the ecology partnership

Preliminary Ecological Appraisal, Further Species Surveys and Biodiversity Net Gain Assessment

Home Farm, Kemnal Road

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing. Whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date. This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated, only dominant species may be recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 INTRODUCTION

Background

1.1 The Ecology Partnership was commissioned by Selby Capital to undertake a Preliminary Ecological Appraisal (PEA) of land at Home Farm, Kemnal Road, Chislehurst, BR7 6GL, hereafter referred to as the 'site' (Figure 1). As part of the PEA, further species surveys have been undertaken and a Biodiversity Net Gain assessment has been undertaken for the proposed development.

1.2 The key objectives of a PEA (CIEEM 2017) are to:

- Identify the likely ecological constraints associated with a project;
- Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
- Identify the opportunities offered by a project to deliver ecological enhancement.

Site Context

1.3 The site (TQ44987141) includes areas of grassland, amenity garden and hardstanding with hedgerows, a pond and buildings. The site is surrounded by areas of woodland, grassland and residential development.

Figure 1: Site red line boundary.

Description of Proposed Development

1.4 The proposed development includes the various alterations, extensions and demolition of existing dwellings and the construction of a single dwelling and the creation of a vineyard with orchard planting.

Planning Policies

1.5 The site was surveyed to assess its ecological value and to ensure the proposals were compliant with relevant planning policy and legislation. Policy guidance is provided by the National Planning Policy Framework (NPPF 2021) as well as policies from the London Borough of Bromley Local Plan which was adopted in January 2019 and The London Plan. The following policies are considered relevant to ecology, biodiversity and nature conservation:

- Bromley Local Plan 2019:
    - ***Policy 43*** *Trees in Conservation Areas*
    - ***Policy 49*** *The Green Belt*
    - ***Policy 50*** *Metropolitan Open Land*
    - ***Policy 68*** *Development and SSSI*
    - ***Policy 69*** *Development and Nature Conservation Sites*
    - ***Policy 70*** *Wildlife features*
    - ***Policy 71*** *Additional Nature Conservation Sites*
    - ***Policy 72*** *Protected Species*
    - ***Policy 73*** *Development and Trees*
    - ***Policy 74*** *Conservation and Management of Trees and Woodlands*
    - ***Policy 75*** *Hedgerows and Development*
    - ***Policy 78*** *Green Corridors*
    - ***Policy 79*** *Biodiversity and Access to Nature*
- The London Plan 2021:
    - ***Policy G6*** *Biodiversity and access to nature*
    - ***Policy G7*** *Trees and woodlands*

1.6 The Environment Bill received Royal Assent on 9th November 2021 and is now enacted as the Environment Act 2021. Part 6 (Nature and Biodiversity) and Schedule 14 of the Environment Act 2021 inset a new section 90A and Schedule 7A into the Town and Country Planning Act 1990 (TCPA), which contain the provisions requiring mandatory biodiversity net gain for development granted planning permission

pursuant to the TCPA. These provisions are not yet in force, but, once they are brought into effect through implementing legislation, will require developments to provide a biodiversity value post-development that exceeds the predevelopment biodiversity value of the onsite habitats by at least 10%. These provisions are not expected to come into force until November 2023 for new planning applications, so do not apply to this proposed development.

1.7 The site has therefore been surveyed to assess its ecological value and to ensure compliance with national and local plan policies and other relevant nature conservation legislation including; Wildlife and Countryside Act 1981, Natural Environment and Rural Communities Act 2006, and the Conservation of Habitats and Species (EU Exit) Regulations 2019.

1.8 The report has been produced with reference to current guidelines for PEA (CIEEM 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practise for Planning and Development.

2.0 METHODOLOGY

Desktop Study

2.1 A desktop study was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and an internet-based aerial mapping service (maps.google.co.uk) was used to understand the habitats present in and around the site, including identifying habitat linkages and features (ponds, woodlands etc.) within the wider landscape.

2.2 Records of protected/notable species and non-statutory designated sites within 1km of the site were requested from Greenspace Information for Greater London (GiGL). Species records were screened for relevance and age with only those from the last 10 years and those that could occur on site.

Phase 1 Habitat Survey and UKHab

2.3 The site was surveyed on 7th June 2022 by senior ecologists Eddie Selwyn BSc (Hons) MSc QCIEEM and Charlotte Chandler BSc (Hons) MSc QCIEEM. The surveyors identified the habitats present, following the standard 'Phase 1 habitat survey' auditing method developed by the Joint Nature Conservancy Council (JNCC) and the

UK Habitat classification system (UKHab). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010). In addition, the dominant plant species in each habitat were recorded and the potential for the site to support protected species was also assessed. The habitats within the site were also subject to a condition assessment to support a Biodiversity Net Gain assessment.

Table 1: DAFOR Scale Lettering

DAFOR Category	**Letter**
Dominant	D
Abundant	A
Frequent	F
Occasional	O
Rare	R

Great Crested Newt eDNA Survey

2.4 A single pond (W1, see Figure 3 below) is located within the site and a pond is located adjacent to the southeast of the site (W2). Both ponds were subject to an environmental DNA (eDNA) survey on 7th June 2022 to determine if great crested newts *Triturus cristatus* have been within the ponds this year. All water samples were analysed by SureScreen Scientifics in accordance with the protocol set out in Appendix 5 of Biggs et al. (2014).

Bat Internal and External Survey

2.5 The buildings to be impacted by the proposed development were internally and externally assessed for their suitability for roosting bats. The surveyors checked for evidence of roosting bat species and Potential Roosting Features (PRFs).

2.6 The surveyors assessed the buildings visually and searched for evidence such as:

- Staining beneath or around a hole caused by natural oils in bat fur.
- Bat droppings beneath a hole, roost or resting area.
- Bat droppings and/or insect remains beneath a feeding area.
- Audible squeaking from within a hole.
- Insects (especially flies) around a hole.
- Dead bats.

Dusk Emergence Surveys

2.7 Buildings B2, B3 and B4 were determined to have 'low' suitability to support roosting bats and therefore were subject to a single dusk emergence survey to determine if roosting bats are present.

2.8 The dusk emergence survey was carried out on 25th July 2022. The survey started 15 minutes before sunset and was completed 1 and a half hours after sunset. The survey followed Bat Conservation Trust guidelines (Collins 2016). Surveyors were positioned to cover aspects of the buildings that could support roosting bats and those affected by the proposed development (Figure 2).

2.9 Surveyors were equipped with an Echo Meter Touch 2 Pro. Surveyors included Eddie Selwyn BSc (Hons) MSc QCIEEM, Anna Watkins BSc (Hons) QCIEEM, Matthew Banner BSc (Hons), Greg Holland and Carl Marshall. Infrared cameras with infrared lamps were utilised to support the surveyors.

