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PROFESSIONAL ECOLOGICAL SOLUTIONS



ECOLOGY

TREE PROTECTION FENCING

SITE PREPARATION & CLEARANCE

HABITAT MANAGEMENT & ENHANCEMENT

Report	Preliminary Ecological Appraisal
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Executive Summary

Ecosupport Ltd was instructed by Richmonds Property to conduct a Preliminary Ecological Appraisal (PEA) on 16 Lovedean Lane, to identify any potentially important ecological features that may be affected by the proposed development. As part of this assessment, the following surveys were undertaken:

- Extended phase I habitat survey (March 2020)
- Preliminary roost assessment (March 2020)

The following important ecological features were identified on site following the conclusion of the above survey work and may be subject to adverse impacts in the absence of suitable mitigation / compensation:

- Moderate – High potential for roosting bats
- Moderate potential for breeding and nesting birds

In the absence of any mitigation measures, the proposed development is anticipated to result in **likely adverse effects** (significance level to be determined following additional survey work). Suitable measures are however outlined within **Section 6.0** of this document as well as the bat survey report which will accompany this report to mitigate against this.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by Richmonds Property to conduct a Preliminary Ecological Appraisal (PEA) on 16 Lovedean Lane, Waterlooville. The purpose of this survey was to assess any ecological impacts that may arise as a result of the proposed development. The objectives of the survey were as follows:

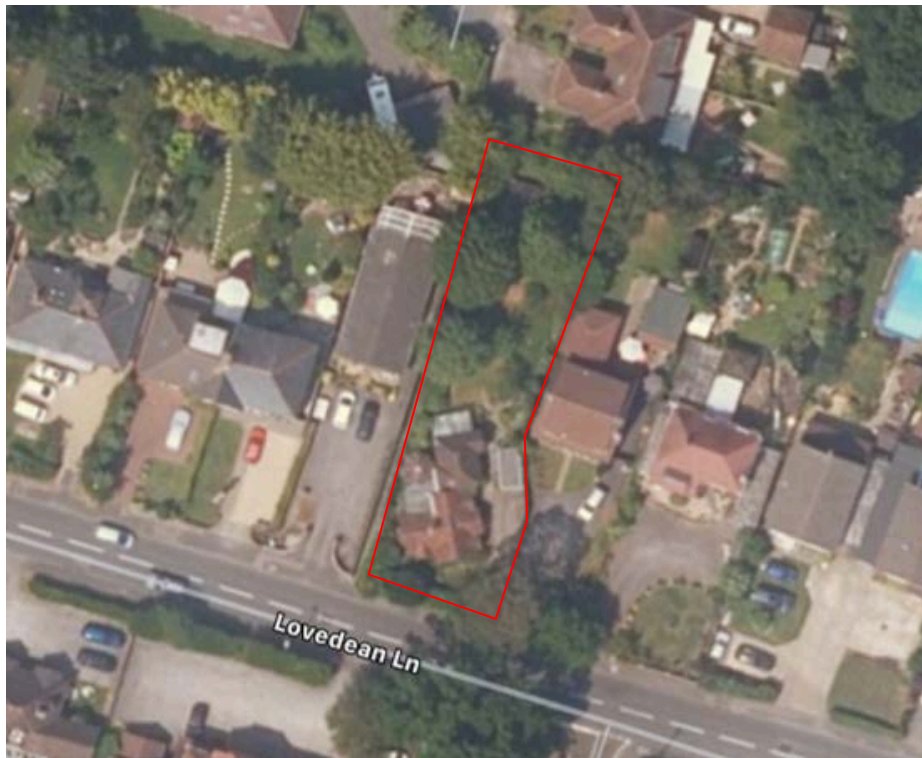
- Assess the ecological value of the site
- Identify any signs of protected species and potential features that may support them
- Make recommendations for further survey work as appropriate.
- Make recommendations for any necessary ecological avoidance, mitigation and compensation measures where possible at a PEA stage
- Make recommendations for site ecological enhancements as per planning policy

NB If the development does not take place within 18¹ months of this report then the findings of this survey will no longer be considered valid and should be repeated.

1.2 Site Description & Location

The site comprises of 16 Lovedean Lane and its associated garden area, Waterlooville, PO8 8HH (centered on OS grid reference SU 69295 11966) (**Fig 1**). The north, east and west of the site is bounded by residential properties and their associated gardens, with the south bounded by Lovedean Lane. The wider environ is largely urbanized with small woodland patches and public open spaces.

