

GEOSPHERE ENVIRONMENTAL

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SITE: Unit 6, Stansted Courtyard, Parsonage Road,
Takeley, CM22 6PU

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VERSION RECORD

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Executive Summary

Report Description	<p>This Preliminary Ecological Appraisal report has been prepared by Geosphere Environmental Limited for Rose Builders Limited and relates to the proposed commercial development of the site at Unit 6, Stansted Courtyard, Parsonage Road, Takeley, CM22 6PU.</p> <p>The purpose of this report is to identify potential ecological constraints to development, particularly in relation to potential legally protected species onsite, confirm the need for further survey work to confirm all baseline ecological conditions, if necessary and highlight opportunities for ecological enhancement.</p>
Summary of Main Findings	<p>The site comprises predominantly hardstanding and one building, with a small area of amenity grassland, introduced shrubs and bare ground with scattered trees.</p> <p>The findings of the extended Phase 1 Habitat Survey confirm that the habitats onsite have the potential to support, bat (roosting and foraging), breeding birds, Great Crested Newt (limited), Hedgehog and invertebrates.</p> <p>The site is not considered suitable for riparian mammals, reptiles, Badger or Hazel Dormouse.</p>
Ecological Constraints	<p>The constraints to development will be the removal of habitats considered suitable for protected species, including buildings, scattered trees and introduced shrubs suitable for bat (roosting and foraging), breeding birds, Great Crested Newt, Hedgehog and invertebrates.</p>
Avoidance measures & Timings of Works to reduce impact	<p>Bats: The proposed development should retain scattered trees where possible. Any new lighting (during and post development) should be designed to avoid increased lighting onto this habitat, which may disturb bats using the habitat for foraging or roosting habitat potentially created within the development.</p> <p>Birds: Any clearance of vegetation and buildings should be timed to avoid the bird breeding season (March-August inclusive). If this is not possible, these habitats can only be removed following confirmation by a suitably qualified Ecologist that they are not in active use by nesting birds.</p> <p>Hedgehog: Should fencing be incorporated within the final development, it should be designed to be Hedgehog-friendly to allow for continued foraging habitat post development.</p> <p>Terrestrial Mammals: Excavations should be covered overnight to prevent inadvertent trapping of terrestrial mammals within trenches.</p> <p>Invertebrates: The inclusion of landscape planting should ensure that common species of invertebrate still use the site post development.</p>
Further Survey Work Required	<p>The following are recommended at the appropriate time of year to establish an ecological baseline:</p>

	<ul style="list-style-type: none"> • Bat (roosting): building B1 has low roost potential. One emergence/re-entry should be undertaken (either dusk emergence or dawn re-entry) (May to August); • Great Crested Newt: as a precaution, clearance of the limited vegetation present, should be undertaken under an Ecological Clerk of Works (ECoW).
<p>Biodiversity Enhancement Opportunities</p>	<p>The following has been recommended for consideration within the final development scheme:</p> <ul style="list-style-type: none"> • Plantation of native species within soft landscaping, incorporating fauna beneficial to bats. • Incorporation of bat and bird boxes within the final development scheme.
<p>Conclusions</p>	<p>The recommendations within Section 7 of this report should be adhered, to reduce the impact on protected species.</p>

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1. INTRODUCTION

This Preliminary Ecological Appraisal report has been prepared by Geosphere Environmental Limited for Rose Builders Limited and relates to the proposed commercial development of the site at Unit 6, Stansted Courtyard, Parsonage Road, Takeley, CM22 6PU. Any limitations and conditions pertaining to the report are stated within Appendix 1, with a full list of technical references provided within Appendix 2.

The report relates to the proposed development of the 0.11 hectare (ha) site for commercial use as shown in Drawing ref. H608/1010 included within Appendix 3. The site is located at National Grid reference TL 55854 22169.

The development boundary is shown on Figure 1 below:

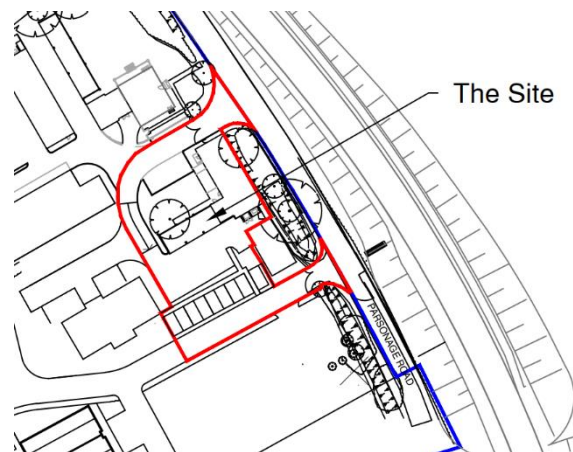


Figure 1 – The proposed development and site boundary is outlined in red

1.1 Aims

This report provides baseline data for the assessment of the ecological features of the site and identifies any potential constraints with regards to protected species. It also outlines recommendations for further surveys if necessary.

2. LEGISLATIVE AND POLICY CONTEXT

2.1 Current UK Legislation

The main legislation that applies to ecological issues within England and Wales is as follows:

- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 transposes 'The Conservation of Habitat and Species Regulations 2017', regarding the conservation of natural habitats and of wild fauna and flora (formally the EC Habitats Directive). Under the regulations, public bodies have a duty in exercising their functions to provide for the protection of 'European Sites' and 'European Protected Species' (EPS).
- The Wildlife and Countryside Act 1981, (WCA) (as amended) provides detail on a range of protection and offences relating to wild birds, other animals, and plants. The level of protection depends upon which Schedule of the Act the species is listed on. Licences are available for specific purposes to permit actions that would otherwise constitute an offence in relation to species.
- The Natural Environment and Rural Communities, (NERC), Act 2006 imposes an obligation on all public bodies, including local authorities, to consider whether their activities can contribute to the protection of wildlife. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England and states that: "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."

Species-specific legislation is detailed within Appendix 4.

2.2 Planning Policy

The recommendations of this report are in line with the key principles of the Ministry of Housing, Communities and Local Government (MHCLG) (2019) National Planning Policy Framework (NPPF) (ref. **R.1**) and Government Circular 05/06: Biodiversity and Geological Conservation (ref. **R.2**).

Local planning policies relating to ecology are invariably based upon the conservation of species protected under the above legislation, including species and habitats of principal importance listed under Section 41 of the NERC Act 2006 and the protection of designated sites.

All of these features are considered within the scope of this Preliminary Ecological Appraisal and therefore any recommendations made herein, are likely to be in line with this policy.

3. METHODOLOGY

3.1 TECHNICAL APPROACH

The PEA has been undertaken following guidelines provided by CIEEM's Guidelines for Preliminary Ecological Appraisal, (ref. **R.3**), and BS 42020: 2013 Biodiversity standards, (ref. **R.4**) to provide an indication of the ecological value of the site and the potential for the site to be used by protected species.

Scientific names and common names of plant species identified are as they appear in Stace, (ref. **R.5**).

The conclusions and recommendations for further works are in accordance with current legislation and guidance.

3.2 Ecological Desk Study

A data search was conducted of freely available biological records. The sources of information included:

- The Multi-Agency Geographic Information for the Countryside (MAGIC) online database (ref. **R.6**) was consulted to obtain geographic information on key statutory designated nature conservation sites of relevance to the site;
- Essex Field Club (EFC) and Essex Wildlife Trust (EWT) were contacted to provide details of legally protected species and non- statutory designated conservation sites within 2km of the site. Only records of protected species from within the last ten years are considered within this report;
- Ordnance survey maps were used to identify ponds/ditches within 500m of the site to assess the potential for Great Crested Newt (GCN) within the immediate vicinity of the site.

All relevant desk study data obtained is attached in Appendix 5, except for detailed lists of species given the sensitive nature of the information.

3.3 Preliminary Ecological Appraisal

The surveys used to inform the Preliminary Ecological Appraisal comprise of a Phase 1 Habitat and Protected Species Scoping Survey, more often referred to as an extended Phase 1 Habitat Survey.

An extended Phase 1 Habitat Survey of the site was undertaken on 03 July 2020 by George Green (Graduate Ecologist). The weather conditions at the time of the survey were sunny with light cloud (cloud cover approximately 15%) with little wind (Beaufort Scale 1), an approximate temperature of 18°C and good visibility.

The Phase 1 Habitat Survey involved a walkover of the site in which the habitats are classified according to JNCC Phase 1 Habitat Survey guidelines, (ref. **R.7**). Habitats on and adjacent to the site were mapped and target notes added for any interesting or notable biodiversity features.

The frequency and cover of each species identified as they are distributed in each habitat is estimated using the DAFOR scale, (ref. **R.8**), as follows:

- Dominant - >75% cover;
- Abundant – 51-75% cover;
- Frequent – 26-50% cover;
- Occasional – 11-25% cover;
- Rare – 1-10% cover;
- Locally dominant (LD), abundant (LA) and frequent (LF) is also used where the distribution is patchy.

The site was assessed for its suitability to support protected species and other species of conservation importance, which could pose a planning constraint. All signs and areas of habitat considered suitable for protected species or those of conservation interest, were recorded and photographed. Sites are taken in the context of their surroundings and so include the immediate environs outside of site boundaries, where appropriate.

All established trees that could be accessed onsite were inspected and assessed in terms of their suitability (negligible, low, moderate or high) to support roosting bats, in line with the Bat Conservation Trust (BCT) survey guidelines (ref. **R.9**).