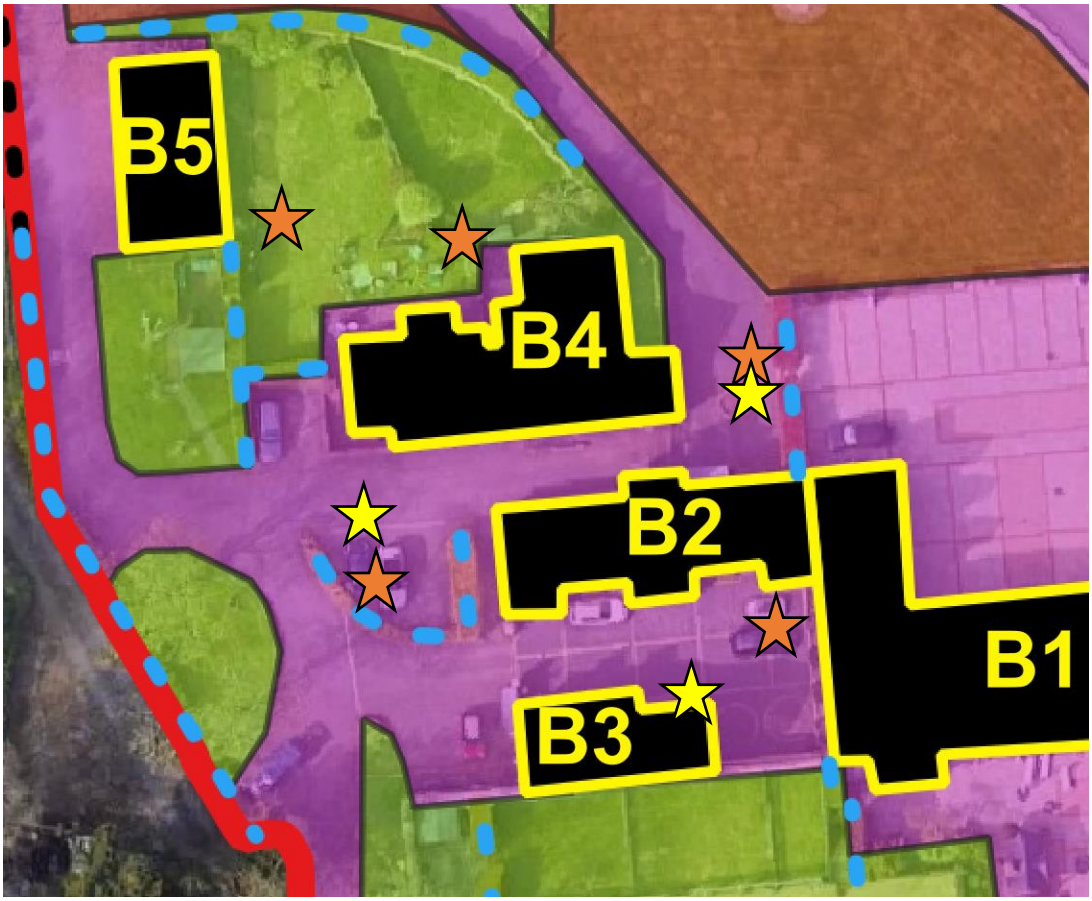


Figure 2: 25th July 2022 - Surveyor (orange stars) and infrared cameras (yellow stars) positions.

2.10 After the initial survey, a single common pipistrelle *Pipistrellus pipistrellus* was recorded roosting within building B4. As such, an additional dusk emergence survey was undertaken on 8th August 2022 and a final emergence survey will be undertaken on 23rd August 2022. Surveyors included Eddie Selwyn BSc (Hons) MSc QCIEEM and Matthew Pendry BSc (Hons) QCIEEM. An infrared camera with infrared lamps was utilised to support the surveyors.

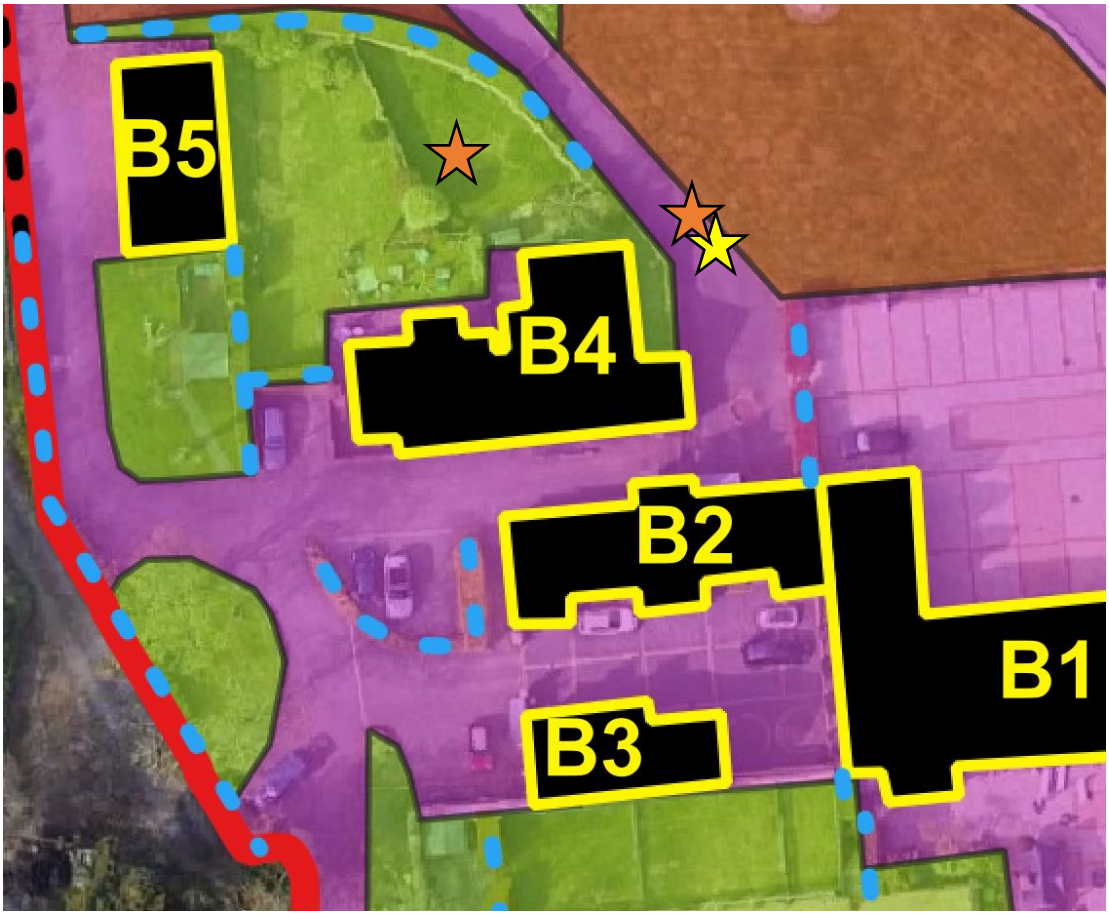


Figure 3: 8th August 2022 - Surveyor (orange stars) and infrared camera (yellow star) position.

Additional Protected Species Assessments

2.11 Any evidence of additional protected species was recorded. Standard methods of search and measures of presence, or likely presence based on habitat suitability were used for bats in trees (Collins 2016), breeding birds (BTO 2020), hazel dormice *Muscardinus avellanarius* (Bright *et al.* 2006), great crested newts (ARG 2010), reptiles (Froglife 2015), badgers *Meles meles* (Creswell *et al*. 1990) and water voles *Arvicola amphibius* (Strachan *et al*. 2011).

Limitations

2.12 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.

2.13 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment it is considered reasonably likely that protected species may be present.

3.0 RESULTS

Desktop Study

3.1 The site does not fall within or adjacent to any designated areas. The closest statutory designated site is Scadbury Park Local Nature Reserve (LNR) located approximately 730m southeast of the site. The LNR supports areas of woodland and parkland with numerous pond habitats.

3.2 There are no international designated sites within 10km of the site.

3.3 There are four Sites of Importance for Nature Conservation (SINCs) within 1km of the site which include:

- Kemnal Woodlands of Borough SINC (Grade II Importance) – adjacent to the northern, southern and southwestern boundary of the site.
- Scadbury Park LNR as mentioned above, is also designated a SINC (Metropolitan Importance).
- Belmont Pasture SINC (Borough Grade I Importance) is located approximately 45m west of the site.

- Hoblands Wood SINC (Local Importance) is located approximately 344m west.

3.4 There are several units of priority habitat within 1km of the site (Figure 4) the closest of which include:

- Deciduous woodland directly adjacent to the site to the north.
- Traditional orchard approximately 16m southwest.
- Ancient and semi-natural woodland approximately 40m north of the site.
- Ancient replanted woodland approximately 826m south.
- Wood pasture and parkland approximately 955m southwest.

