



Little Hayes, Taddiport, North Devon

Ecological Appraisal

December 2016

A report on behalf of Mr & Mrs Barbaric

Ref: 0387-EA-DGS

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Central OS Grid Reference	SS 487 184
Client	Mr & Mrs Barbaric

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Executive Summary






This report presents the results of an Ecological Appraisal at Little Hayes, Taddiport, North Devon (central OS grid reference: SS 487 184) in relation to a proposed planning application for three residential properties with associated garages and landscaping.

A desk study, Extended Phase 1 Habitat Survey including a building inspection for bats and a series of bat emergence and re-entry surveys were undertaken in 2016 to provide baseline data for the Site and assess the ecological implications of the development.

The Site measures approximately 0.49 hectares (ha) and consists of an area of tall ruderal vegetation, hardstanding, walls, agricultural buildings and a 1930's pre-fabricated bungalow, enclosed by species-poor hedgerows. The southern, western and eastern hedgerows were considered to meet the criteria of Habitats of Principal Importance under Section 41 of the NERC Act 2006. The Site was found to have evidence of a range of protected and notable species, including breeding birds, common and widespread reptile and amphibian species (which are assumed to be present) and commuting and foraging bats (including Annex II species). Building 1 on Site was found to support both common and soprano pipistrelle bat roosts, as well as a roost for a single bat from the *Myotis* genus, probably Natterer's bat. Dormice were also assumed to be present within the hedgerows.

The development will result in the loss of the tall ruderal vegetation, hardstanding, walls, buildings and areas of introduced shrub. The hedgerows will be retained in their entirety and improved post-development.

To mitigate for the loss of habitats and species, the development will include:

-  A Natural England EPS licence will be applied for to legally allow impacts on bat roosts. This will include a detailed mitigation strategy including timing of works and replacement bat roosts;
-  Reptiles will be removed from Site through habitat manipulation and a destructive search. Reptile mitigation areas will be created to mitigate for the loss in suitable habitat for example species-rich grassland and hibernacula;
-  Artificial lighting (if introduced) will be controlled, maintaining dark flyways on the Site boundaries for light sensitive bat species using the Site;
-  The sowing of native species-rich grassland mixtures and planting of native shrub species to compensate for the loss of the introduced shrub species and tall ruderal vegetation; and
-  New roosting opportunities for nesting birds.

Additional recommendations have been provided in order to enhance the Site for biodiversity post-development including additional native species-rich shrub planting within the retained hedgerows, the extension of the hedgerow habitat and the planting of standard trees within the Site.

The Devon Wildlife Checklist is provided in **Appendix 4**.

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1 INTRODUCTION

This report presents the results of an Ecological Appraisal (EA) at Little Hayes, Taddipport, North Devon (central OS grid reference: SS 487 184) in relation to a proposed planning application. The area within the application boundary, hereafter referred to as the 'Site', is shown in **Figure 1**. The surveys were commissioned by Mr & Mrs Barbaric.




The Site is located to the south of the small village of Taddipport, Great Torrington, North Devon. It measures approximately 0.49 hectares (ha) and consists of a series of mid-20th Century barn buildings and a 1930's pre-fabricated bungalow. Other habitats include areas of hardstanding, wall, tall ruderal, introduced shrub and a species-poor native hedgerow.

The proposals are understood to include the demolition of all of the buildings, the construction of three new residential dwellings, new garages and the re-landscaping of the Site. It is understood that the hedgerows will be retained and will not be impacted by the proposed development. The development will result in the loss of the introduced shrub and tall ruderal.

This report includes the following surveys undertaken in 2016:

-  Desk study;
-  Extended Phase 1 Habitat Survey;
-  Building assessment for bats and birds;
-  Bat emergence and re-entry surveys.







The aims of this report are to:

-  Identify any existing bat roosts within the building or any potential features which may provide roosting opportunities for bats and identify any evidence of nesting birds;
-  Assess the ecological value of the Site and evaluate the significance of any potential effects;
-  Provide recommendations for mitigation and enhancement opportunities in accordance with relevant planning policy, legislation and other published guidance where necessary.

2 PLANNING POLICY AND LEGISLATION

2.1 Habitat and Species Legislation




Species and habitats receive legal protection in the UK, under various legislation, including:

-  The Wildlife and Countryside Act (WCA) 1981 (as amended);
-  The Conservation of Habitats and Species Regulation 2010 (also known as the Habitat Regulations, it implements the EU Habitats Directive in England and Wales);
-  The Countryside Rights of Way (CRoW) Act 2000;
-  The Hedgerows Regulations 1997;
-  The Protection of Badgers Act 1992; and
-  The Natural Environment and Rural Communities (NERC) Act 2006.

Where relevant, this report takes into account the legislative protection afforded to specific habitats and species.



2.2 National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Governments planning policies for England and how local planning authorities should incorporate them into their own policies and plans. Section 11 of the NPPF contains several policies targeted at enhancing the natural environment and requires local authorities to consider how impacts on biodiversity can be minimised and provide net gains in biodiversity. Additional Planning Practice Guidance (PPGs) supports the NPPF and includes guidance on:

-  Landscape;
-  Biodiversity, ecosystems and green infrastructure; and
-  Brownfield land, soils and agricultural land.

2.3 Regional/ Local Planning Policy

The Torridge District Local Plan 1997 – 2011 (TDLP) sets out the Council's vision for the district and forms part of the decision making process on planning applications Until the North Devon and Torridge Local Plan 2011 – 2031 (NDTLP) is formally adopted. The NDTLP includes the following relevant saved policies from Chapter 6 of the TDLP, which were considered as part of this report:

-  ENV7 Protection of Important Nature Conservation Interests;
-  ENV9 Important Wildlife Corridors; and

 ENV10 Mitigation & Enhancement.

2.4 UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP) was succeeded in 2012 by the 'UK Post-2010 Biodiversity Framework' which demonstrates a whole-environment strategy on how the UK contributes to achieving the Convention on Biological Diversity's (CBD) 20 Aichi Biodiversity Targets. In England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' (Defra, 2011) sets out the strategic direction for biodiversity policy in the future. The former UK BAP was used to draw up lists of species and habitats of 'principal importance' which continue to be regarded as priorities under the Post-2010 Biodiversity Framework and are identified under Section 41 of the NERC Act 2006; these species have been considered throughout this report.

2.5 Local Biodiversity Action Plan

The Nature of Devon – A Biodiversity and Geodiversity Action Plan was revised by the Devon Biodiversity Partnership in 2005. The document takes into account the objectives and targets of the former UK BAP and translates these within a local context. The Plan contains action plans for five common themes, 20 key habitats and 20 key species, which are a consideration in planning decisions.

3 METHODOLOGY

3.1 Desk Study

A desk-based study was undertaken in August 2016 whereby Devon Biodiversity Records Centre (DBRC) was contacted for existing records of protected/ notable species including bats and sites designated for nature conservation value (statutory and non-statutory) within a 2km radius of the Site boundary.

The Government's mapping website MAGIC (www.magic.gov.uk) was also searched for Priority Habitats within 1km of the Site and European designated Natura 2000 sites within 10km. Natura 2000 is a European Union-wide network of nature conservation sites established under the EC Habitats and Birds Directives comprising Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

3.2 Extended Phase 1 Habitat Survey

A site walkover was undertaken in accordance with the Joint Nature Conservation Committee's Phase 1 Habitat Survey methodology (JNCC 2010) on 03 August 2016 by Dominic Sheldon BSc (Hons) PgCert ACIEEM and Kerri Watson BSc when weather conditions were dry and overcast.

All habitats within the Site were identified, described and mapped during the field survey, and an indicative botanical species list compiled. Plant names follow Stace (2010). The survey was extended to highlight the potential presence of protected and priority species in accordance with CIEEM's Guidelines for Preliminary Ecological Appraisal (2013). This involved a search to identify the presence or potential presence of notable and protected species such as breeding birds, badger *Meles meles*, dormouse *Muscardinus avellanarius*, reptiles and amphibians. Target Notes (TNs) were used to record any features or habitats of ecological interest.

Where access allowed, adjacent habitats were also considered in order to assess possible impacts of the proposal in a wider context.

A digital map was produced using MapInfo Professional (Pitney Bowes, version 12.0.3). The Phase 1 Habitat map is shown in **Figure 1**. Plant species lists and target notes are provided in **Appendix 1** and **2** respectively.

3.3 Bat Surveys

3.3.1 Preliminary Tree assessment

The trees on Site were assessed by Dominic Sheldon during the Extended Phase 1 Habitat Survey for their bat roost potential in accordance with best practice methodology published by the Bat Conservation Trust (Collins 2016).

Trees were inspected from ground-level with the aid of binoculars for Potential Roost Features (PRFs) such as rot holes, hazard beams, other vertical or horizontal cracks or splits such as frost cracks, woodpecker holes, knot holes, man-made holes such as flush cuts, cankers, gaps between overlapping stems/ branches, loose bark, dense ivy and bat, bird or dormouse boxes. Signs indicating possible use by bats were also recorded such as bat droppings, odour, scratches, staining and audible sounds. Information collected about PRF's included a description, the height of the feature above ground level and the orientation of the feature in relation to the trunk.

