

# PRELIMINARY ECOLOGICAL APPRAISAL REPORT

# **FOR**

# FLAMBEAU EUROPLAST, THANET

Date of report	9 <sup>th</sup> May 2023
Date of survey	25 <sup>th</sup> April 2023
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Corylus reference	23044

## **CORYLUS ECOLOGY**

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#### **SUMMARY**

A Preliminary Ecological Appraisal has been undertaken at Flambeau EuroPlast, Thanet in April 2023.
 The proposals include the construction of up to 100 residential units with associated hard and soft landscaping to include new access routes.

- No rare or uncommon botanical species or habitats have been recorded. No further surveys in this
  regard have been recommended.
- Contoneaster horizontalis is an invasive species listed on Schedule 9 of the Wildlife and Countryside
   Act, meaning measures should be taken to prevent this species spreading and growing in the wild.
- A reptile presence/likely absence survey is required. This can be undertaken between April and October. If reptiles are present, a mitigation strategy will need to be devised.
- Recommendations have been made regarding the timing of vegetation works in relation to breeding birds: this should be undertaken outside of the breeding bird season, limiting this work to between September and February.
- No further surveys have been recommended for any other protected species.
- Advice has been given to enhance biodiversity within the Site, including native planting and the installation of bat and bird boxes.

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## 1.0 INTRODUCTION

1.1 Corylus Ecology has been commissioned by Flambeau EuroPlast Ltd to undertake a Preliminary Ecological Appraisal at a site at Flambeau EuroPlast, Thanet, Kent hereinafter referred to as 'the Site'.

- 1.2 The Site is set in an urban environment within the Ramsgate, Kent located 850m to the west of Ramsgate train station. The OS grid reference at Site centre is TR 36318 65546. The Site is divided into two district areas with the eastern section dominated by a large warehouse and hardstanding and the western sections dominated by colonising grassland, scrub and tall ruderal habitats. The total area of the Site is approximately 3.3ha. The wider surrounding area is dominated by urban development with industrial land and carparking to the west, Manston Road to the north and east and a railway line and housing to the south.
- 1.3 The proposals include the construction of up to 118 residential units with associated hard and soft landscaping to include new access routes. The details of the proposed development are shown in Figure 3 drawing 'CDP Architecture, proposed Site Plan OL\_TH\_0187.
- 1.4 The survey was undertaken by Corylus Ecology on 25<sup>th</sup> April 2023. The Preliminary Ecological Assessment (PEA) includes a Phase 1 Habitat Survey, which provides information relating to the habitats within the Site, and a Protected Species Assessment, which identifies potential for protected species and, if apparent, use by protected species. The survey informs the need for any further protected species surveys. The Preliminary Roost Assessment looks for evidence of and potential for roosting bats during daylight hours.

## Scope of Survey

- 1.5 The objectives of the survey were to:
  - Classify and map the habitats within the Site according to those within the Phase 1 manual;
  - Determine the potential for protected species to occur within the Site, including an assessment of the buildings and trees for potential to support bats;
  - Identify key ecological constraints to allow early avoidance or minimisation of ecological effects through appropriate design;
  - Suggest appropriate recommendations and further surveys where necessary; and,
  - Suggest measures to maintain and enhance biodiversity.
- 1.6 This report has been prepared for the exclusive use of Flambeau EuroPlast Ltd. No part of this report should be considered as legal advice.

1.7 Survey data has a lifespan, please see Appendix 3 for guidance on the age range of survey data and advice on when update surveys would be required.

## 2.0 METHODOLOGY

## 2.1 Preliminary Desk Study

2.1.1 A search within 3km of the Site was undertaken for designated areas, priority habitats, European Protected Species Mitigation (EPSM) licences and great crested newt *Triturus cristatus* (GCN) records using the Multi-Agency Geographic Information for the Countryside (MAGIC) interactive mapping service (Defra, 2023).

## 2.2 Preliminary Ecological Appraisal

Phase 1 Habitat Survey

2.2.1 The Site was subject to a Preliminary Ecological Appraisal (PEA) on 25<sup>th</sup> April 2023. This survey included a Phase 1 Habitat Survey. The habitats present within the Site were mapped in accordance with the 'Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit' (JNCC, 2003). Habitat areas and features of topographical and/or ecological interest were described in the form of target notes. These were later used to create botanical species lists by target note area and also to create a colour coded Phase 1 Habitat Map. All nomenclature follows Stace (2019). Non-native and invasive species were also identified and mapped where appropriate.

