



Cranbrook Villa, Hayling Island, Hampshire

ECOLOGICAL ASSESSMENT

Final Report
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Executive Summary

This report has been prepared by CC Ecology Ltd on behalf of Kevin Hunt in relation to a planning application for the development of an existing residential plot known as Cranbrook Villa located on Copse Lane, Hayling Island. Proposals for the site include the demolition of the existing house and construction of a single detached residential property with associated garden and driveway.

A Phase 1 Habitat Survey was undertaken of the site by Claire Clarke of CC Ecology Ltd and Dr Lynsey Robinson on 18 August 2015 and this has been followed up by various Phase 2 targeted protected species surveys.

A daytime inspection of the existing house was undertaken in combination with the Phase 1 survey. No evidence of roosting bats was found during the inspection although the building was considered to have moderate potential to support roosting bats. Further phase 2 surveys were commissioned to fully assess the presence or likely absence of roosting bats, two dusk surveys were undertaken, one in August and the other in September. No bats were recorded emerging during the August bat survey but during September three bats were recorded emerging from access points on the ridge and around the chimney and these were noted to be *Myotis* sp. It is considered most likely that the building supports a small transitional roost for *Myotis* sp., most likely Whiskered/Brandts, Natterers or Daubenton's. No trees within and adjacent to the site boundary have potential to support roosting bats.

A reptile survey was undertaken of the site following best practice guidelines and although the habitats within the garden of Cranbrook Villa were considered to have high potential to support the more common and widespread species of reptile, these were found to be absent. It is thought that the absence of reptiles is likely to be due to past management practices within the garden and the isolated nature of the site from patches of suitable reptile habitat in the wider landscape.

Several ponds were noted to be present within 500m of the site boundary. The three closest ponds were assessed using the Habitat Suitability Index, and two were found to be of poor suitability and one of below average suitability. A data search commissioned from the Hampshire Biodiversity Records Centre (HBIC) found no records of Great Crested Newts within 2km of the site and it is thought that this species is likely to be absent from Hayling Island. Whilst records are noted on the mainland, the island is isolated in terms of connective habitat for this species. Although ponds are present in close proximity to the site and the habitat on site is considered to be suitable for terrestrial newts, the surrounding landscape does not provide large extents of suitable terrestrial habitat for this species. Great Crested Newts are therefore considered likely to be absent from the site.

Hedgerow and scrub habitat within and on the site boundary were assessed as being suitable for Dormice during the Phase 1 Habitat Survey. The data search did not note any records of this species within 2km of the site boundary. In addition the surrounding landscape is considered to be of relatively poor quality for this species. It is thought that this species is likely to be absent and no further surveys were recommended.

The building and surrounding vegetation has the potential to support nesting birds. Reports of a Barn Owl using the house were made by neighbours, although the survey found no evidence of this species as being present. Surveys for Barn Owl included a daytime inspection of the loft space as well as vantage point surveys in combination with bat surveys.

The majority of habitats within the site boundary are considered to have no intrinsic nature conservation value. However the habitats present have been found to support protected species. In

order to avoid impacts on protected species a biodiversity mitigation and enhancement strategy has been prepared. This also includes recommendations for enhancing the site for biodiversity as a whole, in line with local biodiversity objective and planning policy.

A Biodiversity Action Plan (BAP) habitat of Traditional Orchard, is noted as being present within the back garden of the property. This habitat is located along the southern end of the garden and will be retained as part of the proposals.

1. Introduction

Background

- 1.1 Prior to undertaking ecological surveys at Cranbrook Villa a planning application had already been submitted to the Local Planning Authority and the Local Planning Authority Ecologist advised that ecological surveys were required to support the application. Anecdotal records for bats, slow worms and Barn Owl using the site mentioned within the comments from the ecologist.
- 1.2 CC Ecology Ltd was commissioned by Kevin Hall in August 2015 to undertake a Phase 1 Habitat Survey at Cranbrook Villa, Copse Lane, Hayling Island, Hampshire (for Location refer to **Map 1**).
- 1.3 Further targeted protected species surveys were required to fully assess the site, these have been undertaken and the results of all ecological surveys are included within this report.

Development Proposals

- 1.4 Current proposals for Cranbrook Villa include the demolition of the existing house and the construction of a single detached residential property with associated driveway and garden. The boundary vegetation and orchard habitat at the southern end of the property will be retained.
- 1.5 For the indicative layout for the proposed scheme refer to **Map 2**.

Site Context

- 1.6 Cranbrook Villa (the Site) is a two storey detached cottage located on Copse Lane, Hayling Island, Hampshire at ordnance survey grid reference SU 731022 (**Map 1**). The general area immediately surrounding the site is low density residential housing and farmland with a patchwork of fields to the north and south of Copse Lane. Small patches of deciduous woodland are located within the surrounding area although most of the land is a patchwork of meadow and arable land inter-dispersed with drains/ditches and hedgerows.
- 1.7 Several designated wildlife sites are located in close proximity to the site Chichester and Langstone Harbour Ramsar and Special Protection Area (SPA), and Chichester Harbour Area of Outstanding Natural Beauty (AONB) and Site of Species Scientific Interest (SSSI) are located approximately 400m to the east of the site; Gutner Point Local Nature Reserve (LNR) is located approximately 600m to the south west of the site; and Solent Maritime Special Area of Conservation (SAC) is located approximately 400m to the north east of the site. These statutory protected sites continue along the southern coast of North Hayling which is also located approximately 450m from the site.
- 1.8 Cranbrook Villa is located within the South Coastal Area National Character Area.

Relevant Legislation and Policy Implications

Relevant Legislation

- 1.9 The key legislative provisions of relevance to this report with respect to the development proposals and their potential effects on ecological features are listed below, with further detail provided in **Appendix 1**.

- The Habitats and Species Regulations 2010 (as amended)
- The Wildlife and Countryside Act 1981
- The Countryside and Rights of Way (CROW) Act 2000
- The Natural Environment and Rural Communities (NERC) Act 2006

Biodiversity Action Plans

- 1.10 The UK Biodiversity Action Plan (BAP) was the Government's response to the 1992 Convention on Biodiversity (The Rio Convention), with the aim of halting the loss of biodiversity in the UK. The new UK post-2010 Biodiversity Framework replaces the previous UK Biodiversity Action Plan and is the government's response to the new strategic plan on the United Nations Convention on Biological Diversity (CBD). Although the UK Post-2010 Biodiversity Framework supersedes the UK BAP, the UK BAP lists of priority species and habitats still remain an important reference source for identifying habitats and species of principal importance within England, Wales, Northern Ireland and Scotland. Within England Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 list species and habitats of principal importance for the conservation of biodiversity.

Planning Implications

- 1.14 The Government has set out its policies for the protection and enhancement of biodiversity in the planning system in The *National Planning Policy Framework (NPPF)* which states that plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests'. The key principles of the NPPF describe the importance of avoiding, mitigating and compensating for adverse effects.
- 1.15 Cranbrook Villa comes under Havant Borough Council. The Havant Borough Local Plan (Core Strategy) sets out its policies for development within the borough until 2026.

Core Policy DM8 relates to Conservation, protection and Enhancement of Existing Natural Features:

Development will only be permitted where it protects and enhances local habitat and landscape distinctiveness and which addresses all of the relevant criteria as set out below:

1. *Protects natural features of nature conservation and/or amenity importance on the site, for example trees, woodlands, hedgerows, soils, streams, stream corridors, springs, ditches or ponds from damage, destruction and deterioration of quality.*
2. *Sympathetically incorporates existing features into overall design of the scheme including measures to ensure their continued survival.*
3. *Provides new landscape works that integrate successfully with the local environment and existing natural features, using local materials and plant species and making provision for future maintenance of new landscape works associated with new developments.*
4. *Ensures sequences of greenspaces are maintained and protects the attractiveness and visual amenity of all green open spaces that contribute to the identity of the borough.*

2. Methodology

Introduction

- 2.1 Methodology for the evaluation of the Site and assessment of the potential impacts has been based on the Guidelines for Ecological Impact Assessment (EcIA) in the United Kingdom published by the Institute of Ecology and Environmental Management (IEEM, 2006) (now CIEEM). Protected species and vegetation surveys have all been based upon best practice guidelines published by various organisations in respect of the species group being surveyed.