An assessment was made according to each tree's potential to support bat roosts and a category assigned as detailed in **Table 1**.

Table 1: Tree Roost Potential

Suitability	Description of tree roost potential
Negligible	Negligible habitat feature/s likely to be used by roosting bats
Low	A tree with one or more potential roost sites that could be used by individual bats opportunistically. However these roost sites do not provide enough space, shelter, protection, appropriate conditions or suitable surrounding habitat to be used on a regular basis by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features of very limited potential.
Moderate	A tree with one or more potential roosting sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (not species conservation status).
High	A tree with one or more potential roost sites that are obviously suitable for use by a larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Roost	Known or confirmed roost

Tree locations are shown in **Figure 1**.

3.3.2 Building Assessment

All buildings within the Site boundary were assessed for their potential to support roosting bats, as well as to search for signs of nesting birds. A detailed inspection was undertaken on 03 August 2016 by Dominic Sheldon Natural England Level 2 (Class licence for bats) registration No. 2016-20473-CLS-CLS and Kerri Watson in accordance with current best practice methodology (Collins 2016).

This involved an external and internal inspection using close focusing binoculars and high-powered torches where appropriate. A search was made for features which could provide suitable roosting spaces for bats, including gaps beneath tiles and flashing, gaps around windows, door frames, ridge tiles, pipe work and possible access under eaves, soffits and barge/ fascia boards. A systematic search was made of all accessible internal spaces for the presence of bats and evidence such as bat droppings.

Buildings were then prescribed a category based on its potential to support roosting bats:

-  Known or confirmed roost – Bats and/or evidence of bats found;

- 👉 High – A structure with many areas suitable for roosting with a large number of potential access points obviously suitable for use by larger numbers of bats on a more regular basis. These are normally sheltered locations, subject to low variation in temperature;
- 👉 Moderate – A structure with one or more areas suitable for roosting due to the features size, shelter, protection, conditions and surrounding habitat that could be attractive to bats and potentially support maternity roosts;
- 👉 Low – A structure with one or more potential roost sites that could be used on a sporadic or occasional basis for feeding or solitary day roosting; or,
- 👉 Negligible – The building is not considered suitable for bats.

Figure 1 illustrates the building locations and reference numbers.

3.3.3 Building Emergence/ Re-entry Surveys

Two dusk emergence surveys and one pre-dawn re-entry survey were conducted in accordance with best practice guidelines (Collins 2016). The survey team was led by Ecologist Dominic Sheldon Natural England Level 2 (Class Licence for Bats) Registration No. 2016-20473-CLS-CLS. The dusk surveys commenced 15 minutes before sunset and continued for up to two hours after sunset. The dawn survey commenced two hours before sunset and finished at sunset. All surveys were completed during optimal weather conditions of at least 10°C temperature at the start of the survey, dry and with very little or no wind, as detailed in **Table 2**.

Table 2: Emergence survey dates, weather and personnel

Survey type	Date	Structures surveyed	Sunset/sunrise time	Start time	Survey length (time)	Weather	Personnel
Dusk	22/08/2016	Building 1	20:23	20:08	2 hrs	Temp (max/min) 15 – 13°C. No rain. Cloud Cover (CC) 60 – 40%, Wind (Beaufort) 0 – 1. Humidity 80 – 94%	DGS, LW
Dusk	20/09/2016	Building 1	19:19	19:00	1:50 hrs	Temp (max/min) 13°C – 12°C. No rain. CC 60 - 80%, Wind (Beaufort) 0 – 1.	DGS, LW
Dawn	28/09/2016	Building 1	07:13	05:13	2 hrs	Temp (max/min) 13°C. No rain. CC 50 - 80%, Wind (Beaufort) 0-1.	DGS, LW

DS = Dominic Sheldon BSc (Hons) PgCert ACIEEM NE Bat Class 2 licence holder; LW = Louise Woolley BSc (Hons) ACIEEM NE Bat Class 2 licence holder.

Surveys involved two experienced bat surveyors positioned around Building 1, with a good view of any potential bat access points and roost features. Surveyors used a combination Wildlife Acoustics Echo Meter 3 (EM3) bat detectors, Titley Scientific Anabat Express and Walkabout recorders in conjunction with an Elekon Bat Scanner.

Incidental bat activity was also recorded during the bat emergence/ re-entry surveys, such as commuting and foraging bats using the Site. The small Site had very limited suitable habitat and commuting features, but those areas that were present were located directly adjacent to the emergence/re-entry survey locations. Therefore it was considered that any activity from bats using this habitat would be adequately recorded during the bat emergence/ re-entry surveys.

3.3.4 Bat Data Analysis

Data recorded during the bat activity surveys was analysed using AnalookW 4.2 to identify species and gain a count of the total bat passes. Identification was guided by information in Russ (2012). Due to difficulties in separating *Myotis* and *Plecotus* (long-eared) bat species by call parameters, these species have been identified to genus level only. The analysed data set is available on request.

3.4 Survey Limitations

Care has been taken to ensure that balanced advice is provided on the information available and collected during the study period (s), and within the resources available for the project. However, the possibility of important ecological features being missed due to survey timings, absence during surveys or the year of survey cannot be ruled out. In addition the lack of evidence or records of protected species on Site does not preclude their presence from Site.

During the initial building inspection on the 3rd August 2016, access into the loft space was not possible due to the poor state of repair of Building 1, both externally and internally. A limited view into the roof space was achieved through a gap created by a series of dislodged hanging asbestos ceiling tiles.

4 RESULTS

4.1 Desk Study

4.1.1 Designated Sites

There is a single Natura 2000 site within 10km of the Site boundary, consisting of three parts of the Culm Grassland SAC. There are no statutory designated sites and two non-statutory designated sites within 2km of the Site boundary. In addition, there are several non-designated Other Sites of Wildlife Interest (OSWI) and Unconfirmed Wildlife Sites (UWS) within 2km. A summary is provided in **Table 3**.

County Wildlife Sites do not have any legal status but are identified by local authorities under the Local Plan (as a requirement of the NPPF) due to their biodiversity importance. OSWIs are sites of significant wildlife interest within a local context that do not reach the criteria for County Wildlife Sites. UWS's have 'possible interest' but not fully surveyed and are not usually covered by the Local Plan.

Table 3: Designated sites records within 2km of Site boundary and Natura 2000 Sites within 10km

Site Name	Location	Description
<i>Natura 2000 Sites</i>		
Culm Grassland (SAC)	Three areas: 7.5km, 9.7km and 9.8km to the west of the Site	Culm Grasslands represents <i>Molinia</i> meadows in south-west England. This site contains extremely diverse examples of the heathy type of M24 <i>Molinia caerulea</i> – <i>Cirsium dissectum</i> fen-meadow. Contains the largest cluster of sites for marsh fritillary <i>Euphydryas aurinia</i> in the south-west peninsula.
<i>Non-statutory CWS</i>		
Great Torrington Commons (CWS)	394m to the north of the Site.	Mosaic of unimproved acid grassland, semi-improved neutral and acid grassland, scrub, bracken, broadleaved woodland and wet woodland, with bat and butterfly interest.
Rosemoor Gardens (CWS)	1.25km to the south-east of the Site.	Garden and woodland with lichen interest.
<i>OSWI and UWS</i>		
Rolle Field (OSWI)	685m to the north-west.	Semi-improved marshy grassland and small area of species-rich marshy grassland.
Taddipport Bridge (E) (UWS)	199m to the north-east	Dry grassland/scrub.
Taddipport Bridge (W) (UWS)	180m to the north	Dry grassland/scrub.
Cross Wood Field (UWS)	310m to the south	Dry grassland/scrub.
The Leper	370m to the	Dry grassland.

Site Name	Location	Description
Fields (UWS)	east	
Caddywell (UWS)	1.29km to the north-east	Rough grass & scrub.
Common Lake (UWS)	1.68km to the north-east	Dry grassland/scrub.
Servis Wood (UWS)	295m to the west	Semi-natural ancient woodland.
Week Bottom Wood (UWS)	1.85km to the east	Ancient semi-natural broadleaved woodland.
Diddycleave and Great Woods (UWS)	1.3k to the south	Ancient semi-natural broadleaved woodland.
Tarka Trail (UWS)	1.18km to the north-west	Disused railway line with possible woodland, grassland etc.
Rosemoor (UWS)	1.7km to the south-east	Ancient deciduous woodland.
Never-Be-Good Wood (UWS)	1km to the south-east	Woodland with notable wildlife.
Darkham Wood Marsh (UWS)	1.5km to the south-east	Possible floodplain grazing marsh.

4.1.2 *Priority Habitats*

The data search found no known priority habitats within the Site itself, although approximately 170m to the west of the Site, areas of deciduous woodland, woodland shrub, ancient semi-natural woodland, ancient replanted woodland and areas of deciduous woodland were recorded. Eighteen metres to the east of the Site, (on the other side of the adjacent road), an area of traditional orchard was also present. All of these habitats qualify as Habitats of Principal Importance (HPI)¹.

