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

DEFRA. (2022). *Multi Agency Geographic Information for the Countryside*. Retrieved from MAGIC Interactive Map: http://magic.defra.gov.uk/MagicMap.aspx

Department for Communities and Local Government. (2021). *National Planning Policy Framework.* London: Department for Communities and Local Government.

Department for Communities and Local Government. (2021). *National Planning Policy Framework.* London: Department for Communities and Local Government.

Google Earth Pro. (2022). Google.

HMSO. (1981). The Wildlife and Countryside Act 1981 (as amended). London, UK: Her Majesty's Stationary Office.

HMSO. (1992). *The Protection of Badgers Act 1992.* Her Majesty's Stationery Office.

HMSO. (2006). The Natural Environment and Rural Communities Act. London, UK: Her Majesty's Stationary Office.

HMSO. (2017). The Conservation of Habitats and Species Regulations 2017 (as amended). London, UK: Her Majesty's Stationary Office.

HMSO. (2019). *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations.* London, UK: Her Majesty's Stationary Office.

Natural England. (2017). *Evidence review of the impact of solar farms on birds, bats and general ecology (NEER012).*

RHS. (2019). *Perfect for Pollinators: Garden Plants.* London: Royal Horticultural Society.

SBRC, S. B. (2022).

Stace, C. (2010). *New Flora of the British Isles 3rd ed.* Cambridge: Cambridge University Press.

Appendix 1 – Site Location Plan (Google Earth Pro, 2022)



Appendix 2 – UK Habitat Classification Plan



Scale: 1:1000 @ A3

N

- Site Boundary
- g3c - other neutral grassland
- h2a - hedgerow (priority habitat)
- h3h -mixed scrub
  h3d - bramble scrub
- Target Note

Date: 07/10/22

Client: Terence O'Rouke

Project: Premier Foods Bakery, Carlton

Title: UK Habitat Classifcation Plan

Map file reference	Plan No.
211006 1532 HAB V1	E001

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Appendix 3 – Pond Location Plan



Scale: 1:3000 @ A3

N

Site Boundary

250m Buffer

Ponds

Date: 07/10/22

Client: Terence O'Rourke

Project: Premier Foods Bakery, Carlton

Title: Ponds within 250m of the Site

Map file reference	Plan No.
221007 1532 POND V1	E001

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Appendix 4 - Local Planning Policy Excerpts (Barnsley Metropolitan Borough Council, 2019)

Policy BIO1 Biodiversity and Geodiversity

Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:

Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.

Maximising biodiversity and geodiversity opportunities in and around new developments.

Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors.

Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.

Protecting ancient and veteran trees where identified.

Encouraging provision of biodiversity enhancements.

Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.

Development which adversely effects a European Site will not be permitted unless there is no alternative option and there are imperative reasons of overriding public interest (IROPI).

Appendix 5 - Site Photographs

Figure 1. Area of mixed scrub at the southern boundary of the site looking east



Figure 2. Area of neutral grassland looking north across Site



Figure 3. Hedgerow on the eastern boundary of Site



Figure 4. Bramble scrub at the north-western boundary of the Site



Figure 5. Pond P1 on adjacent land



Figure 6. Early mature ash to the west of Site



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