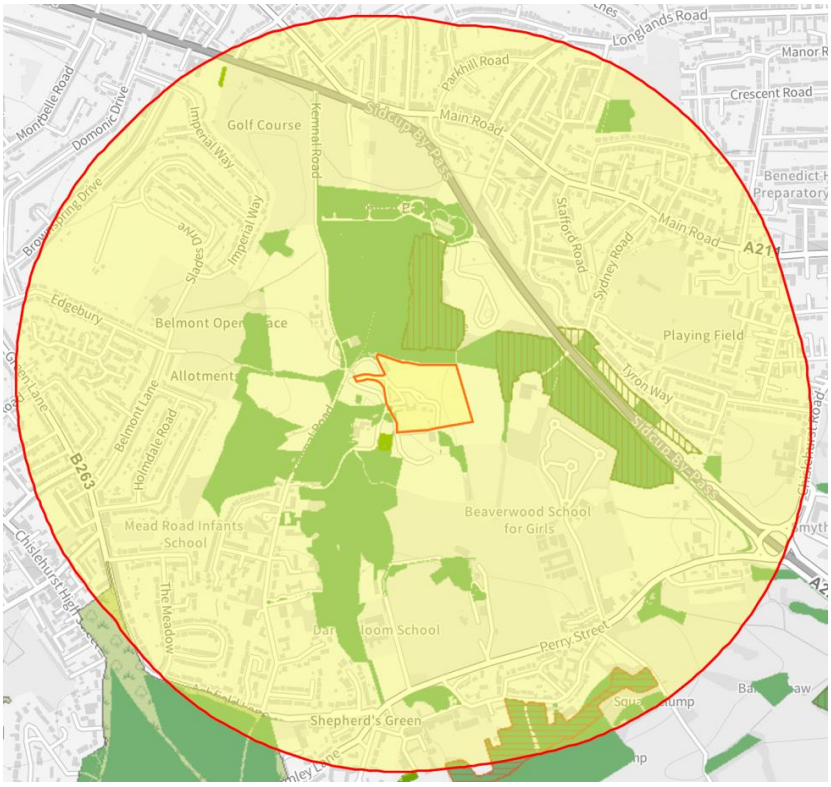


Figure 4: Priority habitat within 1km of the site. Deciduous woodland is denoted by green, traditional orchard is by olive green, ancient replanted woodland is denoted by vertical hatching, ancient and semi-natural woodland is detonated by horizontal hatching, and wood pasture and parkland is light green with symbols.

3.5 A pond (W1) is located within the site and was created as an attenuation feature. OS maps and aerial imagery indicate there are six additional waterbodies within 250m of the site, however several of these are connected to streams, reducing their suitability for great crested newts.

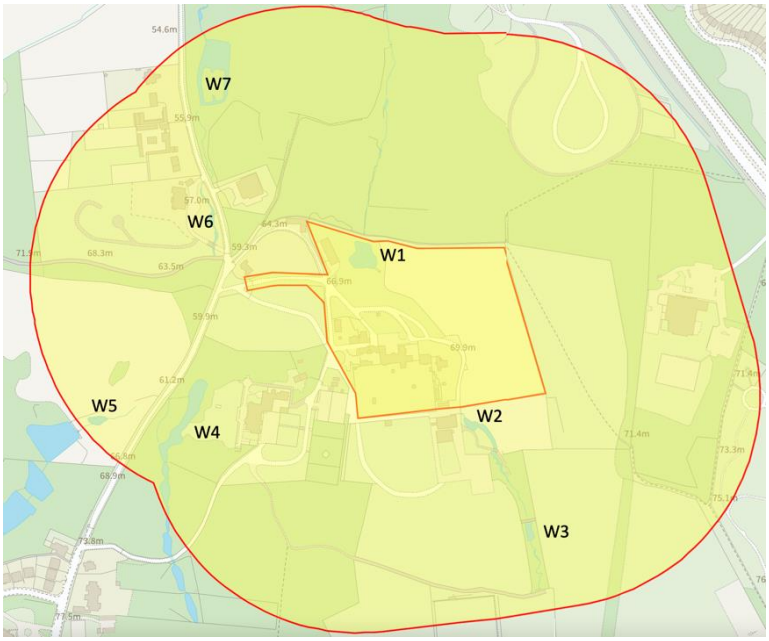


Figure 5: Waterbodies within 250m of the site.

3.6 The closest past European Protected Species (EPS) licences for each species is:

- Bat - located *c.* 1.3km south of the site, 2013 licence for the destruction of a resting place site for common pipistrelle.
- Great crested newt - located *c.* 1.6km southeast of the site, 2020-2026 licence for the damage and destruction of a resting place.
- Dormouse - located over 10km from the site.

Table 2: Biological Records from* GiGL *within 1km of the site

Species	Status	Closest record to site	Most recent record
Stag Beetle *Lucanus cervus*	Wildlife and Countryside Act (1981 as amended) Schedule 5; Habitats Directive Annex 2; NERC Act (2006) Section 41	461m SW (03/08/2019)	1014m E (22/06/2020)
Common Toad *Bufo bufo*	NERC Act (2006) Section 41	703m W (03/03/2017)	713m W (31/03/2021)
Western European Hedgehog *Erinaceus europaeus*	NERC Act (2006)	703m W (21/06/2021)	
Kingfisher *Alcedo atthis*	Birds Directive Annex 1; Wildlife and Countryside Act (1981 as amended) Schedule 1	729m SE (17/11/2014)	
Redwing *Turdus iliacus*	Wildlife and Countryside Act (1981 as amended) Schedule 1; Birds Directive Annex 2.2; Red List BoCC	262m NE (13/03/2017)	
Firecrest *Regulus ignicapillus*	Wildlife and Countryside Act (1981 as amended) Schedule 1	336m NW (02/01/2013)	729m SE (17/11/2014)
Yellow Wagtail *Motacilla flava*	Red List BoCC	519m SE (30/07/2017)	

Song Thrush *Turdus philomelos*	Red List BoCC	737m S (23/06/2014)
Mistle Thrush *Turdus viscivorus*	Red List BoCC	470m N (19/10/2017)

Additional species are present within the biological records may be older than 10 years or outside our search radius. Some species have not been included due to the likelihood of presence on site due to habitat types.

Phase 1 Habitat Survey

3.7 A detailed habitat map is attached in **Appendix 1**, site photos in **Appendix 2**, a full species list is provided in **Appendix 3**.

Amenity Grassland (G1 – Condition Table)

3.8 Areas of amenity grassland are in the west of the site. The grassland is subject to regular management with a short sward length. The grassland is dominated by perennial ryegrass and annual meadow grass with occasional yorkshire fog, cock's foot and rare wall barley. The grassland supports a mixture of herbaceous species, which are concentrated on the margins adjacent to woodland. Herbaceous species included yarrow, ribwort plantain, creeping cinquefoil, ragwort, creeping thistle, common mouse-ear, cut-leaved crane's-bill, broad-leaved willowherb, selfheal, lesser stitchwort and red clover.

Modified Grassland

3.9 The site includes grassland fields subject to intense hay cutting. The grassland is dominated by grasses with limited herbaceous species. The dominant grass species were yorkshire fog, perennial ryegrass and annual meadow grass with occasional cock's foot and red fescue and rare crested dog's-tail. Herbaceous species included yarrow, ribwort plantain, creeping cinquefoil, creeping thistle, common mouse-ear, cut-leaved crane's-bill, broad-leaved willowherb, selfheal, red clover, common sorrel and greater plantain.

Hedgerows and Trees

3.10 The site includes a native hedgerow along the eastern boundary subject to regular management and is dominated by hawthorn with rose, elder, sycamore, ash, and blackthorn, with bramble and white bryony trailing through the hedgerow. An

additional native hedgerow is located along the western boundary of the site and is dominated by hawthorn with elder.

3.11 Two newly planted non-native hedgerows are located along the northern boundary (adjacent to the offsite woodland). A line of newly planted *Pyracantha* sp. is located along the boundary with a line of leyland cypress adjacent. An additional single line newly planted leyland cypress hedgerow is located along the southeast boundary.

3.12 Additional hedgerows within the gardens include those dominated by either cherry laurel or leyland cypress.

3.13 The site supports multiple trees including several oak trees within the centre of the site and lime trees adjacent to the buildings.

Hardstanding

3.14 Areas of hardstanding are located around the buildings.

Pond

3.15 The pond within the site is utilised as an attenuation feature and the pond supports aquatic vegetation including waterlilies and pondweed. The pond was also surrounded by rush and pendulous sedge.

Protected Species

Bats

3.16 The native hedgerow along the eastern boundary and the adjacent woodland likely provides foraging and commuting opportunities for bats.

