

**File Note: 2021 Ecosystems Services Statement**

**Site address:** Rubbing House, Chichester, West Sussex P018 0SP

**Grid Reference:** SU87061101

**Ref:** Ecosystems services statement (ESS)

**Recipients:** Richard Stefanski

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**Background and aims:**

When applying for planning permission within the South Downs National Park (SDNP), evidence of compliance with policy SD2 of the South Downs local plan is required, as the authority's core policy on protecting and enhancing ecosystem services.

The following quotes defining ecosystem services originates from SDNP's *Ecosystem Services Technical Advice Note*:

*Ecosystem Services are the benefits that people and society get from the natural environment. Figure 1 illustrates the inter-relationships between Ecosystem Services and the wider public benefits that people derive the National Park. An ecosystems approach helps us to identify the benefits we get from nature, value them and build them into planning, decision making and management. Further details are set out in the South Downs Local Plan.*



Government policy states that the planning system should recognise the wider benefits of Ecosystem Services. This is carried through to the South Downs Local Plan with Core Policy SD2: Ecosystem Services, which applies to all planning applications made in the National Park.

In applying the policy framework, development proposals within the SDNP will be permitted where they have an **overall positive impact** on the ability of the natural environment to contribute goods and services.

This can be achieved through the use of high-quality design, and by delivering all Policy SD2 Criteria opportunities to:

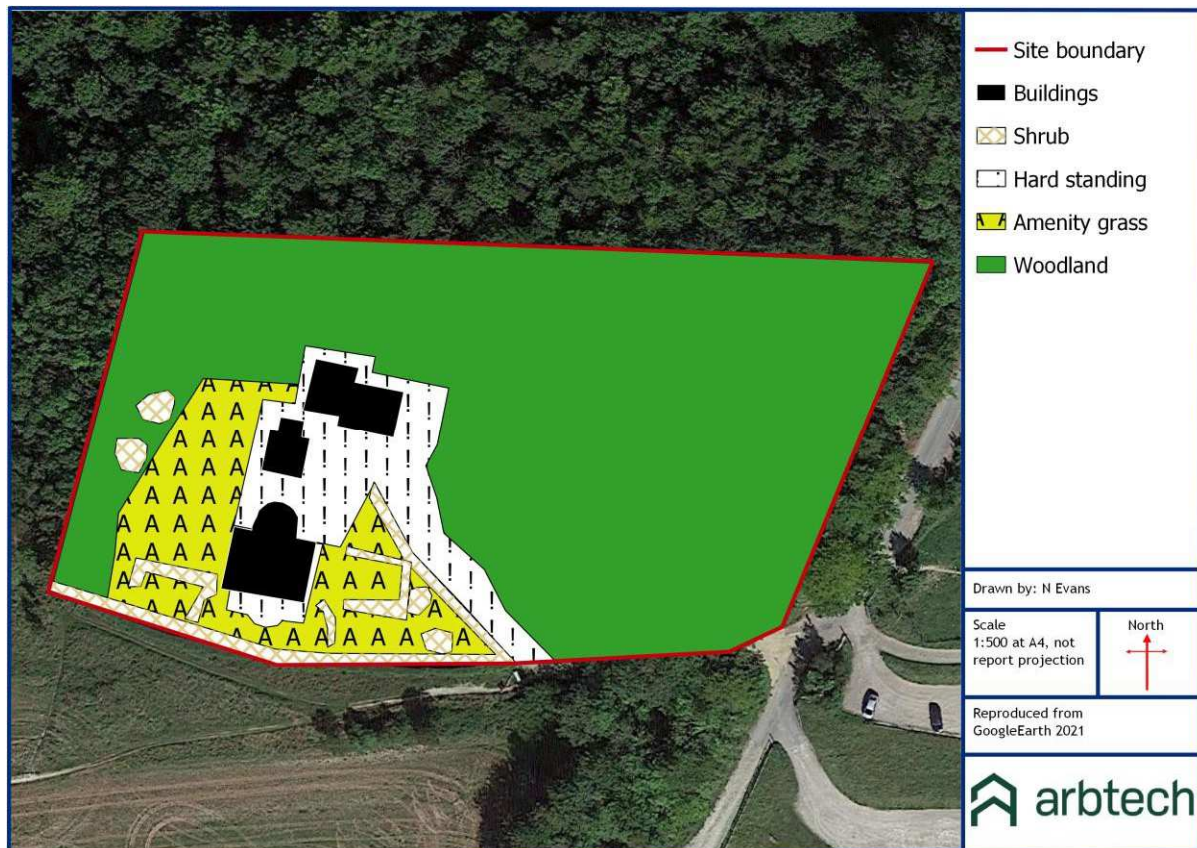
- a) Sustainably manage land and water environments
- b) Protect and provide more, better and joined up natural habitats;
- c) Conserve water resources and improve water quality;
- d) Manage and mitigate the risk of flooding;
- e) Improve the National Park's resilience to, and mitigation of, climate change;
- f) Increase the ability to store carbon through new planting or other means;
- g) Conserve and enhance soils;
- h) Support the sustainable production and use of food, forestry and raw materials;
- i) Reduce levels of pollution;
- j) Improve opportunities for peoples' health and wellbeing
- k) Provide opportunities for access to the natural and cultural resources which contribute to the special qualities.

