BJ Collins
PROTECTED SPECIES SURVEYORS

BIODIVERSITY ENHANCEMENT STRATEGY

QUORN HOUSE
HICKLING PASTURES

A report to:

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Report to:	The Art of Building Ltd
Report Title:	Landscape Biodiversity & Enhancement Plan of Quorn House, Hickling Pastures

Survey Site/Job:	Quorn House, Folly Hall Lane, Hickling Pastures, Melton Mowbray LE14 3QB
OS Grid Reference:	SK 77263 31040

Survey Date(s):	N/A
Surveyed by:	Mr Nick Clayton BSc (Hons) ACIEEM

Architect/Agent:	The Art of Building Ltd
Planning Reference:	

Versioning and Quality Assurance

Report Status	Date	Author(s)	Reviewed by
Final version	11/01/2024	N Clayton BSc (Hons) ACIEEM	B J Collins MSc MCIEEM

DISCLAIMER

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The evidence which we have prepared and provided is true and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

RELIANCE - The report describes the conditions and ecological features on the site (and possibly its environs) at the time of survey and that this may (is likely to) change over time. Reliance upon the findings of this report should be determined in accordance with the Chartered Institute of Ecology and Environmental Management guidance on the longevity of ecological surveys, see Advice Note (April 2019) *On the Lifespan of Ecological Reports and Surveys* CIEEM.

Contents

SUMMARY

This biodiversity enhancement strategy has been prepared for The Art of Building Ltd.

The report has been prepared in order to address the requirements of the local planning authority who require a biodiversity enhancement plan for the application site. A screenshot of condition 6 of the Planning permission is shown below.

6. Prior to the commencement of works beyond damp proof course level, a scheme of biodiversity enhancements including the use of bat/bird/bee boxes/bricks shall be submitted to and approved by the Local Authority. Thereafter the development shall only be carried out in accordance with the approved details.

[To ensure the development contributes to the enhancement of biodiversity on the site having regard to Policy 17 (Biodiversity) of the Rushcliffe Local Plan Part 1: Core Strategy (2014); Policy 38 (Non-Designated Biodiversity Assets and the Wider Ecological Network) of the Rushcliffe Local Plan Part 2: Land and Planning Policies (2019); Chapter 15 (Conserving and enhancing the natural environment) of the National Planning Policy Framework (2021)].

This enhancement plan sets out works to enhance the biodiversity value of the site.

It provides a range of appropriate bird nesting features for species likely to be present in the habitat within and surrounding the site.

It also specifies artificial bat roost features to be incorporated into the redevelopment of the dwellings on site. These features are likely to be attractive to a range of bat species, but specifically targeted at the pipistrelle bats which were the most abundant species around the site during the previous bat surveys.

The report then goes on to detail provisions within the landscape of the site for native bees and other invertebrates.

It also provides details of a suitable Herptile refugia which should be considered as an additional biodiversity enhancement for reptiles and amphibians.

Details of box types, with alternatives where appropriate, and placements are shown. A list of potential suppliers is provided.

1. INTRODUCTION

Project Background

1.1 This biodiversity enhancement strategy has been prepared by BJ Collins – Protected Species Surveyors Ltd for The Art of Building Ltd on behalf of the site owner Mr Simon Lewis.

1.2 The report details a strategy to provide bird nesting, bat roosting, provision for native bees and other invertebrates, as part of the proposed redevelopment of part of the building known as Quorn House.

1.3 The strategy detailed within this report is designed to provide a range of appropriate bird nesting features, bat roost opportunities, and bee boxes integrated/on the buildings and trees associated with the site.

Summary of Development Proposals

1.4 The proposals include the construction of a new two-storey front and side extension, in addition to a new single storey rear extension. The existing roof is to be replaced, which includes raising the height of the ridge, creating four new front dormer windows, and altering the existing eaves. Furthermore, the existing front box dormers are to be converted to ridged dormers, and the existing single-storey side extension to the east is to be demolished.

Legislation Applicable to the species within this document

Breeding Birds

1.5 The bird breeding season generally lasts from early March to September for most species.

1.6 All birds are protected under the Wildlife and Countryside Act (1981) (as amended) and the Countryside & Rights of Way Act 2000. This legislation makes it illegal, both intentionally and recklessly to kill, injure or take any wild bird; take, damage or destroy the nest of any wild bird while it is being built or in use; Take or destroy the eggs of any wild bird; and possess or control any wild bird or egg unless obtained legally.