## Survey Constraints

2.2.2 The PEA survey also included the mapping of invasive botanical species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), as well as those classed as rare or declining. However, some species are seasonally constrained, and therefore may not be visible on a single site visit. Likewise, the presence of densely vegetated habitats may, in some cases, restrict access and non-native botanical species may not be recorded in these areas.

## Protected Species Assessment

2.2.3 The PEA included an assessment of the potential for the Site to support protected species. This type of survey aims to assess the potential for protected species to occur, due to the habitats present and does not include any species-specific survey methods designed to demonstrate whether the Site is in fact used by such species. The exception is badgers *Meles meles* as field signs associated with this species can be searched for, including latrines, holes, pushes, paths and hairs.

#### Preliminary Roost Assessment

2.2.4 A preliminary roost assessment was undertaken by Alexander Watkinson (2016-23339-CLS-CLS) of Corylus Ecology. The external survey consisted of an assessment of areas for potential for bats to roost; these include any gaps in soffits, gable ends or holes in brickwork. A search for evidence, such as droppings and staining immediately below potential roost areas, and for droppings around the base of the buildings, such as on windowsills, was also undertaken.

2.2.5 Internally evidence of bats was searched for, including droppings, staining and bats themselves. The suitability of any voids or cavities were assessed and access points from the outside were looked for, including holes at the eaves, in the walls and roof. Structures are placed into four categories of potential according to the Bat Conservation Trust guidelines: Negligible, Low, Moderate and High as detailed in Table 1 below (Collins, 2016). The survey also included a search for evidence of breeding birds.

#### Bat Tree and Habitat Assessment

- 2.2.6 As part of the protected species assessment, a ground level investigation of all suitable trees was carried out to identify bat potential. Bats may use any crack or hole (such as woodpecker holes), splits or flaking bark and ivy (JNCC, 2004). Bats will also use different roosts at different times of the year; therefore, it can be difficult to confirm bat roosts in trees. Field signs include dark streaking and droppings under access points. However, even where bats are known to occur, such signs are not always evident. Trees were also noted if they supported ivy *Hedera helix*. Ivy can do one of two things: very old, dense ivy can provide cavities for bats between the thick interwoven stems and the tree trunk, or it can conceal features in the tree itself.
- 2.2.7 In addition, the on-site habitats were assessed for their suitability to support foraging and commuting bats. Buildings, trees and habitats were placed into one of four categories as described below (Collins, 2016):

Table 1 - Bat Habitat & Roost Assessment Criteria

Negligible	Habitat, tree or structure with negligible features likely to be used by roosting, foraging or commuting bats.
Low	A structure 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 for shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).  A habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.
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 which are unlikely to support a roost with high conservation status.  Continuous habitat connected to the wider landscape that could be used by bats for commuting and foraging, such as lines of trees and scrub or linked back gardens.

## 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.

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, hedgerows, lines of trees and woodland edge.

## 3.0 RESULTS

## 3.1 Desk Study

Statutory Designations

- 3.1.1 There are six Statutory Designations within a 3km radius of the Site, these are listed below.
  - Thanet Coast and Sandwich Bay RAMSAR located 1.2km to the south
  - Thanet Coast and Sandwich Bay Special Protection Area (SPA) located 1.2km to the south
  - Sandwich Bay Special Area of Conservation (SAC) located 1.2km to the south
  - Thanet Coast SAC located 1.2km to the south
  - Sandwich and Pegwell Bay NNR located 1.1km to the south
  - Sandwich Bay to Hacklinge Marshes SSSI located 1.1km to the south

Ancient Woodland

3.1.2 There are no areas of ancient woodland located within 3km of the Site.

Priority Habitats

3.1.3 Under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, an inventory of Priority Habitats was devised. This is a list of habitats and species of principal importance for the conservation of biodiversity in England. No habitats are present within or adjacent to the Site. The nearest is a section of deciduous woodland located 260m to the west. There are no others located within 1km of the Site.

