APPENDIX 1.2

Reptile Survey Report
October 2017
Ecology Solutions

ecology solutions ltd

BLOOMBRIDGE LLP

BICESTER GATEWAY,
BICESTER,
OXFORDSHIRE
(16/02586/OUT)

Reptile Survey Report

ecology solutions for planners and developers

October 2017
7057.ReptileRep.vf

PROTECTED SPECIES

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PLANS

PLAN ECO1 Reptile Survey Plan

1. EXECUTIVE SUMMARY

1.1. Ecology Solutions was commissioned by Bloombridge LLP in April 2016 to undertake a suite of ecological surveys of Land at Bicester Gateway, Bicester, Oxfordshire, hereafter referred to as the application site, which forms the westernmost part of the Strategic Development site, Bicester 10 – Bicester Gateway. The application site comprises Phase 1 of the Bicester Gateway site (16/02586/OUT).

1.2. The development proposals are for new business space and hotel development, including associated infrastructure, access and landscaping.

1.3. Ecological survey and assessment work was undertaken at the application site to establish a robust baseline, including a desk study, extended Phase 1 habitat survey, assessment of potential opportunities for protected and notable species, and specific surveys for bats and badgers; the findings of which are included within the Ecological Assessment document, produced by Ecology Solutions, which accompanied the planning application.

1.4. This Reptile Survey Report has been produced following submission of the planning application and principal ecological assessment. It serves to consolidate the previously presented information in relation to reptiles (including an initial survey of potentially suitable reptile habitat in April 2016 and specific reptile 'tinning' surveys in September 2017), which provide further clarity on the use of the site by reptiles.

1.5. The results of the specific reptile surveys outlined in this report clearly demonstrate that the application site is not utilised by reptile species. These results therefore further confirm that the design of the proposed development and the implementation of mitigation measures for these species, as recommended within the previously submitted ecological assessment, are sufficient to ensure that there will be no adverse effects on reptiles as a result of proposed development at the application site and, overall, this supports the conclusion that the development of Phase 1 of Bicester Gateway has a low ecological impact.

2. INTRODUCTION

2.1. Background & Proposals

2.1.1. Ecology Solutions was commissioned by Bloombridge LLP in April 2016 to undertake a suite of ecological surveys of Land at Bicester Gateway, Bicester, Oxfordshire, hereafter referred to as the application site, which forms the westernmost part of the Strategic Development site Bicester 10 – Bicester Gateway. The application site comprises Phase 1 of the Bicester Gateway site (16/02586/OUT).

2.1.2. The development proposals are for new business space and hotel development, including associated infrastructure, access and landscaping. This comprises Phase 1 of the Bicester Gateway site (Bicester 10).

2.1.3. Habitat suitability surveys for reptiles were initially undertaken in April 2016 during the Phase 1 habitat survey of the application site, to assess the potential of habitats on site to support reptiles. Subsequently the site was subject to a suite of reptile 'tinning' surveys in September 2017.

2.1.4. This *Reptile Survey Report* serves to consolidate initial assessment of the habitats within the site, in addition to the results of a suite of specific reptile surveys undertaken at the site, summarising the results recorded and setting out appropriate and proportionate mitigation and enhancement measures to ensure that the development may proceed without any significant adverse impacts on reptiles, and biodiversity, as required by legislation and planning policy of relevance to ecology.

2.2. Application Site Characteristics

2.2.1. The application site is located to the south of Bicester in Oxfordshire. Wendlebury Road forms the eastern boundary of the application site, whilst the A41 dual carriageway lies immediately to the west. The land beyond to the south, east and west comprises agricultural pasture land, with a large retail development situated to the north-east.

2.2.2. The application site comprises two semi-improved grassland fields, separated by a road and bordered by hedgerows / treelines, ditches (predominantly dry) and areas of dense scrub.

3. SURVEY METHODOLOGY

3.1. The methodology utilised for the reptile survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

3.2. Desk Study

3.2.1. In order to compile background information on the use of the application site and its immediate surroundings by reptiles, Ecology Solutions contacted Thames Valley Environmental Records Centre (TVERC). The records received are collated data from a number of sources and provide information on an array of reptile species (covering a 3km search radius from the application site).

3.2.2. Information provided by TVERC is included at Appendix 2 of the previously submitted Ecological Assessment.

3.3. Habitat Survey Methodology

3.3.1. Habitat surveys were carried out in April 2016 to ascertain the general ecological value of the land contained within the boundaries of the application site and to identify the main habitats and associated plant species. Notes were also made of fauna utilising the site.

3.3.2. The application site was surveyed based around extended Phase 1 survey methodology[1], as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

3.3.3. Habitats deemed to be suitable for reptiles were noted and these areas were subsequently subject to specific reptile surveys as outlined below.