1.7 Birds listed under Schedule 1 of the Wildlife and Countryside Act (1981) (as amended)

1.8 (e.g. barn owl) are afforded additional protection, which includes making it an offence to disturb a bird while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird

1.9 To avoid conflicts development work that could affect breeding birds should be timed for outside of the breeding season, variable between March and September. Note that a nest is protected from the beginning of its construction until the young have fledged and have left the nest.

Bats

1.10 All species of British bat and their roosts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and bats are classified as European Protected Species under The Conservation of Habitats and Species Regulations 2017 ('the 2017 Regulations'). This makes it an offence to kill, injure or disturb a bat and/or to damage or destroy a breeding site or resting place for a bat.

1.11 It is also an offence to disturb the animals such that it impairs their ability to survive, to reproduce, to nurture their young, or such that it impairs their ability to hibernate or migrate. Under this legislation development work that could affect a bat or bat roost can only be permitted under a licence from Natural England.

1.12 Licences in respect of European Protected Species affected by development can be granted under Section 55(2) (e) of the 2017 Regulations, for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

2. SITE DESCRIPTION

2.1 Quorn House is a residential building located south of Folly Hall Lane, in-between the villages of Hickling Pastures and Upper Broughton, towards the southern edge of Nottinghamshire. It is a residential dwelling consisting of a main two-storey brick-built building, with a large converted double garage extension to the west and a further small single-storey outbuilding extension to the east, both also constructed of solid brick. The main two-storey building consists of a gable roof, topped with concrete tiles and underlined with bitumen felt. Two small, sloped sections of roof, topped with slate tiles and roofing felt, and framed with timber cladding are also located to the front of this main dwelling, extending out over the external doors. The double garage to the west also consists of a slate covered gable roof, with two dormer windows to the front topped with roofing felt and timber-built double doors to the north. The small single-storey outbuilding extension to the east has a flat roof, covered in a layer of roofing felt. The dwelling comprises uPVC windows and doors, in addition to a plastic soffit box and associated fascias which run along all four elevations of the property. The internal roof void of the property, associated with the main two-storey dwelling consists of a timber-built roof structure including a ridge beam, purlins and rafters. A large brick-built shed with a sloped corrugated metal roof covering is also located to the east of the main dwelling. This building is not included within the proposed works. A large garden is also located to the rear of the main two-storey property, which is also excluded from the proposed works.

2.2 The site is located at Folly Hall Lane, Hickling Pastures, Melton Mowbray LE14 3QB, and centered upon the OS grid reference SK 77263 31040.

Surrounding Habitats

2.3 Quorn House is a residential building located south of Folly Hall Lane, in-between the villages of Hickling Pastures and Upper Broughton, towards the southern edge of Nottinghamshire. Both the immediate and wider surrounding landscape is dominated by agricultural land, including both pasture and arable fields that are bounded by intact hedgerow interspersed with tree species. The A46 major trunk road is located 1.5km west of the property, in addition to a disused section of the Midland Railway Line and adjacent vegetation situated 450m west. To the east of this disused railway line is Fairham Brook and its associated edge habitat, running from north to south. A small woodland known as Curates Gorse is located 330m north west of the dwelling, connected to the survey site via the network of agricultural hedgerows in the local vicinity. Two moderate sized ponds are also located within 1km of the property, both located south east at the edge of arable fields. See Figure 1 below for an aerial view of the site within the wider landscape.