European Protected Species Mitigation Licences and Protected Species Records

- 3.1.4 There are no records of EPSM licences from a 3km radius of the Site.
- 3.1.5 There are no results from GCN Class Survey Licence Return records occurring within 3km of the Site.
- 3.1.6 There are no records from the GCN Pond Surveys between 2017 2019 (dates provided by Natural England) within 3km of the Site.
- 3.1.7 Records show no records of great crested newt (*Triturus cristatus*) within 1km of the development site.

  Data obtained from OS maps and online mapping tools indicate there are no water bodies within 250m or 500m of the Site.
- 3.1.8 There are KMBRC records of common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*) present within 1km of the development site. Common lizard has been recorded 980m south-west of the Site.

- 3.1.9 Records show that four bat species have been recorded within 3km of the survey site; serotine (*Eptesicus serotinus*), Nathusius' pipistrelle (*Pipistrellus nathusii*), common pipistrelle (*P. pipistrellus*) and soprano pipistrelle (*P. pygmaeus*). A *Pipistrellus sp.* maternity roost with a peak count of 17 animals has been recorded 1.1km from the site in 1988. No other bat species maternity roosts were recorded within 3km of the development site.
- 3.1.10 The KMBRC show no records of hazel dormouse (*Muscardinus avellanarius*) within 1km of the development site. There are very few records of hazel dormice within the Thanet area.
- 3.1.11 The records show no badger (*Meles meles*) within 1km of the development site.

## 3.2 Phase 1 Habitat Survey

- 3.2.1 The Site comprises of two distinct areas, an eastern and western habitat area. The eastern section of the Site is dominated by a large industrial building and surrounding hardstanding. The vegetation present includes small areas of managed grassland and a tree, scrub and hedgerow forming the northern, southern and western boundaries. A patch of scrub growth is situated within the eastern corner of this land parcel.
- 3.2.2 The western section is dominated by colonising grassland, tall ruderal and scrub. Tree and hedgerows form the northern, western and southern boundaries. The habitats present within the Site are shown on Figure 1, with further detail provided by way of specific target notes: these are denoted by the letters 'TN'. Photographs of selected target notes are provided within Figure 2. A full species list including latin plant names is within Appendix 1.

Amenity Grassland – TN1

3.2.2 There are multiple small sections of managed amenity grassland across the eastern section of the Site.
The species within the grassland are common for the habitat type, dominated by grasses such as perennial rye grass with herb species present such as white clover and ribwort plantain.

Tall Ruderal - TN2

3.2.3 The western edge of the western section of the Site is formed by an earth bund overgrown by tall ruderal habitat. The species here are dominated by creeping thistle and common nettle.

Dense Scrub - TN3a and TN3b

3.2.3 The northern boundary of the western sections TN3a is formed by a bank covered by dense scrub. The species are dominated by rowan, hawthorn, garden privet, cotoneaster and dog rose.

3.2.4 The northern, eastern and southern boundaries of the Site of formed by dense scrub dominated by hawthorn with an understorey of ground ivy, teasel, cleavers, Alexander's, ivy, common nettle and bramble.

Scattered Scrub – TN4

3.2.3 The western section of the Site is dominated by scattered scrub. The species here are dominated by hawthorn, dogwood and buddleia.

Ephemeral – TN5

3.2.3 The western section of the Site has large areas of short ephemeral habitat which supports bristly oxtongue, ox-eye daisy, ribwort plantain, yarrow, creeping thistle and common nettle.

Tree Line - TN6

3.2.4 Within the centre of the Site to the south of B1 is a line mature Leyland cypress trees south, with an understorey bedstraw, alexanders, fennel and ox-eye daisy.

Bare Earth - TN7

3.2.5 Within the centre of the western section of the Site and leading to the east is an area of bare earth where vehicle movements have taken place.

Hard Standing – TN8

3.2.5 Surrounding the building and leading into the western section of the Site is hardstanding formed from tarmac and concrete.

## 3.3 Protected Species Assessment

**Amphibians** 

3.3.3 With regards to great crested newt (GCN), there are no waterbodies located within the Site boundary or known to be located within 500m of the Site boundaries from OS maps and other online mapping services.

Reptiles

3.3.5 The eastern section of the Site contains negligible suitable habitat for reptile species, being dominated by buildings and hardstanding with small, isolated areas of managed grassland. The western section of the Site does provide suitable habitat for use by reptiles with scattered and dense scrub edges as well as ephemeral habitat. There is also suitable adjacent reptile habitat to the south along the train line and to the north where there is further scrub habitat.