Defining the Zone of Influence

- 2.2 In order to define the spatial scope of the Phase 1 Habitat Survey and Phase 2 Surveys it is necessary to predict the likely zone of influence of the development proposals for Cranbrook Villa. The zone of influence of a proposed development is defined by IEEM's EcIA guidelines as '*...the areas/(ecological) resources that may be affected by the biophysical changes caused by a development, both in the construction and operational phases*'.
- 2.3 The types of activities that might occur as a result of the development at Cranbrook Villa and the likely biophysical changes (in the absence of mitigation) include:
- a. Demolition of the existing house, with the potential to disturb roosting bats and nesting birds as well as destroy nest and roost sites (if present);
 - b. Ground and vegetation clearance will be required to facilitate the construction of the new house and surrounding landscaping; this may have an impact on vegetation with the potential to support protected species; and
 - c. Increase of noise, dust and lighting during the construction and operation phases of the development.
- 2.4 The site falls within the SSSI Impacts Risk Zones which is used to identify risks to protected sites such as SSSI's SPA's and SAC's as a result of development. LPA's are asked to consult Natural England on developments that are located within the Impact Risk Zone that fall within certain categories. With reference to Natural England's MAGIC Map it states that:
- "All planning applications outside/extending outside existing settlements/urban areas affecting greenspace, farmland, semi natural habitats or features such as trees, hedges, streams, rural buildings/structures EXCEPT HOUSEHOLDER APPLICATIONS"*.
- 2.5 The proposed development at Cranbrook Villa is located within an existing settlement area and includes the development of a site already classed for residential use. In addition the proposals include the replacement of a single dwelling and it is therefore unlikely that the zone of influence will extend much beyond the site's boundary.

Desktop Study

- 2.6 A desktop study was undertaken to obtain information regarding protected species on the site and within the zone of influence. This involved searching the National Biodiversity Network website, assessing the known distribution of bats in Britain (Richardson, 2001), as well as interrogating Natural England's "Nature on the Map" (MAGIC) to establish protected sites and habitats within the zone of influence of the proposals..
- 2.7 A records request was also commission of the Hampshire Biodiversity Information Centre (HBIC) for records of designated nature conservation sites and protected and notable species within 2km of the site boundary.

Phase 1 Habitat Survey

- 2.8 A Phase 1 Habitat Survey of the Site was undertaken on 18 August 2015 by Claire Clarke (licensed bat ecologist) of CC Ecology Ltd and Dr Lynsey Robinson (licensed bat and barn owl ecologist). The survey is essentially an ecological appraisal of the site. The habitats and features within the site boundary were mapped and classified, in addition any evidence of or potential for protected species to be on the site or within the zone of influence was noted.

Bats

Daytime Inspection

- 2.9 A daytime inspection for bats was carried out in combination with the Phase 1 Habitat Survey on 18 August 2015. The building was searched for evidence that bats may be using, or previously have used, the building for roosting. Such evidence may include:
- The presence of bats;
 - Bat droppings within the building or on external surfaces on and/or immediately adjacent to the building; and
 - Staining or scratch marks around suitable bat roost locations or suitable access points into the building.
- 2.10 All accessible loft voids were searched using a very bright torch. The external inspection of the building involved searching for evidence with the use of a torch and binoculars.
- 2.11 Bats may roost in locations that are inaccessible to a surveyor, such as in between the roof lining and tiles, gaps under hanging tiles, within soffits etc. Therefore, potential areas for bats to roost or potential access points were also noted during the survey in order to assess the buildings 'potential' to support roosting bats (in line with best practice guidelines). An initial assessment of the buildings' potential value to bats was also made at the initial inspection stage in order to determine the level of any further survey work required to fully assess the site for bats.

Phase 2 Bat Surveys – Dusk Emergence and Dawn Re-entry Surveys

- 2.12 As the house was considered to have moderate potential to support roosting bats further surveys were undertaken to fully assess the presence or likely absence of roosting bats.

- 2.13 Three surveyors in total were positioned either side of the house at Cranbrook Villa at locations identified as allowing good sight lines and ensuring that all potential bat access/egress points were visible between the surveyors. Refer to **Map 3**. Each surveyor was equipped with either Petterson D240x or BatBox Duet and an ediol recorder (as appropriate) to record unidentified calls for subsequent computer analysis.
- 2.14 Each surveyor was supplied with a plan of the site on which to mark bat activity. The following information was recorded for any bats seen or heard:
- Species;
 - Time;
 - Behaviour (whether it was feeding, commuting, social calling or swarming);
 - If seen, direction of flight; and
 - If it emerged or re-entered the building.
- 2.15 Behaviour was identified by flight patterns and call characteristics as heard on the bat detector. Weather conditions (temperature, wind speed/direction, cloud cover, rainfall in the last hour) were also recorded at the start and end of each survey.

Timing

- 2.16 Dusk emergence surveys were undertaken on two evenings; 23rd August 2015 and 20th September. All of the dusk emergence surveys were carried out during the period of time considered to be the active bat season. Details of the timings of the emergence/re-entry surveys are given in **Table 2.1**.

Table 2.1: *Timing of Surveys*

Type	Date	Start	End	Sunset/Sunrise	Duration
Emergence	23 August 2015	19:45	21:45	20:09	2 hrs
Emergence	20 September 2015	18:50	20:50	19:17	2 hrs

Barn Owl

- 2.17 The daytime inspection of the building for bats also included an assessment of the building to support Barn Owl. All accessible loft voids were accessed and searched for evidence of nesting and roosting Barn Owl.
- 2.18 Vantage point surveys were carried out in combination with bat emergence surveys to watch for Barn Owl emergence from Cranbrook Villa.

Reptiles

- 2.19 A targeted reptile survey was carried out within the front and back garden of Cranbrook Villa.
- 2.20 A survey to ascertain the presence or likely absence of reptiles on the Site was set up 5 September 2015 using artificial refuges as an established method for collecting data on reptiles (Gent and Gibson 2003). Artificial refugia are materials such as roofing felt or corrugated metal that warm up faster and retain heat for longer than the ground or surrounding vegetation, a mixture of roofing felt, corrugated onduline and corrugated tin was used. Reptiles are exothermic (cold blooded) and will use artificial refuges to shelter

under in order for their bodies to reach the temperature required for activity. Using artificial refuges therefore enables easier detection of reptiles.

- 2.21 A total of 36 artificial refugia were distributed in suitable reptile habitat within the Site boundary (refer to **Map 3**). Survey visits were conducted at suitable weather conditions and at a time appropriate to the season (Gent and Gibson 2003), within the month of September 2015. Suitable weather conditions are generally considered to be between 10°C and 18°C with intermittent sunshine and little or no wind or rain. However, it is possible to carry out surveys in warmer conditions dependant on local conditions on the site and the location of individual refugia. During the survey visits, refugia checks were combined with a direct observation survey, which involves visually searching suitable locations for basking reptiles.

Amphibians

- 2.22 During the Extended Phase 1 Habitat Survey, seven ponds were identified as being present within 500m of the site boundary. A Habitat Suitability Index (HSI) was undertaken on three of the closest ponds to the site to assess their suitability for Great Crested Newts *Triturus cristatus*. This uses ten characteristics of a pond to derive a score between 0 and 1 (with 0 being the lowest and 1 being the highest) relating to how suitable the pond is for Great Crested Newts.

Survey Constraints

- 2.23 Bats will often roost in places that are inaccessible to the surveyor, such as under tiles and within soffits. During the inspection due regard was paid to the noting of features that have the potential to support crevice dwelling species. Ultimately, augmenting the internal and external inspection of the building with dusk and/or dawn surveys should provide a sufficient level of information to allow a more accurate evaluation of whether bats are present or absent within these potential sites.
- 2.24 Due to the restrictions of a small loft hatch located under the slope of the roof it was not possible to fully access the loft, however the area was surveyed from the hatch and the area was fully visible from the hatch.
- 2.25 Bats are nomadic and invariably move between roost sites, therefore any bat survey will only provide a snapshot of how bats are using a particular site at that time.
- 2.26 The reptile survey was conducted at one end of the year and although this is within the optimal survey period the survey results would not monitor reptile presence/absence and distribution across the whole of the active season.