3.4. Reptile Survey

3.4.1. Specific surveys to identify the presence or absence of reptiles within the application site were undertaken during September 2017.

3.4.2. Following an initial assessment to identify areas of suitable reptile habitat within the site, refugia surveys were undertaken. A total of 69 'tins' (0.5 x 0.5 metre squares of heavy roofing felt which are often used as refuges by reptiles) were distributed throughout all suitable reptile habitat within the application site. This included areas of rough grassland across the site.

[1] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

3.4.3. These tins were left in place for two weeks to ‘bed in’ and subsequently surveyed for reptiles beneath or upon the tins during suitable weather conditions.

3.4.4. Suitable weather conditions to carry out surveys are when the air temperature is neither too hot nor too cold. Typically, temperatures between 10 and 20°C are considered optimal. Heavy rain and windy conditions should be avoided.

3.4.5. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask and raise their body temperature which allows them to forage earlier and later in the day.

4. SURVEY RESULTS

4.1. The majority of the application site provides limited potential opportunities for common reptile species including areas of semi-improved grassland and scrub.

4.2. In order to ascertain whether the application site supports this group, refugia surveys were undertaken in September 2017, in line with the methodology outlined in Section 2 above.

4.3. The results of the survey are summarised in Table 1 below.

Date	Survey Number	Weather Conditions	Reptiles Recorded
05.09.17	1	100% cloud cover, 15C	None
11.09.17	2	100% cloud cover, 14C	None
14.09.17	3	65% cloud cover, 15C	None
19.09.17	4	30% cloud cover, 16C	None
25.09.17	5	100% cloud cover, 15C	None
27.09.17	6	100% cloud cover, 15C	None
29.09.17	7	100% cloud cover, 15C	None

Table 1: 2017 Reptile Survey Results (Summary)

4.4. No reptiles were recorded within the application site during any of the survey visits undertaken in 2017. Moreover, no reptiles were recorded to be present underneath natural refugia (such as brash or logs) during surveys undertaken at the application site.

4.5. On the basis of the specific reptile surveys undertaken, and moreover given the site's location between two roads, opportunities for colonisation are limited. It is therefore considered that the application site is not utilised by reptile species, and therefore no specific mitigation measures in relation to this group are proposed.

4.6. **Background Information**. The desk study undertaken with TVERC returned a small number of reptile records from the surrounding area. The closest recent records were of Slow-worm *Anguis fragilis* and Grass Snake *Natrix natrix* returned from a location approximately 1.3km west of the application site at their closest point from 2003. A historical record of a single Grass Snake was returned from within the application site from 1987 however, due to its age, it is not considered relevant.

5. FAUNAL EVALUATION

5.1. Reptile Evaluation

5.1.1. **Legislation**. Rare, endangered or declining reptile species receive 'full protection' under the Wildlife and Countryside Act 1981 as well as protection under The Conservation of Habitats and Species Regulations 2010 (as amended), which transposed into UK law the European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, more commonly known as the Habitats Directive. Species that are fully protected include Smooth Snake *Coronella austriaca* and Sand Lizard *Lacerta agilis*. These receive the following protection from:

- killing, injuring, taking;
- possession or control (of live or dead animals, their parts or derivatives);
- damage to, destruction of, obstruction of access to any structure or place used for shelter or protection;
- disturbance of any animal occupying such a structure or place; and
- selling, offering for sale, possession or transport for purposes of sale (live or dead animal, part or derivative).

5.1.2. Given the geographical location of the application site and the habitats present, it is considered that neither of these species is present.

5.1.3. Due to their abundance in Britain, Common Lizard *Zootoca vivipara*, Slow-worm *Anguis fragilis*, Grass Snake *Natrix natrix* and Adder *Vipera berus* are only 'partially protected' under the Wildlife and Countryside Act 1981 (as amended) and as such only receive protection from:

- deliberate killing and injuring;
- being sold or other forms of trading.

5.1.1. **Application Site Evaluation**. Specific surveys for reptiles, undertaken in September 2017 confirmed that the application site is not utilised by this faunal group.

5.1.2. **Mitigation / Enhancements.** Given the absence of this faunal group within the application site, it is not considered that any specific mitigation measures, in relation to reptiles, are required in association with the development proposals. It follows that the value of the application site for reptiles is correspondingly low (in effect - nil).

6. SUMMARY AND CONCLUSIONS

6.1. Ecology Solutions was commissioned by Bloombridge LLP in April 2016 to undertake a suite of ecological surveys of Land at Bicester Gateway, Bicester, Oxfordshire, which forms the westernmost part of the Strategic Development site Bicester 10 – Bicester Gateway. The application site comprises Phase 1 of the Bicester Gateway site (16/02586/OUT).

6.2. This report serves to supplement the Ecological Assessment, produced by Ecology Solutions and previously submitted to the LPA, in regard to the potential for the development proposals to impact upon reptiles.