Development proposals must be supported by a statement that sets out how the development proposal impacts, both positively and negatively, on ecosystem services. This statement aims to fulfil this requirement.

### Site characteristics

The site was subject to a preliminary ecological appraisal (PEA) by Arbtech in November. Briefly it is described as a large detached dwelling and annex with woodland and gardens. Full habitat and building descriptions can be found in the PEA report. The PEA map can be found as figure 2 below:

Figure 2: PEA map of the site (Natalie Evans, Arbtech, November 2021).



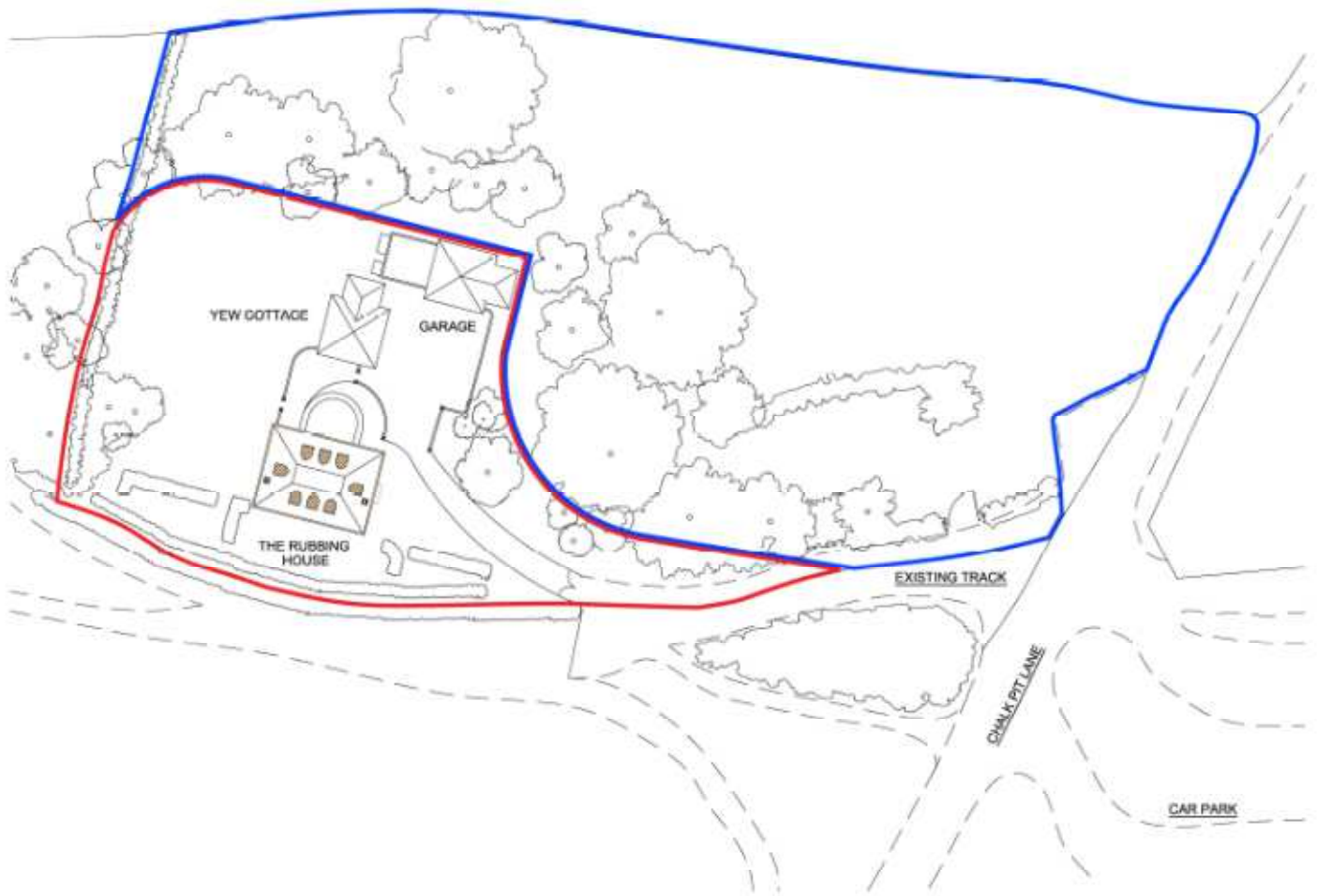
### Development proposals

➤ This report is prepared to inform planning applications with Chichester District Council. The proposed development is described as:

- *Rubbing House - Loft conversion to second floor, dormer windows to north, south, west and east. North facing, flat roof terrace on the second floor.*
- *Rubbing house swimming pool - Proposed swimming Pool.*
- *Yew Cottage - Single storey extension to west facing elevation.*

The proposed plan can be found as figures 3.1 and 3.2 below:

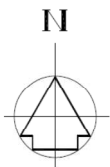
Figure 3.1: Site proposals (Rubbing House)




PROPOSED SITE PLAN  
Sc 1:500



Revisions:



**LEGEND:**

 LINE OF DOMESTIC CURTLAGE INCLUDED IN THIS POSITION AT THE INSTRUCTION OF CDC

NOTE: THE APPLICANT DOES NOT CONSIDER THE POSITION OF THE DOMESTIC CURTLAGE TO BE IN THIS POSITION

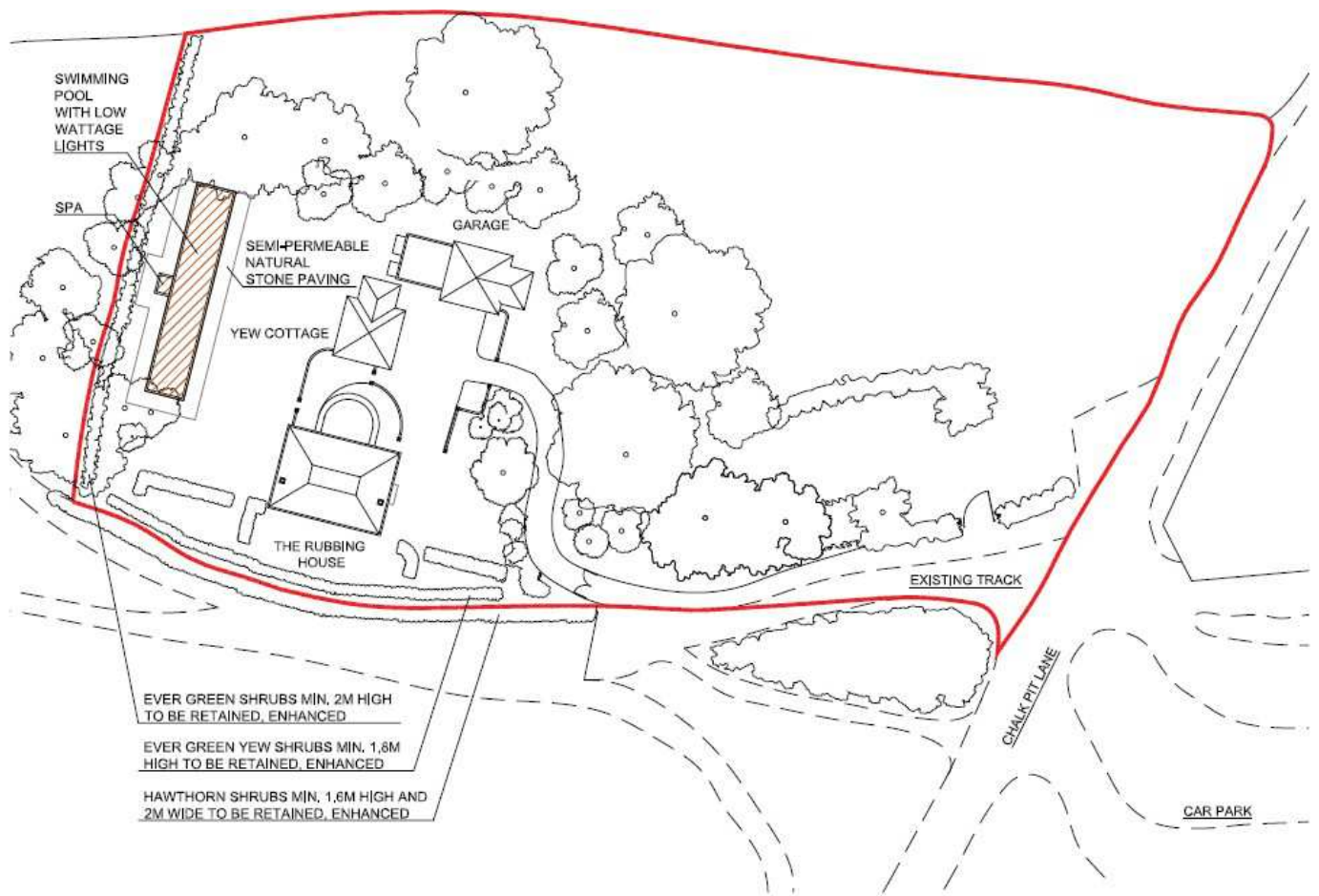