3.17 Multiple mature oak trees within the site have the potential to support roosting bats, although the proposed development will not remove these trees.

3.18 The buildings (B1-B6) within the site were subject to an assessment for roosting bats (Figure 4). No direct evidence of roosting was recorded internal or external for building B1-B6.

Figure 6: Buildings impacted by the proposed development (B1-B6).

3.19 Building B1 is a two-storey house constructed of brick with a slate tiled roof. The building supports wooden soffit boards. The proposed development will impact the garage section of B1 which is adjacent to B2. This section includes a large garage with a converted roof that supports three dormer windows. This section of the building does not support any loft void due to the loft void being converted.

3.20 Building B2 is a two-storey house constructed of brick with a slate tile roof. The building supports wooden soffit boards and the roof supports skylights and a clock tower. The clock tower was checked internally and supports wire meshing to prevent birds from entering the tower. The mesh is considered to also prevent bats from entering the tower. The building includes dormer windows with wooden weatherboarding around the window. The building does not support a loft void, with the loft void fully converted.

3.21 Building B3 is a two-storey house constructed of brick with a slate tile roof. The building supports wooden soffit boards and includes dormer windows with wooden weatherboarding around the windows. The building supports two loft voids

constructed of wooden beams and felt lining below the tiles. The voids floors are fully boarded and the voids include small vents.

3.22 Building B4 is a two-storey house constructed of brick with a slate tile roof. The building supports wooden soffit boards and includes dormer windows with lead flashing around the window. The building includes a loft void that is constructed of wooden beams with felt lining below the tiles. The floor of the void includes insulation. The void includes thick cobwebs.

3.23 Building B5 is a single-storey garage constructed of brick with a slate tiled roof. Internally the garage has a false ceiling.

3.24 Building B6 is a small storage building with the top section of the roof constructed from slate tiled with a clay ridge tile and includes felt lining. The lower section of the building includes a flat roof constructed of lead. The building is constructed of weatherboarding, although this is a single skin, which does not provide any roosting opportunities.

3.25 Building B1 does not include a loft void and the tiles on the roof are in a good condition, therefore this building is considered to have 'negligible' suitability for roosting bats.

3.26 Buildings B2-B4 support very limited loose tiles, gaps in the soffit and gaps in the weatherboarding. These gaps are potential roosting features and therefore these buildings are considered to have 'low' suitability for roosting bats.

3.27 Building B5 is in a good condition and does not support any suitable roosting features. The building is considered to have 'negligible' suitability for roosting bats.

3.28 Building B6 does not include a loft void and with the single skin weatherboarding and due to no evidence of roosting bats being recorded internally, the building is considered to have 'negligible' suitability for roosting bats.

Dusk Survey

3.29 On 25th July 2022 sunset was at 20:58 and the weather was clear with 60% cloud cover, calm and a temperature of 21°C dropping to 19°C by the end of the survey. During the

emergence survey, a single common pipistrelle was recorded roosting in the soffit boarding of building B4.

Figure 7: Common pipistrelle roost location (building B4).

3.30 During the emergence survey, bat activity was low with only a couple of registrations recorded within the retained garden to the south of building B3. Species recorded included common pipistrelle, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared and noctule *Nyctalus noctula* recorded commuting and foraging.

3.31 On 8th August 2022 sunset was at 20:35 and the weather was clear with 0% cloud cover, calm and a temperature of 21°C dropping to 19°C by the end of the survey. During the emergence survey, no bats were recorded roosting in building B4. During the emergence survey, bat activity was very low with only a couple of registrations recorded including common pipistrelle and noctule recorded commuting and foraging.

Badgers

3.32 No evidence of badgers was recorded within the site, although the site provides some foraging and commuting opportunities.

Dormice

3.33 The majority of the habitat within the site is considered unsuitable for dormice due to the majority of the hedgerows supporting amenity species. The native hedgerows are sub-optimal for dormice as it does not support hazel and only supported limited

bramble. The native hedgerows will not be impacted as part of the proposed development.

3.34 The desk study returned no records of dormice within 1km of the site and the closest past EPS licence for dormice is located over 10km from the site.

3.35 Due to the desk study not returning any records of dormice in the local area and the distance of the closest EPS licence for dormice, it is considered that dormice would not be present within the site and no further consideration for this species is detailed within this report. In any case, the proposed development does not impact the native hedgerows within the site, which is the only suitable habitat for dormice.

Great Crested Newts

3.36 The modified grassland fields within the site provide foraging and commuting opportunities for great crested newts. Although the amenity grassland that surrounds the pond is subject to regular management and therefore only provides limited commuting opportunities. The pond within the site (W1) was subject to an eDNA survey and returned negative to great crested newt eDNA and therefore great crested newts do not utilise this pond.

3.37 The closest pond located within 250m of the site (W2) was also subject to an eDNA survey and returned negative for great crested newt eDNA.

3.38 A number of additional waterbodies are located within 250m of the site and the majority are connected to watercourses, which reduces the suitability of the ponds. In addition, these ponds are separated from the site by roads and non-suitable habitats.

3.39 Due to the negative results of the eDNA surveys of the pond within the site and the pond directly adjacent, it is considered that great crested newt would not be present within the site and no further consideration for this species is detailed within this report.

Birds

3.40 The hedgerows and adjacent woodland have the potential to support nesting birds.

Reptiles

3.41 The amenity grassland within the site supports a short sward length which is not suitable for reptiles due to a lack of shelter from predation and no opportunities for foraging purposes. The modified grassland is subject to regular cutting for hay and therefore provides limited resting and foraging habitat for reptiles. The desk study returned no records of reptiles within the local area and given the management regime of the grassland, it is considered that reptiles would not be present within the site and no further consideration for this group is detailed within this report.

Other Species

3.42 Due to a lack of suitable habitat, the site was not considered suitable for other protected species, such as water voles and otters.

4.0 DISCUSSION

4.1 The following paragraphs consider the effects of the development on designated sites, priority habitats and protected and priority species. Where the desk study and Phase 1 survey provide sufficient evidence for an assessment of effects on any of these groups to be taken through planning, these are detailed below, the need for additional surveys and when and how these should be completed are summarised, if required.

4.2 Provisional recommendations are also given for means to enhance biodiversity net gain, following the principle (CIEEM et al. 2016) of following the mitigation hierarchy of; avoidance, minimisation of loss, compensation on site and biodiversity offset.

Effects on Designated Sites

4.3 The site does not fall within or adjacent to any statutory sites and the Impact Risk Zones do not indicate the development will have any likely impact on statutory designated sites. Given the distance of the closest statutory designated site (Scadbury Park LNR), approximately 730m south, it is considered the proposed development will have no direct or indirect impact on these sites. There are no International designated sites within 10km of the site.

4.4 Kemnal Woodlands of Borough SINC is located adjacent to the northern, southern and southwestern boundary of the site and Belmont Pasture SINC is approximately 45m

west of the site. The proposed development is buffered from the adjacent SINC, although given the proximity of this non-statutory designated site, it is recommended that standard construction safeguards are incorporated during construction to prevent impacts from noise, dust, light and water. In addition, the extent of the proposed development is limited, further reducing the overall likely impacts from construction.

Effects on Priority Habitats

4.5 There are a number of priority habitats within the wider landscape, the closest is within Kemnal Woodlands of Borough SINC, which is deciduous woodland, located adjacent to the north of the site. The proposed development is buffered from the adjacent priority habitat and the proposed construction safeguards will mitigate potential impacts from noise, dust, light and water.

Effect on On-site Habitats

4.6 The habitats on site are common and widespread, of ecological value is site level only. The native hedgerow is considered to be of greatest ecological value in the context of the site as it provides potential commuting and foraging habitat for a range of species, including bats. The native hedgerow will be retained and buffered from the proposed development.

4.7 The proposed development includes significant habitat creation, including orchards, and native scrub. As part of the vineyard creation, the grassland margins of the fields will be retained and enhanced to improve the grassland species composition and provide a range of wildlife foraging and commuting opportunities.

4.8 A Biodiversity Net Gain assessment has been undertaken for the proposed development. The site habitat baseline is detailed in Figure 8 below.