6.3. Following on from our assessment in April, specific reptile surveys were undertaken by Ecology Solutions in September 2017 in line with survey methodology and guidelines provided by Natural England.

6.4. No reptiles were recorded within the application site during these surveys.

6.5. Given the absence of reptiles, within the application site, it is considered that the development proposals have no potential to impact upon this group and as such no specific mitigation measures are deemed necessary. It follows that reptiles make no contribution to the biodiversity of the application site.

PLANS

PLAN ECO1

Reptile Survey Plan

KEY:

- APPLICATION SITE BOUNDARY
- SEMI-IMPROVED GRASSLAND
- HEDGEROWS/TREELINES
- DENSE SCRUB
- X SCATTERED SCRUB
- AREAS TINNED FOR REPTILES

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7057: BICESTER GATEWAY

PLAN ECO1:
REPTILE SURVEY PLAN

APPENDIX 1.3

Bat Survey Report
April 2017
Ecology Solutions

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1. EXECUTIVE SUMMARY

1.1. Ecology Solutions was commissioned by Bloombridge LLP in April 2016 to undertake a suite of ecological surveys of Land at Bicester Gateway, Bicester, Oxfordshire, hereafter referred to as the application site, which forms the westernmost part of the Strategic Development site Bicester 10 – Bicester Gateway. This site comprises Phase 1 of the Bicester Gateway site (16/02586/OUT).

1.2. The development proposals are for new business space and hotel development, including associated infrastructure, access and landscaping. This comprises Phase 1 of the Bicester Gateway site (Bicester 10).

1.3. Ecological survey and assessment work was undertaken at the application site to establish a robust baseline, including a desk study, extended Phase 1 habitat survey, assessment of potential opportunities for protected and notable species, and specific surveys for bats and badgers; the findings of which are included within the Ecological Assessment document, produced by Ecology Solutions, which accompanied the planning application.

1.4. This *Bat Survey Report* has been produced following submission of the planning application and principal ecological assessment. It serves to consolidate the previously presented information in relation to bats (including an initial survey of potential bat roosting features in April 2016 and specific bat activity survey in September 2016) and moreover detail the results of further activity surveys conducted during October 2016 and April 2017, which together provide further clarity on the use of the site by bats.

1.5. The results of the specific bat surveys outlined in this report clearly demonstrate that the application site is of very limited value for foraging and commuting bats. These results therefore further confirm that the design of the proposed development and the implementation of mitigation measures for this group, as recommended within the previously submitted ecological assessment, are sufficient to ensure that there will be no adverse effects on bats as a result of proposed development at the application site.

2. INTRODUCTION

2.1. Background & Proposals

2.1.1. Ecology Solutions was commissioned by Bloombridge LLP in April 2016 to undertake a suite of ecological surveys, including bat surveys, of Land at Bicester Gateway, Bicester, Oxfordshire hereafter referred to as the application site (see Plan ECO1 of the previously submitted Ecological Assessment).

2.1.2. The development proposals are for new business space and hotel development, including associated infrastructure, access and landscaping. This comprises Phase 1 of the Bicester Gateway site (Bicester 10).

2.1.3. Specific bat surveys were initially undertaken in April 2016 during the Phase 1 habitat survey of the application site, to assess the site for features of potential use by roosting bats. Subsequently the site was subject to a bat activity survey in September 2016. The results of both of these surveys were incorporated into the Ecological Assessment submitted in support of the planning application. Following submission of the planning application, Ecology Solutions were asked to undertake further bat activity surveys at the application site, with these surveys conducted in October 2016 and April 2017.

2.1.4. This *Bat Survey Report* serves to bring together the overall suite of bat surveys undertaken at the site, summarising the results obtained and setting out appropriate and proportionate mitigation and enhancement measures to ensure that the development may proceed without any significant adverse impacts on bats, as required by legislation and planning policy of relevance to ecology.

2.2. Application Site Characteristics

2.2.1. The application site is located to the south of Bicester in Oxfordshire. Wendlebury Road forms the eastern boundary of the application site, whilst the A41 dual carriageway lies immediately to the west. The land beyond to the south, east and west comprises agricultural pasture land, with a larger retail development situated to the north-east.

2.2.2. The application site comprises two semi-improved grassland fields, separated by a road and bordered by hedgerows / treelines, ditches (predominantly dry) and areas of dense scrub.

3. SURVEY METHODOLOGY

3.1. The methodology utilised for the bat survey work can be split into two areas, namely the assessment of any potential roosting opportunities and the activity surveys to assess the use of the site by foraging and commuting bats. These are discussed in more detail below.

3.1.1. **Roost Assessment**. Bat surveys were undertaken in April 2016 to assess the potential for roosting bats within trees on and adjacent to the application site. The work was undertaken by an experienced bat worker and aimed to establish the likelihood of presence / absence of bats.