 AREA OF LAND CONTROLLED BY OWNER

NOTE: THE LINE APPEARS TO BE ARBITRARY LINE SET OUT BY PREVIOUS PLANNING APPLICATION DATING BACK TO 1996

 AREA OF THE PROPOSED EXTENSION



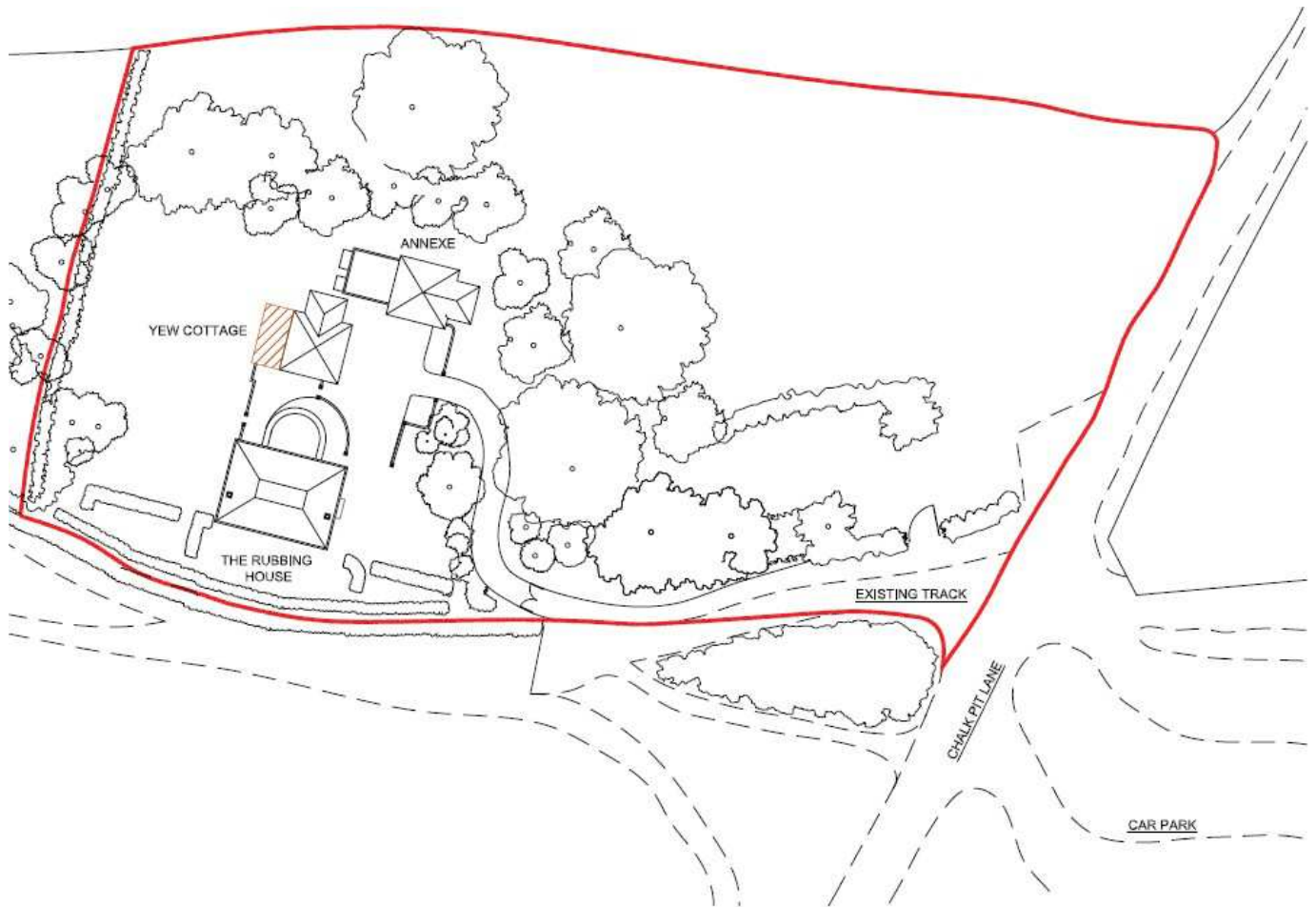
Figure 3.2: Site proposals (Rubbing House Pool)