Badger

3.3.6 There was no evidence of badger, such as latrines, setts, tracks or snuffle holes, recorded during the survey, within or immediately adjacent to the Site.

**Dormice** 

3.3.7 The Site provides limited suitable habitat for dormice as it is dominated by built environment and shorter colonising habitats. The Site is isolated within the wider landscape, set within an urban environment with roads, houses and industrial space against all boundaries and no links to areas of larger suitable habitat such as woodland.

Breeding Birds

3.3.8 The mature vegetation of trees and dense scrub at the boundaries of the Site contains suitable habitat for nesting birds. The warehouse building B1 is not suitable for use internally due to use and construction methods, however externally it was noted that herring gulls were using the roof to rest and shelter with the possibility of some locations being suitable for nesting sites.

#### 3.4 Bat Assessment

Overview

3.4.1 There is a single structure within the Site that has been surveyed as part of the bat building assessment of the Site. Building B1 is a large modern and active warehouse and office structure that dominates the eastern section of the Site. The location of the building and layout are shown within Figure 1 and annotated pictures of the building are within Figure 2.

Building B1 – Office and Warehouse

- 3.4.2 The building is a modern construction warehouse with attached offices, the external walls are built from brick with sections of metal and glass in warehouse areas. The roof is a mix of flat and pitched sections and is constructed from corrugated metal sheet roof panels and skylights. Internally the building is used as office space and a manufacturing warehouse that is in constant use resulting in a well-lit, noisy environment. There are no void or attic spaces within the structure. No evidence of bat use was found whilst inspecting the structure.
- 3.4.3 Building B1 is considered to have 'Negligible' suitability for bats under the Bat Conservation Trust Good Practice Guidelines (Collins, 2016).

Bat Tree Assessment

3.4.4 All suitable trees within and adjacent to the Site boundary were assessed for their potential to support day roosting bats. The only mature trees are the line of Leyland cypress trees in the centre, these trees

have been assessed and these trees have 'Negligible' suitability for bats under the Bat Conservation Trust Good Practice Guidelines (Collins, 2016). The remaining vegetation across the Site is too immature or small to support potential roost features for bats.

## Bat Habitat Assessment

3.4.5 The Site contains limited suitable bat foraging habitat which is confined to the boundaries; ; the Site centre is either built environment or short ephemeral habitats. The boundary habitats within the Site will be retained. The Site is well-lit by light sources from both within the Site as well as surrounding areas such as the Tesco car park to the west. The Site has been assessed to be of 'Low' suitability for foraging and commuting bats under the BCT guidelines (Collins, 2016).

4.0 EVALUATION AND RECOMMENDATIONS

#### 4.1 Overview

4.1.1 A Preliminary Ecological Appraisal has been undertaken at Flambeau EuroPlast, Thanet in April 2023. The proposals include the construction of up to 118 residential units with associated hard and soft landscaping to include new access routes.

## 4.2 Desk Study

4.2.1 The Site falls within the Impact Risk Zone (IRZ) for four designated sites of International Importance within 5km and two statutory designated sites of National Importance within 2km of the development. The construction zone lies 1.2km from the Thanet Coast and Sandwich Bay Ramsar site, Thanet Coast and Sandwich Bay SPA and the Sandwich Bay and Thanet Coast SAC. Due to the scale of the proposals and proximity to protected sites, consultation with Natural England will be required for the scheme.

## 4.3 Phase 1 Habitat Survey

4.3.1 No rare or nationally scarce botanical species were identified within the Site. The Site contains a limited diversity of plant species commonly found in colonising scrub and ephemeral. No further surveys are recommended.

Invasive species

4.3.2 Cotoneaster horizontalis was noted within the Site. Cotoneaster horizontalis is on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) which means is an offence to plant or cause this species to grow in the wild. It should be noted that any clearance of a species currently listed on Schedule 9 would require appropriate disposal, including plant material and contaminated soil.

## 4.4 Protected Species Assessment

**Amphibians** 

4.4.1 There are no waterbodies within the Site, and no mapped waterbodies located within 500m of the Site. The desk study undertaken also showed no local records of GCN presence within 3km of the Site. No further surveys are recommended.