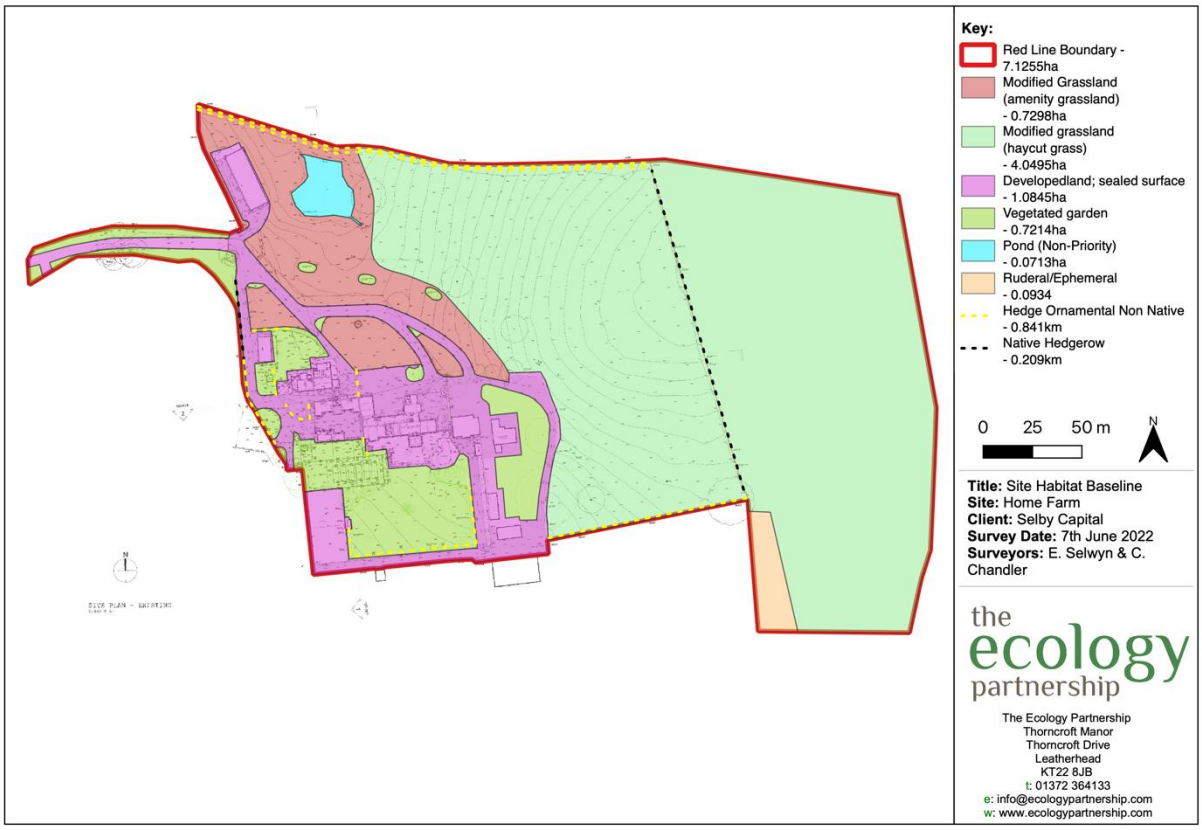


Figure 8: Site Habitat Baseline

4.9 The site habitat creation is detailed in Figure 9 below.

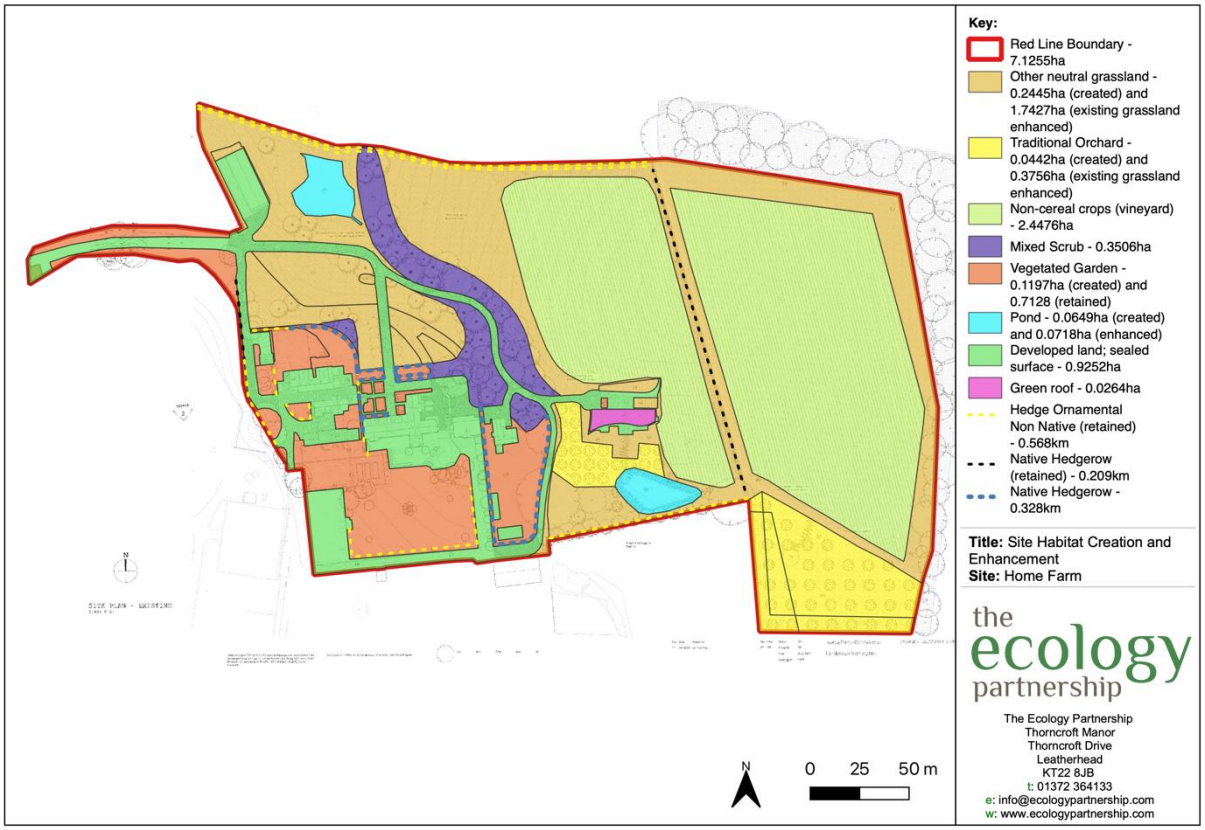
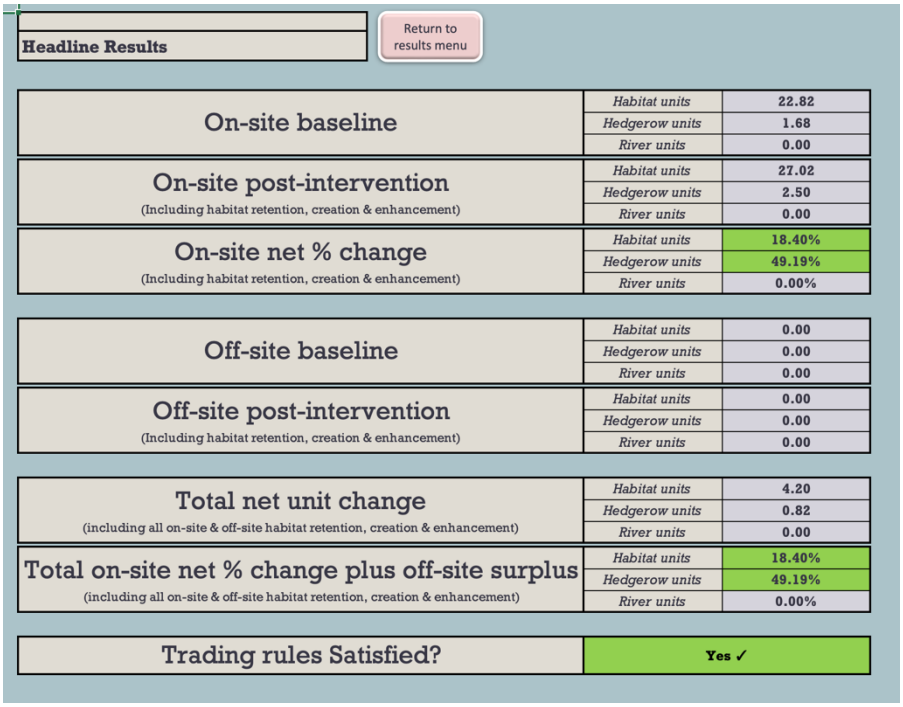


Figure 9: Site Habitat Creation

4.10 The proposed development will result in an 18.40% net gain in habitat units and a 49.19% net gain in hedgerow units (see separated excel calculator for detail).