PROPOSED SITE PLAN  
Sc 1:500



**Figure 3.3: Site proposals (Yew Cottage)**



PROPOSED SITE PLAN  
Sc 1:500



## **Ecosystems services statement application to proposal:**

### **Stage 1: evidence gathering**

#### **Aims:**

*At the very outset an exercise should be undertaken to understand the baseline conditions of the application site and its surrounds. It should focus on assets, such as tree and woodland, wildlife habitats, water or soils that are valuable for providing Ecosystem Service benefits or might fall within the scope of the exercise defined by the criteria of policy SD2.*

#### **Assessment:**

- A preliminary ecological appraisal (PEA), which included a preliminary roost assessment for bats (PRA) was conducted on site in November 2021 by Arbtech Consulting Ltd. This provided an ecological audit with a phase 1 habitat survey and considered the impact of the development on designated sites, priority habitats, invasive species and a range of ecological receptors such as bats, great crested newts, dormouse, reptiles, riparian mammals, breeding birds, invertebrates and badgers.

The ecological baseline as concluded in these reports, as well as the recommendations are used to inform this Ecosystems Services Statement. They should be readily available for cross reference if required.

### **Stage 2: Analysis of Evidence**

#### **Aims:**

*Once the assets present on the site have been established these should be analysed, with reference to the criteria of policy SD2, to determine what opportunities are present on the site (including linkages and impacts upon the surrounding area). It is important at this stage that the Ecosystem approach is utilised as a 'lens' through which to evaluate the assets of the site to ensure that all potential benefits are identified. This needs to determine what opportunities are present on the site to protect and enhance Ecosystem Service provision.*

#### **Assessment:**

- According to the PEA/PRA survey report, the following ecological receptors require mitigation measures:

##### Bats

Precautionary measures are recommended to prevent disturbance of bats that could be roosting under the fascia boards of BI.

##### Birds

No vegetation clearance between March and August without a pre-works inspection.

- In addition to the required mitigation, the following opportunities for enhancement have been identified from the PEA/PRA:

##### Birds

Habitat boxes

Herptiles (amphibians and reptiles)

Refugia, longer vegetation, wildlife pond.

Other Mammals (non-bats)

Habitat enhancement, habitat boxes, planting of fruiting species

**Stage 3: Determining the site strategy for Ecosystem Services**

**Aims:**

*Once the opportunities to implement Ecosystem Services actions on the site and the surrounding area have been identified it is appropriate to consider how these will best be delivered to generate multiple benefits. To ensure compliance with policy SD2 it will be important to demonstrate how these opportunities will be delivered and how they are within the control of the applicant to deliver them. We would expect proposals to be setting out how the principle of 'net-gain' might be delivered from the design and layout of the scheme.*

**Assessment:**

- l) For this small-scale development, habitat, tree and ground boxes and small-scale enhancements such as herptile refugia or hibernacula and buffer habitats around site boundaries would generate a net gain in ecology niches. Proposals for this are described in more detail in stage 4. These measures would contribute to the below Policy S02 Criteria opportunities as outlined above:
  
- b) *Protect and provide more, better and joined up natural habitats.*

**Stage 4: Implementation of Strategy**

**Aims:**

*The assessment stage will help determine what the appropriate Ecosystem Services based solutions for the development proposals are. Once complete this assessment, along with a summary of the methodology, should be set out within an Ecosystem Services Statement. They should also be shown on the submitted application plans.*

**Assessment:**

The following is a methodology of measures to be followed to enable the Policy S02 Criteria opportunities outlined in stage 3 to be met on site.