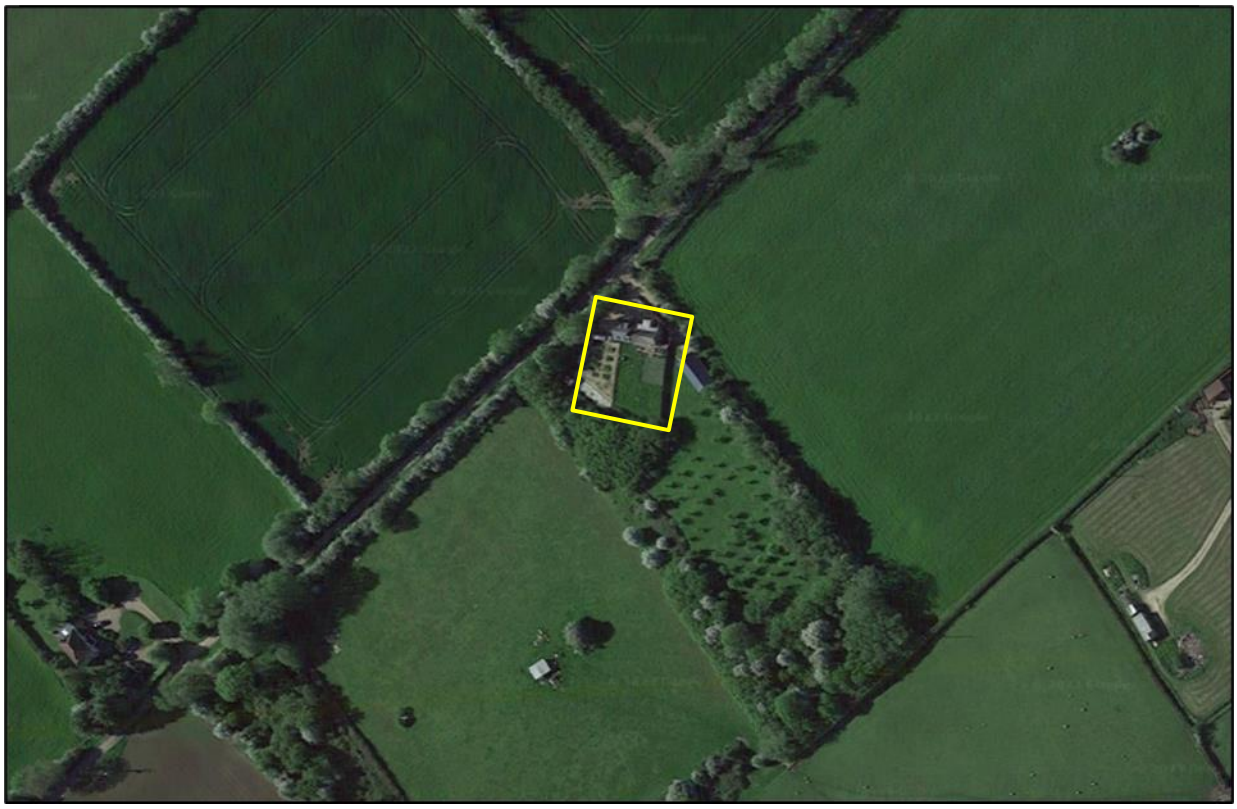


Figure 1 – the location of the building (outlined in yellow) within the surrounding landscape, courtesy of Google Earth

Photograph 1 – Front view of Quorn House showing the gravel driveway to the north, taken from the north east.

Photograph 2 – Rear view of Quorn House showing the large garden to the south, taken from the south west.

Photograph 3 – Large brick-built shed with sloped corrugated metal roof covering to the east of the main dwelling, taken from the north west. This building is outside of the proposed works.

Photograph 4 – Looking across the rear garden.

Photograph 5: The orchard and young line of trees in the distance looking south.

3. IMPACTS UPON NESTING BIRDS, BATS AND HEDGEHOG

3.1 The Phase II Bat Surveys carried out by this consultancy in 2023 noted that the site has good potential for foraging and commuting bat species and that foraging opportunities occur across the site.

3.2 It also observed the presence of a range of potential nesting bird habitat provided by the line of trees and hedgerow around the site. It was also highlighted that no active nests were located, but evidence to suggest Jackdaws had previously nested was identified.

Bats

3.3 This biodiversity enhancement report will focus on foraging/commuting bats and enhancements for the pipistrelle species.

3.4 To minimize any negative effects upon bat foraging habitat within the redevelopment, it is recommended that bat friendly lighting is used. A lighting scheme which utilises either low- or high-pressure sodium lamps and minimises light scatter using light spill accessories (Institute of Lighting Professionals, 2023) will be designed into the site. Any lighting will also be aimed away from any sensitive habitats including the boundary hedgerows and line of trees around the site.

Nesting Birds

3.5 No areas that contain potential bird nesting and foraging habitat will be removed to enable the redevelopment of the site. However, if any vegetation clearance is undertaken or planned, work must be timed to avoid the bird breeding season, which runs from March to September (inclusive). This is to avoid adverse impacts to any active nests present.

3.6 If it becomes necessary to carry out any vegetation clearance work during the breeding season, then a survey must be carried out by a qualified ecologist immediately prior to the work.