3. Survey results and evaluation

Designated Sites

- 3.1 Several statutory designated wildlife sites are located in close vicinity to the site. Chichester and Langstone Harbour Ramsar and Special Protection Area (SPA), and Chichester Harbour Area of Outstanding Natural Beauty (AONB) and Site of Species Scientific Interest (SSSI) are located approximately 400m to the east of the site; Gutner Point Local Nature Reserve (LNR) is located approximately 600m to the south west of the site; and Solent Maritime Special Area of Conservation (SAC) is located approximately 400m to the north east of the site. These statutory protected sites continue along the southern coast of North Hayling which is also located approximately 450m from the site.
- 3.2 Forty one Sites of Importance for Nature Conservation (SINCs) are located within 2km of the Site's boundary (refer to **Appendix 3**). Most of the sites are designated for Brent Geese and together form a network of important foraging grounds for this species as well as other overwintering birds.

Habitats and Features

- 3.3 Refer to **Map 4** for the habitats and features present within the Cranbrook Villa Site. Target Notes on **Map 4** are included within the text below. Photos are included in **Appendix 2**.
- 3.4 The Site comprises of a house with a small front garden and extensive back garden and orchard.
- 3.5 The house (Target Note (TN) 1) is a two storey cottage with a pitched and hipped slate tiled roof; to the rear is a small single storey pitched section and a flat roof section. Due to the unkempt nature of the property the house is in a relatively dilapidated state. During the survey the main roof of the house was noted to contain many slipped, lifted and missing tiles which create in some areas extensive holes in the roof. The soffits are constructed of wood and these are rotten in places. Extensive areas of Ivy *Hedera helix* are present on the south western aspect of the building covering the external walls of the property on the main sections and single storey extension.
- 3.6 The front garden is surrounded by hedgerows including both native and non-native ornamental garden species, the lawn is relatively overgrown and comprises of a tussocky grassland structure (TN 6). To the west of the front garden is an area of gravel which is overgrown with ruderals (TN 7) Land to the rear and western aspect of the house is quite extensive and due to the unkempt nature of the site is relatively overgrown and impenetrable in areas. Immediately to the west and south of the house the habitat is comprised of tall ruderals and bramble scrub, species such as Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare* and Ragwort *Senecio jacobaea* are dominant in these areas. Patches of tall ruderals and Bramble scrub were noted across the site, within the centre and around the boundaries with a large expanse present at the southern end of the site. The site is bordered by mature trees and hedgerows including species such as Oak sp. *Quercus* sp., Ash *Fraxinus excelsior*, Field Maple *Acer campestre* and coppiced Elm *Ulmus procera*. Non-native ornamental species are also present within the boundaries such as Bamboo (TN 5) and various species of fruit tree.

- 3.7 A patchwork of rough tussocky grassland (TN 6) is inter-dispersed among the areas of tall ruderals and includes species such as Yorkshire Fog *Holcus lanatus*, Meadow Fox Tail *Alopecurus pratensis*, Yarrow *Achillea millefolium*, Ribwort Plantain *Plantago lanceolata* and Greater Plantain *Plantago major*. Naturalised garden species such as Garden Mint and Lupins are present throughout. The grassland habitats are characteristic of a once cultivated garden that has been left unmanaged for some time.
- 3.8 Towards the southern end of the site there are a number of fruit trees present including apple, plum and pear. The western part of the site coincides with a Biodiversity Action Plan (BAP) Priority Habitat. With reference to Natural England's *Nature on the Map/MAGIC* the western section of the site is classed as Traditional Orchards. Within the site boundary this habitat is only found at the very bottom of the garden (TN 4). As this area is a BAP Priority Habitat, I would recommend retaining an Orchard area and that tree protection zones are placed around the boundary trees that will be retained. This could be achieved by fencing the bottom part of the garden during the development phase.
- 3.9 The southern end of the site is dense with scrub/tree and hedgerow vegetation. A dry ditch was noted running along the southern end of the site, which is likely to hold water in the winter months.

Bats

Existing Records

- 3.10 The data search returned records of Noctule *Nyctalus noctula*, Pipistrelle sp. *Pipistrellus* sp., Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Long-eared bat sp. *Plecotus* sp., and Natterers *Myotis nattereri*, within 2km of the Site boundary.
- 3.11 Local bat records including those of Richardson (2000) occurring within a 100 km area show Greater Horseshoe bat *Rhinolophus ferrumequinum*, Lesser Horseshoe bat *R. Hipposideros*, Whiskered bat *Myotis mystacinus*, Brandt's bat *Myotis brandtii*, Natterer's bat *M. nattereri*, Bechstein's bat *M. bechsteinii*, Daubenton's bat *M. daubentonii*, Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *P. pygmaeus*, Brown Long-eared bat *Plecotus auritus*, Grey long-eared bat *P. austriacus*, Serotine bat, Noctule bat, Leisler's bat *N. leisleri* and Barbastelle bat *Barbastella barbastellus*. Of these species, only the two Pipistrelle species and Brown long-eared bats can be considered as being at all common. The other species range from local to rare.

Daytime Inspection

- 3.12 The initial daytime inspection for bats was undertaken on 18 August 2015 by Claire Clarke of CC Ecology Ltd and Dr Lynsey Robinson (both Licensed bat ecologists). The survey included an internal and external inspection of the cottage including the loft space. In addition other structures and trees within the site boundary were assessed for their potential to support roosting bats
- 3.13 The external inspection of the house recorded a number of large holes in the roof and soffits of the building. The internal inspection found two loft spaces, the main loft above the two storey section and a smaller loft above the most southern section of the single storey part of the house. Within the main loft the space was very exposed due to the large number of holes present within the roof. No insulation is present and there is no lining underneath

the tiles. Apart from crevices around the chimneys at each end of the main loft space, the void is considered to be largely unsuitable for roosting bats due to its exposed nature.

- 3.14 The small loft above the single storey section of the house is shallow and cluttered with a water tank at one end. The loft is insulated with fibre glass insulation between joists and is lined with wooden sarking, another layer of wooden boarding was noted in some areas. A small number (approximately 30) of degraded droppings were recorded within this section. These were relatively old and at the time of survey not considered very distinguishable between some of the rodent droppings that were numerous within this section. Later DNA analysis confirmed the droppings to be from shrew, which have a similar diet to bats.
- 3.15 No evidence of roosting bats was found during the daytime inspection however the building was considered to have moderate potential to support roosting bats.
- 3.16 The two sheds (TN 2 and 3) were assessed for their potential to support roosting bats. One located to the west of the house is single skin with a concrete asbestos roof; the other was of similar structure although quite dilapidated with the roof fallen in. Both were considered to have negligible potential to support bats.
- 3.17 No trees within and on the site boundary were found to have bat roost potential.

Bat Dusk Emergence Surveys

- 3.18 **Map 5** summarises the results from the dusk emergence and dawn re-entry surveys.
- 3.19 The dusk survey undertaken on 23 August 2015 recorded low level activity around the cottage. No bats were noted to emerge from the property. The majority of the bats recorded commuting and foraging around the property were Soprano Pipistrelle although Myotis sp. and Long-eared sp. were recorded as brief passes towards the end of the survey. Activity from Soprano Pipistrelles was low level with no sustained foraging activity and passes noted as "brief".
- 3.20 Activity levels during the dusk emergence survey undertaken on 20 September 2015 were also relatively low level throughout the survey. Three bats were recorded to emerge from the roof of the cottage, the first was not echolocating, but the subsequent bats emerging from the property were and their calls were characteristic of Myotis sp. Due to the speed at which the bats emerged it was not possible to take recordings of the calls.
- 3.21 Other than the emerging bats the majority of the bat activity recorded during the September dusk survey was from Soprano Pipistrelle. Single brief passes from Common Pipistrelle and Serotine were also recorded.

Interpretation/Evaluation of Results

- 3.16 The daytime inspection of Cranbrook Villa assessed the cottage as having moderate potential to support roosting bats. No evidence of roosting bats were found, although the potential for bats to be roosting within crevices to be impacted upon by the proposed development warranted further surveys to ascertain the presence or likely absence of roosting bats.
- 3.17 Subsequent dusk emergence surveys recorded three bats emerging from the roof of the property during September. These were recorded as being *Myotis* sp. Although it was not possible to identify these bats to species during the survey it is considered likely that they are either whiskered/brandts, natterers or daubentons.
- 3.18 Based on the results of the dusk surveys, with no emerging bats recorded during the August survey and a small number of bats recorded during the September survey, it is considered likely that Cranbrook Villa supports a small day roost of this species group. Due to the time of year that the bats were recorded as being present it is most likely that this is a small transitional roost.
- 3.19 Based on the results of the survey it is considered that the site and its immediate adjacent habitats are of value to roosting and foraging bats only at the Site level.