All ponds within 500m of the site were also assessed for their suitability for Great Crested Newt (*Triturus cristatus*) if the ponds were publicly accessible or if access had been granted prior to the survey. This includes a habitat suitability index (HSI) assessment (ref. **R.10**) which assesses the pond based upon a number of factors including the size, water quality, permanence, shading, presence of fish, the number of nearby ponds and macrophyte cover. A score between 0 and 1 is given; where 0 represents poor suitability and 1 represents excellent suitability.

3.4 Ecological Impact Assessment

The ecological evaluation and impact assessment detailed below is based upon CIEEM Guidelines for Ecological Impact Assessment in the United Kingdom, (ref. **R.11**).

CIEEM Guidelines state that the value or potential value of an ecological resource or feature should be determined within a defined geographical context from an international to site scale as follows:

- On an International scale, e.g. Ramsar, SAC or SPA site;
- On a UK scale, for example a SSSI or a National Nature Reserve, (NNR);
- On a National scale, e.g. a reserve of importance to England/Northern Ireland/Scotland/Wales;
- On a Regional scale, e.g. a local site with important regional habitats or UKBAP species;
- On a County scale, e.g. a local site with a habitat that is characteristic of the County or rare on a County scale, or with LBAP species;
- On a District scale, e.g. a site with wildlife corridors likely to improve the biodiversity of the area;
- Local or Parish, e.g. areas of green space in a predominantly urban environment;

- On a Site scale, e.g. habitats with value within the zone of influence only.

The potential for protected species to use the habitats onsite contributes significantly towards the potential value of the habitats onsite.

4. DESK STUDY RESULTS

4.1 Nature Conservation Sites

There are no designated sites within the site boundary.

4.1.1 Non-Statutory Sites

Biological records have confirmed the presence of four non-statutory designations within the 2km search radius. The closest of which is Stansted Airport Sewage Works Fen (LWS), located 515m north of the site, containing species-rich and wet grassland habitats.

4.1.2 Statutory Sites

One statutory designated nature conservation site is located within 2km of the site. Hatfield Forest (SSSI and NNR), located 1.5km south-west of the site, offers 400 hectares of ancient coppice woodland, with scrub, grassland, marshland and a lake located within its borders.

4.1.3 Internationally Protected Sites

As part of the Habitats Regulations 2017, some areas of the country are looking more closely at impacts to Ramsar, SPA and SAC sites, from indirect impacts, notably Essex and Suffolk.

Internationally protected sites (SPA, SAC and Ramsar) receive additional protection under The Conservation of Habitat and Species Regulations 2017, as such a wider 22km search was undertaken for internationally protected sites.

No internationally protected sites were returned within this search.

4.2 Protected Species Records

Records of protected and notable species listed within 2km of the site were returned from EFC. Absence of records should not be taken as confirmation that a species is absent from the search area.

Table 1 provides a summary in Table 1 overleaf:

Table 1 – Selected Protected and Notable Species Records

Common Name	Scientific Name	Biological Records Within 2km	Date of Most Recent Record	Protective Status *
Amphibian				
Common Frog	<i>Rana temporaria</i>	No	-	WCA Sch 5 (Common. Documented decline up to 1970s, since then appears to have stabilised).
Common Toad	<i>Bufo bufo</i>	Yes	2016	UKBAP, WCA Sch 5, NERC.
Great Crested Newt	<i>Triturus cristatus</i>	Yes	2018	UKBAP, WCA Sch 5 + 6, HabsDir.
Reptile				
Common Lizard	<i>Zootoca vivipara</i>	Yes	2016	UKBAP, WCA Sch 5, NERC.
Slow Worm	<i>Anguis fragilis</i>	Yes	2016	UKBAP, WCA Sch 5, NERC.
Adder	<i>Vipera berus</i>	No	-	UKBAP, WCA Sch 5, NERC.
Grass Snake	<i>Natrix natrix</i>	No	-	UKBAP, WCA Sch 5, NERC.
Mammal				
Badger	<i>Meles meles</i>	Yes	2019	PBA.
Otter	<i>Lutra lutra</i>	Yes	2018	UKBAP, WCA Sch 5 + 6, HabsDir.
Water Vole	<i>Arvicola amphibius</i>	Yes	2018	UKBAP, WCA Sch 5, HabsDir.
Hedgehog	<i>Erinaceus europaeus</i>	Yes	2016	NERC, UKBAP, WCA Sch 6.
Barbastelle Bat	<i>Barbastella barbastellus</i>	Yes	2015	HabsDir, WCA Sch 5 + 6.
Whiskered Bat	<i>Myotis mystacinus</i>	No	-	HabsDir, WCA Sch 5 + 6.
Natterer's Bat	<i>Myotis nattereri</i>	Yes	2015	HabsDir, WCA Sch 5 + 6.
Serotine Bat	<i>Eptesicus serotinus</i>	No	-	HabsDir, WCA Sch 5 + 6.
Noctule Bat	<i>Nyctalus noctula</i>	Yes	2018	HabsDir, WCA Sch 5 +6, NERC, UKBAP.
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Yes	2018	HabsDir, WCA Sch 5 + 6, NERC, UKBAP.
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Yes	2019	HabsDir, WCA Sch 5 + 6.
Brown Long-eared Bat	<i>Plecotus auritus</i>	Yes	2019	HabsDir, WCA Sch 5 + 6, NERC, UKBAP.
Daubenton's bat	<i>Myotis daubentonii</i>	Yes	2015	HabsDir, WCA Sch 5 + 6, NERC.
Brown Hare	<i>Lepus europaeus</i>	No	-	UKBAP.
Hazel Dormouse	<i>Muscardinus avellanarius</i>	No	-	HabsDir, NERC, UKBAP, WCA Sch 5 + 6.
Plants				

Table 1 – Selected Protected and Notable Species Records

Common Name	Scientific Name	Biological Records Within 2km	Date of Most Recent Record	Protective Status *
One Schedule 8 species, Bluebell (<i>Hyacinthoides non-scripta</i>), was returned within the biological records.				
Invertebrates				
Twelve UKBAP/NERC species, including Latticed Heath (<i>Chiasmia clathrata</i>), Small Heath (<i>Coenonympha pamphilus</i>) and Brown-spot-Pinion (<i>Agrochola litura</i>), were returned within the biological records.				
Birds				
Eleven Schedule 1 species, including Black Tern (<i>Chlidonias niger</i>), Red Kite (<i>Milvus milvus</i>) and Hobby (<i>Falco subbuteo</i>) were returned within the biological records. Nine UKBAP/NERC species, including Spotted Flycatcher (<i>Muscicapa striata</i>), Yellowhammer (<i>Emberiza citrinella</i>) and Ringed Ouzel (<i>Turdus torquatus</i>) were also returned within the biological records. Two EBAP species, Skylark (<i>Alauda arvensis</i>) and Song Thrush (<i>Turdus philomelos</i>) were also returned.				
Notes:				
*WCA Sch 1 - Wildlife and Countryside Act (1981) Schedule 1. WCA Sch 5 - Wildlife and Countryside Act (1981) Schedule 5 (Killing, injuring and sale of certain species), WCA Sch 6 - Wildlife and Countryside Act (1981) Schedule 6 (Animals which may not be killed or taken by certain methods), WCA Sch 8 - Wildlife and Countryside Act (1981) Schedule 8 (Plants which are protected), UKBAP –UK Biodiversity Action Plan Species, NERC- Natural Environment and Rural Communities Act (2006) Section 41. Species and Habitats of Principal Importance. PBA - Protection of Badgers Act (1992). HabsDir- Conservation of Habitats and Species Directive (2010) Annex II, Annex IV. BoCC Red / Amber - Birds of Conservation Concern - Red or Amber listed.				

4.3 Habitat Suitability Index Assessments

Three ponds are located within 500m of the site, referenced Ponds 1 to 3 herein and shown on Drawing ref. 5051,EC/002/Rev0, in Appendix 3. An HSI assessment has been undertaken where access was possible.

5. FIELD SURVEY RESULTS

The results of the Phase 1 Habitat Survey and Protected Species Scoping Survey are detailed below and annotated on Drawing ref. 5051,EC/001/Rev0, attached in Appendix 3. Descriptions of the target notes (TN) and relevant photographs are included in Appendix 6 and 7.

5.1 Phase 1 Habitat Survey

The following habitat types were recorded within the survey area:

- Two Buildings and Hardstanding;
- Amenity Grassland;
- Scattered Trees;
- Introduced Shrubs;
- Fencing.

The following habitat types recorded within close proximity of the survey area were also surveyed:

- Open Water (Ponds 1 and Pond 2).

5.2 Habitat Within the Development Zone

5.2.1 Buildings and Hardstanding

Two buildings were noted within the site boundary, with relevant photographs within Appendix 7 and a summary within Table 2 below:

Table 2 – Bat Roost Suitability of Buildings			
Ref. No.	Building Description	Potential Roost Feature	Bat Roost Suitability
B1	Timber clad office with clay pitched roof tiles and a car port area with storage above to the west of the building.	Areas of timber cladding had become loose on the southern aspect of the western extension of the building.	Low
B2	Group of temporary portacabin structures.	N/A.	Negligible

Areas of hardstanding were noted surrounding the buildings onsite.