Hedgehog and Badger

3.7 There is potential for hedgehog and badger to be present on the site. Whilst the impact may be negligible, nevertheless, it is recommended that best practice actions are undertaken during the construction activities.

3.8 These mitigation actions comprise simply that if any trenches are dug during works activities which are to be left open overnight, then they must be left with a sloping end or ramp (such as a scaffold plank) to allow any mammals to escape. Trenches should be checked before infilling at the beginning of each working day. Any hedgehogs located should be carefully placed into a receptacle and translocated to a safe environment outside of the area of works.

4. MITIGATION AND ENHANCEMENT STRATEGY

Overview

4.1 The following strategy details proposals to provide opportunities for three species groups on site and to also enhance the site with regards to commuting, roosting and breeding opportunities for wildlife species.

Bird nest box scheme

4.2 The number of boxes specified for each species is in line with typical territory sizes in relation to the development site area, along with a consideration of the solitary or colonial nesting behaviour of each species.

4.3 For most bird species the provision of artificial nest boxes on south facing elevations is to be avoided as extreme temperatures during hot sunny weather in such locations is invariably fatal to nestlings.

Great and Blue Tits

4.4 Great tits and blue tits naturally nest in tree holes so the scarcity of older trees around the development has the potential to cause a lack of suitable nest sites. These species readily adopt nest boxes. A minimum of two boxes will be provided, spaced apart on 1.8 m posts or upon the trees, see Appendix 1.

4.5 The proposal is for a timber nest box following a standard design. There will be 1 of these installed with 25 mm holes to provide for the smaller of the tit species and likewise a further 1 with 32 mm holes to provide for great tit.

Figure 2 - example of the bird nest box proposed for great and blue tit

4.6 These boxes will be placed at a height of 1.8 metres on posts within the site in the locations shown in Appendix 1, but with the exact placement and orientation decided at the time by the ecologist.

4.7 These boxes may also attract a number of other species such as coal tit and marsh tit.

4.8 Other woodland species may also be attracted to this type of box.

Robin

4.9 Robins usually nest in dense hedgerows, bank-side hollows, often amongst the cover of ivy or creeper and occasionally in buildings.

4.10 They will take to nest boxes and an open-fronted design is usually specified. Siting of the box is critical, to ensure that it is well hidden from, and inaccessible to, potential predators.

4.11 Two open-fronted nest boxes will be installed located sufficiently distant to avoid issues with regards to conflicts between this territorial species. The placement will be in dense cover, such as within the hedgerows and line of trees. The recommended box is the timber open fronted box as indicated below.

Figure 3 - example of the open fronted nest box proposed.

4.12 This nest box may also attract other species such as spotted flycatcher or wren.

House Sparrow

4.1 A colonial nester, house sparrows take readily to artificial nest boxes. The proposal is to install permanent nest features into the walls of the dwelling on site, aiming to place the box close to the junction of the roof/wall. The proposed location of this box is shown within the summary mitigation plan in appendix 1.

4.2 A suitable location to install nest boxes for this species is required, which can be noisy and which bring in quantities of nesting material, making it desirable to clean the boxes from time to time.

4.3 A sparrow “terrace” nest box providing nest space for three pairs will be fixed under the eaves on the redeveloped building. The recommended box is a Schwegler No.1SP. Suitable commercial alternatives are available. The box is designed to be integrated into the brickwork and different facings can be specified to ensure that the installation is visually unobtrusive.

Figure 4- example of the house Sparrow nest box designed to be integrated into the eaves of new build properties on site

Bats

4.4 The boundary hedgerows provide connectivity between the site and other suitable foraging habitats and the trees are likely to attract a variety of prey species, resulting in foraging occurring across the site.

4.5 The enhancement proposal is aimed at targeting the species most likely to utilise the buildings on site, the pipistrelle bats which commonly use summer roost sites in modern buildings.

4.6 Potential roost provision for pipistrelle bats will be achieved by the installation of a purpose-built bat box/tube set into selected areas of the redeveloped building, providing a discreet location and opportunities for bats to disperse directly to habitat features.

4.7 Whilst the design of this habitat feature is primarily aimed at pipistrelle bats, the placement of the integrated bat tubes is such that they could also benefit other species found in this part of the country, including several of the Myotis bat species.