Nesting Birds

- 3.20 The hedgerows bordering the Site and scrub habitats within the boundary of the Site are likely to provide suitable bird nesting opportunities for common garden bird species.
- 3.21 The cottage also has high potential to support nesting birds.

Barn Owl

- 3.22 Anecdotal records suggest that the cottage supports Barn Owl. Neighbours have stated that they have noted a Barn Owl flying out of the roof of the cottage.
- 3.23 The daytime inspection of the cottage included an assessment of the site for Barn Owl. The loft space of the cottage was considered to have potential to support Barn Owl due to the presence of a number of access points although no evidence of this species nesting or roosting was noted during the inspection.
- 3.24 Access to the loft space was relatively restricted and although it was possible to view the whole of the loft space from the hatch it was not possible to physically enter the loft space. Whilst it is possible that small amounts of evidence may not have been noted due to the access restrictions, it is unlikely that any substantial evidence suggesting the presence of nesting barn owl would have been missed.
- 3.25 The daytime inspection of the building was augmented with vantage point surveys that were carried out in combination with the bat surveys. No barn owls were noted emerging or entering the building, nor using the site or its immediate surrounds.
- 3.26 Based on the results of the surveys undertaken it is considered that barn owl are likely to be absent from the building at present.

Reptiles

- 3.27 The records search returned records for Common Lizard *Zootoca vivipara* and Adder *Vipera berus* within 2km of the Site boundary.
- 3.28 The front and back garden of Cranbrook Villa was considered to have high potential to support the common and widespread species of reptile. The tussock grassland and scrub edge habitats provide ideal basking and foraging habitats for these species, in addition log piles and tussock bases provide natural refuges for reptiles in addition to hibernation opportunities.
- 3.29 A targeted survey to determine the presence/absence of reptiles was undertaken and no reptiles were recorded. **Map 3** shows the position of artificial reptile refugia. **Table 3.1** below provides the results from the surveys.

The reptile survey results are provided in **Table 3.1** below.

Date	Time	Temperature (°C)	Cloud Cover (%)	Wind (Beaufort)	Rain	Animals
15 September 2015	13:00	17	90	2	0	
17 September 2014	14:00	18	80	1	0	Adult Common Frog
18 September 2014	12:00	17.2	70	1	0	
20 September 2015	12:30	18.5	80	0	0	Adult Smooth Newt
23 September 2015	14:30	16.5	90	1	0	
25 September 2015	15:00	15.1	60	0	0	
28 September 2015	12:15	17.5	80	0	0	

- 3.30 It is considered that reptiles are likely to be absent from the site. All of the surveys were undertaken during ideal weather conditions, during one of the most optimal months for surveying reptiles. Whilst the habitats within the site boundary seem highly suitable for reptiles it is likely that this is due to recent regeneration of habitats on the site due to the lack of garden management in the last couple of years. The immediate surrounding landscape is largely unsuitable for reptiles and it is likely that the successive habitats within the site boundary are isolated from sites that do support reptiles in the wider landscape.

Dormice

- 3.31 The data search returned no records for dormice within 2km of the site boundary. It is possible that records of Dormice are absent for Hayling Island, whilst an absence in records does not necessarily mean an absence in the species, it is possible that the relative isolated nature of Hayling Island to the mainland is restrictive in terms of this species distribution.
- 3.32 The habitat in and on the site boundaries is considered suitable for dormice. Various fruiting trees and shrubs are present that would provide a suitable food source for this species.
- 3.33 Whilst the hedgerows are connected to more extensive hedgerows in the surrounding landscape, these do not connect to any larger blocks of suitable habitat such as deciduous woodland. Habitats immediately surrounding the site are largely extensive arable fields bordered by a network of hedgerows. Whilst these are likely to be comprised of a mix of hedgerow species that could provide foraging and nesting opportunities for dormice, without the connection to larger blocks of suitable habitat it is unlikely that these habitats alone would be sufficient to support a dormouse population. In combination with the relative isolated nature of Hayling Island itself it is considered very unlikely that dormice are present within the site boundary.

Amphibians

- 3.34 The record search returned records for Common Toad *Bufo bufo* within 2km of the Site boundary. No records of Great Crested Newt *Triturus cristatus* were returned.
- 3.35 Habitats within the site boundary are considered suitable for terrestrial amphibians. Tussocky grassland, the ditch at the southern end of the site, hedgerow bases and scrub all provide suitable foraging and refuge habitat for amphibian species.
- 3.36 During the reptile refugia survey common frog and smooth newt were recorded under artificial refugia within the site boundary.
- 3.37 Seven ponds are present within 500m of the site boundary. The two closest are located at Lower Tye Farm (65m away) and Upper Tye Farm (150m away), the third closest is located on the footpath running west towards Northward Farm from Copse Lane (390m away). The site in relation to these ponds is shown on **Map 1**.

- 3.38 Access was possible for the three ponds that are closest to the site, it was not possible to view the other four ponds. A Habitat Suitability Index (HSI) for Great Crested Newts was carried out on the three ponds closest to the site: Lower Tye Farm pond scored 0.38 and the pond located on the path to Northwood Farm scored 0.46 and therefore are considered “poor” suitability; the pond at Upper Tye Farm scored 0.58 which is below average. Although Great Crested Newts can sometimes occupy ponds with poor suitability, under these circumstances they are usually dependant on other more suitable ponds nearby as well as good terrestrial habitats interlinking these ponds for successful breeding.
- 3.39 Whilst the habitats within the site boundary are considered suitable for terrestrial newts it is likely that these are relatively recently regenerated from what was once a well-managed garden. The surrounding landscape does not provide optimal terrestrial habitats for this species as it is largely comprised of large arable fields. Whilst there are no real barriers for dispersal between the site and the closest ponds the landscape does not lend itself to support a population of this Great Crested Newts.
- 3.40 The closest pond at Lower Tye Farm is of very poor quality, located within a stable yard adjacent to a manure heap, concrete lined and overshadowed by a mature Willow tree. The water is highly eutrophic and lacking in any macrophyte cover. The pond is relatively isolated by hardstanding and thought to be highly unsuitable for amphibians. Taking this into account a rapid risk assessment for the project using the tool within the Natural England mitigation licence template (wmla142_tcm6-4103), which gave the result “GREEN – OFFENCE HIGHLY UNLIKELY” (see table below). This removes the pond at Lower Tye Farm as a potential breeding pond and takes into account the impacts on habitats within the site boundary in relation to the other two ponds (if they did support Great Crested Newts).

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
Maximum:		0.1
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

- 3.41 It is noted that if likely effect to the “Individual great crested newts” component is changed to “minor disturbance of newts” or anything greater, the risk assessment result changes to at least “AMBER – OFFENCE LIKELY.” However, it is considered unlikely that (even if present), great crested newts would reach the site. Radio-tracking studies have shown that adult great crested newts typically remain within 100m of their breeding pond (Jehle 2000) with a maximum dispersal of 150m (Jehle & Arntzen 2000). In addition, drift fencing and pitfall trap capture rates decline significantly at distances over 50m from the breeding pond and are rarely effective at distances over 100m from a breeding pond (Cresswell & Whitworth 2004).
- 3.42 In addition no records are present for Great Crested Newts within the surrounding area, it is considered possible that this species is absent from Hayling island and therefore the island itself is isolated from any mainland population. Taking all of these aspects into consideration it is considered unlikely that Great Crested Newts are present within the site boundary.

Other Species

- 3.43 During the reptile surveys a Stag Beetle *Lucanus cervus* was found within a log pile. This species is considered a species of principal importance for the conservation of biodiversity.
- 3.44 No other protected or notable species were recorded during any of the surveys.

4. Potential impacts in the absence of mitigation

Introduction

- 4.1 This section details the potential ecological impacts of the proposal in the absence of mitigation. The potential activities are identified with reference to the scheme, as identified in **Section 1**. Recommended mitigation and enhancements to ensure that the favourable conservation status of protected species is maintained, and that enhancements are made for biodiversity in compliance with the relevant legislation and planning policy, is detailed in **Section 5**.