3.1.2. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004[1]), the Joint Nature Conservation Committee (2004[2]) and the Bat Conservation Trust (2016[3]).

3.1.3. All trees at the application site were assessed for their potential to support roosting bats. For a tree to be classed as having some potential for roosting bats it must usually have one or more of the following characteristics:

- obvious holes, e.g. rot holes and old woodpecker holes;
- dark staining on the tree below a hole;
- tiny scratch marks around a hole from bats' claws;
- cavities, splits and/or loose bark from broken or fallen branches, lightning strikes etc.;
- very dense covering of mature Ivy *Hedera helix* over trunk.

3.1.4. **Activity Transect Surveys.** Bat activity surveys were undertaken within the application site in September and October 2016 and April 2017 to ascertain the level of use of the application site by foraging and commuting bats, and to identify any features of potential value for this group. Surveyors walked transects through the application site incorporating all features of potential value, with all bat data observed or heard noted. The surveys were commenced 15 minutes before sunset and continued until 2 ½ hours after sunset, and were undertaken in suitable weather conditions (mild, dry with light breeze). Following the September survey the detectors were subsequently deployed overnight following the activity survey to record additional data through the night.

3.1.5. EchoMeter 3 (EM3) bat detectors were utilised during the activity survey to record bat calls, with all data subsequently analysed using Analook bat sound analysis software.

[1] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[2] Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.
[3] Collins, J. (Eds.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. Bat Conservation Trust, London.

4. SURVEY RESULTS

4.1. Use of the Site by Roosting Bats

4.1.1. There are no trees present either within or immediately adjacent to the application site that support any features of potential value for roosting bats, such as woodpecker holes, cracks, splits or flaking bark.

4.1.2. No buildings are present within or immediately adjacent to the application site.

4.2. Use of the Site by Foraging and Commuting Bats

4.2.1. The application site offers some potential foraging and commuting opportunities in the form of hedgerows and treelines along field boundaries. However, given the presence of the A41 dual carriageway to the west (with associated street lighting, particularly in close proximity to the large roundabout which lies immediately to the west of the application site and results in significant light spill into the application site), it is considered unlikely that the application site would be of any particular significance for bats.

4.2.2. Nonetheless, in order to fully assess the use of the application site by foraging and commuting bats, bat activity surveys were undertaken at the application site on 23 September 2016, 11 October 2016 and 10 April 2017 in line with the methodology set out in Section 3 above. Table 1 below outlines the weather conditions during the survey.

Date	Weather Conditions
23.09.2016	17C, 80% cloud cover, dry, light breeze
11.10.2016	13C, 20% cloud cover, dry, light breeze
10.04.2017	10C, 30% cloud cover, dry, light breeze

Table 1: Weather Conditions during bat surveys

4.2.3. The activity survey undertaken on the 23rd September recorded only Soprano Pipistrelle *Pipistrellus pygmaeus*, with very little activity recorded (19 registrations in total). The survey did not identify any features or treelines within the application site to be of relatively greater importance, with the very limited degree of activity distributed evenly through the site.

4.2.4. Following the activity survey, two bat detectors were deployed overnight, with one situated adjacent to T2 in the north-west of the site (see plan ECO2 of the Ecological Assessment) and one situated adjacent to T3 in the south-east of the site. The detector deployed at T2 recorded very limited bat activity, with a total of 37 registrations of Common Pipistrelle *Pipistrellus pipistrellus* and two registrations of Soprano Pipistrelle recorded throughout the night. The detector deployed at T3 recorded only two registrations of Soprano Pipistrelle throughout the night.

4.2.5. The activity survey undertaken on the 11th October again recorded very low levels of bat activity with this limited to Common Pipistrelle (four registrations), Soprano Pipistrelle (two registrations) and a Plecotus species, considered likely to be Brown Long-eared *Plecotus auritus* (1 registration). Recorded activity was dispersed evenly around the application sites boundary hedgerows.

4.2.6. Very low levels of bat activity was again recorded during the survey undertaken on the 10th April. During this survey, bat registrations recorded were limited to Common Pipistrelle (5 registrations) and Soprano Pipistrelle (11 registrations). Again these records were distributed evenly throughout the application site in association with the boundary hedgerows.

4.2.7. **Background information**. The desk study undertaken with TVERC returned a small number of bat records from the surrounding area. The closest record was of Common Pipistrelle *Pipistrellus pipistrellus* from a location approximately 1km to the north-east of the application site from 2009, although the type of record was not specified.

5. EVALUATION

5.1. In line with the principles of evaluation, as set out within section 6 of the previously submitted ecological assessment, the use of the site by bats, as recorded and outlined above, is evaluated below with relevance to the current legislative framework.