4.8 The type of bat tube recommended for this purpose is the Ibstock 'Eco-habitats for bats' roost box. These have been designed to be manufactured using the exact specification of brick. As a result, they are well hidden and a good aesthetic solution with only the access slot visible. The 215 mm x 290 mm box should be utilised. A total of 3 of these boxes will be installed into the redeveloped building.

4.9 There are also other alternative manufacturers for this type of box available and any integrated bat tube of a size approximately of that described would be suitable for this purpose.

4.10 Locations for the bat tubes are shown in Appendix 1.

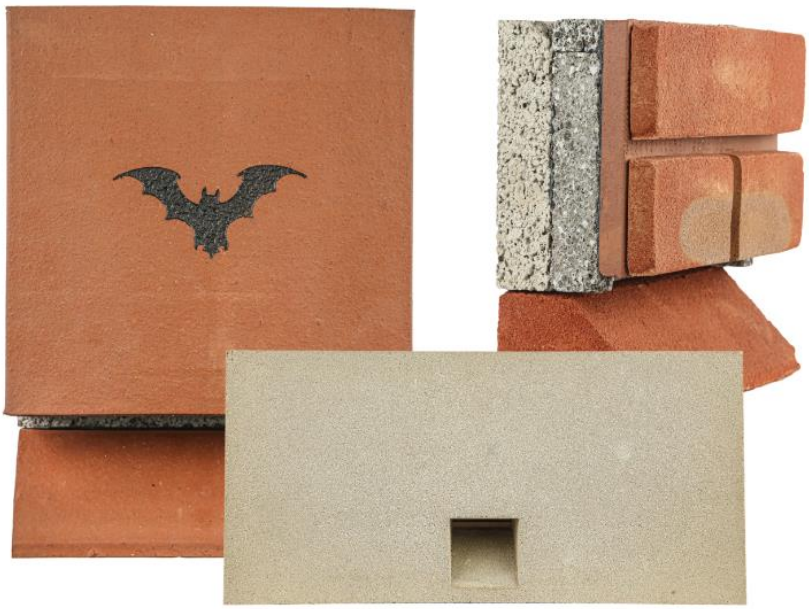


Figure 5 - example of the Ibstock 'Eco-habitats for bats' roost box (Bat box B) designed to be integrated into the eaves and gable end.

Mitigation for any adverse impact to foraging and commuting bats from lighting.

4.11 The design of the lighting for the development should aim to avoid light pollution and spillage onto the existing boundary features. The external lighting on the new development site should be as per 'Bats and Artificial Lighting at Night (Institute of Lighting Professionals, 2023).

4.12 The elements of this mitigation best practice are as follows:

Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component.
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)
- Internal luminaires can be recessed (as opposed to using a pendant fitting where installed in proximity to windows to reduce glare and light spill
- Waymarking inground markers (low output with cowls or similar to minimise upward light

spill) to delineate path edges.

- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1- or 2-minute timer is likely to be appropriate.

The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.

Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

Bees and insects

4.13 The UK there are over 250 species of bee, with the vast majority approximately 225 of these are solitary bees (Bumblebee Conservation Trust, 2024). To promote areas for these species we recommend that the placement of three specific Solitary bee boxes should be placed around and within the hedgerow and line of trees. In addition to these Solitary bee boxes, we would recommend the placement of two insect hotels also within the hedgerow/line of trees. See appendix 1 for approximate locations.

4.14 A reduced management plan for the grassland areas (where appropriate) should be considered, as this would increase the native floral species to become more abundant. A link of how to increase the biodiversity value of a grassland is attached https://naturalengland.blog.gov.uk/2017/08/15/how-to-create-a-wildflower-meadow/.

Figure 6 - examples of Solitary bee and bug hotel boxes.

Herptiles

4.15 The homeowner has constructed a new pond within the boundary of the site, thus increasing the biodiversity value of the site and increasing the potential for common reptile species such as grass snake and common amphibians to use the area.

4.16 A positive enhancement feature for these species would be to construct one refugia/grass snake egg laying sites within close proximity to the pond. A specification is provided below. The exact placement of this refuge has not been provided in Appendix 1 and is not a condition of the planning permission, it would however have a positive impact for reptiles and amphibians within the area.