Impacts to Sites and Habitats

- 4.2 No valuable habitats within the site boundary will be affected by the proposed development. The house will be demolished and the surrounding vegetation will be impacted upon by the works, however boundary hedgerows will remain. In addition the Traditional Orchard, Biodiversity Action Plan (BAP) Habitat located at the southern end of the site will be retained.
- 4.3 Demolition works and clearance of habitats on the Site may have an impact on protected species, however there will be no impact on any habitats considered to be of conservation value.

Impacts to Fauna

- 4.4 Without mitigation measures, works at the site during both the demolition and construction phases have the potential to cause indirect disturbance to feeding or roosting shorebirds using the surrounding SINC's. Impacts may include:
- Visual disturbance (during both demolition and construction), which is known to cause a reduction in feeding efficiency in overwintering waders;
 - Noise disturbance, particularly during the period of November to March. Noise levels above 75dB (The Planning Inspectorate, 2013) are considered to affect the foraging behaviour of shore birds;
 - Increased artificial light levels often present on construction sites (particularly during the winter months) are also identified as causing disturbance; and
 - Vibration caused by engineering works such as piling etc. (Hockin *et al.*, 1992).
- 4.5 The surveys found that the cottage supports a small daytime transitional roost for *Myotis* sp. bats. The demolition of the cottage will result in the loss of the building as a bat roost. If bats are present at the time of works, there is the potential for them to be harmed and disturbed. As the roost will be destroyed it will be necessary to gain a European Protected Species Licence (EPSL) to undertake the works lawfully.
- 4.6 The building does have potential to support nesting birds and therefore demolition works have the potential to disturb nesting birds and to destroy nests if present at the time. Removal of small flower borders and a small isolated section of beech hedge may also have an impact on nesting birds through the removal of nest sites and disturbance of birds at the nest which would result in an offence under the Wildlife and Countryside Act 1981.

- 4.7 In the absence of mitigation the proposals may include increased lighting during the construction and operational phases. Lights may shine on boundary vegetation and have an adverse impacts on bats using these features.
- 4.8 It is considered likely that Great Crested Newts are absent from the site and surrounding area. However, a rapid risk assessment taking into account the ponds located at Upper Tye Farm and on the path to Northwood Farm indicates that, even if newts were breeding within these ponds, impacts on Great Crested newts as a result of the works at Cranbrook Villa would be unlikely.

5. Opportunities for mitigation and enhancement

Introduction

- 5.1 In order for the proposals to comply fully with applicable legislation and planning policy, it is necessary to mitigate or compensate for the ecological impacts as identified in **Section 4**. The NPPF also places an onus on developments to provide ecological enhancements and to meet local biodiversity objectives wherever possible. Within this section mitigation measures are recommended to ensure that sensitive habitats and protected species are considered during the construction and operation phases of the development, in compliance with applicable legislation and planning policy.

Mitigation

Habitats

- 5.2 The Extended Phase 1 Habitat survey found that Traditional Orchard Habitat, a BAP habitat, is located at the southern end of the site. This is located along the southern boundary furthest from the footprint of the proposed new dwelling. As part of the proposals this habitat will be retained.

Overwintering Birds

- 5.3 Wading birds may be using close-by SINC's for foraging. In order to avoid disturbance of overwintering waders and wildfowl using these sites the following mitigation measures should be implemented:
- No percussive piling or works with heavy machinery to occur on site within the wader/waterfowl overwintering period, 1 October to 31 March inclusive;
 - No construction activities that would result in noise levels in excess of 75dB shall take place between the months of November to March inclusive; and
 - Use of a decibel meter may be required to ensure that noise levels do not exceed 75dB during November to March inclusive.

Bats

- 5.4 The surveys undertaken on Cranbrook Villa have found that the cottage supports a small transient day roost of *Myotis* sp., most likely Natterers, Whiskered/Brandts or Daubentons. As all species of bat and their roosts are protected under the Habitats and Species Regulations 2010(as amended) it will be necessary to gain a European Protected Species licence (EPSL) to undertake the works lawfully.
- 5.5 The proposals for the site will involve the demolition of the existing house and construction of a new dwelling within a similar footprint. It is therefore recommended that the proposals for the site are undertaken in such a way to minimise any potential impacts to bats.
- 5.6 Prior to the start of works, three Schweglar bat boxes suitable for a range of species will be installed on mature trees within the site boundary, to provide alternative roosting opportunities for bats during the construction phase.

- 5.7 Demolition of the house will be carried out by hand under the supervision of a licensed bat ecologist. All sensitive areas of the building (confirmed and potential roost sites for bats) will be included within a soft strip following a tool-box talk and internal inspection by a bat ecologist. Contractors will be directed to carefully remove any potential roost features, such as tiles and barge boards. Any bats found will be caught by hand by a licensed bat worker and transferred out of harm's way to one of the previously installed bat boxes.
- 5.8 Once the building is stripped of all tiles and any other potential roosting opportunities it should be left open ended for at least 24 hours before being inspected by a bat ecologist and then demolished by machine. No destructive works will be carried out during the hibernation season, which is generally considered to be from 1 November to 31 March (although this is always dictated by weather conditions).
- 5.9 Compensation for the loss of roosting opportunities within Cranbrook Villa will be provided within the new building. The roof will be lined with black bitumen roofing felt as opposed to Breathable Roof Membrane (which is harmful to bats). Four bat access tiles will be provided on the roof as well as 2 ridge tile access points. Small torn holes (50mm x50mm) will be provided in the felt close to battens and access tiles to provide additional access to the loft space.

Birds

- 5.10 All species of bird are protected at the nest. Any development that could affect nesting birds should take place outside of the nesting bird season, usually considered March-August (though this is dictated by regional variations in weather and temperature conditions). Works that need to be undertaken within the nesting bird season should be undertaken immediately following an early morning bird survey to assess whether the works area is being used by nesting birds at the time of the works.
- 5.11 Nesting opportunities within the house, sheds and scrub vegetation that will be removed will be lost as a result of the proposals and therefore in order to compensate for this three bird boxes will be installed within the retained orchard area. Much of the boundary habitats and mature trees will be retained.

Barn Owls

- 5.12 It is considered that unlikely that Barn Owls are currently using the building for nesting or roosting, however the building does remain suitable and therefore it is recommended that an update survey is undertaken prior to works commencing on the site.
- 5.13 To compensate for the loss of the building and thus the opportunity for Barn Owls to use it for roosting or nesting, a Barn Owl nest box will be installed on one of the mature trees within the site boundary.

Enhancements

- 5.14 In addition to the installation of bat and bird boxes on trees within the Site some simple measures can be taken to ensure that the proposals include enhancements for biodiversity as a whole, in line with national and local planning policy. The impacts of the proposals on ecological features is low and within the mitigation strategy described above for all protected species there is scope to positively enhance the Site for biodiversity as a whole.

The mitigation described above does not only mitigate and compensate for impacts on species but also increases and enhances the habitats available within the Site boundary.

- 5.15 The surveys undertaken on the site found Stag Beetles present. In addition the data search returned record of Toad within 2km of the site boundary. Both of these species are priority species and therefore measures should be taken to ensure that habitats remain on the site that help to retain and even improve their favourable nature conservation status. Enhancements will be made to the Site through the provision of:

- The planting of native, fruiting hedgerow species and the net increase of hedgerow habitat;
- The creation of log piles;
- The creation of a stag beetle loggery (half buried logs);
- The seeding of wildflower seed mix; and
- The installation of bat and bird boxes on mature trees.

- 5.16 A biodiversity enhancement and mitigation strategy is provided on **Map 5**. This includes the provision of a tussock grassland/wildflower buffer to the retained orchard. A compost area will be created close to the end of the garden in addition to a log pile and a stag beetle loggery constructed of half buried logs. The creation and retention of a variety of habitats will in turn help to create a more diverse assemblage of invertebrates which will in turn provide an increased food source for species such as bats, small mammals and amphibians. Planting native fruiting shrub species will also provide additional foods for small mammals and birds.

Residual Impacts

- 5.17 Provided the mitigation recommended above is implemented in full, there should be no residual impacts to protected species and habitats as a result of the proposed works at Cranbrook Villa. By providing additional habitats as well as retaining and managing the more valuable habitats within the site boundary the favourable nature conservation status of protected and priority species will be retained, in addition to enhancing the site for biodiversity as a whole.