4.1.3 *Protected and Notable Species*

The data request from Devon Biological Records Centre returned numerous records within the 2km search area around the Site. The results have been referenced throughout this report within the relevant sections; the full dataset is available on request.

4.2 **Extended Phase 1 Habitat Survey**

4.2.1 *Desk Study*

Several notable plants were returned as part of the desk study, as detailed in **Table 4** below.

¹ Listed in Section 41 of the NERC Act 2006

Table 4: Notable plant records provided by Devon Biological Records Centre

Species	Conservation Status	Record Details
Himalayan balsam <i>Impatiens glandulifera</i>	WCA 9	Rolle Field SS483191
Japanese knotweed (<i>Fallopia japonica</i>)	WCA 9	Multiple: SS487193, SS489188, SS492188, SS492192, SS481199, SS482194, SS484196, SS492196, SS493196, SS493198, SS496193, SS496200, SS497195.
Upright chickweed <i>Moenchia erecta</i>	DN2	Torrington Commons
Bird's-Foot clover <i>Trifolium ornithopodioides</i>	DN1	Torrington, nr Warren Lane
Musk stork's-Bill <i>Erodium moschatum</i>	NS; DR	Castle Hill/Great Torrington Common
Cornish moneywort <i>Sibthorpia europaea</i>	NS, DN3	Great Torrington Commons; Old Bowling Green

WCA 9 = Wildlife and Countryside Act (1981) Schedule 9: animals and plants for which release into the wild is prohibited; DN1 = Devon Notable¹: 1-25 2 km squares in Atlas of Devon Flora 1984; DN2 = Devon Notable²: 26-50 2 km squares in Atlas of Devon Flora 1984; DN3 = Selected species recorded from over 50 2 km squares in Atlas of Devon Flora 1984; NS = Nationally Scarce; DR = Devon Rarity: native species recorded from 3 or fewer localities within Devon.

4.2.2 Site Summary

The Site is located on the very edge of the small village of Taddipport, on the southern side of the River Torridge, opposite the nearby town of Great Torrington.

The Site is approximately 0.49 hectares (ha) and comprised a series of mid-20th Century pre-fabricated barn buildings and a 1930's pre-fabricated bungalow. The remainder of the Site comprised hardstanding, wall, introduced shrub and a species-poor native hedgerow. Directly to the north and north-east of the Site there is a series of private dwellings, whilst to the south, east and west of the Site, a series of pasture and arable fields bound by old Devon hedgebanks and woodlands set in steep river valleys. Further afield, to the east, areas of surviving culm grassland remain and to the west are large blocks of deciduous woodland.

Figure 1 shows the results of the Extended Phase 1 Habitat Survey with associated Target Notes (TNs) included in **Appendix 1**, which should be read in conjunction with the following habitat descriptions.

4.2.3 Tall Ruderal Vegetation

This habitat dominated the former gardens of the dilapidated bungalow (Building 1) at the northern end of the Site. Species included rosebay willowherb *Chamerion angustifolium*, greater plantain *Plantago major*, false oat grass *Arrhenatherum elatius*, herb Robert *Robertiella robertiana*, common mouse-ear *Cerastium fontanum*, nipplewort *Lapsana communis*, tutsan *Hypericum androsaemum*, Yorkshire fog *Holcus lanatus*, foxglove *Digitalis purpurea*, bramble *Rubus fruticosus* agg., spear-leaved willowherb *Epilobium lanceolatum*, evening primrose *Oenothera biennis*, scarlet pimpernel *Anagallis arvensis* and smooth hawksbeard *Crepis capillaris*.

4.2.4 Introduced Shrub

This consisted in its entirety of a dense strip of mature buddleia *Buddleja* sp. along the northern boundary of the Site.

4.2.5 Species-poor Native Hedgerow

Three hedgerows formed the eastern, southern and western boundaries of the Site. The eastern hedgerow consisted of an isolated 40m section comprising hazel *Corylus avellana*, field maple *Acer campestre*, sycamore *Acer pseudoplatanus*, ash *Fraxinus excelsior* and leyland cypress *Cupressus* × *leylandii*. This hedgerow was last managed in 2011 (from Google street view) when the hedgerow was heavily reduced in height. The hedgerow has since developed a dense bushy structure and measured approximately 2m tall x 2m wide.

The southern boundary hedgerow measured approximately 35m in length. This hedgerow consisted entirely of semi-mature English elm *Ulmus minor* 'Atinia' and was approximately 3 – 5m in height x 4m wide. As such it had not been managed for a number of years. A number of the elm trees had been infected with Dutch elm disease and had died.

The western boundary hedgerow measured approximately 85m in length. This hedgerow was slightly more species-diverse than the eastern and southern hedgerows, with field maple, hazel, dog rose *Rosa canina* and hawthorn *Crataegus monogyna* being recorded. The northern half of this hedgerow, adjacent to Building 1 has received regular trimming, presumably from the western (field) side of the hedgerow and measured approximately 1.5m tall x 1.5m wide. Towards the southern end of the hedgerow (surrounding Building 3), the hedge had remained unmanaged for many years and had developed into a series of over-stood hazel coppice stools measuring approximately 4m tall x 3.5m wide.

All of these hedgerows can be considered to meet the criteria for Habitats of Principal Importance under the NERC Act 2006.

4.2.6 *Other Habitats – Wall, Hardstanding*

Hardstanding formed the majority of the ground surface of the Site. Predominantly this was concrete with smaller areas of degraded tarmacadam. The walls onsite were constructed out of bare concrete blocks bound by Portland cement.

4.3 **Fauna**

4.3.1 *Badger*

The desk study revealed 16 records of badger within 2km of the Site (between 1985 and 2014) most of which covered sightings on minor roads.

No evidence of badgers, such as setts, latrines, hairs, footprints or paths were recorded during the Site survey. As such this species was considered absent from the Site, although it is accepted that badger may cross the Site on a transient basis and that the Site may form part of a badger social group's territory.

4.3.2 *Bats*

The data search returned 32 bat records within 2km of the Site boundary; these are summarised in **Table 5** below. In all 19 records of bat roosts were returned from the data search. The most important of which are expanded on in more detail below:

Table 5: Summary of bat records within 2km of Site (provided by DBRC)

Species	UK Status/ Distribution ²	Record Summary
Long-eared bat <i>Plecotus</i> sp.	Common, widespread	Nine records of seven roosts. Records include maternity roosts and day roosts. Largest roost recorded at Merrow Lea, Dropwell Lane, Torrington with 40-50 long-eared bats being recorded.
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Common, widespread	Two maternity roost records from 1995 of between 40 to 50 individuals in each roost within Torrington. 1997 record of a nursery roost within house in Torrington. 2005 maternity roost record within Newton House, Torrington. Additional 2006 record of a maternity roost within a house within Torrington.
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	Common, widespread	Single record of a historic roost comprising the licenced destruction of roost in 2015 within Great Torrington. Other incidental record at RHS Rosemoor.
Lesser horseshoe <i>Rhinolophus hipposideros</i>	Rare, localised populations occur in south west England, Wales and western Ireland	1995 record of two individual bats roosting within former narrow gauge railway tunnel converted to bat roost in 1991 by DCC Prince of Wales Trust. Single 2004 record of night roost within Great Torrington.
Unidentified bat sp.	-	2006 record of a roost in roof apex within Great Torrington. 1993 record of bats roosting within roof apex of house in Torrington. Considered likely to be Brandt's / whiskered but ID uncertain.

4.3.3 Tree Assessment

None of the trees on Site were identified as having features that could potentially be used by roosting bats. The trees were immature or semi-mature, and as such were less likely to have had time to develop features that could potentially be used by roosting bats. A few of the dead elm trees situated along the southern boundary had small areas of flaking bark. However these small areas were considered not to be weather proof and are considered to offer negligible potential to roosting bats.

² Statistics from Bat Conservation Trust www.bats.org.uk

4.3.4 *Building Assessment*

The Site contains four buildings.

Situated within the northern part of the Site is a pre-fabricated 1930's bungalow (**Building 1**). This building presented numerous potential roosting locations and had roosting evidence for use by bat species in the form of five very old scattered, partially degraded, bat droppings within the 'conservatory' room situated on the southern aspect of the building (Target Note 1). This building was categorised as having 'High' potential for roosting bats.

Buildings 2 – 4 were situated in the south-western portion of the Site. These were all constructed in a similar manner from wooden supporting beams supporting a corrugated iron/ asbestos walls and roof, together with a concrete floor. The walls were constructed from a mixture of corrugated iron sheeting, together with smaller amounts of corrugated asbestos and Perspex sheeting. Easy access for bat species into all of the barns is possible with substantial gaps above the doorways. No direct evidence of bats such as bat carcasses, droppings or feeding remains were discovered within any of these buildings on Site. These buildings were categorised as having negligible potential for supporting roosting bats.

A summary is provided in **Table 6** below. Refer to **Figure 1** for building numbers and locations.