5.2.2 Amenity Grassland

An isolated small area of amenity grassland was noted to the north-west of the site (TN1), maintained to a short sward. Species noted within this habitat included, dominant Meadow Grass (*Poa sp.*), with rare instances of White Clover (*Trifolium repens*), Common Ragwort (*Senecio jacobaea*), Daisy (*Bellis perennis*) and Creeping Thistle (*Cirsium arvense*).

5.2.3 Scattered Trees

Scattered trees were noted to the north of the site, with species including Hazel (*Corylus avellana*) and Willow (*Salix sp.*). The trees to the north-east of the site were situated within a bare ground habitat.

5.2.4 Introduced Shrubs

A small area of introduced shrubs were noted surrounding the area of amenity grassland (TN1).

5.2.5 Fencing

Wooden hording was noted separating B1 from B2 (TN2).

5.3 Outside the Development Zone

The site is located to the north of the village of Takeley, Essex. The north and west of the site, extends to further commercial buildings associated with Stansted Courtyard. The east of the site meets road infrastructure with vegetated banks. The south of the site meets ongoing construction works and commercial buildings.

6. SPECIES APPRAISAL

6.1 Plants

No records of rare plants were returned within biological records and no evidence of any rare plants was noted during the site survey.

6.2 Invertebrates

The areas that will be impacted are of low species diversity, including introduced shrubs and amenity grassland vegetation and are unlikely to support an assemblage of rare invertebrates.

6.3 Amphibians

There are three ponds within 500m of the site. These ponds are referred to as Ponds 1 to 3 on Drawing ref. 5051,EC/002/Rev0 within Appendix 3. Pond 3 was not accessible.

A Habitat Suitability Index, (HSI), was undertaken to assess their suitability to support Great Crested Newts. A score between 0 and 1 is given; where 0 represents poor suitability and 1 represent excellent suitability. The results are provided in Appendix 8 and summarised in Table 3 overleaf:

Table 3 – HSI Scores of Ponds					
Pond	Distance from Site	Connected or Separated from Site	Pond Size (m²)	HSI Score	Pond Suitability for Great Crested Newts
1	5m west	Limited connectivity to the suitable terrestrial habitat onsite.	50	0.58	Below Average.
2	160m north-west	Separated from the site by commercial development and road infrastructure.	360	0.56	Below Average.
3	325m west	Separated from the site by commercial development and road infrastructure.	290	N/A.	N/A.

Although Pond 1, was located in close proximity to the site, there was limited connectivity to the suitable terrestrial habitat onsite (amenity grassland and introduced shrubs).

6.4 Bats

6.4.1 Roosting

B1, was classified as having low potential to support roosting bats as documented within Section 5.2.1 of the report.

No trees were classified as having bat roost potential.

6.4.2 Foraging

The scattered trees and introduced shrubs provide foraging opportunities for bats, albeit limited given its location within a commercial area and plentiful foraging habitat in the wider area.

6.5 Birds

The scattered trees, buildings and introduced shrubs provide suitable habitat for breeding birds, with grassland offering suitable foraging habitat. The grassland within the site boundary was not dense enough to support ground nesting birds.

6.6 Hedgehog

Hedgehog are widespread species and considered likely to be using the introduced shrubs and grassland for commuting and foraging purposes. Records of Hedgehog were returned within the biological records.

6.7 Other Fauna

Records of Otter and Water Vole were returned within the biological records, though the site did not offer suitable habitat for these species. As such, riparian mammals will not be a material constraint within this development.

As the grassland and introduced shrubs is isolated from further suitable habitat, the site is not considered suitable for reptiles and Badger.

The site did not offer habitat suitable for Hazel Dormouse.

7. EVALUATION, CONSTRAINTS AND RECOMMENDATIONS

7.1 Nature Conservation Sites

The desk study identified one nature conservation site with statutory designation, and four non- statutory designated nature conservation sites within 2km radius of the site. No internationally protected sites were returned within 22km of the site.

The development site does not contain any habitats which could support the important species associated with either the statutory or non-statutory sites, and there is not potential habitat connectivity between the site and the statutory sites.

As no internationally protected sites were returned within 22km of the site, with the development works being commercial, no further action will be required in line with the Essex Coast Recreational disturbance Avoidance and Mitigation Strategy (RAMS).

7.2 Habitat Constraints

The ecological constraints regarding general habitats onsite are detailed within Table 4 below, along with associated recommendations for avoidance and/or mitigation to reduce likely impact:

Table 4 – Habitat Constraints and Recommended Actions			
Habitat	Value/Importance	Impact without Appropriate Mitigation	Recommended Actions (Avoidance Measures or Recommendations to Reduce Impact)
Mature Trees.	Mature trees have intrinsic ecological value, in particular as dispersal routes for wildlife.	Unmitigated removal would have an impact of site to district significance.	Mature trees should be retained where possible. Any trees that are removed during development should be replaced within the landscaping of the final development using similar species. Protection measures should be implemented according to BS 5837: 2012 'trees in relation to design, demolition and construction' (ref. R.12).

7.3 Legally Protected and Notable Species

The ecological evaluation and impact assessment for protected species is detailed Table 5 below:

Table 5 – Protected Species - Ecological Constraints and Recommended Actions					
Ecological Constraint/ Receptor	Biological Records Within 2km	Value of Supporting Feature	Impact without Appropriate Mitigation in Place	Recommended Actions (Avoidance/mitigation/compensation Measures and Recommendations for Further Works)	Timing Restrictions
Bats (roosting) – B1	Yes	B1 was considered to have low bat roost potential.	Site to district significance.	Further Work Required: a dusk emergence or dawn re-entry survey should be undertaken to confirm roost suitability. Good Working Practice: If works do not commence on the buildings within two years of this report, a re-survey of the buildings should be undertaken prior to the commencement of work, to re-assess the suitability for roosting bats in case building conditions have altered.	single survey between May to August . Should bats be confirmed using the features, an additional two surveys would be required.
Bats (foraging) – scattered trees and introduced shrubs	Yes	The foraging habitat onsite is considered to be of low value, with the hedgerow offering limited wider connectivity. Given the above, there would be low impact on the conservation status of local bat species (if present) should this associated habitat be removed.	Site to local significance.	The habitats onsite are considered too small to warrant multiple activity surveys to confirm a baseline. Avoidance by Design: Measures should be designed into the scheme to avoid negative impact. This should include: <ul style="list-style-type: none"> Retention and protection of the scattered trees within the final development plan; A sensitive lighting scheme should be designed in coordination between a qualified lighting engineer and a suitably qualified ecologist, according to current best practice guidelines (ref. R.13). This will need to be demonstrated through production of proposed lux level lighting plans and confirmation from lighting engineers that proposed lighting will not be above existing lux. This should ensure that foraging or commuting habitat remains as unlit as possible to allow continued and future use by bats. 	N/A.
Great Crested Newt – Introduced shrubs and grassland	Yes	The habitats onsite have limited connectivity to Pond 1	Site to district significance.	Further Works Required: Clearance of vegetation onsite should be conducted under an Ecological Clerk of Works (ECoW) and supervised by a suitably qualified ecologist to ensure no Great Crested Newts are harmed within the development.	N/A.
Breeding Birds – scattered trees, introduced shrubs and building.	Yes	Habitats offer value to breeding birds for common passerine birds and are considered important on a site scale.	Site significance.	Avoidance by Design: Avoidance measures should be designed into the scheme to avoid negative impact, including: <ul style="list-style-type: none"> Retention and protection of the scattered trees. Avoidance/Mitigation Measures: To ensure that no offences occur under the WCA, it is recommended that any clearance work is undertaken outside of the bird nesting season. If it is not possible to undertake clearance works outside of the nesting bird season, a suitably qualified ecologist should be employed to determine if nesting birds are using the site prior to works commencing, to avoid negative impact on protected species. Any active nests that are found would need to be provided with a 10m buffer which would have to be left until the young had fledged, (typically four weeks from eggs being laid for the garden and woodland species likely to be present). Clearance works within the area can recommence only once the nest is no longer in use.	N/A.
Hedgehog – introduced shrubs and grassland	Yes	The site offers limited suitable foraging and commuting habitat for Hedgehog. Habitats are considered to be of site importance for Hedgehog.	Site significance.	Compensation through Design: Should fencing be required within the final development, it should be designed to be Hedgehog friendly to allow continued connectivity for Hedgehogs using the land. A 15cm diameter hole at the base of fencing should be included, to connect residential gardens in all directions. Pre-made gravel boards are commercially available. Good Working Practice: All open excavations should be covered overnight to prevent entrapment of Hedgehog or other mammals during development.	N/A.
Invertebrates – grassland and introduced shrubs.	Yes	The habitats onsite are considered important on a site scale for common species.	Site significance	Mitigation through Design: Inclusion of landscape planting should ensure that common species of invertebrate still use the site post development.	N/A.

8. GENERAL ENHANCEMENTS AND OPPORTUNITIES

The following general enhancements have been recommended to be included within the final development Scheme:

- Planting within the final design should ideally be native, incorporating species that are beneficial to foraging bats. A list of recommended species is included within Appendix 9
- Bat and Bird boxes should be implemented and placed on retained or surrounding trees or integrated into the building design. Examples of these are included within Appendix 10.

9. CONCLUSIONS

The proposed development will not adversely affect any statutory or non- statutory designated nature conservation sites.