6. Conclusions and recommendations

Conclusions

- 6.1 An Extended Phase 1 Habitat Survey and targeted Phase 2 surveys for bats, reptiles and Barn Owl were undertaken on Cranbrook Villa.
- 6.2 A data search found that several SINC's designated for overwintering wading birds surround the site.
- 6.3 Within the site boundary no habitats to be impacted upon were considered to have any real intrinsic nature conservation value. Traditional Orchard BAP habitat is located at the southern end of the garden and this is proposed for retention.
- 6.4 The Phase 2 surveys recorded a small transitional day roost for *Myotis* sp. bats within the cottage.
- 6.5 No evidence of Barn Owl was found to be present within the building although potential still remains for this species to utilise the site.
- 6.6 No reptiles were found to be present during the surveys. Although habitats within the site boundary appear suitable, it is likely that past management practices and the isolated nature of the site has resulted in the absence of reptiles.
- 6.7 No records were returned for Great Crested Newts or Dormice within 2km of the site boundary. Although the habitats within the site boundary are considered suitable for these species, there is a lack of suitable habitats within the surrounding landscape. It is considered likely that Great Crested Newts and Dormice are absent from the site.
- 6.8 Recommendations for mitigation and enhancement have been made and are listed below.

Recommendations

- 6.9 The mitigation measures and enhancements that have been recommended, include:
- Measures to avoid the disturbance of overwintering waders and wildfowl to include no construction related activities that would result in excessive noise levels between 1 October to 31 March inclusive;
 - Soft strip of Cranbrook Villa under a European Protected Species Licence (EPSL) and supervision of a suitably qualified and licensed ecologist;
 - Provision of bat roosting opportunities within the new build;
 - Early morning bird survey immediately prior to works commencing on the site if works are to be undertaken during the nesting bird season (March-August/September);
 - Update Barn Owl survey prior to works commencing;
 - Installation of bat and bird boxes on mature trees within the boundary of the Site;
 - Retention and enhancement of Traditional Orchard area to include a tussock grassland/wildflower buffer to be seeded;
 - Creation of log piles, a compost area and a stag beetle loggery
 - Enhancement of existing hedgerows and creation of new ones with the planting of native fruiting hedgerow species; and

- Any external lighting to shine inwards to the site and to be of a low lux level to avoid impacts on protected species that may use the boundary hedgerows.

6.9 Provided the mitigation recommended above is implemented in full, there should be no residual impacts to ecological features as a result of this development.

6. References

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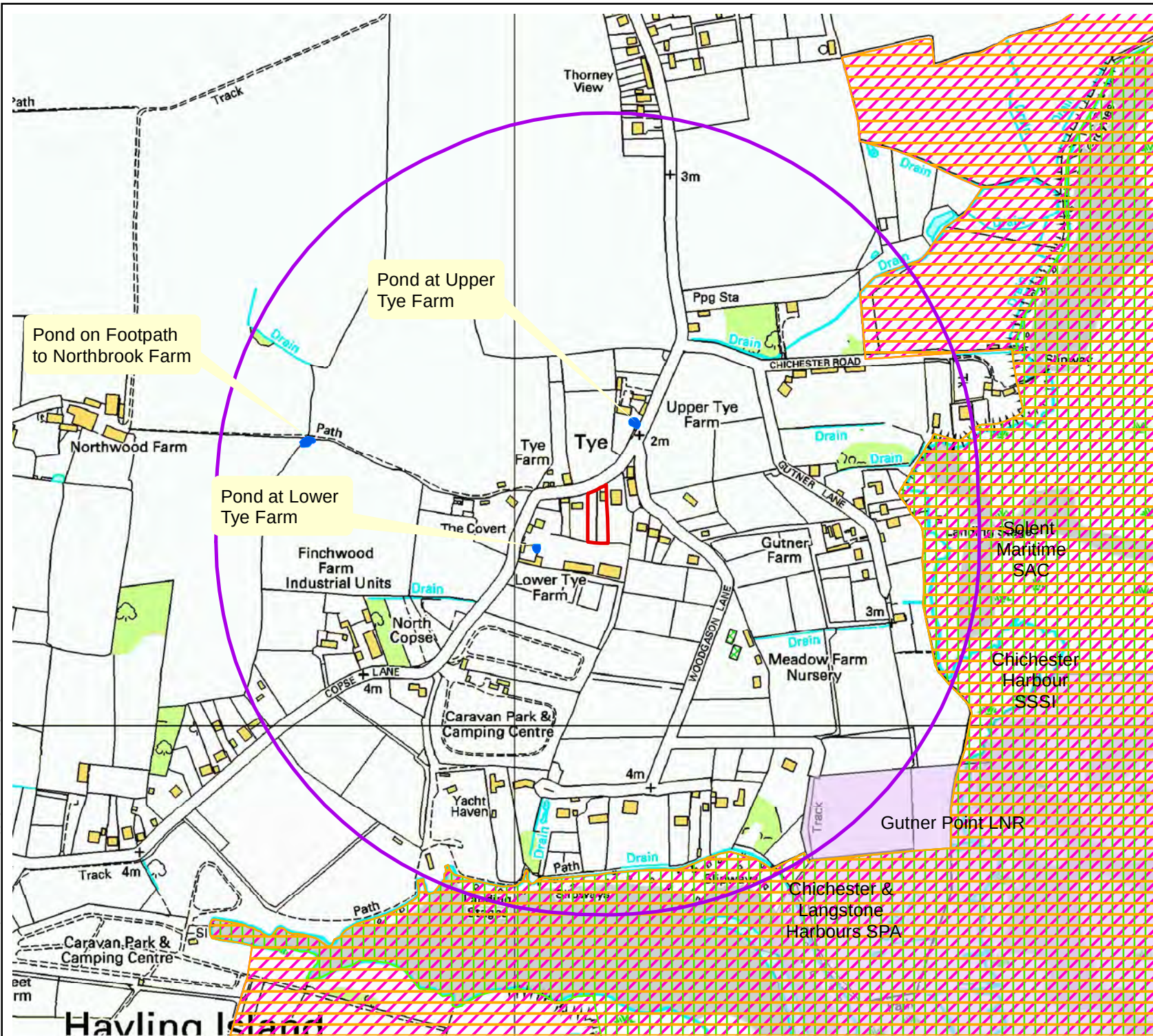
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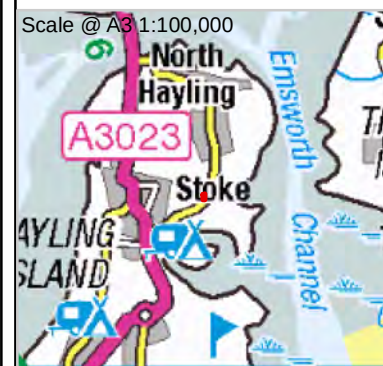
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Key

- Site Boundary
- 500m Buffer of Site Boundary
- SPA
- SAC
- SSSI
- Local Nature Reserve
- Ponds Within 500m