Headline Results

Return to results menu

On-site baseline	Habitat units	22.82
	Hedgerow units	1.68
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	27.02
	Hedgerow units	2.50
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	Habitat units	18.40%
	Hedgerow units	49.19%
	River units	0.00%
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	4.20
	Hedgerow units	0.82
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	18.40%
	Hedgerow units	49.19%
	River units	0.00%
Trading rules Satisfied?	Yes ✓	

Figure 10: Headline Results – Biodiversity Metric 3.1

Effects on Protected Species

Bats

4.11 The native hedgerows and adjacent woodland habitat provide foraging and commuting opportunities for bats. The majority of the existing habitat will be retained, including the native hedgerows. The proposed green belt planting within the centre of the site and the enhanced grassland habitat will enhance foraging and commuting opportunities throughout the site. As such, the proposed development is considered to enhance opportunities for bats within the site and surrounding area.

4.12 Buildings B2-B4 are to be impacted by the proposed development and have low potential to support roosting bats due to limited external gaps within the tiles, soffit board and weatherboarding. As such these buildings were subject to an emergence survey on 25th July 2022. The emergence survey recorded a single roosting common pipistrelle emerging from the soffit board of building B4. The emergence survey on 8th August 2022 did not record any roosting bats in B4.

4.13 Therefore, building B4 is a confirmed roost for a single common pipistrelle and will be subject to a final emergence survey on 23rd of August. This survey will determine if additional bats are roosting in the building and will support the Natural England application for a bat mitigation licence.

4.14 The proposed development will heavily impact the area around the roost and therefore to ensure roosting opportunities are retained and as part of the licence mitigation strategy, integrated bat boxes will be installed into the building B4 as part of the proposed development.

4.15 Should this additional survey record roosting bats, it is considered that roosting opportunities can be accommodated into the proposed development and that these opportunities can be enhanced post-development will the integration of bat boxes in buildings and installation of existing suitable trees.

4.16 Any proposed lighting scheme as part of the development should consider bats in the surrounding area as well as site. All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels, which can affect both their roosting and foraging behaviour. This needs to be considered with a sympathetic lighting scheme for the development. Recommendations include:

- Installing lighting only if there is a significant need;
- Using sodium lamps instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics;
- Directing lighting to where it is needed and avoiding light spillage;
- Using baffled lighting where light is directed towards the ground and
- Avoid putting lighting near trees or hedgerows and angling light away from these linear features which are used by commuting and foraging bats.

Badgers

4.17 No evidence of badgers, such as setts or latrines, was observed in the site, however as a precaution, it is recommended that best practice construction measures are undertaken to avoid impacting badgers and other mammals, including rabbits which were observed on site. The guidelines are as follows:

- Any trenches or excavations on site should be either covered over at night or a plank of wood placed in so as to allow any mammals to escape if the badgers were to accidentally fall in.
- Any open pipes or conduits laid should be blocked off each night to prevent badgers from entering them.
- Disturbances, such as loud noises, vibrations and flood lighting in association with night working should be minimised.

4.18 The proposed orchard planting and green belt will increase foraging and commuting opportunities for badgers within the site.

Birds

4.19 The majority of the existing habitat will be retained, although any removal of suitable vegetation should have consideration for nesting birds. It is therefore recommended that vegetation removal is undertaken outside of the breeding bird season (March-September inclusive) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

4.20 The proposed orchard planting, green belt and enhanced retained grassland will increase foraging opportunities for birds within the site. The green belt planting will also provide additional nesting opportunities.

Ecological Enhancements

4.21 Several enhancements can be made to the final development to further biodiversity net gain. Planning policy also encourages developments to improve biodiversity, therefore some recommended ecological enhancements to be considered are included below.

4.22 Bird boxes can be hung on mature trees within the site or installed onto the brickwork of the new development to increase the number of breeding opportunities. Woodcrete (or similar) boxes are recommended as they provide better thermal properties, are longer lasting and more durable than wooden boxes. The box should be positioned on a north or east facing aspect and at least 2m above the ground if possible.

4.23 To enhance the local bat population and provide additional roosting opportunities within the site, bat boxes can be hung on mature trees within the site or installed onto the brickwork of the new development (Figure 11). These provide good opportunities for crevice-dwelling species such as pipistrelles. The opening of the bat box/tube will be the only section visible and they are designed so that they require little to no maintenance. Several of these tubes can be established in a row together providing a good-sized roost space. The bat tubes should be inserted in the brickwork at least 4m from ground level in a location not illuminated by artificial lighting. Habibat, in association with the Bat Conservation Trust, provides a range of boxes which are unfaced for render or designed to match the brickwork of the building.

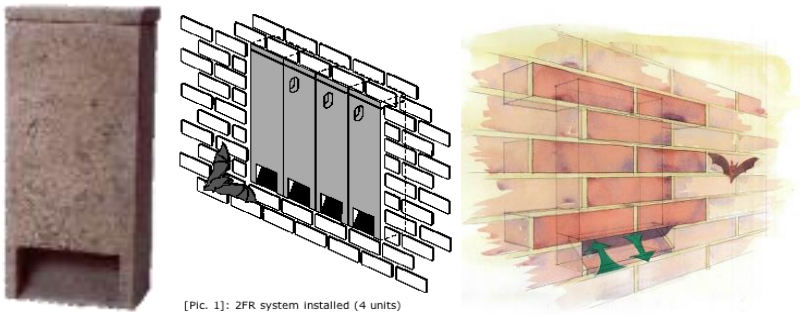


Figure 11: Bat tubes incorporated into the wall of a building to provide roosting space

4.24 To support the invertebrates and bees attracted to the site by the surrounding vegetation and new planting, Bee Bricks (Figure 12) can be incorporated into the building. The Bee Brick can be used in place of a standard brick or block in construction to create habitat for solitary bees. Bee Bricks need to be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. No cleaning or management of the Bee Bricks is required.

Figure 12: Bee Bricks to be incorporated into the development

4.25 The proposed development includes a significant green belt. This area should be planted with native species including:

- Holly (*Ilex aquifolium*)
- Blackthorn (*Prunus spinosa*)
- Hawthorn (*Crataegus monogyna*)
- Hazel (*Corylus avellana*)
- Guelder rose (*Viburnum opulus*)
- Dog rose (*Rosa canina*)
- Hornbeam (*Carpinus Betulus*)
- Field maple (*Acer campestre*)
- Silver birch (*Betula pendula*)
- Beech (*Fagus sylvatica*)

4.26 It is also recommended that log piles are created within the retained dense vegetation adjacent to the site. The log piles can be created from any trees that are being removed as part of the proposal. Log piles offer shelter for hibernating small mammals and insects, as well as a foraging area for some birds. Recommended structures for the log piles are shown in Figure 13 below.

Figure 13: Examples of log piles that can be made on site.

5.0 IMPACT ASSESSMENT

5.1 This section of the report forms an EcIA (Ecological Impact Assessment) and is designed to quantify and evaluate the potential impacts of the development on habitats and species present on site or within the local area.

Methodology

5.2 The approach to this assessment accords with guidance presented within the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018). In essence, an EcIA assesses the activities associated with a proposed scheme that are likely to generate changes within identified zone of influences, on identified ecological features and receptors. The proposals are subsequently reviewed and mitigation and compensation measures are outlined which help to reduce negative impacts.