The findings of the extended Phase 1 Habitat Survey confirm that the habitats onsite have the potential to support bat (roosting and foraging), breeding birds, Great Crested Newt (limited), Hedgehog and invertebrates. The recommendations within Section 7 of this report should be adhered, to reduce the impact on protected species.

Opportunities exist for the provision of ecological enhancements in the form of integrated bat and bird boxes and planting of native species beneficial to bats within the final development.

APPENDICES

Appendix 1 – Report Limitations and Conditions

General Limitations and Exceptions

This report was prepared solely for our Client for the stated purposes only and is not intended to be relied on by any other party or for any other use. No extended duty of care to any third party is implied or offered.

Geosphere Environmental Ltd does not purport to provide specialist legal advice.

The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered in the context of the whole report.

Interpretations and recommendations contained within the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based upon current legislation in force at that time.

Ecology Limitations and Exceptions

Any limitations associated with the report will be stated. The consequences of any limitations, findings and/or recommendations in the report are made clear in line with CIEEM (2013) 'Guidelines for Preliminary Ecological Appraisal' (GPEA) and BSI (2013) BS 42020:2013 Biodiversity – 'Code of practice for planning and development'.

This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context.

The wildlife and habitats present on any site are subject to change over time. Surveys of this kind can have limited validity, with the possibility of behaviour patterns and territory boundaries varying over time, due to the dynamics of adjacent populations.

New information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to us for re-assessment and, if necessary, re-appraisal.

It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment.

The scoping survey does not assess the presence or absence of a species, but is used to assess the potential for habitat to support them. Additional surveys may be recommended if, on the basis of the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present.

This survey does not constitute an invasive species survey and should not be treated as such.

Owing to seasonal variances and prevailing weather, conditions may sometimes be sub-optimal for surveying and this may delay or disrupt planned survey programmes. If applicable, full details are given in the report.

Geosphere Environmental Ltd may not be aware of information that could be held by other organisations or individuals, and it is always possible for features of nature conservation interest to be unrecorded during surveys.

Scientific survey data will be shared with local biological records centre in accordance with the CIEEM professional code of conduct.

Appendix 2 – References

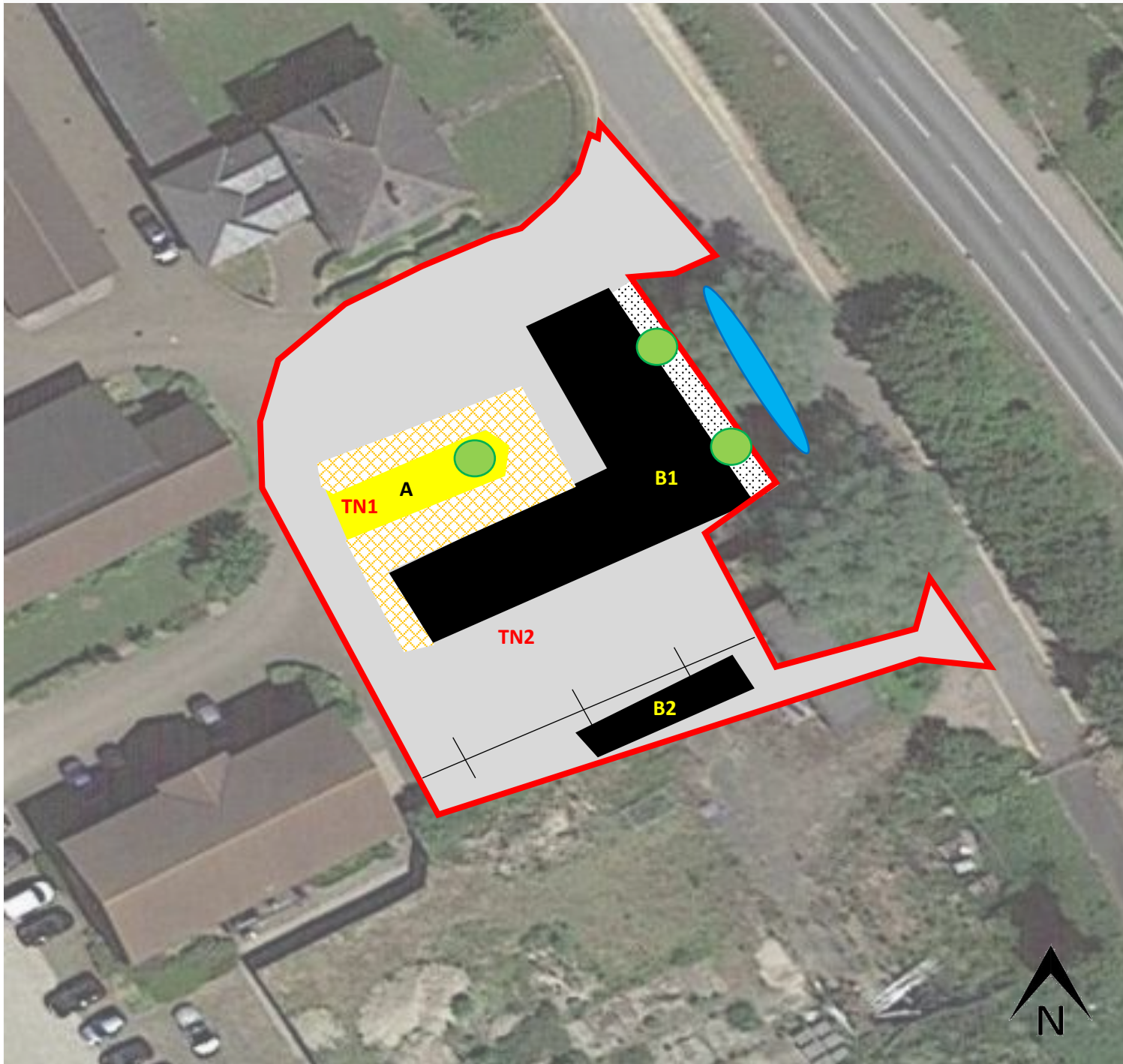
- R.1.** Ministry of Housing, Communities and Local Government (MHCLG) (2019) National Planning Policy Framework (NPPF).
- R.2.** ODPM (2005) Government Circular: Biodiversity and Geological Conservation – statutory obligations and their impact within the planning system.
- R.3.** CIEEM (December 2017) Guidelines for Preliminary Ecological Appraisal, 2nd ed. Chartered Institute of Ecology and Environmental Management, Winchester.
- R.4.** BSI (2013) BS 42020:2013 Biodiversity – Code of practice for planning and development. BSI Standards Limited 2013.
- R.5.** Stace, C. A. (2010). New Flora of the British Isles (third edition), Cambridge University Press.
- R.6.** Magic (2020). Site Check Report. www.magic.gov.uk.
- R.7.** JNCC, (2010). 'Handbook for Phase I Habitat Survey: A technique for environmental audit' (reprint). Joint Nature Conservation Committee, Peterborough.
- R.8.** Goldsmith, B. (1991). Monitoring for Conservation and Ecology, Chapman & Hall.
- R.9.** BCT (2016). 'Bat Surveys – Good Practice Guidelines' Bat Conservation Trust, London, 3rd Edition.
- R.10.** Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.
- R.11.** CIEEM, (2018). Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland
- R.12.** BS 5837: (2012), 'Trees in Relation to Design, Demolition and Construction'.
- R.13.** Institution of Lighting Professionals (2018) Bats and artificial lighting in the UK, Bats and the Built Environment series – Guidance Note 08/18

Appendix 3 – Drawings

Phase One Habitat Plan – Drawing ref. 5051,EC/001/Rev0

Pond Location Plan – Drawing ref. 5051,EC/002/Rev0

Proposed Development Plan – Drawing ref. H608/101



LEGEND

- Site Boundary
- B1 Building
- Hardstanding
- Introduced Shrubs
- A Amenity Grassland
- Bare Ground
- Open Water (Pond 1)
- Scattered Trees
- Fencing
- TN Target Notes

SOURCE

[© GoogleMaps](#)