Table 1: Ecological mitigation and enhancement measures.

Work	Specification
Ecological mitigation	<u>Bats</u>



measures  
during works

Owing to the nature of the proposed development and the low potential for impacts to bat roosts, further bat surveys are considered to be disproportionate. It is anticipated that any risk to bats can be reduced to an acceptably low level through the implementation of a precautionary working method during and post-development. This will include the following measures:

- Works will be scheduled during the winter months (November to March) when bats are least likely to be present, insofar as is possible.
- Any scaffolding used must not block/damage or prevent access to the eaves in any way.
- There must be no additional external lighting

#### Lighting strategy for bats and other taxa

Lighting will be controlled across the developed site. Research into the effects of artificial lighting on bats has shown that it can impact upon bat emergence times and lead to a reduced foraging time. As bats are faithful to their roost sites and commuting routes, often returning to the same site for many years, the impact of lighting on emergence times and in turn reduced foraging times can ultimately result in the roosts/foraging habitat being abandoned with impacts on survival and fecundity.

- Key areas of the site which are sensitive to artificial lighting are the site boundaries which consist of the trees and hedges - providing foraging and commuting routes for bats.
- The lighting on the developed site will be limited to the extended new buildings and new roads only. No lighting will be installed within or shining into the tree-lined boundaries (or new bat or bird boxes), thereby maintaining the existing dark areas within the developed site for bat commuting and roosting.
- Low impact lighting strategies will be adopted from the guidance outlined in the Bat Conservation Trust "Bats and Lighting" publications:

<https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

The lighting on the site will:

- Use narrow spectrum light sources to lower the range of species affected by lighting
- Use light sources that emit minimal ultra-violet light
- Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the

	<p>blue shortwave length content they should be of a warm/ neutral colour temperature &lt;4,200 kelvin.</p> <ul style="list-style-type: none"> <li>• Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal.</li> <li>• Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only.</li> <li>• External lighting will be positioned below the eaves, be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on.</li> <li>• Wall lights and security lights will be 'dimnable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.</li> </ul> <p>All of the above will ensure that the replacement bat roosts within the developed site will not be affected by any external lighting ensuring their long-term use</p> <p><u>Other mammals</u></p> <p>No further surveys are required.</p> <p>However, the following recommendations are given in order to mitigate against potential harm to hedgehogs and other terrestrial mammals during the development works.</p> <ul style="list-style-type: none"> <li>▪ Any trenches dug should either be covered at night or have a rough sawn plank placed in them to act as a ramp for any wildlife which may fall in.</li> <li>▪ Security lighting to be directed away from the undergrowth.</li> <li>▪ Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.</li> </ul>
<p>Bat enhancement</p>	<p>The installation of a minimum of two bat boxes on mature trees within the woodland on site will provide additional roosting habitat for bats e.g.</p> <p>2F Schwegler Bat Box (trees)</p> <p>IFF Schwegler Bat Box (trees)</p> <p>2FN Schwegler Bat Box (trees)</p> <p>Or a similar alternative brand.</p>

	<p>Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light.</p> <p>Alternatively, bat adapted tiles could be added in the new dormer windows with a bitumen felt lining beneath to provide roosting opportunities for crevice dwelling bats between roof tiles and roof felt.</p>
<p>Herptile enhancement</p>	<p><u>Hibernacula</u></p> <p>To add further habitat value for herptiles, one hibernaculum of earth, logs and stones will be created on site (See schematic in figure 4 below and map in Appendix 1). These will provide refuge and hibernation sites.</p> <p>Points to consider when creating a hibernaculum include:</p> <ul style="list-style-type: none"> <li>▪ a sunny position</li> <li>▪ a well-drained site, not prone to flooding,</li> <li>▪ orientation so that one of the long banks faces south,</li> <li>▪ access to reptiles through openings of some sort,</li> <li>▪ location in a patch of habitat favourable for dispersal, such as tussocky grassland,</li> <li>▪ minimal public disturbance,</li> <li>▪ size at least 4 m long, by 2 m wide, by 1 m high and ideally much larger.</li> </ul> <div data-bbox="320 1061 1453 1597" style="border: 1px solid black; height: 239px; width: 710px; margin: 10px 0;"></div> <p style="text-align: center;">Figure 4: Hibernacula specification</p> <p><u>Log piles</u></p> <p>In addition to the hibernacula, a log pile will be created from any fallen branches or wood that arises from the works, to be placed in a sunny area to provide further refuge habitat for herptiles, as well as habitat niches for other taxa, notably invertebrates.</p>