Reptiles

4.4.2 The Site supports suitable reptile habitat within the western section of the Site only, in the form of the scrub, ephemeral and tall ruderal vegetation that provides opportunities for foraging, rest and shelter. As the majority of the suitable reptile habitat will be impacted by the proposals, a reptile presence/likely absence survey will be required.

4.4.3 The reptile survey would entail setting out heat traps (squares of roofing felt) which reptiles use to thermo-regulate. Froglife (1999) recommend that a minimum of 10 heat traps are set out per hectare, however the density set is also in relation to the amount of suitable reptile habitat within the Site. Once set, the heat traps are left to bed in for a few days and are then checked on seven occasions in suitable conditions. The number and species of reptile and breeding conditions would be recorded. The optimal survey period for reptiles is April – October and, ideally, surveys should be spread out evenly over this time, excluding prolonged periods of high temperatures when reptiles are less likely to use the heat traps. If reptiles are found to be present, a mitigation strategy will need to be devised: this will involve retaining any reptile population onsite in a dedicated receptor area.

Badger

4.4.4 No evidence of badger was found on Site and no further surveys are required.

**Dormice** 

4.4.5 No suitable dormouse habitat is present within the Site, no further surveys are required.

Breeding Birds

- 4.4.6 The mature vegetation within and surrounding the Site and roof of the building B1 within the Site boundaries are suitable for use by breeding birds. All wild birds, including eggs and chicks, are protected against injury or killing and their nests are protected against damage or destruction when in use under the Wildlife and Countryside Act (1981) as amended.
- 4.4.7 It is therefore recommended that any cutting back or removal of boundary vegetation or trees as well as the demolition of the building is undertaken outside of the breeding bird season, limiting this work to September-February inclusive. If these dates do not coincide with clearance work, then it is recommended that the vegetation is checked by a suitably experienced ecologist before the works commence. If nests are found, works in the vicinity will need to be delayed until all of the chicks have fledged, and the nest is no longer in use.

Bat Building Assessment

4.4.8 The assessment did not reveal any evidence of bats within the structure surveyed (B1). This building has been assessed as having 'Negligible' potential for bats due to the construction, materials and the lack of roosting points for both crevice and void-dwelling bat species. No further surveys for bats for the buildings are required.

#### Bat Tree Assessment

4.4.9 A bat tree assessment of all suitable trees within and adjacent to the Site was undertaken. No trees within the Site have suitable features for bat use and no further surveys are required.

#### Bat Habitat Assessment

- 4.4.10 The Site has been assessed to be of 'Low' suitability for foraging and commuting bats under the BCT guidelines (Collins, 2016). The Site does contain limited suitable bat foraging habitat at the Site boundaries. It is considered that the proposals will not have a detrimental impact on the local bat population due to the retention of the mature boundary vegetation.
- 4.4.11 The greatest impact on bats in this instance will be a potential increase in artificial lighting in the area. No further bat activity surveys are required, but a sensitive lighting strategy should be followed to minimise the impacts of the proposals on the local bat population. General guidance regarding artificial lighting is provided in Appendix 2.

## 4.5 Recommendations with regard to NPPF

- 4.5.1 The National Planning Policy Framework (NPPF) sets out planning policies on protection of biodiversity and geological conservation through the planning system. Section 15, paragraph 174, of the NPPF states the following:
  - "Planning policies and decisions should contribute to and enhance the natural and local environment by:
  - "a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
  - "b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
  - "c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
  - "d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".
- 4.5.2 Regarding the NPPF, it is recommended that the general measures detailed below are included in the scheme to maintain and enhance biodiversity.
  - The existing boundaries of the Site should be retained, protected and enhanced using protective fencing and signage.
  - There is proposed new boundary planting within the Site and it is recommended that it consists of generous native and species-rich planting. Suitable species would include; hornbeam Carpinus

betulus, beech Fagus sylvatica, common alder Alnus glutinosa, hawthorn Crataegus monogyna, hazel Corylus avellana, blackthorn Prunus spinosa, rowan Sorbus aucuparia, wild service-tree Sorbus torminalis, spindle Euonymous europaeus, field maple Acer campestre, dog-rose Rosa canina, guelder rose Viburnum opulus and honeysuckle Lonicera periclymenum. Native evergreen species such as holly llex aquifolium and yew Taxus baccata would be useful additions as they will provide year-round foliage.