5.1.1. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 ("the Habitats Regulations"), as amended. These include provisions making it an offence:

- Deliberately to kill, injure or take (capture) bats;
- Deliberately to disturb bats in such a way as to:-
  (i) be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
  (ii) affect significantly the local distribution or abundance of the species to which they belong;
- To damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly to obstruct access to any place used by bats for shelter or protection.

5.1.2. While the legislation is deemed to apply even when bats are not in residence, Natural England guidance suggests that certain activities such as re-roofing can be completed outside sensitive periods when bats are not in residence provided these do not damage or destroy the roost.

5.1.3. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

5.1.4. The offence of damaging or destroying a breeding site or resting place (which can be interpreted as making it worse for the bat) is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

5.1.5. European Protected Species licences are available from Natural England in certain circumstances, and permit activities that would otherwise be considered an offence.

5.1.6. Licences can usually only be granted if the development is in receipt of full planning permission and it is considered that:

(i) The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
(ii) There is no satisfactory alternative; and
(ii) The action authorised will not be detrimental to the maintenance of the population of the species

concerned at a favourable conservation status in their natural range.

5.1.7. **Application Site Evaluation.** As outlined above, the application site does not provide any potential opportunities for roosting bats.

5.1.8. Whilst the treelines and hedgerows provide some suitable foraging and commuting opportunities, given the context of the site (with the A41 dual carriageway with street lighting situated to the west and resulting in significant light spill into the application site) it is considered it would not be of any particular significance for bats.

5.1.9. Additional survey work undertaken in respect of foraging and commuting bats in October 2016 and April 2017 confirmed the findings set out in the Ecological Assessment for the application site (i.e. that the application site is not of any particular significance for this faunal group). Indeed the full suite of bat surveys undertaken at the site (September 2016, October 2016 and April 2017) have identified very limited bat activity overall, with this activity moreover limited to only three common and widespread species (Soprano Pipistrelle, Common Pipistrelle and Brown Long-eared).

5.1.10. **Mitigation and Enhancements.** The further surveys undertaken at the application site confirm that the site is of very limited value to bats and as such that the measures set out within the Ecological Assessment are sufficient to ensure that significant adverse impacts on bats can be avoided as part of the development proposals. For clarity, these measures are detailed again below.

5.1.11. The majority of the treelines present along the eastern boundary of the application site are to be retained and enhanced, with new native tree, scrub and wildflower meadow grassland margins proposed as part of the planting scheme. This will ensure that existing opportunities for foraging and commuting bats within the application site are retained.

5.1.12. Notwithstanding that the application site is not considered to be of any significance for bats, it is recommended that a sensitive lighting strategy should be adopted as part of the development proposals, using measures such as hoods and cowls to minimise light spill and ensure that dark corridors are provided post-development. This will ensure that any existing (albeit sub-optimal) opportunities available for foraging and commuting bats are maintained.

5.1.13. There is also scope to provide enhancements for roosting bats in the local area by installing a number of bat boxes on suitable retained trees or buildings within the application site.

6. SUMMARY & DISCUSSION

6.1. Ecology Solutions was commissioned by Bloombridge LLP in April 2016 to undertake a suite of ecological surveys of Land at Bicester Gateway, Bicester, Oxfordshire, in association with a submitted planning application (16/02586/OUT).

6.2. The development proposals are for new business space and hotel development, including associated infrastructure, access and landscaping. This comprises Phase 1 of the Bicester Gateway site (Bicester 10).

6.3. A suite of bat surveys undertaken within the application site have recorded no evidence to suggest that the site is of any significant importance for this group.

6.4. Recommendations have been put forward in the previously submitted ecological assessment that would fully safeguard the existing ecological interest of the application site, including for bats, and wherever possible, measures to enhance ecological and biodiversity value have been set out.

6.5. Based on surveys undertaken and assessment, the presence and potential presence of bats has been given due regard and measures to enhance the application site for such species have been put forward.

6.6. In conclusion, implementation of the measures set out in this report would enable the emerging development proposals for the application site to fully accord with legislation and planning policy for ecology and nature conservation at all administrative levels, as well as with Policy Bicester 10 which relates specifically to the application site.

APPENDIX 2

Bat Boxes

Bat Boxes

Schwegler bat boxes are made from ‘woodcrete’ and have the highest rates of occupation of all types of box.
The 75% wood sawdust, clay and concrete mixture is ideal, being durable whilst allowing natural respiration and temperature stability. These boxes are rot and predator proof and extremely long lasting.
Boxes can be hung from a branch near the tree trunk or fixed using ‘tree-friendly’ aluminum nails.

1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width: 27cm
Height: 43cm
Weight: 8.3kg

2FN Bat Box

A large bat box featuring a wide access slit at the base as well as an access hole on the underside. Particularly successful in attracting Noctule and Bechstein’s bats.