Figure 1. Google Maps (2020) aerial image of the site (redline).



¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

1.3 Proposed Development

It is understood that the development will consist of the demolition of the existing dwelling and its associated outbuildings to be replaced by 2 residential dwellings.

2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 *The Conservation of Habitats and Species Regulations (2017)*

This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

2.1.2 *The Wildlife and Countryside Act (1981) (as amended)*

This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

2.1.3 *The Countryside and Rights of Way Act (2000)*

This Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.4 *NERC Act*

The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies have due regard to the conservation of biodiversity. This means that Planning authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the *UK Post – 2010 Biodiversity Framework*.

2.1.5 *Protection of Badgers Act*

The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a set and
- Disturbing a Badger while it is occupying a sett

Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

2.2 Policy

2.2.1 National

The revised National Planning Policy and Framework (NPPF) (last updated February 2019) replaces the previous NPPF (published 2012, revised July 2018) and sets out the Government's vision for biodiversity in England in line with the country's 25 Year Environment Plan. The revised NPPF is supported by the National Planning Practice Guidance (NPPG) (published January 2016, last updated July 2019). The relevant section of the Guidance concerning biodiversity is 'Natural Environment: Biodiversity, Geodiversity and Ecosystems'. Under this Guidance, Local Authorities' duty to have due regard to the conservation of biodiversity under the NERC Act (2006) is highlighted.

Chapter 15 of the revised NPPF, 'Conserving and Enhancing the Natural Environment', together with associated guidance within the NPPG, outlines key principles related to the natural environment.

Development plans should contribute to and enhance the natural environment. Plans should take both an individual and strategic approach to minimising biodiversity impacts, creating, conserving, restoring and enhancing priority habitats and habitat networks, protecting and aiding in the recovery of priority species and their populations, and providing measurable biodiversity net gains. Individual developments must consider how they can contribute to habitat networks in the wider area (including as part of the Nature Recovery Network), thereby increasing their resilience to current and future pressures.

2.2.2 Local – East Hampshire District Local Council

Policy 'CP21 BIODIVERSITY' of the East Hampshire District Council Local Plan: Joint Core Strategy (2014) states that development proposals must maintain, enhance and protect the District's biodiversity and its surrounding environment.

New development is required to maintain, enhance and protect district wide biodiversity, in particular the nature conservation designations. As well as extending specific protection to, and encouraging the enhancement of, other sites and features which are of local value for wildlife, contribute towards maintaining a district-wide network of local wildlife sites, wildlife corridors and stepping stones between designated sites and other areas of biodiversity value or natural green space. This will help to prevent the fragmentation of existing habitats and allow species to respond to the impacts of climate change. Development must also ensure wildlife enhancements are incorporated into the design to achieve a net gain in biodiversity by designing in wildlife and by ensuring that any adverse impacts are avoided where possible or, if unavoidable, they are appropriately mitigated for, with compensatory measures only used as a last resort. Finally the Core Strategy specifically mentions the importance of protecting and, where appropriate, strengthen populations of protected species.

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Waterbodies

Any ponds located within 500m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

3.1.2 Designated sites

A search for designated sites that may be impacted by the proposals was conducted using freely available online maps.

3.2 Field Survey

3.2.1 Habitats

The field survey work which forms the basis of the findings of this report was carried out by Aaron Domblides, a Project Ecologist with Ecosupport Ltd (2 years post BSc graduation experience) on the 13th March 2020.

The Phase 1 Habitat survey (JNCC, 2010) methodology was adopted which is a method of classifying and mapping wildlife habitats in Great Britain. It was originally intended to provide “...relatively rapidly, a record of semi-natural vegetation and wildlife habitat over large areas of the countryside”. The standard Phase 1 Habitat survey methodology has been ‘extended’ in this report to include the following:

- Floral species lists for each identified habitat;
- Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition;
- Mapping of additional habitat types (e.g. hardstanding);
- Identification of Priority Habitats under Section 41 of the NERC Act;
- Evidence of, or potential for, the presence of certain species/groups

3.2.2 Badger

The site was thoroughly searched for evidence of use by Badgers (*Meles meles*), with the specific aim of identifying the presence and location of any setts. In accordance with the *Badgers and Development: A Guide to Best Practice and Licensing* (Natural England, 2011) guidance, the survey accounted for a 30m from the site’s boundary (observed where possible i.e. does not conflict with private dwellings). Evidence of Badgers could include latrines, dung pits, feeding remains and foraging evidence, trails and setts.