- It is recommended that a range of nectar-rich plants are considered for any landscape planting around the Site. This would benefit local wildlife by providing nest building opportunities and food sources for small mammals, birds and invertebrates. Species such as lavenders, heathers and honeysuckles are good nectar sources for bumblebees and other insects, and honeysuckle can also be used by birds to forage and nest in. Flowering plants should be made available for as long as possible throughout the year by planting a combination of plants which flower during spring, summer and late summer. Non-native species such as laurel, Leyland cypress, bamboo and rhododendron should be avoided.
- 4.5.3 The following should be installed in order to enhance the Site and the surrounding area for breeding birds and bats:
  - Due to lack of mature trees within the Site, six general purpose bird boxes are recommended for
    installation on the new buildings along the southern edge of the Site. Nest boxes that can be
    installed into or onto structures such as the woodstone build-in hidden nest box, build-in woodstone
    half open, woodstone single chamber or Schwegler 1HE brick bird box would be suitable.
  - Two terraces for house sparrow Passer domesticus should be incorporated into the soffits when the new buildings are being constructed by cutting away a 32mm slot in the back of the soffit board against the external wall. Sparrows are colonial, so three of these slots should be created in at least two separate locations. Alternatively, ready-made boxes such as the Schwegler 1SP Sparrow Terrace are widely available. They should be installed during the construction process in groups beneath the eaves of the buildings and they should be placed out of direct sunlight, preferably on the eastern elevations and at least 3m above ground level. They should not be placed directly above any windows or doors.
  - Four mounted bat boxes, such as the Schwegler 2F bat box or similar should be installed on the
    retained alder trees within the Site's south-east corner at 2m or higher and on the east or south
    facing side.

## 5.0 CONCLUSIONS

- 5.1 A Preliminary Ecological Appraisal has been undertaken at Flambeau EuroPlast, Thanet in April 2023. The proposals include the construction of up to 118 residential units with associated hard and soft landscaping to include new access routes.
- 5.2 No rare or uncommon botanical species or habitats have been recorded. No further surveys in this regard have been recommended.
- 5.3 Contoneaster horizontalis is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act, meaning measures should be taken to prevent this species spreading and growing in the wild.
- 5.4 A reptile presence/likely absence survey is required. This can be undertaken between April and October.

  If reptiles are present, a mitigation strategy will need to be devised.
- 5.5 Recommendations have been made regarding the timing of vegetation works in relation to breeding birds: this should be undertaken outside of the breeding bird season, limiting this work to between September and February.
- 5.6 No further surveys have been recommended for any other protected species.
- 5.7 Advice has been given to enhance biodiversity within the Site, including native planting and the installation of bat and bird boxes.

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#### Note species in red listed under Schedule 9 in England and Wales

Species	Latin Name	TN1	TN2	TN3a	TN3b			TN6	TN7			
	2 1 1 1					TN4	TN5	1140	1147	-	-	Coun
Alexanders	Smyrnium olusatrum			✓	✓		<b>✓</b>					
annual meadow-grass	Poa annua	✓					✓					
olackthorn	Prunus spinosa			<b>✓</b>	✓	✓						
oramble	Rubus fruticosus sp. agg			✓	✓	✓						
oristly oxtongue	Helminthotheca echioides		✓				✓					
proad-leaved dock	Rumex obtusifolius						✓					
outterfly bush	Buddleja davidii			✓	✓	✓						
Canadian fleabane	Conyza canadensis					✓	✓					
cleavers	Galium aparine		✓				✓	✓				
cock's-foot	Dactylis glomerata	✓	✓									
common ivy	Hedera helix ssp. helix			✓	✓							
common ragwort	Senecio jacobaea						✓					
contoneaster	Contoneaster horizontalis			✓	✓	✓						
creeping cinquefoil	Potentilla reptans	✓										
creeping thistle	Cirsium arvense		✓									
cut-leaved crane's-bill	Geranium dissectum	✓										
dandelion	Taraxacum officinale	✓										
log-rose	Rosa canina			✓	✓	✓						
logwood	Cornus sanguinea					✓						
ennel	Foeniculum vulgare					✓	✓					
garden privet	Ligustrum ovalifolium			✓	✓	✓						
goat willow	Salix caprea			✓								
quelder rose	Viburnum opulus			✓	✓	✓						
nawthorn	Crataegus monogyna			<b>✓</b>	✓	✓						
nemlock	Conium maculatum						✓					
nolly	llex aquifolium			<b>✓</b>								
mperforate St John's-wort	Hypericum maculatum						<b>✓</b>					
eyland cypress	X Cuprocyparis leylandii							✓				
oxeye daisy	Leucanthemum vulgare						<b>√</b>					
perennial rye-grass	Lolium perenne	✓										
petty spurge	Euphorbia peplus					✓	<b>√</b>					
prickly sowthistle	Sonchus asper		✓									
ibwort plantain	Plantago lanceolata	✓	<b>√</b>			✓	<b>√</b>					
spear thistle	Cirsium vulgare		<b>√</b>									
spotted medick	Medicago arabica		✓			<b>√</b>	<b>√</b>					
pringy turf-moss	Rhytidiadelphus squarrosus		<b>√</b>			✓	<b>√</b>					
easel	Dipsacus sp.			1		✓	<b>✓</b>		<u> </u>	1		
vhite clover	Trifolium repens	✓					<b>√</b>					
wild carrot	Daucus carota ssp carota						<b>√</b>					
wood false-brome	Brachypodium sylvaticum			1			<b>✓</b>		<u> </u>	1		
yarrow	Achillea millefolium	✓	✓	1		<b>✓</b>	<b>✓</b>			1		