<p><b>Bird Enhancements</b></p>	<p><b><u>Habitat Boxes</u></b></p> <p>To provide new nesting habitat</p> <ul style="list-style-type: none"> <li>➤ <u>Install the following bird boxes:</u> <ul style="list-style-type: none"> <li>• 1x Schwegler 1B nest box with 32mm entrance hole on a retained tree to attract blue, marsh, coal and crested tits, redstart, nuthatch, collared and pied flycatcher, wryneck, tree and house sparrow. <ul style="list-style-type: none"> <li>▪ This should be mounted 3-5m high on a tree with a clear flight path to the entrance.</li> <li>▪ External dimensions 26H x 17W x 18D cm.</li> <li>▪ Weight 3.6kg</li> </ul> </li> <li>• 1x Schwegler 2H Robin box on a retained tree. <ul style="list-style-type: none"> <li>▪ This should be mounted 3-5m high on a tree with a clear flight path to the entrance.</li> <li>▪ Interior nesting chamber: 12 cm diameter</li> <li>▪ External dimensions 20H x 15W x 20D cm.</li> <li>▪ Weight 2.5kg</li> </ul> </li> </ul> </li> </ul> <p>See the map in Appendix 1 for suggested locations.</p>
<p><b>General terrestrial mammal</b></p>	<p><b><u>Hedgehogs</u></b></p> <p>Habitat Boxes:</p> <ul style="list-style-type: none"> <li>➤ 1x hedgehog house will be installed on site, in a quiet corner. This can be bought or made. The following is some advice from hedgehogstreet.org, a collaboration of the People's Trust for Endangered Species (PTES) and the British Hedgehog Preservation Society (BHPS). Suggested house locations can be seen above in Figure 4. <ul style="list-style-type: none"> <li>• <i>When siting the box choose a shady, quiet area of your garden.</i></li> <li>• <i>Build a 1m high brick or concrete wall to prevent predators such as badgers or foxes from getting to the hedgehog with their paws.</i></li> <li>• <i>We recommend using untreated wood for hedgehog homes. Wood from certain softwood tree species grown in the UK, such as larch, Douglas-fir and red cedar have excellent durability as exterior timbers. Pre-treated wood can contain chromated copper arsenate (CCA) compounds that are hazardous to</i></li> </ul> </li> </ul>

*many species. PTES promote the use of locally grown timber which encourages good woodland management practices. (hedgehogstreet.org)*

**Fence gaps**

- Terrestrial mammals rely on connectivity of sites to find foraging habitats and commuting routes. Garden fences and walls can block these off and degrade chances of survival.
  - Therefore, dedicated holes in the boundaries around the site and also through any internal fences will be created and maintained to allow free access for a range of taxa into and out of the site. At least one such hole should be present in every fence, to create a robust network.
  - An example of a plaque that could be installed above each hole is shown below in figure 5:



Figure 5: An example of a hedgehog hole with information plate (from *hedgehogstreet.org*)