Woodcrete construction, 16cm diameter, height 36cm.

2F Bat Box

A standard bat box, attractive to the smaller British bat species. Simple design with a narrow entrance slit on the front.

Woodcrete construction, 16cm diameter, height 33cm.

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Images and text adapted from manufacturer’s website: *https://www.schwegler-natur.de/fledermaus/?lang=en*

1FW Bat Hibernation Box

This huge box is designed to provide a protected environment which is particularly important through the cold winter months when bats are hibernating. Three wooden panels within the box imitate crevices for roosting.

Woodcrete construction, 38cm diameter, height 50cm, weight 28kg.

This heavy box requires secure mounting if placed above the ground and should be sited away from public areas.

1FD Bat Box

A larger than standard bat box, with two additional roughened l wooden panels inside to be used by the bats as perches.

Woodcrete construction, 16cm diameter, height 36cm.

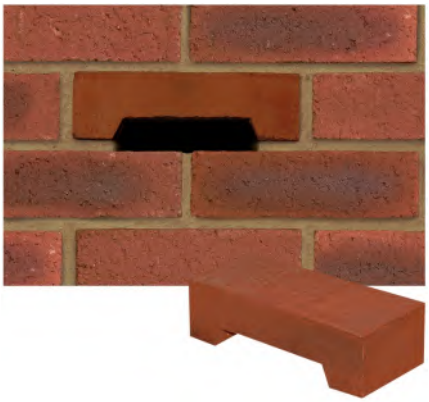
Habibat Bat Box (Rendering)

The Habibat Bat Box is a large, solid box made of insulating concrete with an internal roost space, which can be incorporated into the fabric of a building as it is built or renovated. A variety of facings can be fitted to suit any existing brick, wood, stonework or rendered finish, rendering the box unobtrusive and aesthetically pleasing.

The Habibat box is suitable for species which are commonly found roosting in buildings in the UK.

Height: 440mm, Width: 215mm, Depth: 102mm, Weight: 8kg

Please note that the Habibat box should be located on southerly aspects and positioned ideally near the eaves or gable apex of the property with a minimum of 2m but preferably 5-7m above the ground. Placement above windows, doors and wall climbing plants should be avoided.



Ibstock Bat Box A

A discrete, easy to install single bat brick that allows bats to create a natural home habitat within the cavity of the building

Height: 215mm Width: 65mm

Please note that this box is designed to be installed flush witha wall.

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APPENDIX 3

Bird Boxes

Bird Boxes

Ibstock Swift Box

A specially designed Swift nesting feature which can be integrated into the fabric of the building.

Size / Width / Height - 327 x 140 x 140mm.

1SP Schwegler Sparrow Terrace

A Woodcrete bird box which allows for several Sparrow pairs to nest in a single location. The box can either be integrated within the fabric of a building or otherwise fitted to the exterior of the building walls.

Brood chamber dimensions: Height: 16cm, Width: 10.5cm, Depth: 15cm

External dimensions: Height: 24.5cm, Width: 43cm, Depth: 20cm

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Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box. They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

House Martin Terrace

This exceptionally stylish new design will complement any house and prove equally popular with the martins. Straightforward to erect (masonry screws are provided) and easy to clean (each nest slides out after release of a safety screw) the woodcrete construction of both nests and housing ensures it will look just as attractive after 20 years and 80 or more broods.

Dimensions: 180H x 430W x 150D mm.
Nests slide out for cleaning.
Made in remarkable WoodcretePLUS™.

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Bird Boxes

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1B Bird Box

This is the most popular box for garden birds and appeals to a wide range of species. The box can be hung from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

Available in four colours and three entrance hole sizes. 26mm for small tits, 32mm standard size and oval, for redstarts.

2H Bird Box

This box is attractive to robins, pied wagtails, spotted flycatcher, wrens and **black redstarts**.

Best sited on the walls of buildings with the entrance on one side.

Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.

2M Bird Box

A free-hanging box offering greater protection from predators.
Supplied complete with hanger which loops and fastens around a branch.

With standard general-purpose 32mm diameter entrance hole.
Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.