Scale @ A3 1:100,000



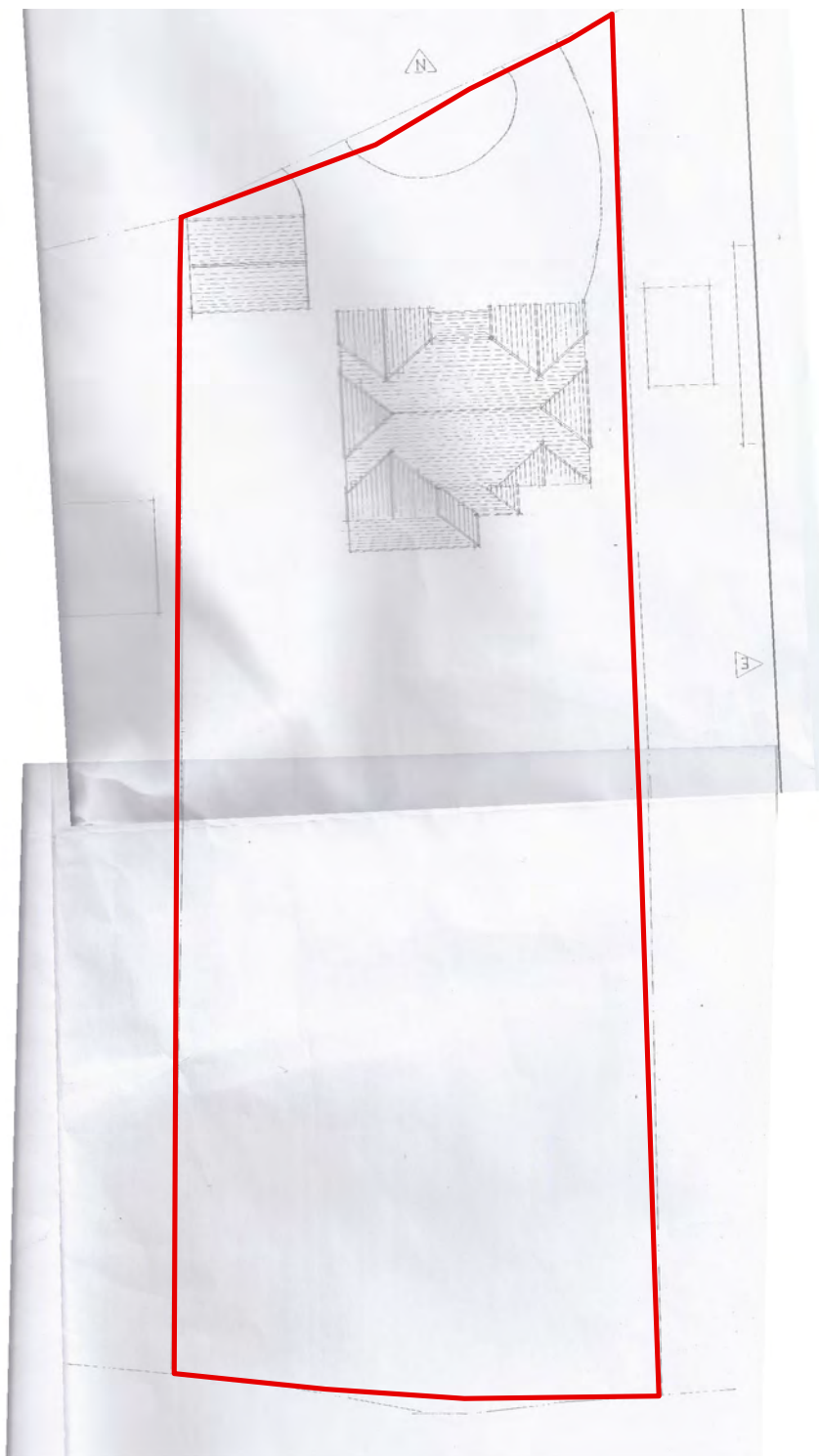
1:7,000 Scale @ A3
0 0.06 0.12 km



Ref: CCE_CranbrookVilla_Map001
Date: 18/11/2015

Map 1:
Site Location and Designations

Cranbrook Villa
Hayling Island



Key

 Site Boundary

DRAFT

Indicative Layout - Not to Scale

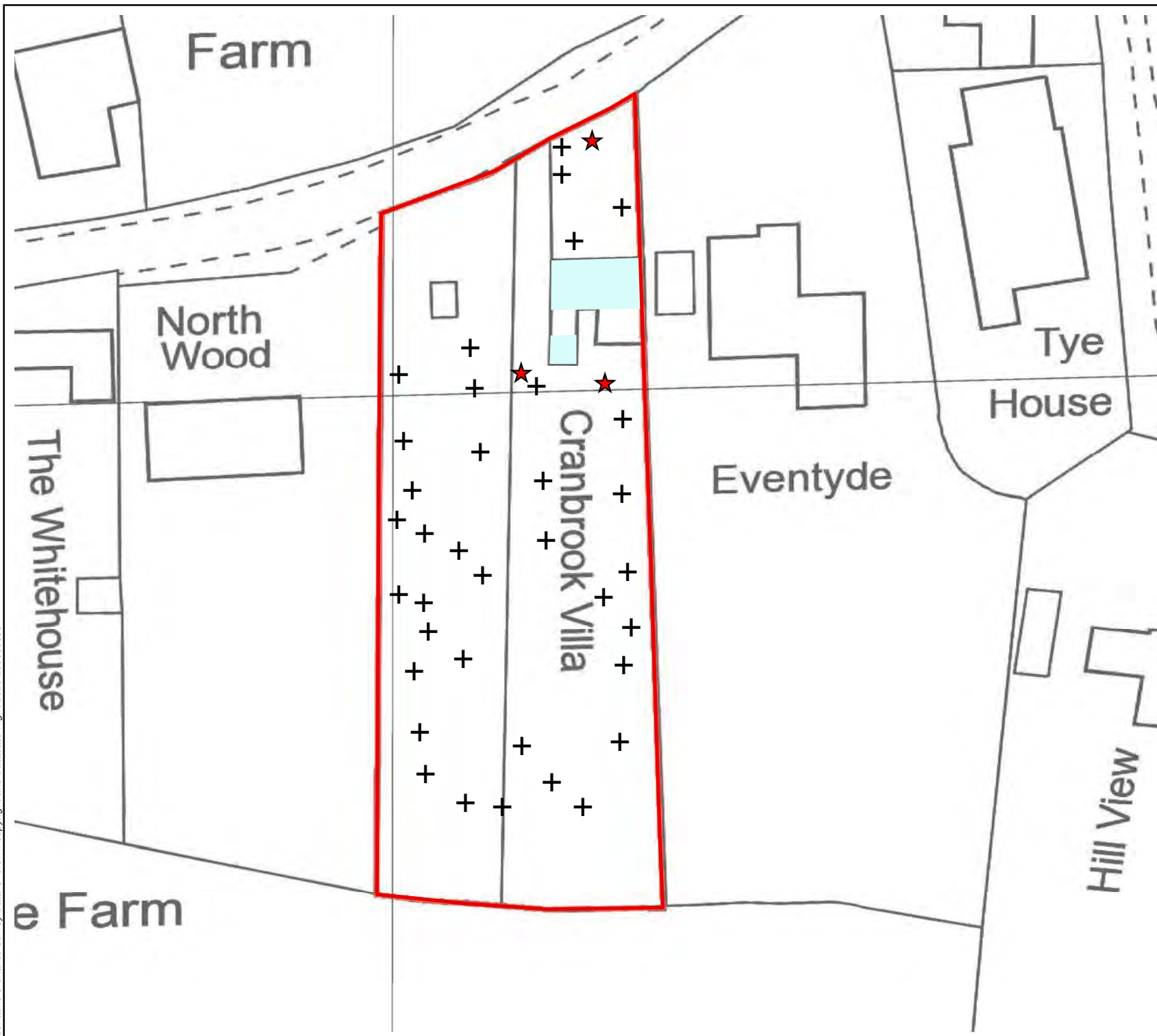


Ref: CCE_CranbrookVilla_Map002

Date: 18/11/2015

*Map 2:
Site Proposals*

Cranbrook Villa
Hayling Island



Key

- Site Boundary
- Loft Voids Inspected
- + Reptile Refugia Position
- ★ Bat & Barn Owl Surveyor Position

1:500 Scale @ A3
 0 0.004 0.008 km



Ref: CCE_CranbrookVilla_Map003
 Date: 18/11/2015

Map 3:
 Ecological Survey Summary

Cranbrook Villa
 Hayling Island



Key

- Site Boundary
- Building
- Gravel / Ruderals
- Hedgerow
- Log Pile
- Non Native / Ornamental Vegetation
- Rank / Tussocky Grassland
- Ruderals & Bramble Scrub
- Fence
- Tree
- Target Note