5.3 The zone of influence for the development is defined as:

- The project red-line, for effect on habitats and species;
- Adjacent habitat, considered by species, for mobile species with territories or foraging ranges that may overlap the site;
- Up to 1km for national statutory and non-statutory designations; and,
- Up to 15km for international statutory designations.

5.4 The types of features considered in the assessment of effects, to meet legislative and policy requirements are:

- Designated sites (European, national and local);
- Protected species;
- Habitats and species of principal importance (Section 41 list);
- Hedgerows and woodland, were not of principal importance; and
- Habitats, where not of principal importance, that may function as wildlife corridors or stepping stones.

Impact Assessment and Mitigation

5.5 Table 3 below summarises the impacts and required mitigation for each receptor as previously detailed in the discussion.

Table 3: Assessment of effects from the proposal after mitigation and compensation

Feature	Scale of Importance	Mitigation/Compensation Required	Residual Effect
Scadbury Park LNR	National	None required – considerable distance from the site.	Not significant

Kemnal Woodlands of Borough SINC	Local	None required – considerable distance from the site, no related habitats will be lost through this scheme.	Not significant
Bat (roosting)	Local	Buildings B2-B4 have low suitability to support roosting bats and will be subject to an emergence survey on 25th July 2022. Mitigation/Enhancement in the form of the installation of bat boxes and habitat creation.	Not determined.
Bats (commuting and foraging)	Local	Potential commuting and foraging habitat is to be removed. Mitigation/Enhancement in the form of the installation of sensitive lighting, native planting and habitat enhancements.	Not significant
Nesting Birds	Site	Mitigating direct harm to nests by removal of any suitable nesting habitat outside of nesting bird season or after a check by a suitably qualified ecologist. Enhancement in the form of the installation of bird boxes.	Not significant
Badgers	Site	Construction safeguards to ensure foraging and commuting badgers are not impacted.	Not significant
Great Crested Newts, Dormice and Reptiles	N/A	Considered unlikely to be present on site.	Not significant

6.0 CONCLUSIONS

6.1 The site does not lie within or adjacent to any statutory designated sites and the Impact Risk Zones do not indicate any impacts from the proposed development. Kemnal Woodlands of Borough SINC is located adjacent to the northern, southern and southwestern boundary of the site and Belmont Pasture SINC is approximately 45m west of the site. The proposed development is buffered from the adjacent SINC, although given the proximity of this non-statutory designated site, it is recommended that standard construction safeguards are incorporated during construction to prevent impacts from noise, dust, light and water. In addition, the extent of the proposed development is limited (single house), and this reduced the overall likely impact of the site. Construction safeguards will ensure that the proposed development does not have any direct or indirect impact on any designated sites.

6.2 The habitats on site are common and widespread throughout the local area and the UK as a whole. The native hedgerows are of the greatest ecological value in the context

of the site and will be fully retained. The proposed development includes significant planting and habitat creation, and this has also resulted in the development achieving biodiversity net gain.

6.3 The native hedgerows and adjacent woodland provide suitable foraging and commuting opportunities and will be retained as part of the proposed development. The creation of significant new habitats and enhancement of the existing habitats will enhance opportunities for bats post-development. Enhancements and the installation of bat boxes will increase roosting opportunities.

6.4 Buildings B2-B4 are to be impacted by the proposed development and have low potential to support roosting bats due to limited external gaps within the tiles, soffit board and weatherboarding. As such these buildings were subject to an emergence survey on 25th July 2022. The emergence survey recorded a single roosting common pipistrelle emerging from the soffit board of building B4. The emergence survey on 8th August 2022 did not record any roosting bats in B4.

6.5 Therefore, building B4 is a confirmed roost for a single common pipistrelle and will be subject to a final emergence survey on 23rd of August. This survey will determine if additional bats are roosting in the building and will support the Natural England application for a bat mitigation licence.

6.6 The pond within the site (W1) and adjacent (W2) were subject to eDNA surveys, which returned negative for eDNA. As such, great crested newts are not present within the ponds and are not considered present within the site.

6.7 No evidence of badger activity, such as sett entrances, faeces, or badger hairs, was recorded within the site. As a precaution, it is recommended that precautionary construction measures are implemented to avoid impacting badgers that might forage and commute in the site.

6.8 Birds may use the scrub and trees for nesting. Any works to these features should therefore be undertaken outside of bird nesting season (March – September inclusive) or after a nesting bird check by a qualified ecologist.

6.9 The site does not support suitable habitats for water voles, or otters and is not considered to support dormice and reptiles. Therefore, further surveys for these species groups are not considered necessary.

7.0 REFERENCES

ARG., (2010) *UK Advice Note 5: Great crested newt habitat suitability index.* Amphibian and Reptile Groups of the United Kingdom.

Bright, P., Morris, P. & Mitchell-Jones, T., (2006)., *The Dormouse Conservation Handbook.* 2nd edition. English Nature.

CIEEM., (2017)., *Guidelines for Preliminary Ecological Appraisal, 2nd Edition.* Chartered Institute of Ecology and Environmental Management, Winchester.

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

Chapman, C., & Tyldesley, D. (2016). *Small-scale effects: How the scale of effects has been considered in respect of plans and projects affecting European sites-a review of authoritative decisions*. Natural England Commissioned Reports, (205).

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

Creswell, P., Harris, S. & Jeffies, D.J. (1990)., *The history, distribution status and habitat requirements of the badger in Britain.* Nature Conservancy Council, Peterborough.

English Nature., (2004)., *Reptiles: guidelines for developers.* English Nature, Peterborough.

Froglife., (2015)., *Surveying for Reptiles*. Froglife, Peterborough.

Franklin, J. F. (1993)., 'Preserving Biodiversity: Species, Ecosystems, or Landscapes?', *Ecological Applications*, 3: 202-205.

Joint Nature Conservation Committee., (2010)., *Handbook for Phase 1 habitat survey – a techniques for environmental audit.* JNCC, Peterborough.

Institution of Lighting Professionals., (ILP – 2018)., *Guidance Note 08/18 – Bats and artificial lighting in the UK.* ILP, Rugby.

Langton, T.E.S., Beckett, C.L. & Foster, J.P. (2001)., *Great Crested Newt Handbook.* Froglife, Halesworth.

Mitchell-Jones, A.J. (2004)., *Bat Mitigation Guidelines.* English Nature, Peterborough.

Natural England., (2011)., *Badgers and Development: A guide to best practice and licensing*. Natural England, Bristol.

Neal, E. & Cheeseman, C. (1996)., *Badgers*. T & A D Poyser Ltd. London.

Stone, E.L., Jones, G., Harris, S. (2009)., Street lighting disturbs commuting bats. *Current Biology*, **19:** 1123-1127.

Stratchan, R., Moorhouse, T., & Gelling, M. (2011)., *Water Vole Conservation Handbook. 3rd Edn.* Wildlife Conservation Research Unit, University of Oxford.

Wilson, G.J., Harris, S. & McLaren, G. (1997)., *Changes in British badger population, 1988-1997.* People's Trust for Endangered Species, London.