Table 6: Summary of building assessment results and bat evidence

Building number	Description	Bat evidence/ access points/ potential features	Category (based on Collins 2016)
1	A single storey 1930's pre-fabricated bungalow with an attached outhouse and conservatory. Constructed out of a timber frame with concrete panel walls. Roof structure was of a timber frame with internal sarking boards covered in flat diamond shaped asbestos tiles. Internally the ceiling was formed from a series of substantial asbestos tiles. There was no access point into the roof void, and only a limited view was achieved through gaps in the ceiling tiles which were dislodged due to the poor state of repair of the building in general. The concrete extension extending to the south a short way from the original buildings was constructed out of pre-fabricated shuttered concrete walls with a corrugated asbestos roof. The main building measures approximately 8m long x 7.45m wide.	Access points into the property were multiple with gaps under the fascia boards on all elevations. The soffit boxes on the eastern and western gable ends were heavily degraded with access points being created at the building corners allowing access into the roof structure. On the northern elevation two small bay windows project away from the main body of the building. These two bays are roofed by two small peaked dormer rooves. The ridge tiles are open at the ends, potentially allowing for access into the roof structure by a range of crevice- dwelling bat species. Internal evidence of bats was limited to scattered old and degraded droppings within the conservatory (Target Note 1) on the southern elevation of the building. Additionally, all internal rooms full of long floor to ceiling cobwebs of some age, indicating that no bats had flown through any of the rooms recently.	High
2	A single storey outbuilding constructed out of wooden uprights with corrugated iron walls and roof. Building measures approximately 7m long x 4m wide and is constructed on an east – west axis. Internally the building was cluttered with a large assortment of farm chemicals, tools and machinery spares. The building has 'windows' (just a panel of corrugated Perspex on the southern elevation).	Generally the building was well sealed. No obvious bat access points were observed.	Negligible
3	This building measures approximately 23.5m long x 6.0m wide and is constructed on a north – south axis. This building is constructed out of a timber frame with corrugated iron and asbestos walls with a corrugated iron roof. Internally the building was divided into two rooms with a corrugated iron partition wall dividing the two. The floor was of bare earth. The barn is used for the storage of farm	Easy access for a range of wildlife into the building as large gaps both above and below the doors. However, no direct evidence of roosting bats was recorded. Overall negligible potential for roosting bats within the building due to its design and build.	Negligible

Building number	Description	Bat evidence/ access points/ potential features	Category (based on Collins 2016)
	machinery and housed a tractor and a range of other machinery.		
4	<p>This building measures approximately 18.5m long and 7.5m wide. Towards the southern end of the building, however, the building steps out to approximately 9.5m wide at approximately half way. At the southern end of the building a small lean-to measuring approximately 3x3m is set against the building wall. The building, including the lean-to was constructed from a timber frame with corrugated iron walls and roof.</p> <p>The main building was divided into three rooms using corrugated iron wall partition walls. The middle and northern of the three rooms did not have any doors and were open along the western face. The southern room was sealed using a corrugated iron door on the western elevation. This building was used for storage and as a workshop with a large array of farm machinery and spares stored inside.</p> <p>The lean-to measured approximately 4m x 3m and was constructed from corrugated iron around a timber post frame. The roof was of timber boards lined with corrugated iron. The lean-to was heavily dilapidated and was considered unsafe to enter. However the small room was surveyed from the entrance using a torch. The room was damp and no longer weather proof. The floors within all rooms were of bare earth.</p>	The whole eastern face of the building was open or poorly sealed allowing easy access for bats. However the building materials and design used in the construction of the building offer extremely limited potential roosting features for bat species in general. No internal evidence of bats was recorded.	Negligible

4.3.5 *Bat Emergence/Re-entry Results*

Building 1

The surveys identified that the bungalow was used by low numbers/ individual common and soprano pipistrelle bats as well as an individual bat from the *Myotis* genus probably Natterer's *Myotis nattereri*. The roosts were located at three distinct locations around the building.

On the initial bat emergence survey (22/08/2016) two unidentified pipistrelle (species) bats were recorded emerging from the end of the ridge tile of the north-eastern bay window at 20:45 and 20:46. A common pipistrelle was recorded emerging from under the fascia board on the western elevation at 20:35 and a single common pipistrelle was recorded emerging from under the concrete cap of the chimney on its southern face at 20:47.

The second bat survey (20/09/2016) recorded two soprano pipistrelles emerging from the south-eastern corner of the building from a sizeable gap in the soffit box at 19:43. No other bats were recorded emerging from the building during this survey.

The dawn re-entry survey (28/09/2016) recorded a probable Natterer's bat re-entering (at 06:25) the open ridge tile above the north-eastern bay window (the same location as the two common pipistrelle bats that emerged from during the initial bat emergence survey).

The bats were observed to fly either south along the eastern hedgerow a short distance to the east of Building 1, or west along an adjacent hedgerow a short distance to the west of Building 1.

This building is therefore considered to support four low-status (non-breeding) roosts within various locations of the building fabric.

4.3.6 *Incidental Bat Activity*

Other species recorded incidentally during the survey (e.g. flying past, but not associated with the building) included low numbers of noctule *Nyctalus noctula*, *Myotis Myotis* sp., common and soprano pipistrelle, and single bats from the *Plecotus* genus as well as a single Leisler's bat *Nyctalus leisleri*. Low numbers of lesser horseshoe bat *Rhinolophus hipposideros* were also recorded on all three bat emergence and re-entry surveys commuting along the western hedgerow of the Site from/ to a presumed roost a short distance further to the north.

During the final bat-re-entry survey on the 28th September 2016, three lesser horseshoe bats were recorded commuting north along the eastern hedge boundary between 06:31AM and 06:37AM. As sunrise was at 07:13AM, and the area was light approximately 30mins prior to sunrise, this recorded activity from the light sensitive lesser horseshoe can be considered as very 'late'. This was presumably due to a roosting location a short distance away further to the north.

4.4 Breeding birds

The data search returned 21 bird records within 2km of the Site boundary; these are summarised in **Table 7** below:

Table 7: Notable bird records from within 2km provided by Devon Biological Records Centre

Species	Conservation Status	Record Details
Yellowhammer <i>Emberiza citrinella</i>	NERC 41, UKBAP (P); Red	Single 2005 record from Great Torrington Common - Limer's Hill. SS485193.
Redwing <i>Turdus iliacus</i>	WCA 1, Red	Two records between 2003-2006: SS487190, SS499177,
Barn owl <i>Tyto alba</i>	WCA 1, 9. DBAP	Three records between 1998 - 2004 Torrington SS487194, SS4918, SS4817, SS499177
Willow tit <i>Poecile montana</i>	NERC 41	2001 record Torrington Common
Tawny owl <i>Strix aluco</i>	Amber	2001 record, Torrington Cemetery
Pied flycatcher <i>Ficedula hypoleuca</i>	Red	2013 record at 'Rolle Road', below Torrington Common (old canal route)
Spotted flycatcher <i>Muscicapa striata</i>	NERC 41, UKBAP	1998 record Cemetery Lodge, New Street, Great Torrington.
Swift <i>Apus apus</i>	Amber	2010 record Great Torrington town centre
Brambling <i>Fringilla montifringilla</i>	WCA 1	2002 Great Torrington Commons
Common kingfisher <i>Alcedo atthis</i>	WCA 1, Amber	Two records: 2002 Great Torrington Commons & 2003-2011 RHS Rosemoor
Common crossbill <i>Loxia curvirostra</i>	WCA 1	Two 2003 records RHS Rosemoor; Darkham Wood.
Fieldfare <i>Turdus pilaris</i>	WCA 1, Red	2002 Great Torrington Commons
Peregrine <i>Falco peregrinus</i>	WCA 1	2002 Great Torrington Commons
Whimbrel <i>Numenius phaeopus</i>	WCA 1, Red	2001 Little Torrington

Species	Conservation Status	Record Details
Dunnock <i>Prunella modularis</i>	Amber	2009 Rolle Field

NERC 41: Species listed under Section 41 of the Natural Environment and Rural Communities Act (2006). UKBAP (P): UK Priority Species; RED: Bird species of high conservation concern; WCA 1: Wildlife and Countryside Act (1981) Schedule; WCA 9 = Wildlife and Countryside Act (1981) Schedule 9; DBAP: Devon Biodiversity Action Plan species; AMBER: Bird species of medium conservation concern.

The only direct evidence of nesting birds was found within Building 3, which contained two recent barn swallow *Hirundo rustica* nests (Target Note 2). These were positioned on a roof beam towards the northern end of the building.

No other nests of other bird species was recorded during any of the Site visits, but it is likely that the Site's hedgerows provide good nesting and foraging habitats for a range of bird species, with common species such as wood pigeon *Columba palumbus*, blackbird *Turdus merula*, and robin *Erithacus rubecula* which were recorded during the initial Site visit.

4.5 Dormouse

The record centre search returned three records for hazel dormouse from between 1981 and 2014. The two closest records are from RHS Rosemoor situated approximately 1.1km to the east of the Site. Another record was located approximately 1.2km to the west of the Site in the wooded valley of Langtred Lake. Plentiful habitat for dormouse is also provided by two broadleaved woodlands, Pencleave Wood and Servis Wood (both Ancient Woodland), both within 2km of the Site. The hedgerow connectivity of the Site with the wider landscape is good with full connectivity from multiple hedgerows to the east, south and west, and as such are considered to have moderate potential to support dormice.