## **Appendix 2 - Technical Guidance on Artificial Lighting and Bats**

From: Institute of Lighting Professionals (ILP) and Bat Conservation Trust (BCT). 2018. *Guidance Note 8: Bats and Artificial Lighting.* 

Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700 Kelvin) should be adopted to reduce blue light component.</li>
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- Low level or bollard lighting can often cause unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition. Therefore the use of specialist bollard or low-level downward directional luminaires should only be considered if their use is directed by a lighting professional.
- The height of columns should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1 minute) timers.
- As a last resort to minimise, accessories such as baffles, hoods or louvres can be used to reduce light spill
  and direct it only to where it is needed.

Appendix 3 - CIEEM Advice Note on the Lifespan of Ecological Reports and Surveys (April 2019)

Age of Survey Data	Report/Survey Validity
Less than 12 months	Likely to be valid in most cases.
12-18 months	Likely to be valid in most cases with the following exceptions:  • Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe (see scenario 1 example);  • Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment (see scenario 2 example);  • Where country-specific or species-specific guidance dictates otherwise. Report authors should highlight where they consider it likely to be necessary to update surveys within a timeframe of less than 18 months.
18 months to 3 years	A professional ecologist will need to undertake a site visit and may also need to update desk study information (effectively updating the Preliminary Ecological Appraisal) and then review the validity of the report, based on the factors listed below. Some or all of the other ecological surveys may need to be updated. The professional ecologist will need to issue a clear statement, with appropriate justification, on:  • The validity of the report; • Which, if any, of the surveys need to be updated; and • The appropriate scope, timing and methods for the update survey(s). The likelihood of surveys needing to be updated increases with time, and is greater for mobile species or in circumstances where the habitat or its management has changed significantly since the surveys were undertaken. Factors to be considered include (but are not limited to): • Whether the site supports, or may support, a mobile species which could have moved on to site, or changed its distribution within a site (see scenario 1&2 examples); • Whether there have been significant changes to the habitats present (and/or the ecological conditions/functions/ecosystem functioning upon which they are dependent) since the surveys were undertaken, including through changes to site management (see scenario 3 example); • Whether the local distribution of a species in the wider area around a site has changed (or knowledge of it increased), increasing the likelihood of its presence (see scenario 4 example).
More than 3 years	The report is unlikely to still be valid and most, if not all, of the surveys are likely to need to be updated (subject to an assessment by a professional ecologist, as described above).

Chartered Institute of Ecology and Environmental Management (2019). Advice Note On the Lifespan of Ecological Reports and Surveys



Figure 2 - Annotated Photographs







Looking east along northern boundary scrub TN3b

Looking east along northern and eastern boundary scrub TN3b

Looking north along western edge of Site







Looking west along tree line TN6

Looking east across western section of Site TN4/TN5

Looking west along northern boundary scrub TN3a







Looking east along track TN7 and TN5/TN6

Looking west across western section of Site TN4/TN5

Northern and western elevations of B1







Western and southern elevations of B1

Northern elevation of B1

Northern and eastern elevations of B1