PROJECT

Unit 6, Stansted Courtyard, Parsonage Road, Takeley, CM22 6PU

TITLE

Phase One Habitat Plan

DRAWING NUMBER

5051,EC/001/Rev0

SCALE

Not to Scale

DATE

07/07/2020

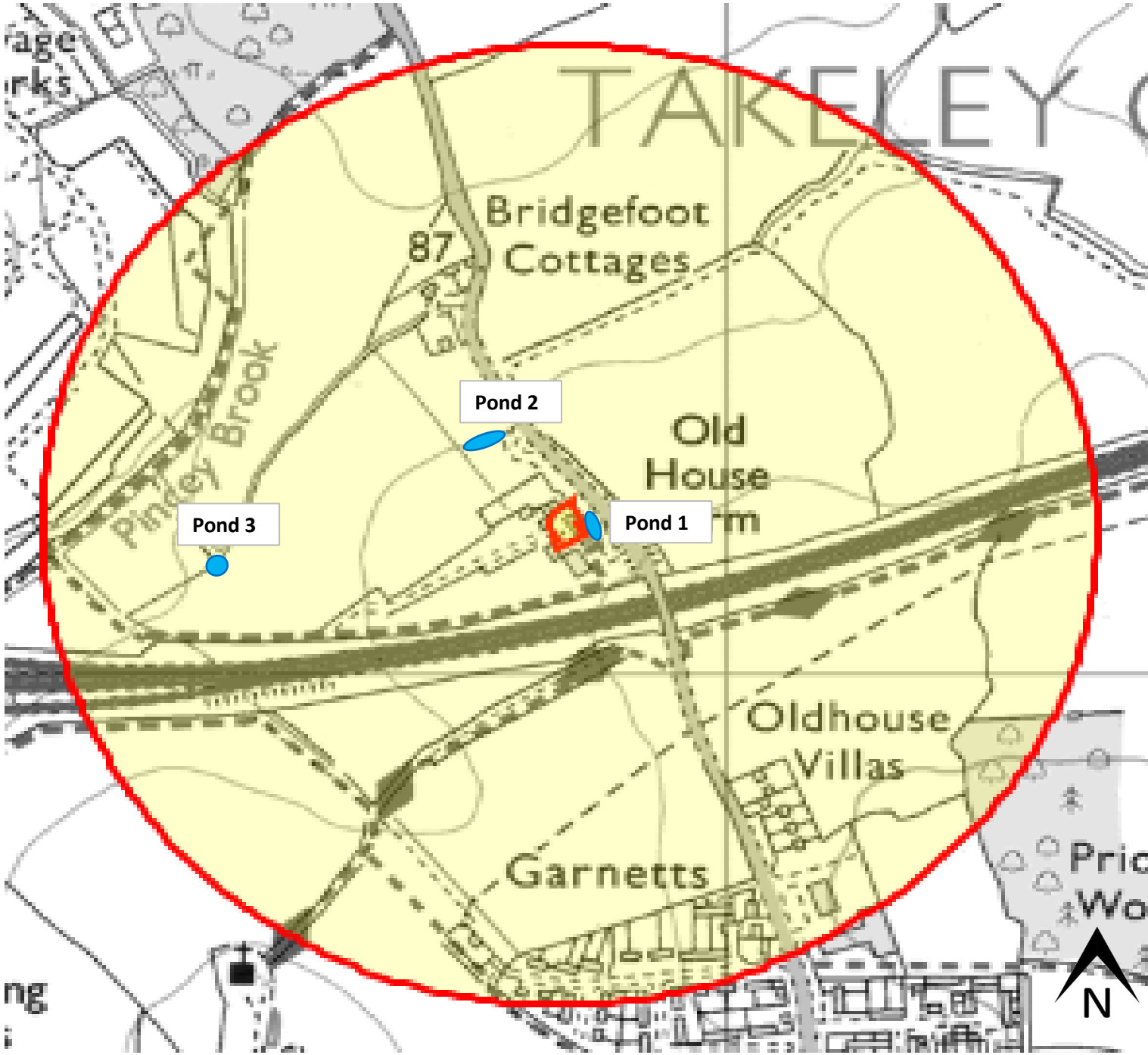
DRAWN BY

GG

CHECKED BY

KL





LEGEND

- Site Boundary
- 500m Buffer
- Pond Location

SOURCE

[© MagicMaps](#)

PROJECT

Unit 6, Stansted Courtyard, Parsonage Road, Takeley, CM22 6PU

TITLE

Pond Location Plan

DRAWING NUMBER

5051,EC/002/Rev0

SCALE

Not to Scale

DATE

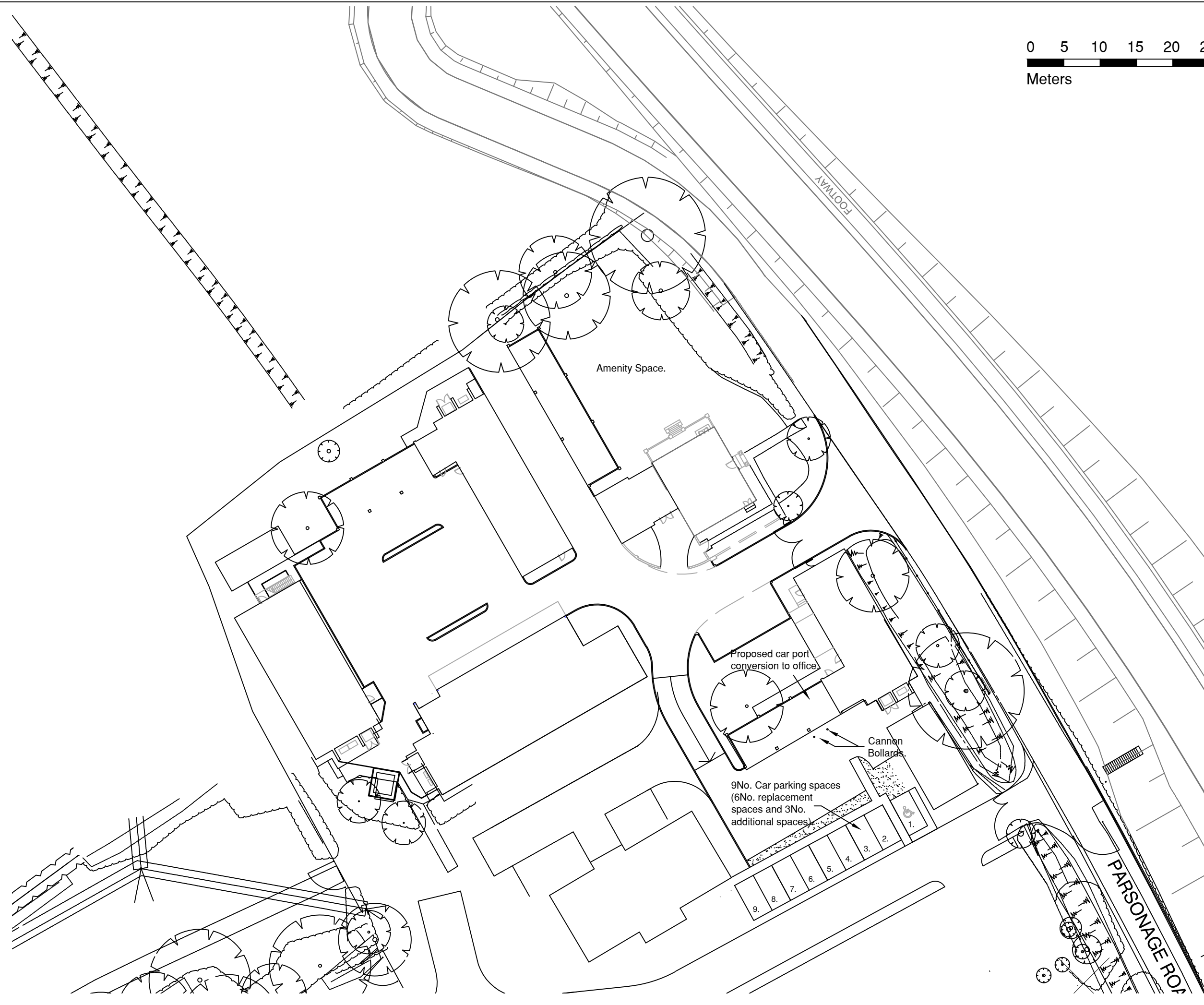
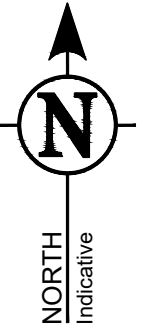
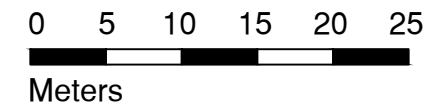
07/07/2020

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GG

CHECKED BY

KL



ROSPER
ESTATES

CLIENT
Rosper Estates

PROJECT
Unit 6 Carport Conversion
Stansted Courtyard
Parsonage Road
Takeley
CM22 6PU

DRAWING TITLE
Site Plan

JOB NO. H608

DATE 25/06/20

SCALES 1:500

DRAWN BY P.W.

CHECKED BY

DWG NO. H608/101

SHEET NO. Sheet 1

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Appendix 4 – Species-Specific Legislation

Badger

The Protection of Badgers Act 1992 exists for welfare reasons, to protect badgers from cruelty. Under the act it is a criminal offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so, or to intentionally or recklessly interfere with a sett.

Bats

All bat species are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. It is illegal to kill or injure bats, cause disturbance at their resting places or to block access to, damage or destroy their roost sites.

Great Crested Newts

Great Crested Newts are protected under the Wildlife and Countryside Act 1981 (as amended) Section 5 and the Conservation of Habitats and Species Regulations 2010. It is illegal to intentionally or deliberately kill, injure or capture Great Crested Newts or intentionally, deliberately or recklessly damage or destroy their breeding and resting places or obstruct access to their place of shelter or protection.

Hazel Dormouse

Hazel Dormice are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5 and the Conservation of Habitats and Species Regulations 2010. It is illegal to intentionally or deliberately kill, injure or capture a Dormouse or intentionally, deliberately or recklessly disturb a Dormouse, or damage its breeding or resting place or obstruct its place of shelter or protection.

Otters and Water Voles

Otters are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5 and the Conservation of Habitats and Species Regulations 2010. It is illegal to take, injure, kill or sell an otter, it is also an offence to damage, destroy or obstruct access to a resting place or disturb or harm an Otter at any time.

Water Voles are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5. It is illegal to deliberately kill, injure, capture or disturb them or to destroy, damage or obstruct access to any places used for shelter or protection

White-clawed Crayfish

White-clawed Crayfish (*Austropotamobius pallipes*) are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Sections 9(1) & 9 (5). It is an offence to intentionally take White-clawed

Crayfish from the wild or to sell them. It is also a qualifying Annex II species for some Special Areas of Conservation under the Habitats Directive.