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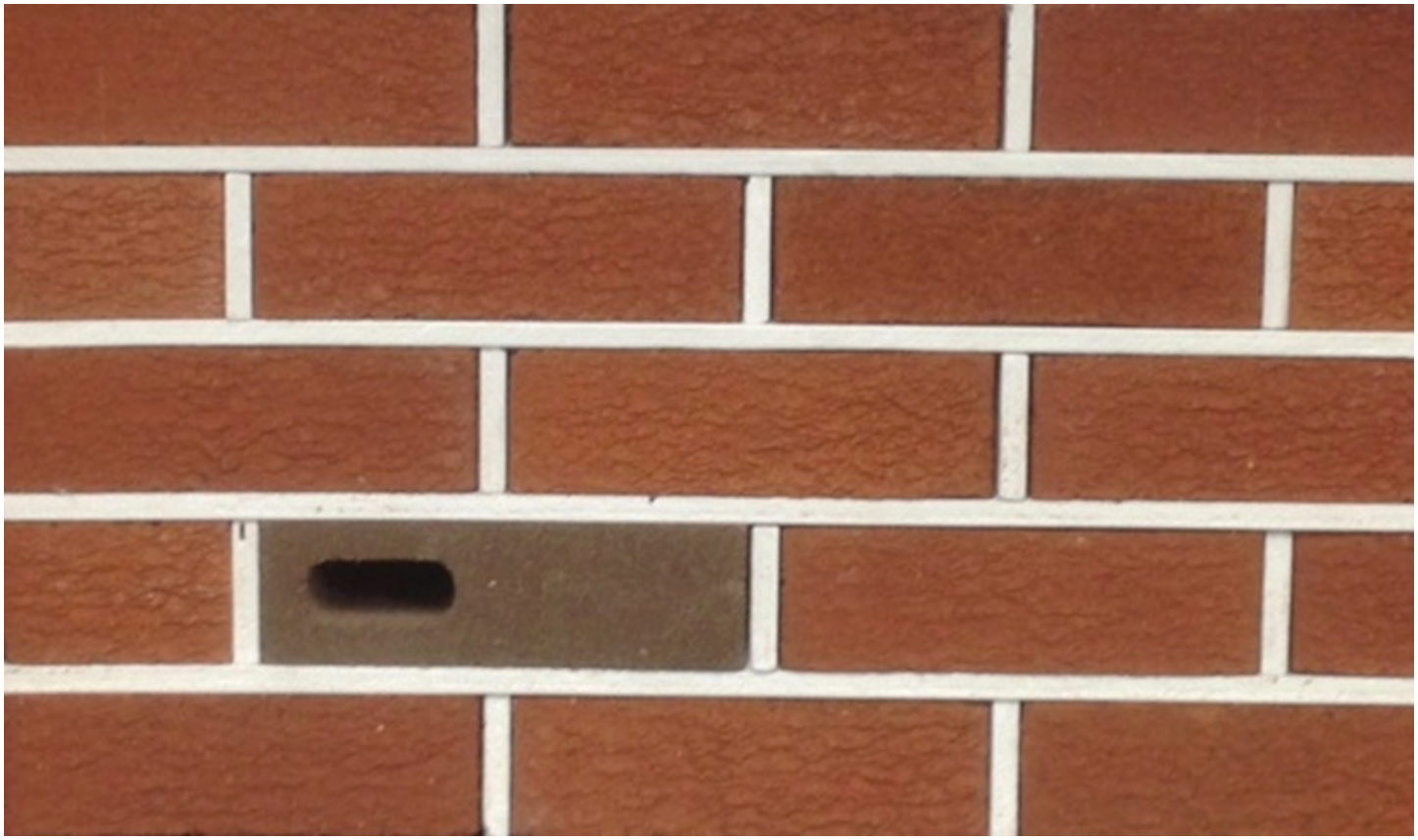
Cambridge Swift Nesting System

Wildlife and environment solutions

- The Cambridge Swift Nesting System has the advantage it is unobtrusive.
- The front facing brick and rear nesting blocks are a standard size so can be installed easily.
- If as recommended it is fitted to gable end it means any minor mess will not fall on windows.
- Being of concrete this will be a low cost long term solution to creating an ideal home for a Swift.



This image is showing the outer facing wall with the Cambridge Swift nest box bridging the gap into the inner wall.