Dormice are therefore considered likely to be using the Site. However it is understood that there is to be negligible direct impact on any of the Site's hedgerows from the proposed development; as such no further survey work was considered appropriate and they are not considered further within this report.

4.6 Amphibians

The data search returned a single 2011 record for great crested newt *Triturus cristatus* within 2km of the Site boundary. This record was located at Orford Mill, Great Torrington, adjacent to RHS Rosemoor approximately 1.25km to the east of the Site. The Site also lies within the Devon Great Crested Newt Consultation Zone, a five kilometre area defined around existing and historical (post 1970) great crested newt records designed to help consultants, developers and LPAs to identify when they should consider the impacts of

proposals on great crested newts. Two records for common toad *Bufo bufo* from 2002 and 2014 were returned from within 2km of the Site boundary. Both of these records were from within private gardens along Mill Street approximately 580m to the north-east of the Site.

However, no ponds or other identified areas of standing water are situated within 500m of the Site. As such no survey was deemed necessary. Great crested newts are not considered further within this report.

There were four records of more common and widespread amphibians within 2km of the Site boundary returned as part of the desk-study, including common toad *Bufo bufo* and common frog *Rana temporaria*. These records were all associated with the suburban landscape of Great Torrington or the rougher vegetation just to the north of the River Torridge. There are no records from the south or west of the River Torridge. However this is likely to be due to under-recording within the direct locality.

The Site is considered to offer suitable (albeit limited in scale) habitat for more common and widespread amphibian species due to the habitats present, with tall ruderal vegetation and the old Devon hedgerbanks being considered to provide shelter for common and widespread amphibian species. These habitats are therefore considered likely to support low numbers of common and widespread amphibian species.

4.7 Invertebrates

Twenty four invertebrate species of conservation interest were returned as part of the desk study, as summarised in **Table 8** below.

Table 8: Invertebrate records provided by DBRC within 2km of Site

Species	Conservation Status	Record Details
Beaded Chestnut <i>Agrochola lychnidis</i>	S41, UKBAP (P)	Great Torrington: Rosemoor Gardens
Blomer's Rivulet <i>Discoloxia blomeri</i>	Nb,	
Blood-Vein <i>Timandra comae</i>	S41	Five records: SS479200, SS489172, SS484198, SS499177, SS499179.
Broom Moth <i>Spilosoma luteum</i>	S41	Great Torrington Common
Buff ermine <i>Spilosoma luteum</i>	S41, UKBAP (P)	Five records: SS479200, SS484198, SS489172, SS499177, SS499179
Cinnabar <i>Tyria jacobaeae</i>	S41, UKBAP (P)	Three records: RHS Rosemoor & Great Torrington Common.
Cloaked Carpet <i>Euphyia biangulata</i>	Nb	
Dark green fritillary <i>Argynnis aglaja</i>	Decline	Ten records: SS475200, SS481199, SS4819, SS482198, SS483198,

Species	Conservation Status	Record Details
		SS484196, SS485195, SS485197, SS486197, SS487196.
Dotted carpet <i>Alcis jubata</i>	Nb	Two records: RHS Rosemoor
Broom moth <i>Melanchra pisi</i>	S41	Great Torrington Common
Green hairstreak <i>Callophrys rubi</i>	Decline	12 records: Great Torrington & Great Torrington Common.
Grey dagger <i>Acronicta psi</i>	S41, UKBAP (P)	RHS Rosemoor
High brown fritillary <i>Argynnis adippe</i>	WCA 5; S41, UKBAP (P); CR	Seven records from between 1982 – 2006 from Great Torrington Common
Marsh fritillary <i>Euphydryas aurinia</i>	WCA 5; S41, UKBAP (P); Nb, VUL	Seven records from between 1982 – 1994 from Torrington Common
Mottled rustic <i>Caradrina morpheus</i>	S41, UKBAP (P)	Two records RHS Rosemoor
Orange footman <i>Eilema sororcula</i>	Nb	Three records: RHS Rosemoor and Great Torrington Common
Pearl-bordered fritillary <i>Boloria euphrosyne</i>	WCA 5 (S); NERC 41, UKBAP (P); DBAP; Nb	Sixteen records: Great Torrington Common, RHS Rosemoor and Marsh Hill Wood.
Powdered quaker <i>Orthosia gracilis</i>	S41, UKBAP (P)	RHS Rosemoor
Pretty Chalk carpet <i>Melanthia procellata</i>	S41, UKBAP (P)	RHS Rosemoor
Purple hairstreak <i>Quercusia quercus</i>	Decline	Eight records: Great Torrington Common and RHS Rosemoor
Scarce merveille Du Jour <i>Moma alpium</i>	RDB3	Three records: Great Torrington Common, RHS Rosemoor
Shoulder striped wainscot <i>Mythimna comma</i>	S41, UKBAP (P)	Three records: Great Torrington Common, RHS Rosemoor
Small emerald spot <i>Hemistola chrysoprasaria</i>	S41, UKBAP (P)	Single 2004 record from 2004 from Great Torrington Common
Small pearl-bordered fritillary <i>Boloria selene</i>	S41, UKBAP (P), Decline	Sixteen records: Great Torrington Common, RHS Rosemoor and Marsh Hill Wood, Furzebeam Hill
Small phoenix <i>Hydrelia sylvata</i>	S41, UKBAP (P)	Five records: Watergate Bridge, Great Torrington Common, RHS Rosemoor
Wall <i>Lasiommata megera</i>	S41, UKBAP (P)	Nine records: RHS Rosemoor, Great Torrington Common
Waved carpet <i>Hydrelia sylvata</i>	S41, UKBAP (P)	Three records: Watergate Bridge, RHS Rosemoor
White ermine <i>Spilosoma lubricipeda</i>	S41, UKBAP (P)	Four records: Great Torrington Common, Little Torrington& RHS Rosemoor

Decline = Substantial local decline in Devon; S41 = Species listed under Section 41 of the Natural Environment and Rural Communities Act (2006); UKBAP (P): UK Priority Species (Short and Middle Lists - UK Biodiversity steering Group Report 1995).

The notable butterfly and moth species listed above are considered highly unlikely to be present on Site as the Site does not support either the habitats or plant species required for

these species to survive. The only exception of this is the wall butterfly, which feeds on cock's foot, bent, brome and Yorkshire fog grasses. Two of which, cock's foot and Yorkshire fog have been recorded on Site.

The hedgerows contain a limited dead wood component in the form of the recently immature and semi-mature dead elm trees situated along the southern Site boundary. However this is not considered to constitute the older more substantial deadwood that would be required to support a range on saproxylic invertebrate species.

The tall ruderal and species-poor hedgerows on Site are considered likely to support a range of common and widespread invertebrates; however no invertebrate species were recorded during the survey.

4.8 Otter

The data search returned 30 records for European otter *Lutra lutra* (WCA 5; NERC 41; EC IIa, IIIa; Bern II; UKBAP (P); DBAP) within a 2km radius of the Site boundary. Dates vary from 1978 to 2015. Records are invariably associated with the River Torridge or the Rosemoor Canal/ gardens. There is no suitable habitat for otter on Site and the nearest watercourse is the River Torridge 175m further to the north. Otter are considered to be absent from the Site, and as such are not considered further in this report.

4.9 Reptiles

There were 16 records of reptiles within 2km of the Site boundary returned as part of the desk-study, including slow-worm *Anguis fragilis*, grass snake *Natrix natrix* adder *Vipera berus* and common lizard *Zootoca vivipara*. All of these records are either associated with RHS Rosemoor to the east of the Site, the suburban landscape of Great Torrington or the rougher vegetation just to the north of the River Torridge. There are no records from the south or west of the River Torridge. However this is likely to be due to under-recording within the direct locality.

The Site is considered to offer suitable habitat for reptile species due to the habitats present, with tall ruderal vegetation and suitable basking areas in the form of areas of hardstanding as well as the old Devon hedgebanks being considered to provide shelter for common and widespread reptile species. These habitats are therefore considered likely to support low numbers of common and widespread reptile species.

4.10 Other Species

As part of the desk study, DBRC returned records of additional species of conservation interest; summarised in **Table 9**. None of these species were recorded during the surveys although some of the habitats on and adjacent to Site were considered to have potential to support them.

Table 9: Desk study results – other species of conservation interest

Species	Year of record and approximate locations	Conservation status	Likely status on site
European hedgehog <i>Erinaceus europaeus</i>	1985 Torrington	S41	Although a historic record, the hedgerow bases had potential to support hedgehog.
Eurasian Pygmy Shrew <i>Sorex minutus</i>	1986-1988 & 2003 Great Torrington Commons	WCA 6, Bern III	Eurasian pygmy shrew requires areas of undergrowth and leaf litter. The Site does not provide suitable habitat for this species.
Eurasian water shrew <i>Neomys fodiens</i>	Torrington 1986-1988	WCA 6, Bern III	Site particularly suitable for this species given the absence of water year round.
Weasel <i>Mustela nivalis</i>	1988 record Ladies Island, Torrington.	Bern III	The Site does not provide suitable habitat for the prey of this species.

S41 = Section 41 Species of Principal Importance.