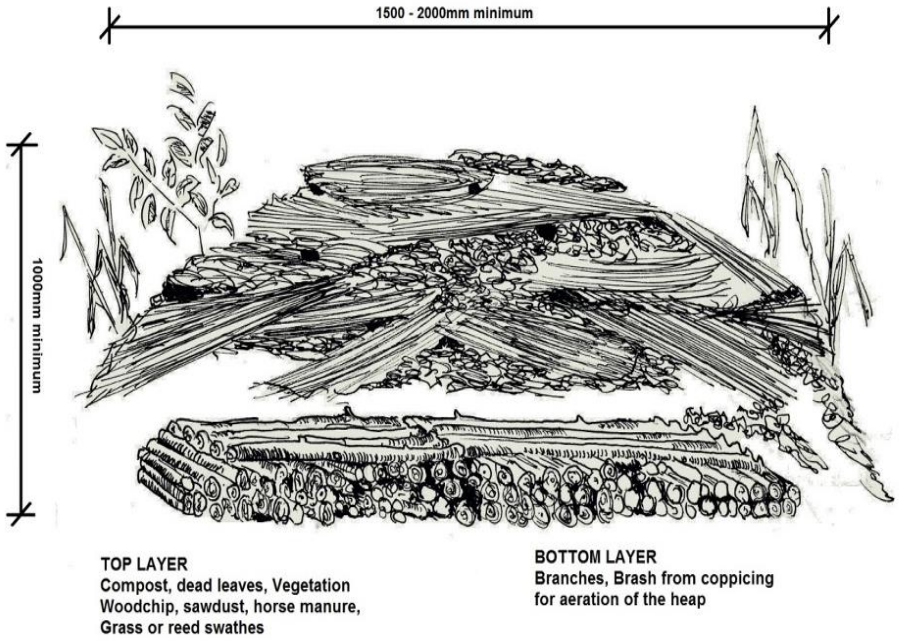


Figure 7 – Herptile refugia/grass snake egg laying feature

5. INSTALLATION AND MAINTENANCE

5.1 The boxes specified in section 4 will be installed under the supervision of an appropriately experienced ecologist.

5.2 No routine maintenance will be required for the bat boxes.

5.3 The house sparrow terrace and the tit nest boxes will need occasional cleaning, outside of the breeding season, if they have been occupied.

5.4 There will no routine maintenance will be required for the bee/insect boxes.

6. REFERENCES

1. Bumblebee Conservation Trust (2024) **Solitary Bees**. Available at https://www.bumblebeeconservation.org/other-bees/

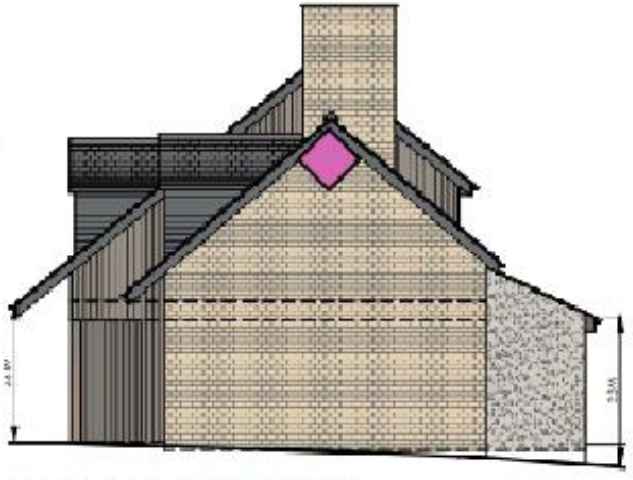
2. Eaton, M. et al (2015) **Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man.** British Birds 108 • December 2015 • 708–746 http://britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf

3. Mitchell Jones, AJ (2004) **Bat Mitigation Guidelines**. English Nature

4. Institute of Lighting Professionals (2023) **Bats and artificial lighting at night**, Available at https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/