Birds

Wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). It is illegal to take or harm them, their nests (whilst in use or being built) or their eggs.

Additionally, for some species listed under Schedule 1 of the Act, it is an offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly disturb their dependent young.

Reptiles

Common reptiles include Slow-worm, Adder, Grass Snake and Common Lizard. These are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Sections 9 (1) & 9 (5) only. It is illegal to kill or injure them.

It is not illegal to capture, disturb or to damage their habitats. However, the reptiles themselves are protected so any works to damage their habitat could risk causing harm to reptiles and hence could be illegal.

Rare reptiles which include Sand Lizard and Smooth Snake are restricted to a few locations in Britain and are fully protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9 and the Conservation of Habitats and Species Regulations 2010. It is illegal to kill, injure or intentionally disturb them whilst occupying a 'place used for shelter or protection' and destruction of these places.

Appendix 5 – Desk Study Data

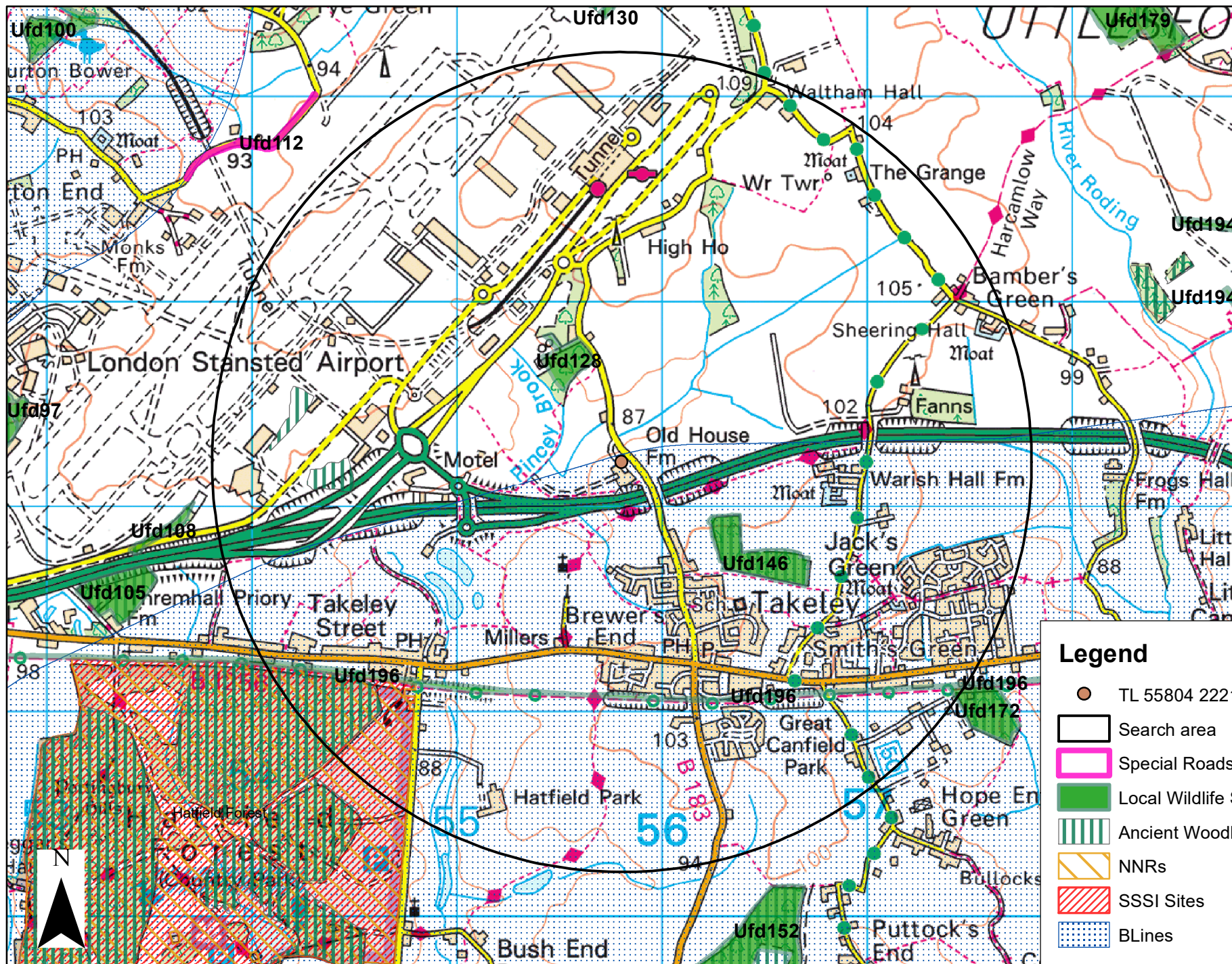
Essex Wildlife Trust Records Centre - designated sites within 2km search boundary for Stansted Courtyard, Uttlesford area



Essex
Wildlife Trust

Essex Wildlife Trust
Biological Records Centre
Abbotts Hall Farm
Great Wigborough
Essex
CO5 7RZ

www.essexwtrecords.org.uk
records@essexwt.org.uk
[@EssexWTrecords](https://twitter.com/EssexWTrecords)



Legend

- TL 55804 22216
- Search area
- Special Roadside Verges
- Local Wildlife Sites
- Ancient Woodlands
- NNRs
- SSSI Sites
- BLines

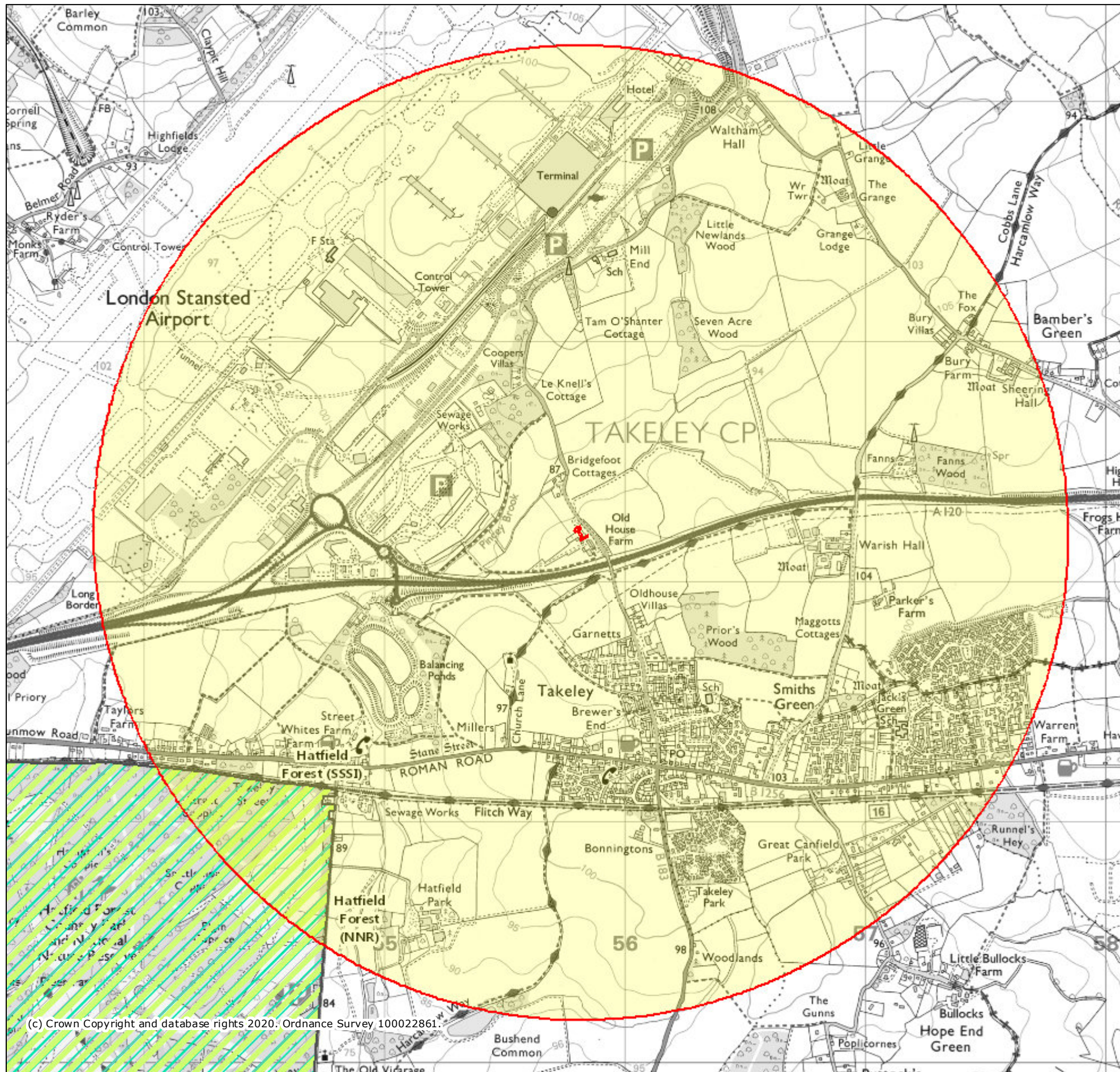
0 0.275 0.55 1.1 Kilometers 1:25,000

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Date: 24/06/2020

Created by : Dana Knollova

Stansted Courtyard - 2km Site Search



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)
- Marine Conservation Zones (England)**
 - Designated
 - Proposed
 - Recommended
- Special Areas of Conservation (Marine Components GB)**
 - Candidate
 - Designated
 - Possible
- Special Protection Areas (Marine Components GB)**
 - Classified
 - Potential

Projection = OSGB36
 xmin = 551300
 ymin = 219900
 xmax = 560200
 ymax = 224500



Map produced by MAGIC on 25 June, 2020.
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Appendix 6 – Target Notes

Target Note 1



Target Note 2



NOTES

Target Note 1

Small area of amenity grassland and introduced shrubs to the north-west of the site, with a scattered tree noted.