3.2.3 Bats

An assessment was made of the suitability of the building and trees on site to support roosting bats based on the presence of any Potential Roost Features (PRFs) during March 2020. This involved the use of 8 x 42 close focus binoculars and a high-powered torch (where required) for a more detailed inspection of any features. The survey conformed to current best practice guidance as described *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016) and was carried out by Aaron Domblides (as an accredited agent under Adam

Jessop 2015-13366-CLS-CLS).

3.3 Assessment Methodology

3.3.1 Introduction

The methodology for the assessment of the likely ecological effects of the proposed development is based on CIEEM's *Guidelines for Ecological Assessment in the UK* (CIEEM 2018). Although this assessment does not constitute a formal Ecological/ Environmental Impact Assessment, the CIEEM guidelines provide a useful framework for assessing ecological impacts at any level.

3.3.2 Valuation

Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

3.4 Limitations

There were not considered to be any significant limitations on the results of the survey with all areas of the site accessible and the survey undertaken at an appropriate time of year for flowering vascular plants.

4.0 ECOLOGICAL BASELINE

4.1 Desktop Study

4.1.1 Designated sites

There are a number of designated sites within close proximity to the site. These include Dell Piece West LNR (0.82km north east), Hazleton Common LNR (0.85km north east) and Yoell's Copse LNR (0.90km north west).

4.1.2 Waterbodies

No waterbodies were identified within 500m of the site.

4.2 Vegetation Survey Results

The vegetation within the site has been described below using the broad Phase I habitat classification terminology as described with JNCC (2010). The below species noted should not be considered an exhaustive list and instead refer to dominant, characteristic and other noteworthy species associated with each community within the survey area. The habitat types on site comprise:

- Amenity grassland
- Hedge
- Scattered trees
- Bare ground
- Buildings

4.2.1 Amenity grassland

The dominant habitat type on site was managed amenity grassland with a short sward height. Species noted included; common grass species, Moss, Ground Ivy (*Glechoma hederacea*), Dandelion (*Taraxacum officinale*), Broad Leaved Dock (*Rumex obtusifolius*), Laurel (*Laurus nobilis*) sapling, Bramble (*Rubus fruticosus*), Herb Robert (*Geranium robertianum*), Lords and Ladies (*Arum maculatum*), Cinquefoil (*Potentilla reptans*), Yarrow, Lesser Celandine (*Ficaria verna*), Cleaver (*Galium aparine*), Male Fern (*Dryopteris filix-mas*), Hart's-tongue Fern (*Asplenium scolopendrium*) and a number of non-native ornamental plants (**Fig 2**).

Figure 2. Managed amenity grassland area in northern area of the site



4.2.2 Hedge

A hedge lines the southern and western boundary of the site with species noted including Holly, Laurel, Ivy (*Ilex aquifolium*) and ornamental shrub species.

Figure 3. Hedgerow lining the southern and western boundary



4.2.3 Scattered trees

A Single mature Scots Pine (*Pinus sylvestris*) lies at the entrance of the site. It is understood that this is to be retained as part of the proposed plans (**Fig 4**).

Figure 4. Picture of the mature pine tree present to the front of the property from google street view



4.2.4 Bare ground

Much of the garden area to the rear of the main dwelling is bare ground as a result of recent maintenance works.

Figure 5. Area of bare ground to the rear of the property



4.2.5 Buildings

The buildings are described in greater detail in regards to the bat roosting potential in section 4.3.2 below.

4.3 Bat Survey Results

4.3.1 Trees

The only mature tree on site is the Scots Pine located to the front of the property which is understood to be retained as part of the proposed plans.

4.3.2 Buildings

The findings of the preliminary roost assessment of 16 Lovedean Lane are outlined in **Table 1** below.

Table 1. Preliminary roost assessment of buildings on site.