Internet resources:

Google Maps: www.google.co.uk/maps

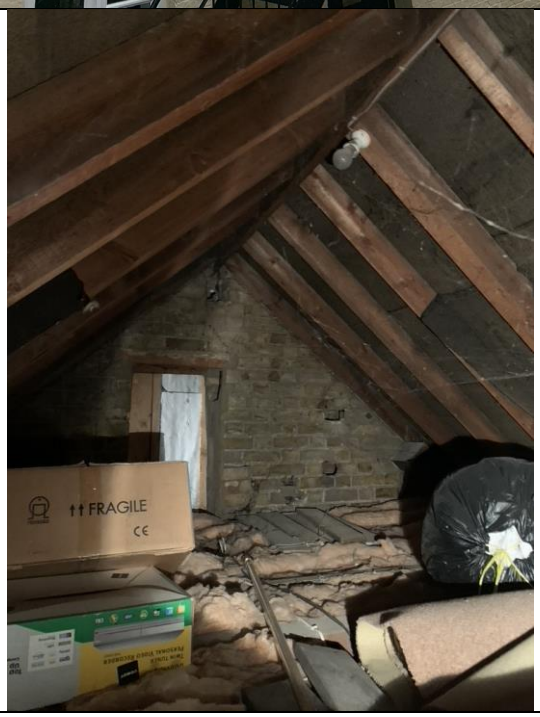
Magic Interactive Map: www.magic.gov.uk

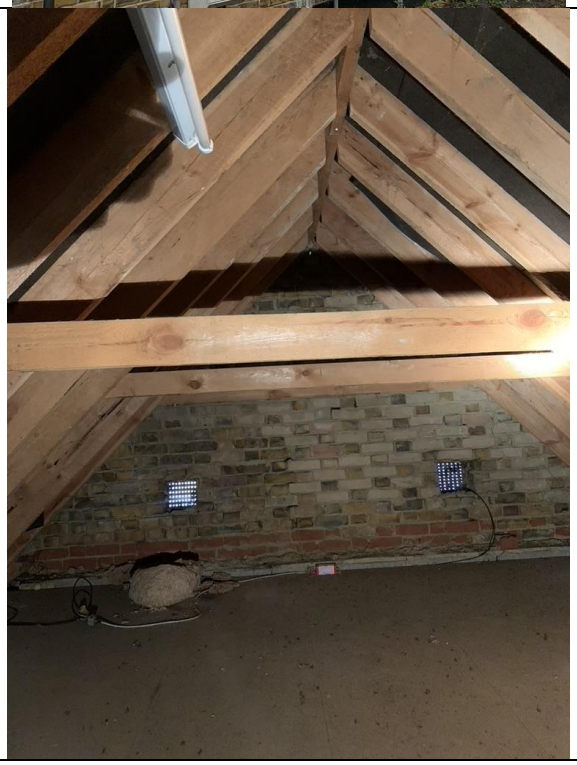
Appendix 1: Habitat Map

Appendix 2: Site Photographs

Photograph 1: Building B1	
Photograph 2: Building B1 on the left and building B2 on the right (north face).	

Photograph 3: South face of building B2	
Photograph 4: South face of building B2	

Photograph 5: Building B4	
Photograph 6: Building B4 internal loft void.	

Photograph 7: Building B3.		
Photograph 8: Building B3 internal loft void.		

Photograph 9: Amenity grassland and buildings (B1, B2 and B4)	
Photograph 10: Modified grassland and newly planted leylandii cypress hedge.	

Photograph 3: Modified Grassland	
Photograph 3: Amenity Garden	

Appendix 3: Species List

Common name	Latin name	DAFOR score
Amenity Grassland		
Sward Species		
Perennial ryegrass	*Lolium perenne*	D
Annual meadow grass	*Poa annua*	D
Yorkshire fog	*Holcus lanatus*	O
Cock's foot	*Dactylis glomerata*	O
Wall Barley	*Hordeum murinum*	R
Herbaceous Species		
Red clover	*Trifolium pratense*	A
Yarrow	*Achillea millefolium*	F
Ribwort plantain	*Plantago lanceolata*	F
Ragwort	*Jacobaea vulgaris*	F
Common mouse-ear	*Cerastium fontanum*	F
Cut-leaved crane's bill	*Geranium dissectum*	F
Selfheal	*Prunella vulgaris*	F
Creeping cinquefoil	*Potentilla reptans*	O
Creeping thistle	*Cirsium arvense*	O
Broad-leaved willowherb	*Epilobium montanum*	O
Lesser Stitchwort	*Stellaria graminea*	R

Modified Grassland		
Sward Species		
Yorkshire fog	*Holcus lanatus*	D
Perennial ryegrass	*Lolium perenne*	D
Annual meadow grass	*Poa annua*	D
Cock's foot	*Dactylis glomerata*	O
Red fescue	*Festuca rubra*	O
Crested dog's-tail	*Cynosurus cristatus*	R
Herbaceous Species		
Red clover	*Trifolium pratense*	A
Yarrow	*Achillea millefolium*	F
Ribwort plantain	*Plantago lanceolata*	F
Common mouse-ear	*Cerastium fontanum*	F
Cut-leaved crane's bill	*Geranium dissectum*	F
Selfheal	*Prunella vulgaris*	F
Greater plantain	*Plantago major*	F
Creeping cinquefoil	*Potentilla reptans*	O
Creeping thistle	*Cirsium arvense*	O
Broad-leaved willowherb	*Epilobium montanum*	O
Common sorrel	*Rumex acetosa*	R

Native Hedgerows		
Hawthorn	*Crataegus monogyna*	D
Bramble	*Rubus fruticosus*	A
Rose	*Rosa sp.*	O
Blackthorn	*Prunus spinosa*	O
White Bryony	*Bryonia dioica*	O
Elder	*Sambucus nigra*	R
Sycamore	*Acer pseudoplatanus*	R
Ash	*Fraxinus excelsior*	R

Trees		
English Oak	*Quercus robur*	D
Lime	*Tilia cordata*	O

Amenity Hedgerows		
Cherry laurel	*Prunus laurocerasus*	D
Leyland cypress	*Cupressus × leylandii*	D
Pyracantha	*Pyracantha sp*	D
Elder	*Sambucus nigra*	R

Appendix 4: eDNA Results

SureScreen Scientifics

Folio No: E14074
Report No: 1
Purchase Order: LON0881
Client: THE ECOLOGY PARTNERSHIP
Contact: Eddie Selwyn

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 10/06/2022
Date Reported: 21/06/2022
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
3867	Onsite Pond Chislehurst	TQ 4487 7146	Pass	Pass	Pass	Negative	0
3870	Offsite Pond Chislehurst	TQ 4499 7127	Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Esther Strafford **Approved by:** Chelsea Warner

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Appendix 5: Condition Assessment

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UKHab Habitat Type(s): Grassland - Modified grassland (included amenity grassland)			
Condition Assessment Criteria		**Amenity Grassland**	**Hay cut Grassland Field**
1	There must be 6-8 species per m^2. Note - if a grassland has 9 or more species per m^2 it should be classified as a moderate distinctiveness grassland habitat type. **NB - this criterion is non-negotiable for achieving good condition.**	Pass	Pass
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail	Fail
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Pass	Pass
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	Pass	Pass
5	Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Fail	Fail
6	Cover of bracken less than 20%.	Pass	Pass
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Pass	Pass
	Condition	**Moderate**	**Moderate**
Condition Assessment Result			
Good	Passes 6 or 7 of 7 criteria including non-negotiable criterion 7		
Moderate	Passes 4 or 5 of 7 criteria; OR Passes 6 of 7 criteria excluding non-negotiable criterion 7		
Poor	Passes 0, 1, 2 or 3 of 7 criteria		

Condition Sheet: Ponds		
UKHab Habitat Type(s): Lakes - Ponds (priority habitat)/Ponds (non-priority habitat)/Temporary ponds and pools/ Ornamental pond [Use Lake condition sheet for lakes]		
Condition Assessment Criteria		**Pond 1**
1	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Pass
2	There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge.	Pass
3	Less than 10% of the pond is covered with duckweed or filamentous algae.	Pass
4	The pond is not artificially connected to other waterbodies, either via streams, ditches or artificial pipework.	Fail
5	Pond water levels should be able to fluctuate naturally throughout the year. No obvious dams, pumps or pipework.	Fail
6	There is an absence of non-native plant and animal species[2].	Pass
7	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Pass
8	**In non-woodland ponds**, plants, be they emergent, submerged or floating (excluding duckweeds)[3], should cover at least 50% of the pond area that is less than 3 m deep.	Fail
9	The surface of **non-woodland ponds** is no more than 50% shaded by woody bankside species.	Pass
	Condition	**Moderate**
Condition Assessment Result		
Good	Passes **7 of 7** criteria for woodland ponds or **9 of 9** for non-woodland ponds	
Moderate	Passes **5 or 6 of 7** criteria for woodland ponds or **6 - 8 of 9** for non-woodland ponds	
Poor	Passes **<5 of 7** criteria for woodland ponds or **<6 of 7** for non-woodland ponds	

Footnote 1 - A woodland pond will be surrounded on all sides by woodland habitat.
Footnote 3 - If the pond is seasonal (i.e. dries out in most summers) then emergent species alone are likely to be found.

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Date: 11/08/2022