Target Note 2

Wooden board fencing separating B1 and B2.

PROJECT

Unit 6, Stansted Courtyard, Parsonage Road, Takeley, CM22 6PU

PROJECT NUMBER

5051,EC

TITLE

**Ecological Target Notes
Relating to Extended Phase 1 Habitat
Survey**

DATE

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Appendix 7 – Selected Photographs

Photograph 1



Photograph 2



Photograph 3



Photograph 4



DESCRIPTION

Photograph 1

Pond 1 (below average HSI score)

Photograph 2

Pond 2 - seperated from site and found to be predominantly dry at the time of the survey.

Photograph 3

B1 - Low bat roost potential, with lifted timber cladding in places on the southern aspect of the western extension of the building.

Photograph 4

B2 - nelgibgle bat roost potential (group of temporary portacabins)

PROJECT

Unit 6, Stansted Courtyard, Parsonage Road, Takeley, CM22 6PU

PROJECT NUMBER

5051,EC

TITLE

Selected Photographs Relating To Extended Phase 1 Habitat Survey

DATE

07/07/2020

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Appendix 8 – Habitat Suitability Index

HSI SCORES



Project Number: 5923,EC

Project Name: Unit 6, Stansted Courtyard, Parsonage Road, Takeley, CM22 6PU

Date: 08/07/2020

Pond Ref:	SI1	SI2	SI3	SI4	SI5	SI6	SI7	SI8	SI9	SI10	HSI	Suitability
	Location	Pond Area	Pond Drying	Water quality	Shade	Fowl	Fish	Ponds	Terr'I Habitat	Macrophytes		
1	1	0.1	1	0.67	1	0.67	1	0.6	0.33	0.5	0.58	Below Average
2	1	0.7	0.1	0.33	1	1	1	0.6	0.67	0.3	0.56	Below Average

HSI Score	Pond suitability
<0.5	Poor
0.5-0.59	Below average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

Appendix 9 – Recommended Plant List

GENERAL PLANTS CONSIDERED BENEFICIAL TO WILDLIFE

The lists of plants below are taken from current Natural England guidance (ref. **1**), a web-based data based managed on behalf of the RHS and the Wildlife Trusts (ref. **2**) and professional judgement. When buying native plants, ensure they are from a reputable source, as many wildflowers are illegally taken from the wild.

Large Trees

Common Name	Latin Name	Common Name	Latin Name
Beech	<i>Fagus sylvatica</i>	Pedunculate Oak	<i>Quercus robur</i>
Wild Cherry	<i>Prunus avium</i>	White Willow	<i>Salix alba</i>
Bird Cherry	<i>Prunus padus</i>	Small-leaved Lime	<i>Tilia cordata</i>
Sessile Oak	<i>Quercus petraea</i>		

Medium/Small Trees

Common Name	Latin Name	Common Name	Latin Name
Field Maple	<i>Acer campestre</i>	Apples	<i>Malus spp.</i>
Alder	<i>Alnus glutinosa</i>	Pears	<i>Pyrus spp.</i>
Silver Birch	<i>Betula pendula</i>	Rowan	<i>Sorbus aucuparia</i>
Holly	<i>Ilex aquifolium</i>		

Other Shrubs for Nectar, Pollen or Fruits

Common Name	Latin Name	Common Name	Latin Name
Serviceberry	<i>Amelanchier canadensis</i>	Himalayan Honeysuckle	<i>Leycesteria formosa</i>
June Berry	<i>Amelanchier lamarckii</i>	Mahonia	<i>Mohonia spp.</i>
Californian lilac	<i>Ceanothus spp.</i>	Mock Orange	<i>Philadelphus spp.</i>
Japanese quince	<i>Chaenomeles japonica</i>	Firethorn	<i>Pyracantha spp.</i>
Creeping Cotoneaster	<i>Cotoneaster frigidus</i>	Lilac	<i>Syringa vulgaris</i>
Daphne	<i>Daphne mezereum</i>	Laurustinus	<i>Viburnum tinus</i>
Hebes	<i>Hebe spp.</i>	Bodant Viburnum	<i>Viburnum x bodnantense</i>
Lavenders	<i>Lavandula spp.</i>		

Native Wildflowers for Borders

Common Name	Latin Name	Common Name	Latin Name
Yarrow	<i>Achillea millefolium</i>	Toadflax	<i>Linaria vulgaris</i>
Agrimony	<i>Agrimonia eupatoria</i>	Yellow loosestrife	<i>Lysimachia vulgaris</i>
Corncockle	<i>Agrostemma githago</i>	Common mallow	<i>Malva sylvestris</i>
Chives	<i>Allium schoenoprasum</i>	Marjoram	<i>Origanum vulgare</i>
Harebell	<i>Campanula rotundifolia</i>	Common poppy	<i>Papaver rhoeas</i>
Cornflower	<i>Centaurea cyanus</i>	Cowslip	<i>Primula veris</i>
Greater knapweed	<i>Centaurea scabiosa</i>	Primrose	<i>Primula vulgaris</i>
Chicory	<i>Chichorium intybus</i>	White campion	<i>Silene alba</i>
Foxglove	<i>Digitalis purpurea</i>	Red campion	<i>Silene dioica</i>
Teasel	<i>Dipsacus fullonum</i>	Goldenrod	<i>Solidago virgaurea</i>

REFERENCE

1. Natural England (2007). Plants for Wildlife-friendly Gardens: NE29.
2. RHS and the Wildlife Trusts (2015). Gardening with Wildlife in Mind. <http://www.joyofplants.com/wildlife/>.

TITLE
**Recommended Planting
within Final Development**

DATE
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Sea hollies	<i>Eryngium</i> spp.	Devil's-bit scabious	<i>Succisa pratensis</i>
Lady's bedstraw	<i>Galium verum</i>	Tansy	<i>Tanacetum vulgare</i>
Meadow crane's-bill	<i>Geranium pratense</i>	Dandelion	<i>Taraxacum officinale</i>
Herb-robert	<i>Geranium robertianum</i>	Wild thyme	<i>Thymus drucei</i>
Dame's-violet	<i>Hesperis matronalis</i>	Great mullein	<i>Verbascum thapsus</i>
Field Scabious	<i>Knautia arvensis</i>	Germander speedwell	<i>Veronica chamaedrys</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>	Spiked speedwell	<i>Veronica spicata</i>

Cultivated Plants for Borders

Common Name	Latin Name	Common Name	Latin Name
Alliums	<i>Allium</i> spp.	California poppy	<i>Eschscholzia californica</i>
Hollyhock	<i>Althaea rosea</i>	Snowdrop	<i>Galanthus nivalis</i>
Yellow alyssum	<i>Alyssum saxatile</i>	Sunflowers	<i>Helianthus</i> spp.
Grecian windflower	<i>Anemone blanda</i>	Christmas rose	<i>Helleborus niger</i>
Angelica	<i>Angelica archangelica</i>	Lenten rose	<i>Helleborus orientalis</i>
Snapdragon	<i>Antirrhinum majus</i>	Candytuft	<i>Iberis sempervirens</i>
Alpine rock-cress	<i>Arabis alpina</i>	Poached-egg plant	<i>Limnanthes douglasii</i>
Michaelmas daisies	<i>Aster</i> spp.	Hybrids sweet alyssum	<i>Lobularia maritime</i>
Lilac bush	<i>Aubrieta deltoidea</i>	Honesty	<i>Lunaria rediviva</i> or <i>annua</i>
Borage	<i>Borago officinalis</i>	Sweet bergamot	<i>Monarda didyma</i>
Pot marigold	<i>Calendula officinalis</i>	Grape hyacinth	<i>Muscari botryoides</i>
Red valerian	<i>Centranthus ruber</i>	Forget-me-not	<i>Myosotis</i> spp.
Wallflower	<i>Cheiranthus cheiri</i>	Tobacco plant	<i>Nicotiana sylvestris</i>
Corn marigold	<i>Chrysanthemum segetum</i>	Evening primrose	<i>Oenothera biennis</i>
Cosmos	<i>Cosmos bipinnatus</i>	Phlox	<i>Phlox paniculata</i>
Spring crocus	<i>Crocus chrysanthus</i>	Black-eyed Susan	<i>Rudbeckia fulgida</i>
Sweet William	<i>Dianthus barbatus</i>	Scabious	<i>Scabiosa</i> spp.
Purple coneflower	<i>Echinacea purpurea</i>	Ice plant	<i>Sedum spectabile</i>
Globe thistle	<i>Echinops ritro</i>	French marigold	<i>Tagetes</i> spp.
Winter aconite	<i>Eranthis hyemalis</i>	Mulleins	<i>Verbascum</i> spp.
Fleabane	<i>Erigeron</i> spp.		