WCA6 = Animals (other than birds) which may not be killed or taken by certain methods.

Bern III = Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix III. Exploitation of listed animal species to be subject to regulation.

5 EVALUATION AND IMPACT ASSESSMENT

5.1 Designated Sites

5.1.1 Statutory Designated Sites

There is a single Natura 2000 Site within 10km of the Site. This comprises several areas of habitat that form part of the Culm Grassland Special Area of Conservation (SAC). The nearest area of this culm grassland habitat is situated approximately 7.5km to the west of the Site at an area called Thorne Moor. Given the scale of the development and distances between them, adverse effects during construction are considered highly unlikely. Although Thorne Moor is open access CROW land and a registered common land, it was also

considered unlikely that the SAC would suffer from increased recreational disturbance given that a large range of more suitable alternative recreational options are available nearby.

There are no Sites of Special Scientific Interest (SSSI) within 2km of the Site. The nearest SSSI being situated approximately 3.2km to the south-east. As such, no SSSI is considered likely to suffer any direct or indirect impacts as a result of this development, given the distance from the Site and lack of connectivity.

5.1.2 *Non- statutory Designated Sites*

A number of County Wildlife Sites (CWS), Other Sites of Wildlife Interest (OSWI) and Unconfirmed Wildlife Sites (UWS) are also within 2km of the Site boundary. These consist primarily of grassland, scrub and ancient broadleaved woodland with grazing marsh. Some of these, such as Great Torrington Commons a short distance away are likely to see an increase of use with the cumulative increase of residential properties in the area. However, the scale of the development in question is extremely limited, being of two new residential properties replacing a single residential property. As such, due to the scale of the impacts, these sites are considered highly unlikely to be impacted, either directly or indirectly by the proposed development.

5.2 Habitats

The Site was dominated by hardstanding, native species-poor hedgerows, introduced shrub and tall ruderal habitats. These habitats supported neither rare nor notable species, and are considered common within the local area and landscape. As such these habitats are considered to be of local value only. The development will result in the loss of approximately 0.159ha of these habitats. The losses of these habitats are not considered to be significant.

Hedgerows, which form the southern, western and part of the eastern boundaries were species-poor, but were considered to meet the criteria of Habitats of Principal Importance under Section 41 of the NERC Act 2006. It is understood that all hedgerows on Site are to be retained, planted up with additional species and managed appropriately post-development. Any effects on the hedgerow habitat from this development are not considered to be significant.

5.3 Bats

5.3.1 *Roosting Bats*

The surveys identified that Building 1 on Site is used for roosting by low numbers of common and soprano pipistrelle bats together with an individual natterer's bat within at least three locations around the building including the soffit boxes, fascia boards, chimney structure and ridge tiles. No swarming or mating activity, such as lekking males, was observed. As such the buildings on Site are not considered to support a mating roost.

Buildings 2 – 4 contained no evidence of use by bats. Due to their design (single skin panel walls) there were no locations where any bats could potentially support anything other than a night or feeding roost. However no evidence of any bat usage of Buildings 2 - 4 was recorded.

Due to the design of Building 1, using single skin pre-fabricated concrete panel walls (with no cavity), and the poor thermic properties of the building in general, it is considered that there is no suitable location within Building 1 that may potentially support a maternity roost.

This is supported by the total lack of any other supporting evidence for the potential presence of a maternity roost within Building 1, despite a thorough search of the ground floor which contained easy access from the roof space into the internal rooms of the building via the dislodged ceiling tiles.

The only other internal evidence of bat presence recorded consisted of five very old droppings discovered within the 'conservatory' on the buildings southern face. No other evidence, such as dead bats or larger accumulations of droppings were recorded. As such Building 1 is considered as being extremely unlikely to support any maternity roost/s. Building 1 is therefore considered to support a summer roost of low numbers of both common and soprano pipistrelle bats as well as a single Natterer's bat

Hibernation potential is considered to be extremely unlikely within any of the buildings on Site due to the construction methods, being of either thin-skinned corrugated iron construction or of pre-fabricated concrete panels with no wall cavity and having such a low thermic mass able to provide the steady temperature range necessary to support hibernating bats. For these reasons, the Site is considered to be extremely unlikely to be support any hibernating bats.

The proposed development has potential to the kill or injure bats and result in the loss of a common, soprano pipistrelle and Natterer's bat roosts (Building 1) through the demolition of the structure to make way for the proposed development. The loss of the bat roosts from Building 1 post development, as well as the disturbance and displacement of the bats during the construction and enabling process on Site is thought to represent a low impact at the local level (Mitchell-Jones, 2004; Wray *et al*, 2010). Although in the absence of mitigation the above actions would cause an offence under the Conservation of Habitats and Species Regulations 2010.

5.3.2 *Incidental Bat Activity*

In general terms, the bats that emerged from the Building 1 used the Site's eastern and western hedgerows as flight corridors to commute along, presumably to access foraging areas and/ or roosting sites further afield. It is considered that all of the hedgerows on Site form a shaded area, suitable for light sensitive and non-light sensitive bat species to commute along. The Site is considered to be of local-parish level importance to commuting bats.

The development will result in the loss of all of the current habitats on Site with the exception of the species-poor hedgerow habitat. The loss of these habitats is not considered likely to have a significant adverse impact on commuting and foraging bats given the extent of other higher value habitats in the surrounding countryside.

The introduction of artificial lighting to the Site is considered to have an adverse impact on bats, particularly for light-averse species such as *Myotis sp* and lesser horseshoe bats which are known to use the Site, as it is considered likely that a lesser horseshoe roost is situated nearby. The introduction of artificial lighting to a previously dark Site, will affect the use of the Site by bats by cutting commuting routes resulting in bats potentially having to use longer, less-efficient routes to reach foraging areas and roosts within the landscape.

5.4 **Breeding Birds**

The Site's hedgerow boundaries, introduced shrub and buildings are considered to be of local value to a range of breeding bird species. Given that the Site's boundaries are being retained, any impacts will be limited to short-term temporary disturbance impacts during the construction period.

Building 3 on Site supports nesting barn swallows. The loss of the nesting opportunities from this building post-development as well as the disturbance and displacement to this species

during the construction and enabling process on Site is thought to represent a loss at the local level.

5.5 Invertebrates

The Site's tall ruderal and hedgerow habitats are likely to be used as a nectar or larval food source for a range of common and widespread invertebrate species. The tall ruderal and introduced shrub habitats will be lost as a result of the development, while the hedgerows will be retained, which is likely to result in a temporary short-term negative impact on invertebrates.

5.6 Reptiles and Amphibians

The Site's tall ruderal vegetation (former garden) and hardstanding habitats are considered likely to support low numbers of common and widespread reptile species such as slow worm and amphibian species such as common toad. As such the Site is considered to be of local value to these species.

During enabling/ construction works there is a risk of injury and mortality to reptiles and amphibians during site clearance. There will also be a permanent loss of suitable habitat such as the tall ruderal which will represent an adverse effect on the population, although this is unlikely to be significant. However, gardens of the new properties will provide suitable habitat for slow worms and common toad and it is anticipated that they would soon be re-colonised post construction.

6 FURTHER SURVEY WORK

The results detailed in this report are considered valid for a period of two years. No further ecological survey work is considered necessary for this application; however any changes to the proposed masterplan may require further survey work.





7 MITIGATION REQUIREMENTS

This section outlines the measures required to avoid, minimise or compensate for the impacts detailed in **Section 5** above by applying the mitigation hierarchy in accordance with the NPPF paragraph 118 which states:

"If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused."

7.1 Impact Avoidance












Measures have been incorporated into the design to avoid impacts to species and habitats. Some measures will also need to be implemented during construction and enabling works to avoid adverse effects on ecological features, this includes:

-  Avoid the installation of artificial lighting within the proposed development;
-  Avoiding the use of lighting during the bat active season (April to October) or designing construction lighting to avoid illumination of boundaries;
-  Protecting the retained hedgerows with a buffer strip of at least 2m and weld mesh fencing
-  Timing vegetation removal of the introduced shrub habitat and works demolishing the buildings on Site to take place outside the breeding bird season which runs March to August inclusive.

7.2 Mitigation, Compensation and Enhancement Measures

Table 10 below outlines the mitigation, compensation and enhancement measures required to minimise impacts to ecological receptors which have been described in **Section 5** above. **Figure 3** provides an illustration of where these measures should be applied.