1:500 Scale @ A3
0 0.004 0.008 km

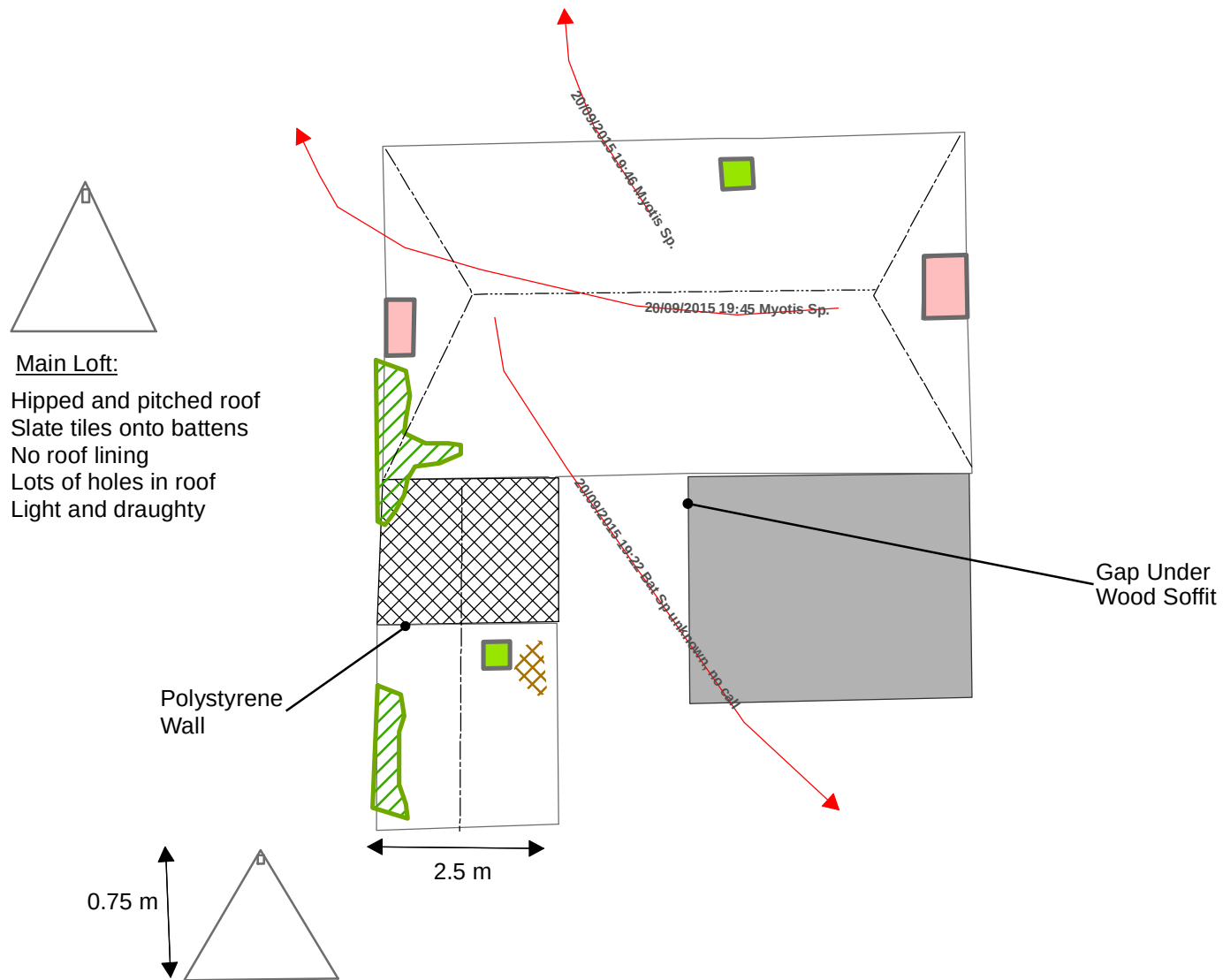


Ref: CCE_CranbrookVilla_Map004

Date: 18/11/2015

Map 4:
Habitats and Features

Cranbrook Villa
Hayling Island



Key

- Pitched Roof
- Chimney
- Loft Hatch
- Flat Roof
- Inaccessible Void
- Bird Nesting Material
- Ivy
- Emerging Bat

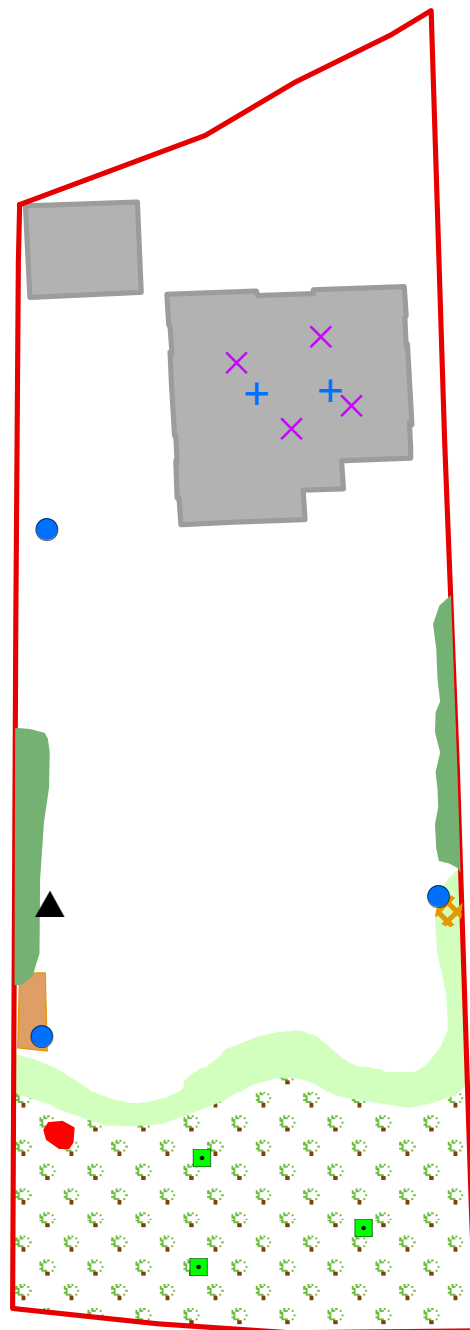
1:100 Scale @ A3
 0 0.0085 0.017 km



Ref: CCE_CranbrookVilla_Map005
 Date: 18/11/2015

Map 5:
 Bat Survey Summary

Cranbrook Villa
 Hayling Island



Key

- Site Boundary
- Location of Proposed New Buildings (Indicative)
- Retained Hedgerow
- Tussock Grass / Wildflower Area
- Retained Orchard
- Stag Beetle Loggery
- Compost Pile
- Log Pile
- X Bat Access Tile
- + Ridge Tile Access for Bats
- Tree Bat Box
- ▲ Owl Box
- Bird Box

Indicative Layout - Not to Scale



Ref: CCE_CranbrookVilla_Map006

Date: 18/11/2015

*Map 6:
Biodiversity Mitigation &
Enhancement Strategy*

Cranbrook Villa
Hayling Island

Appendix 1

Relevant Legislation

CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2010

The Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations) transpose Habitats Directive into UK legislation. The Habitats Regulations provide for the designation and protection of European Sites and European Protected Species. European Sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which form part of the Natura 2000 network of protected areas across Europe.

European Protected Species (EPS) are those listed under Schedule 2 of the Habitats Regulations and include dormouse, great crested newt, otter and all species of bat. The regulations prohibit the deliberate capture, killing or disturbance of any EPS; it is also an offence to damage or destroy a breeding site or resting place of any of these species. In order to carry out a lawful operation (e.g. development work which has full planning permission) that may result in an offence under the Habitats Regulations, it is necessary to obtain a licence from Natural England. EPS Licences will only be granted after Natural England has been satisfied that there are no satisfactory alternative and that there will not be any adverse impacts on the favourable conservation status of the species.

WILDLIFE AND COUNTRYSIDE ACT 1981

The Wildlife and Countryside Act 1981 is the principle piece of legislative protection of wildlife in Great Britain. Various amendments have occurred since the original enactment. The Wildlife and Countryside Act contains both habitat and species protection. Certain bird, animal and plant species are afforded protection under Schedules 1, 5 and 8 of the Act. Measures for the protection of the countryside, National Parks, Sites of Special Scientific Interest (SSSIs) are also included within the Act.

COUNTRYSIDE AND RIGHTS OF WAY ACT 2000

The Countryside and Rights of Way (CROW) Act 2000 adds to the protection afforded in the WCA to SSSI's and other important sites for nature conservation. In addition, under the Act it became a criminal offence to "recklessly disturb" Schedule 1 nesting birds and species protected under Schedule 5 of the Wildlife and Countryside Act. It also enabled heavier penalties on the conviction of wildlife offences.

THE NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006

The Natural Environment and Rural Communities (NERC) Act 2006 improved wildlife protection by amending the WCA. The main function of the NERC Act was to raise the profile of biodiversity amongst public authorities. Section 40 (S40) of the Act places a 'Biodiversity Duty' on all public bodies to have regard to the conservation of biodiversity when carrying out their normal functions.

Appendix 2

Site Photos

	Side view of the house showing single storey section.
	Front elevation of house.
	Main loft space. No insulation, tiles straight onto battens (no roof lining), large gaps in the roof.



Rear Garden



Rear garden looking back towards house. Tall ruderals.