Plants for Shady Areas

Common Name	Latin Name	Common Name	Latin Name
Bugle	<i>Ajuga reptans</i>	Bluebell	<i>Hyacinthoides non-scripta</i>
Lords and Ladies/ Cuckoopint	<i>Arum maculatum</i>	Yellow archangel	<i>Lamium galeobdolon</i>
Lilly of the Valley	<i>Convallaria majalis</i>	Daffodils	<i>Narcissus pseudonarcissus</i>
Foxglove	<i>Digitalis purpurea</i>	Primrose	<i>Primula vulgaris</i>
Wood avens	<i>Geum urbanum</i>	Sweet Violet	<i>Viola odorata</i>

TITLE
**Recommended Planting
within Final Development**

DATE
08/07/2020

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PLANTS CONSIDERED BENEFICIAL TO BATS

The lists of plants below are considered suitable species for foraging bats. When buying native plants, ensure they are from a reputable source, as many wildflowers are illegally taken from the wild.

Trees

Common Name	Latin Name	Common Name	Latin Name
Apple	<i>Malus domestica</i>	Plum	<i>Prunus domestica</i>
Bird Cherry	<i>Prunus padus</i>	Rowan	<i>Sorbus aucuparia</i>
Crab Apple	<i>Malus baccata</i>	Sugar Maple	<i>Acer saccharum</i>
Medlar	<i>Mespilus germanica</i>	Sycamore	<i>Acer pseudoplatanus</i>
Norway Maple	<i>Acer platanoides</i>	Whitebeam	<i>Sorbus aria</i>
Pear	<i>Pyrus communis</i>	Wild Cherry	<i>Prunus avium</i>

shrubs

Common Name	Latin Name	Common Name	Latin Name
Field Maple	<i>Acer campestre</i>	Butterfly Bush	<i>Buddleja davidii</i>
Hazel	<i>Corylus avellana</i>	Golden Ball Buddleia	<i>Buddleja globose</i>
Hawthorn	<i>Crataegus monogyna</i>	Hebe	<i>Hebe spp.</i>
Heather	<i>Erica vagans</i>	Privet	<i>Ligustrum ovalifolium</i>
Cherry Laurel	<i>Prunus laurocerasus</i>	Wayfaring	<i>Viburnum lantana</i>

Climbers

Common Name	Latin Name	Common Name	Latin Name
Dog Rose	<i>Rosa canina</i>	Ivy	<i>Hedera helix</i>
Guelder Rose	<i>Viburnum opulus</i>	Jasmine (night scented)	<i>Cestrum nocturnum</i>
Honeysuckle	<i>Lonicera periclymenum</i>		

Herbaceous Plants

Common Name	Latin Name	Common Name	Latin Name
Angelica	<i>Angelica sylvestris</i>	Lemon Balm	<i>Melissa officinalis</i>
Aubretia	<i>Aubretia deltoidea</i>	Marjoram	<i>Origanum majorana</i>
Candytuft	<i>Iberis sempervirens</i>	Knapsweed	<i>Centaurea nigra</i>
Corn Cockle	<i>Agrostemma githago</i>	Mallow	<i>Malva sylvestris</i>
Cornflower	<i>Centaurea cyanus</i>	Ox-eye Daisy	<i>Leucanthemum vulgare</i>
Corn Marigold	<i>Glebionis segetum</i>	Primrose	<i>Primula vulgaris</i>
Borage	<i>Borago officinalis</i>	Yarrow	<i>Achillea millefolium</i>
English Marigolds	<i>Calendula officinalis</i>	Rosemary	<i>Rosmarinus officinalis</i>
Lavender	<i>Lavandula spp.</i>	Sweet Cicely	<i>Myrrhis odorata</i>
Musk Mallow	<i>Malva moschata</i>		

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Appendix 10 – Example Bat and Bird Boxes

EXAMPLE BAT AND BIRD BOXES

EXAMPLE BAT BOXES

External Bat Box: Schwegler 1FQ bat box



The structure of the 1FQ has been designed with bat behaviour in mind. For example, the outside of the front panel has been roughened to enable the animals to land and hang onto it securely. Access is via a step-like recess which enables even young and inexperienced bats, to safely access the box. The inside of the box has rough pieces of wood incorporated which provide good insulation and are also used by the bats as perches. The internal layout provides three different areas from which bats can hang and which offer different levels of light and temperature. There are also non-slip areas, gaps ranging from 1.5 to 3.5cm in width and various places for individuals to hide.

Installation of the 1FQ is achieved using the four screws and plugs provided. The back panel is initially screwed onto the wall (using four screws) and then the front panel is attached to this. It can easily be attached to most types of external brick, timber or concrete and can also be placed inside a roof space. (If fixing to timber then the gaps between the wall and the box should be sealed with silicone to prevent moisture being trapped here). The box should be positioned a minimum of three metres above the ground and where there is a clear flight path for bats entering and leaving. If desired, the front panel can be painted to match your building using an air-permeable paint.

SOURCE

<https://www.nhbs.com/1ff-schwegler-bat-box-with-built-in-wooden-rear-panel>

External Bat Box: 1FF Schwegler Bat Box with Built-in Wooden Rear Panel



The Schwegler 1FF bat box is spacious enough for bats to use as a summer roost or nursery site and is open at the bottom, allowing droppings to fall out so it does not need cleaning. The 1FF is, therefore, especially suitable for hanging in inaccessible places such as high in trees, or on steep slopes and house walls.

The 1FF is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects.

The inner dimensions of the 1FF have a reducing width making it ideal for bat species which inhabit crevices such as pipistrelle and noctule bats. For conservation projects and studies, the entire front of the box can be easily swung open for inspection purposes.

The 1FF bat box can be sited in trees or on buildings and is best positioned at a height of between 4 to 6 metres.

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External Bat Box: 2F Schwegler Bat Box with Double Front Panel



This box has a front panel and a second inner wooden panel fitted to it to create a cavity wall. This provides ideal quarters for bats that inhabit crevices, such as Nathusius' Pipistrelle (*Pipistrellus nathusii*), Daubenton's Bat (*Myotis daubetonii*) and the Common Pipistrelle (*Pipistrellus pipistrellus*).

It has been designed as a summer roosting space for bats and has a simple entrance hole at the front. The Schwegler 2F double front panel is removable and can be converted in to a bird nest box using a replacement 1B front panel if there is no evidence of bat activity after a couple of years. The 2F Double Front Panel is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects. Woodcrete is breathable and maintains a stable temperature inside the box and the 2F is painted black to absorb warmth. It also provides a good rough surface for bats to cling on to and climb.

The 2F Double Front Panel bat box can be sited in trees or on buildings and is best positioned at a height of between 3 to 6 metres.

SOURCE

<https://www.nhbs.com/2f-schwegler-bat-box-with-double-front-panel>

External Bat Box: Vincent Pro Bat Box



This attractive bat box has been designed by leading bat researcher, Collin Morris, based on a tried and tested design from the Vincent Wildlife Trust.

The box features three vertical chambers of different sizes, providing ideal roosting space for a variety of species. Beneath the crevice entrances is a ladder which provides a rough surface for bats to land.

Proven with seven UK species: Barbastelle, Leisler's, common pipistrelle, soprano pipistrelle, brown long-eared, Natterer's and whiskered bat.

SOURCE

<https://www.nhbs.com/vincent-pro-bat-box>

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Example Bat and Bird Bricks & Boxes

Please note that once bats have inhabited a roost (integrated or external box) they may only be disturbed by licensed bat workers.

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EXAMPLE BIRD BOXES

External Bird House: 1B Schwegler Bird Nest Box (General)



These Woodcrete nest boxes last for at least 20-25 years. Woodcrete is a breathable blend of wood, concrete and clay which will not rot, leak, crack or warp, whilst preventing condensation and maintaining more constant temperatures inside than wooden boxes.

Schwegler bird boxes are backed by conservation organisations, government agencies and forestry experts and experiments have shown that the highest density of bird populations (i.e. breeding pairs per hectare) is achieved with Schwegler nest boxes.

They are carefully designed to provide a stable environment and to mimic natural nest and roost sites with internal brood chamber dimensions that are similar to natural woodpecker cavities. Schwegler have a patented method of installation on trees that prevents the tree trunk from growing over the hanger from which the box is suspended.

SOURCE

<https://www.nhbs.com/woodstone-swift-nest-box>

External Bird House: 1ZA Schwegler Wren Roundhouse



The nest box is designed to encourage Wrens as they like to nest near the ground, in undergrowth. They are not particularly good flyers, preferring to hop about in the undergrowth. They like shady places - in hedges, thickets, heavily overgrown areas and bushes as well as balconies.

Hang the nest box in undergrowth, in a shady place. It can also be placed upon a pile of brushwood or garden clippings, for example. If hung in a totally unobstructed place it will also attract other types of birds that nest in holes and cavities, including Blue-, Coal- and Great Tits, as well as Tree and House Sparrows.

These Woodcrete nest boxes last for at least 20-25 years.

SOURCE

<https://www.nhbs.com/1za-schwegler-wren-roundhouse>

External Bird House: Natural Log Robin Nester



The Silver Birch Log nest, suitable for Robins, Wrens, Pied Wagtails or Spotted Flycatchers.

Locate the bird box 1.5 - 2m high on a tree, wall or fence. Ideally you should face the open Log nestbox somewhere between north and south-east. For Robins and Wrens site within shrubs to provide plant cover.

SOURCE

<https://www.nhbs.com/1b-schwegler-nest-box>

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