Table 10: Recommended mitigation, compensation and enhancement measures to be incorporated into design

Ecological Receptor	Mitigation and Compensation	Enhancements
Designated Sites	 N/A	 N/A
Habitats	 Protect all retained hedgerows with a buffer strip of at least 2m and weld mesh fencing in order to prevent degradation to root protection zones;  Compensatory habitat will be provided for the loss of the introduced shrubs and tall ruderal habitat. This includes: <ul style="list-style-type: none"> ○ The seeding of a strip of species-rich grassland mixture; ○ Species-rich grassland or flowering lawns should be used on amenity areas within the build itself. ○ Planting of native shrubs throughout the development. 	 Enhancement for the sites hedgerows will be provided with at least 30m of new native hedgerow planting along the northern Site boundary linking the isolated eastern section of hedgerow with the hedgerow on the western boundary. The hedgerow should include a mixture of at least 5 species of hawthorn, spindle, blackthorn, holly, hazel, field maple, elder and oak;  Allow standard trees to develop within the hedgerows adjacent to the Site entrance;  Gapping up and planting up of a more diverse range of native hedgerow species within the southern hedgerow.
Bats	<p>A Natural England EPS mitigation licence will be applied for once planning permission has been obtained. The licence will detail the mitigation measures required to safeguard the population of roosting bats, further details are provided in Appendix 3, but in summary will include:</p>  Four bat boxes of suitable type will be fitted onto either the semi-mature elm trees along the southern boundary of the Site, or on a 2.5m pole situated along the northern boundary of the Site. This box will serve two primary functions: 1) To provide alternative roosting for bats that may normally roost within the Building 1 and; 2) In the unlikely event a bat/s are discovered during the roof strip, to provide a temporary home;  Works will be timed to avoid sensitive times for bats, with roof strip overseen by a licensed bat ecologist; and,  Like-for-like bat roosts will be provided on new buildings, post-construction.	 New hedgerow along the northern boundary will form suitable bat commuting corridor further connecting the Site to the wider landscape as well further shielding the Site from any more distant light spill from the hamlet of Taddipport.

Ecological Receptor	Mitigation and Compensation	Enhancements
	<p>To mitigate for impacts on commuting bats the following measures will be undertaken:</p> <ul style="list-style-type: none"> Existing boundaries must remain unlit; light spill should not fall within 5m of any boundary. 	
Breeding birds	<ul style="list-style-type: none"> Any demolition works to the existing buildings should take place outside the breeding bird season which runs from March to August inclusive. If this cannot be achieved then a pre-works check for nesting birds should be undertaken by an ecologist. Any active nests will need to be avoided until all chicks have fledged; Compensatory nesting habitat will be provided in the form of a selection of bird boxes incorporated into the build with locations and types recommended by an ecologist. This will include house sparrow terraces. 	<ul style="list-style-type: none"> The new hedgerow will provide an enhancement for foraging birds and provide increased nesting opportunities.
Reptiles and Amphibians	<ul style="list-style-type: none"> Habitat removal will be undertaken following a detailed Method Statement to minimise the risk of killing or injuring reptiles and amphibians. This will involve phased vegetation manipulation by strimming suitable vegetation to a height of 150mm from south to north; Cut and maintain the tall ruderal habitat at a low level to ensure reptiles do not recolonise the main body of the Site until the construction and enabling works on Site commence; A mitigation area will be provided which is safeguarded and will include species-rich grassland. The grassland will be strimmed twice a year only to allow a tussocky sward to develop (spring and September); Hedgerow bases must be given a buffer of at least 2 metres in which no machinery or habitat clearance occurs to safeguard any reptiles, the use of weld mesh fencing should be implemented during construction; A reptile hibernacula will be created to act as a reptile and amphibian refugia. 	<ul style="list-style-type: none"> N/A
Invertebrates	<ul style="list-style-type: none"> The creation of areas of species-rich grassland will compensate for the loss of the large area of tall ruderal habitat. 	<ul style="list-style-type: none"> N/A

8 CONCLUSIONS

In summary the main impacts of the development will be the loss of the bat roosts within Building 1, the loss of the barn swallow nesting opportunities, the potential introduction of artificial lighting and the loss of habitats suitable for reptiles and amphibians.

Mitigation and compensation have been incorporated into the design to ensure that the proposal and work program is designed to minimise adverse impacts on ecological features, for example, undertaking the conversion works under a licence, providing replacement roosting features for bats, maintaining a dark corridor around the periphery of the Site for light sensitive bats and providing mitigation for common and widespread reptile species assumed to be present on Site.

In order to compensate for the loss of habitats, the proposed development will include the creation of a species-rich tussocky grassland and the planting of a range of trees and shrubs throughout the development.

A summary of the predicted net gains and losses to biodiversity is illustrated in **Table 11**.

Table 11: Biodiversity net losses and net gains

Ecological receptor	Loss	Gain
Designated sites	None	N/A
Tall ruderal	Loss of habitat 860m ²	Species-rich grassland creation.
Introduced shrub	Loss of habitat 45m ²	New suitable native shrub planting within the new development.
Hedgerows	None	Enhancement for the sites hedgerows will be provided with at least 30m of new native hedgerow planting along the northern Site boundary linking the isolated eastern section of hedgerow with the hedgerow on the western boundary. The hedgerow should include a mixture of at least 5 species including hawthorn, holly, hazel, field maple, elm, elder and oak. Allow standard trees to develop within the hedgerows adjacent to the Site entrance. Gapping up and planting up of a more diverse range of native hedgerow species within the southern hedgerow.
Bats	Loss of four roosts of low number of both common and soprano pipistrelle bats and Myotis bat within Building 1 on Site. Potential impacts to flight corridors of rare Annex II species such as lesser horseshoe due to	Installation of a number of bat boxes within the proposed development creating permanent roosting opportunities for a range of bat species. Artificial lighting to be kept away from the Site peripheries maintaining a dark corridor. New hedgerows enhancing connectivity of corridors.

Ecological receptor	Loss	Gain
	introduction of artificial lighting.	
Reptiles and Amphibians	860m ² loss of tall ruderal mosaic with basking opportunities in the form of hardstanding and loss of hibernacula within garden features.	Small area of tussocky species-rich grassland, as well as construction of new hibernacula. In addition, the proposed gardens of the Site are likely to offer opportunities for a range of reptile species and common toad.

Enhancement recommendations have been outlined with the aim of providing a net biodiversity gain, contributing to the aims of National Planning Policy Framework and local policy.

Provided that the measures outlined in this report can be achieved, it is considered that the proposed development will result in a net gain for biodiversity.

9 REFERENCES

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Map Legend

- Site boundary
- Native hedgerow - species poor
- Wall
- Tall ruderal
- Hardstanding
- Building
- Introduced shrub
- ① TN1 - Bat droppings
- ② TN2 - Swallow nests
- ✱ Elm trees - within hedgerow
- 2 - Building number

N
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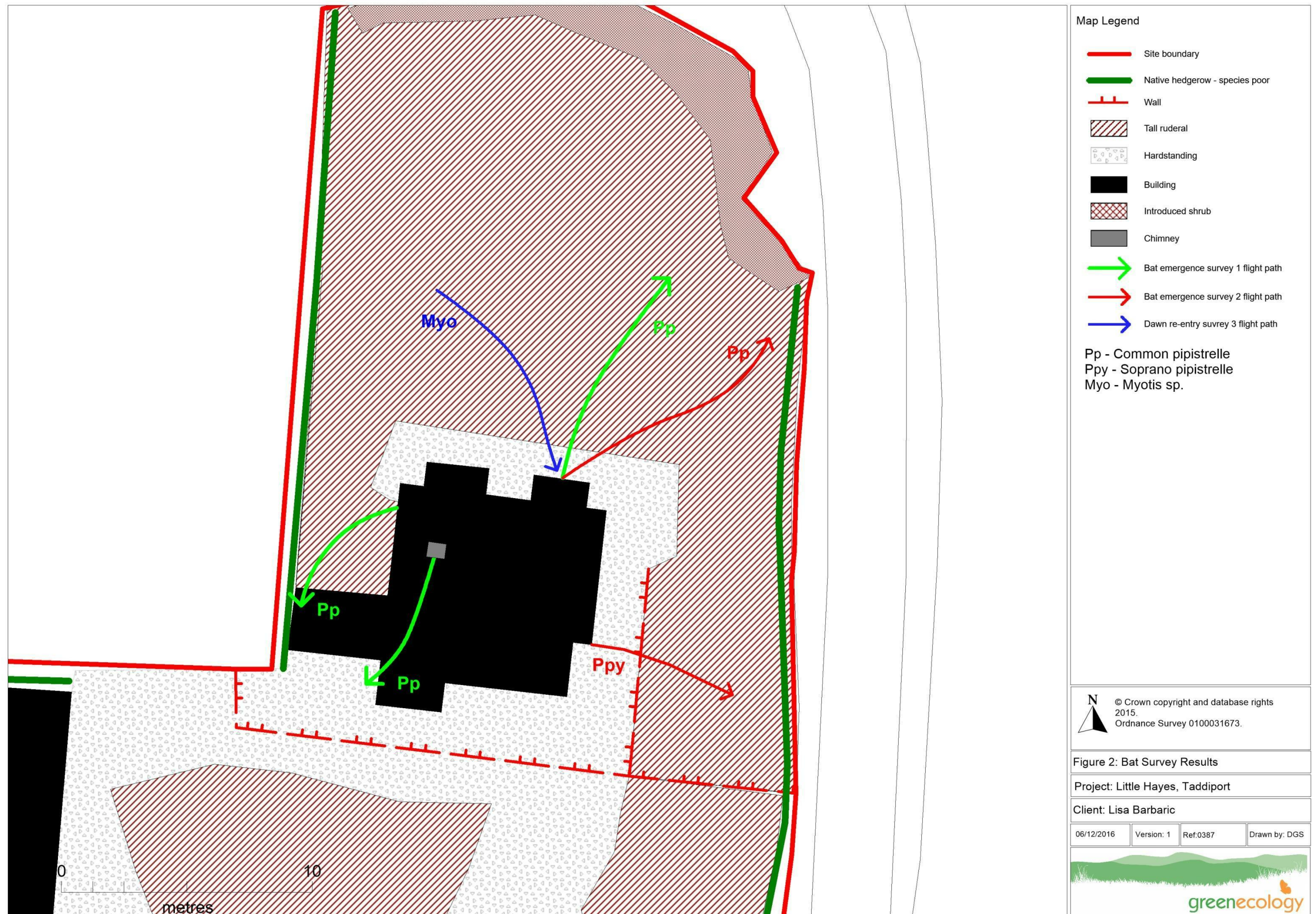
Figure 1: Phase 1 Habitat Map