Building	Fig	Description of Construction	PRFs / Evidence of Occupation	Assessed Roost Potential
Main dwelling	Figure 7. External view of main dwelling.  Figure 8. Internals of the loft space 	The Main dwelling is of brick and flint built construction, with whitewash walls. The roof is largely clay peg tiles with some small flat rooved sections. Internally the roof appeared to be lined with sarking boarding in places however expanding foam had been used across the entirety of the roof to prevent leaking. The loft voids were well lit due to the presence of windows in the roof. In some places the roof was vaulted.	There were a large number of PRF's noted across all aspects of the roof of the main dwelling as a result of a number of lifted, slipped and missing tiles. No evidence of bats was identified within either of the loft spaces located within the main dwelling.	High

	Figure 9. Vaulted ceiling in main building 			
Outbuilding	Figure 10. External view of outbuilding 	Wood built summer house with corrugated clay tile roof to the front and bitumen roof to the rear. The underlining of the roof is a mixture of bitumen and sarking boarding. There were a small number of gaps into the internals, however the internals were very well lit due to the presence of windows.	There were a number of gaps under clay tiles due to broken / slipped tiles as well as missing mortar noted under tiles within the ridge. The gaps between the tiles and the sarking / felt and within the ridge tiles will provide suitable roosting opportunities for a range of bat species. No evidence of bats was noted internally.	Moderate

	Figure 11. Internal roof structure of the outbuilding with wooden sarking board ceiling. 			
Garage	Figure 12. View of the garage adjacent to the main dwelling. 	Prefabricated concrete garage with flat roof.	Due to the nature of the building, no PRF's were noted. No Evidence of bats was noted.	<i>Negligible</i>

Greenhouse	Figure 13. Greenhouse in rear garden of the main dwelling. 	Metal framed greenhouse.	Due to the nature of this building no PRF's were noted, with no evidence of bats noted.	<i>Negligible</i>
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4.4 Reptiles

Due to the short sward height of the amenity grassland area, the large areas of bare ground present and the urbanised surroundings, the site is considered to be of ***Negligible potential*** to support reptiles.

4.5 Breeding and Nesting Birds

The pine tree present to the front of the property, the boundary hedgerows and the main dwelling provide suitable opportunities for nesting and foraging birds, however due to the urbanised surroundings and the more suitable nesting habitat present in nearby woodland, the site is considered to be of ***Low potential*** for breeding birds and nesting birds.

5.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

5.1 Introduction

The CIEEM guidelines (CIEEM 2018) require that the potential impacts of the proposals should be considered in absence of mitigation. In order for a significant adverse effect to occur, the feature being affected must be at least of local value. However, in some cases, features of less than local value may be protected by legislation and/or policy and these are also considered within the assessment. Although significant effects may be identified at this stage of the assessment, it is often possible to provide appropriate mitigation.

5.2 Site Preparation and Construction

5.2.1 Impacts to habitats

There are no habitats of significant ecological value that will be lost as a result of the works, with the majority of the site comprising of well managed amenity grassland and hedgerow which contains non-native species. As such, the habitats on site are largely only considered to be of value at the **Site** level. There is however a mature Pine tree to the front of the property which is considered to be of value at Local level. Therefore, the development is assessed as having **potential minor adverse impact** to habitats of significance at the **site - local level**.

5.2.2 Impacts to wildlife

Although the trees and hedgerow are to be retained, the buildings have potential for nesting birds and, there is potential disturbance to the vegetation which could result in the disturbance of nesting birds and damage to their nests. Considering the low potential for breeding/nesting birds, only a **minor adverse impact is likely** at the **local level**.

Given the high roost potential of the main dwelling and the moderate potential of the outbuilding it is considered that an **adverse impact is likely** at the **Local – County level** (depending on the types of roosts present).

5.3 Site Operation

5.3.1 Impacts to wildlife

The development will result in an increase in lighting within the general area from external lights on the dwellings. This can affect the behaviour, particularly foraging, of nocturnal wildlife. Therefore, an **adverse impact is likely** on nocturnal species.

6.0 MITIGATION & RECOMMENDATIONS

6.1 Introduction

The below sections outline a number of recommendations to both mitigate and protect the existing features of value from potential impacts and provide enhancements post development.

6.2 Bats

6.2.1 Buildings

The main dwelling is considered to be of **High** roosting suitability with the summerhouse outbuildings considered to be of **Moderate** roosting suitability. As per best practice guidelines (to ascertain the presence or likely absence of roosting bats as per the survey effort requirements from BCT 2016 (**Table 2**)), the high potential building requires 3 dusk emergence / dawn re-entry surveys, with the moderate potential building requiring 2 dusk emergence / dawn re-entry surveys. This will inform a detailed impact assessment with regards to roosting bats on site.

Table 2. Recommended minimum number of survey visits (from Table 7.3 (BCT, 2016)).