APPENDIX 1 – PLAN SHOWING THE LOCATION OF ENHANCEMENT FEATURES

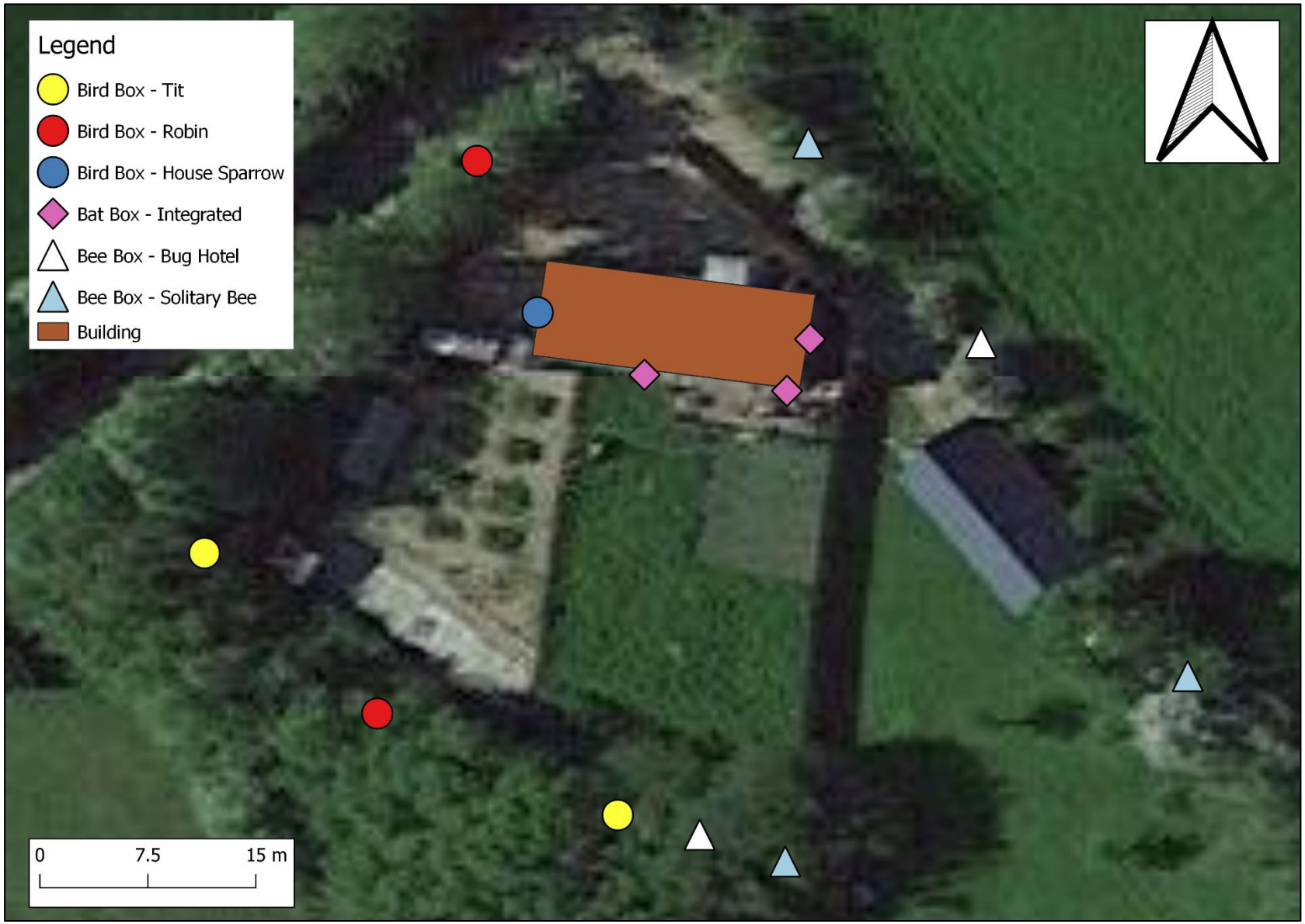
PROPOSED REAR ELEVATION 1:100



PROPOSED SIDE ELEVATION 1:100

Legend

- Bird Box - Tit
- Bird Box - Robin
- Bird Box - House Sparrow
- Bat Box - Integrated
- Bee Box - Bug Hotel
- Bee Box - Solitary Bee
- Building


Legend
Bird Box - Tit
Bird Box - Robin
Bird Box - House Sparrow
Bat Box - Integrated
Bee Box - Bug Hotel
Bee Box - Solitary Bee
Building
0
7.5
15 m

Appendix 2 - Potential suppliers of specified wildlife features (not exhaustive)

www.nhbs.com/browse/subject/908/bird-boxes

www.naturecounters.com/catalog/index.php?cPath=35

www.birdfood.co.uk/vivara-pro

www.wildcareshop.com/wildlife-nest-boxes/bird-boxes.html

www.habibat.co.uk/category/bird-boxes

www.ibstock.com/eco-products

https://www.nhbs.com/search?q=bee box