Project: Little Hayes, Taddiport

Client: Mr & Mrs Barbaric

06/12/2016	Version: 2	Ref: 0387	Drawn by: DGS
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Map Legend

- Site boundary
- Tussocky species-rich grassland creation
- New native hedgerow
- New standard tree (native)
- Integrated bird box
- Integrated bat box - crevice type
- Tree mounted bat box x 3
- Reptile hibernacula

NOT TO SCALE

Basemap taken from Fearnley Lott Architects drawing 16 119 14C Site Location Plan

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Figure 3: Proposed Mitigation Plan

Project: Little Hayes, Taddipport

Client: Mr & Mrs Barbaric

21/12/2016	Version: 1	Ref: 0387-F3	Drawn by: FM
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Appendix 1 – Target Notes & Photographs

Target Note (TN) No.	Description	Photograph
1	Bat droppings situated within Building 1	No photograph
2	Swallows nests within Building 3 (at top corner of building)	




Appendix 2 – Plant Species List

Scientific name	Common name
<i>Acer campestre</i>	Field maple
<i>Acer pseudoplatanus</i>	Sycamore
<i>Anagallis arvensis</i>	Scarlet pimpernel
<i>Arrhenatherum elatius</i>	False oat grass
<i>Buddleja sp.</i>	Butterfly bush
<i>Cerastium fontanum</i>	Common mouse-ear
<i>Cirsium vulgare</i>	Spear thistle
<i>Corylus avellana</i>	Hazel
<i>Crepis capillaris</i>	Smooth hawksbeard
<i>Crataegus monogyna</i>	Hawthorn
<i>Chamerion angustifolium</i>	Rosebay willowherb
<i>Cupressus × leylandii</i>	Leyland cypress
<i>Dactylis glomerata</i>	Cock's-foot
<i>Digitalis purpurea</i>	Foxglove
<i>Epilobium lanceolatum</i>	Spear-leaved willowherb
<i>Fraxinus excelsior</i>	Ash
<i>Geranium robertianum</i>	Herb robert
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Hypericum androsaemum</i>	Tutsan (<i>cultivar</i>)
<i>Lapsana communis</i>	Nipplewort
<i>Lolium perenne</i>	Perennial ryegrass
<i>Oenothera biennis</i>	Common evening primrose
<i>Plantago major</i>	Greater plantain
<i>Rosa canina</i>	Dog-rose
<i>Rubus fruticosus agg.</i>	Bramble
<i>Rumex crispus</i>	Curled leaved dock
<i>Salix caprea</i>	Goat willow
<i>Taraxacum agg.</i>	Dandelion sp.
<i>Ulmus minor 'Atinia'</i>	English elm


Appendix 3 – Bat Mitigation Strategy

No conversion works on any barns will be undertaken until an EPS licence and appropriate mitigation is in place. In normal circumstances an EPS licence will not be issued unless planning consent is in place.


During the licencing process, there is a requirement to demonstrate that the application meets the 'Three Tests' under the Conservation of Habitats and Species Regulations 2010. If met, these tests provide for derogations via the licensing process which allow what would under normal circumstances be illegal acts to take place legally. The three tests are as follows:

-  **Regulation 53(2)(e)** states: a licence can be granted for the purposes of “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.
-  **Regulation 53(9)(a)** states: the appropriate authority shall not grant a licence unless they are satisfied “that there is no satisfactory alternative”.
-  **Regulation 53(9)(b)** states: the appropriate authority shall not grant a licence unless they are satisfied “that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.”






The three tests will be met in this case as follows:

-  The licence would be applied for under ‘other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’. This project would meet this test as the proposed development is in line with Strategic Objectives and Policies within the Torridge Local Development Framework (2001). In particular, Policies ENV1, ENV9 and ENV10 as the development will:
 - (ENV1) conserve the distinct archaeological, geophysical, landscape and ecological attributes, characteristics and features of the area include the conversion of an existing building (It is considered that there is no satisfactory alternative to the demolition of the barns as they are no longer in agricultural use and they will eventually fall into disrepair and be lost). The existing bungalow is in a very poor state of repair and structure and is therefore not viable to be repaired;
 - (ENV9) there is a need or a benefit that outweighs the nature conservation interest and adequate measures can be put in place to mitigate the adverse effects; and any areas or significant features lost are replaced with resources agreed to be of at least equivalent nature conservation interest; and management provisions will establish the maintenance of affected resources;

- (ENV10) measures required to mitigate the adverse impact of development that affects an important nature conservation interest shall provide adequately for habitat and species mitigation at a level and in a manner consistent with the loss or disturbance; and conserve important features in situ where practicable.

 The demolition of the bungalow (Building 1) will not be detrimental to the population of pipistrelle species or Natterer's bats in their natural range, because: proportionate bat mitigation measures will be detailed as part of the mitigation plan and Method Statement in the EPS licence application and will become a legal requirement once issued.

In summary mitigation will include:

-  **Prior to works:** three bat boxes of suitable type will be fitted onto either one of the (living) semi-mature elm trees along the southern boundary of the Site, or on a 2.5m pole situated along the northern boundary of the Site. These boxes will serve two primary functions: 1) To provide alternative roosting for bats that may normally roost within the site's buildings and; 2) In the unlikely event a bat/s are discovered during the roof strip, to provide a temporary home;
-  **Replacement bat roosts:** the client has agreed to provide integral replacement roosts in the buildings within the development (see **Figure 3**), on a 'like-for-like' basis. This will comprise four 2FR Schwegler bat tubes (or similar);
-  **Timing of works:** Works will be undertaken during the period November to March when bats are least likely to be present;
-  **Clerk of works:** a licenced bat ecologist will undertake a pre-works check for bats. Contractors will be briefed on the mitigation procedure prior to works commencing. A copy of the EPS mitigation method statement will be provided; and
-  **Method Statement:** works will be undertaken under a Method Statement with roof tiles being removed by hand as a precautionary measure. A licenced bat worker will be present during this task.

Appendix 4 – Devon Wildlife Checklist

Devon Wildlife Checklist

A tick or cross must be placed in all boxes in column two (shaded) and then, where there is a tick, all other boxes in that row.

Species - terrestrial, intertidal, marine	Walkover shows that suitable habitat present and reasonabl y likely that the species will be found? <u>Tick or cross</u>	Detailed survey needed to clarify impacts and mitigation requirements ?	Detailed survey carried out and included ?	Species Present or Assume d to be present on site <u>Indicate with P or A and name the species</u>	Impact on species ?	Detailed Conservation Action Statement included? Sets out actions needed in relation to avoidance, mitigation, compensation , enhancement	EPS offence committed ? Three tests met?	Grid referenc e for specific location of species (for large sites)
Bats (roost)	✓	✓	✓	P	✓	✓	No	
Bats (flight line / foraging habitat)	✓	x			No			
Dormice	✓			A		No impacts		
Otters	x							
Great crested newts (*check consultation zone)	x							
Cirl buntings (*check consultation zone)	x							
Barn owls	x							
Other Schedule 1 birds	x							
Breeding birds	✓			P		✓		
Reptiles	✓			A		✓	No	
Native crayfish	x							
Water voles	x							
Badgers	x							
Other protected species	x							
UK BAP priority species	✓			Common toad				
Devon BAP key species	x							
Invasive species	x							

A tick or cross must be placed in all boxes in column two and then, where there is a tick, all other boxes in that row.

Designation Terrestrial, intertidal, marine	Within site or potential impact. <u>Tick or cross</u>	Name of site / habitat	Detailed Conservation Action Statement inc. in report ?	Habitat balance sheet included (showing area of habitats lost, gained & overall net gain)	Relevant organisation consulted & response included in the application?
Statutory designations					
European designations - Special Area of Conservation (SAC), Special Protection Area (SPA) and RAMSAR site or within Greater Horseshoe consultation zone					
Site of Special Scientific Interest (SSSIs)					

Marine Conservation Zone (MCZ)					
Local Nature Reserve (LNR)					
Non statutory wildlife designations					
County Wildlife Site (CWS)					
Ancient woodland					
Special Verge					
UK BAP Priority habitat					
Local Biodiversity Network (mapped by Devon Wildlife Trust / through Green Infrastructure work)					
Non statutory geological designation					
County Geological Site (CGS or RIGS)					