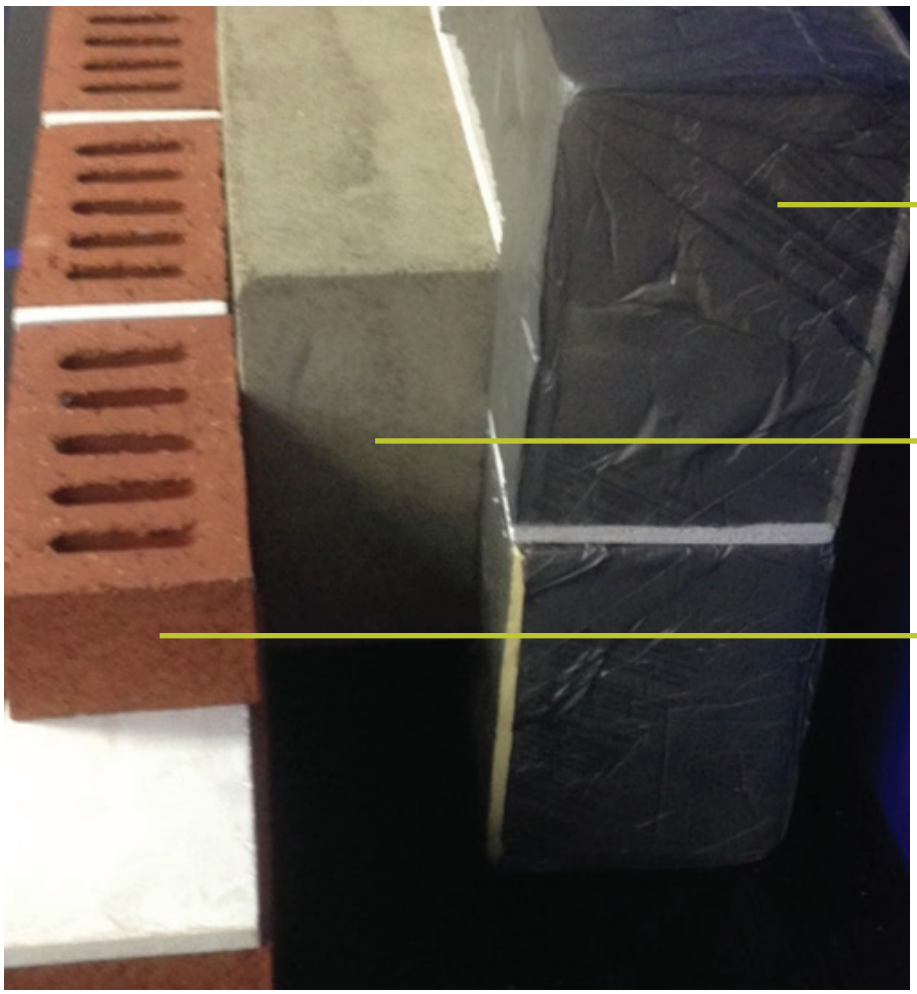
This model has nesting cups inside the box and gives the Swift a large area to nest. For young fledglings there is plenty of room to exercise their wings so they can gain strength before fledging.

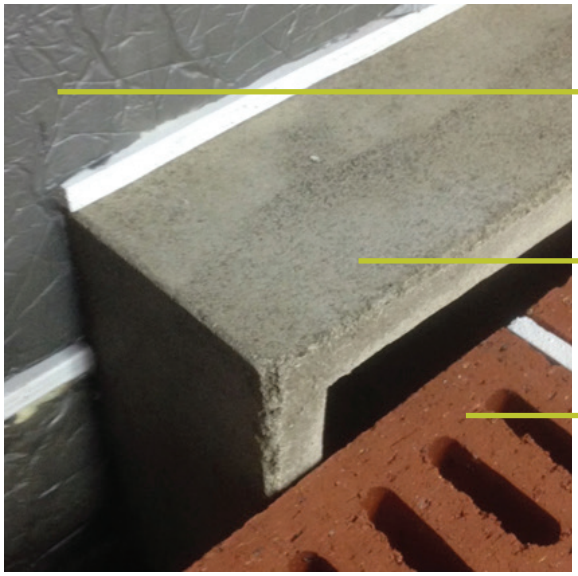
Cambridge Swift Nesting System

Wildlife and environment solutions

Cambridge Swift project side on view showing the front facing brick layer, the middle cavity, and the inner leaf.

Insulation and DPC would often be fitted with this design especially if it is next to living accommodation.





Examples of Swift Boxes

Ibstock Swift Box

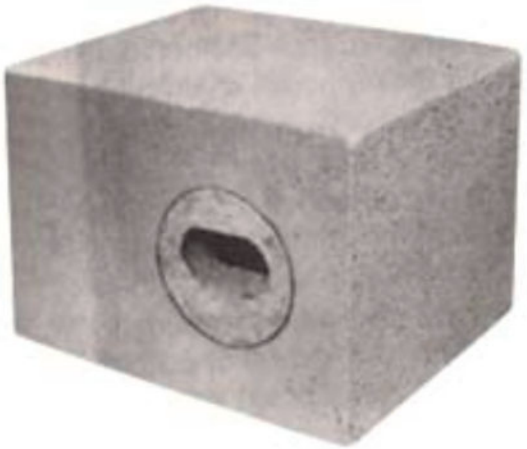
A specially designed Swift nesting feature which can be integrated into the fabric of the building.

Size / Width / Height - 327 x 140 x 140mm.

Schwegler Type 25 Nest Brick

Designed for installation into the fabric of a building, this box is suitable for swifts.

Woodcrete
Entrance hole 55 x 33mm
Dimensions 265mm wide x 220mm deep x 180mm high
Weight 8.8kg



Green & Blue Swift Box

Designed for installation into the fabric of buildings. Cast concrete construction.

Size / Width / Height - 440 x 215 x 160mm.

Images and text adapted from manufacturer's websites.

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