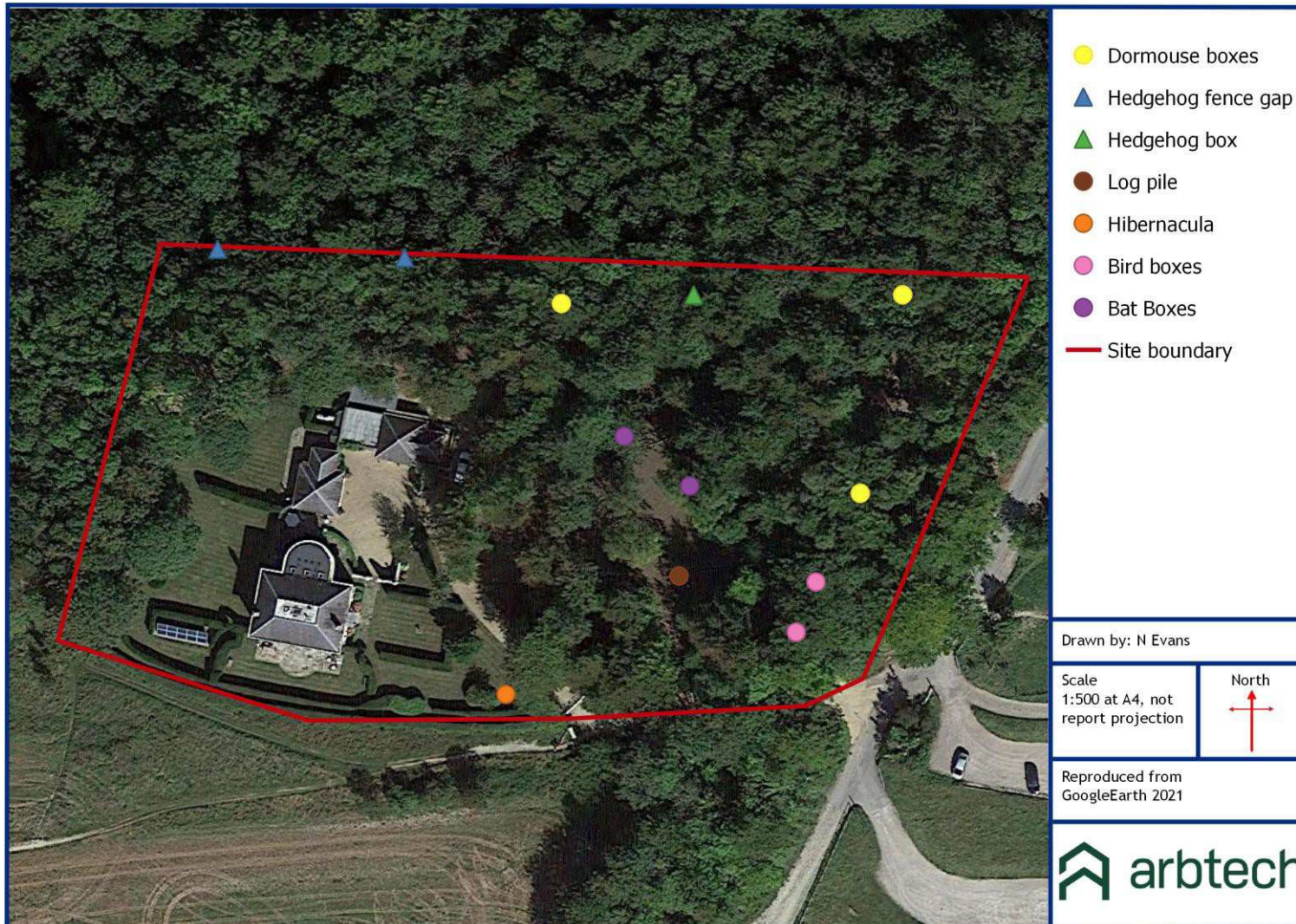
<p><b>Hazel dormice</b></p>	<p>The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for dormice:</p> <ul style="list-style-type: none"> <li>• Planting of native trees, shrubs and hedgerows, in particular fruit and nut bearing species, to increase foraging opportunities.</li> </ul> <p>The installation of dormouse boxes at the site. These should be approximately 1.5m from the ground in appropriate habitat.</p>
<p><b>Invertebrates</b></p>	<p>Half buried piles of deadwood will be added to the woodland area to provide breeding habitat for invertebrates, particularly stag beetles.</p>

Table 2: Management schedule

Activity	Year 1	Every year for 25 years
Habitat boxes	<input type="checkbox"/> habitat boxes for bats, birds and dormice using Appendix 1.	<input type="checkbox"/> broken or fall e.g. during storms.  <input type="checkbox"/> build up. Do not attempt to open or clean bat boxes – they can only be disturbed or removed with a licence.
Mammal enhancements	<input type="checkbox"/> information plaques on both sides) and hedgehog domes on site in accordance with Appendix 1.	<input type="checkbox"/> blockages and educate owners into their importance for hedgehog commuting routes.  <input type="checkbox"/> Check the hedgehog domes for blockages annually.
Lighting	<input type="checkbox"/> external lighting will be checked by a bat licenced ecologist upon completion of the development. Recommendations for improvements will be made where applicable.	<input type="checkbox"/> lighting levels across the developed site. No changes will be made until advice has been sought from a bat licenced ecologist.



### Appendix 1: Proposed ESS plan



**BACK PAGE**

Arbtech Consultant's Contact Details:

Natalie Evans

Senior Consultant and Bat Licence Lead

Tel: 07860951397 Email: [ne@arbtech.co.uk](mailto:ne@arbtech.co.uk)

<https://arbtech.co.uk>