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey*.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third could be either dusk or dawn.
May – August	May – September with at least one of the surveys between May - August	May – September with at least two surveys between May and August

6.2.2 Trees

The large mature pine tree located to the front of the main dwelling was not assessed for its potential for roosting bats as it is not anticipated to be impacted by the proposals. Should this change, a full roost assessment of this tree will be necessary and the report updated accordingly.

6.2.3 Sensitive Lighting

A new document (*Guidance Note 08/18 Bats and Artificial Lighting in the UK*) has recently been produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented provided there are no conflicts with any legal limits of illumination (in which case a suitable compromise should be reached).

'Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:

- *All luminaires should lack UV elements when manufactured. Metal halide, 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 spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.*
- *Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).*
- *Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.*
- *The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.*
- *Column heights should be carefully considered to minimise light spill.*
- *Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.*
- *Luminaires should always be mounted on the horizontal, ie no upward tilt.*
- *Any external security lighting should be set on motion-sensors and short (1min) timers.*

As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed' (Fig 14).

Figure 14. (a) Shield 'barn doors' (b) cowl hood; (c) shield and; (d) external louvre Images from ILP (2018).



6.3 Protection of Hedgerows and Trees

All the existing trees / hedgerows that are to be retained should be protected from damage during the works. All the trees / hedges should be fenced using Heras fencing or similar to prevent access by machinery. Where large mature trees are present, they should be protected using standard arboriculturally tree protection measures which include protection of the canopy and prevents root compaction.

6.4 Avoidance of Impacts to Nesting Birds

It is understood that the trees and hedges on site are to be retained as part of the proposed plans. The demolition of the buildings on site and any necessary vegetation management should be undertaken outside of the bird-nesting season (typically March – August, dependant on weather). If this is not possible, the area to be cleared should be thoroughly checked by an ecologist immediately prior to clearance. If any active nests are found they should be left undisturbed with a suitable buffer of undisturbed vegetation (ca. 5m) until nestlings have fledged.

6.5 Enhancements

6.5.1 Native species planting

As a general enhancement, any other landscape planting will aim for a 70:30 ratio in favour of native species over non-natives and ornamentals (in line with the CIEEM guidance outlined within Smith & Day (2012)). Species that can be considered within any planting include: Rowan (*Sorbus aucuparia*), Alder (*Alnus glutinosa*), Hazel (*Corylus avellana*), Holly (*Illex aquifolium*), Silver Birch (*Betula pendula*), Small-leaved Lime (*Tilia cordata*) and Willow (*Salix* spp.). Non-natives and ornamentals should only be given a bias in formal locations where aesthetics is a priority.

6.5.2 Hedgehogs

The landscaping areas around the each of the new dwellings will have 1 Hedgehog home incorporated (such as the Igloo Hedgehog home or Hogitat Hedgehog house). This will be provided within or adjacent to areas of planted / retained trees / shrubs and will provide a rapidly declining species with a place to shelter / hibernate.

Should close-board fencing be installed at property boundaries provision will be made to promote site connectivity and extend foraging ranges and opportunities for European Hedgehog. Holes measuring 5 square inches will be made at the base of fences into and between each garden and the surrounding habitats, such as the ecology buffer strips. Small signage could be installed at these points to ensure they remain open upon completion of the development. The People's Trust for Endangered Species provide such signage, the purchase of which also supports conservation efforts (**Figure 15**).

Figure 15. Hedgehog habitat connectivity (PTES, 2017).



6.5.3 Bat and Bird Bricks

To act as biodiversity enhancement, each of the newly built dwellings will include one Swift brick and one bat brick. The Ibstock 'Eco Home for Swifts' bricks will be installed (**Fig 16**) as they are a discreet and attractive box ideal for new dwellings. The boxes should be installed under the eaves or in high walls in shaded areas out of direct sunlight and away from windows. The installation of such boxes has also been shown to be beneficial for House Sparrows (*Passer domesticus*) which are a nationally declining species.

The bat bricks used should be the ibstock bat brick B as they are available in a variety of different brick colours and requires no maintenance (**Fig 17**). These should also be positioned as close to the eaves as possible, away from windows and in a position that will receive direct sunlight.

Figure 16. Ibstock eco home for swifts that will be incorporated into the newly built dwellings.



Figure 17. The Ibstock bat brick 'B' that will be incorporated into the newly built dwellings.



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