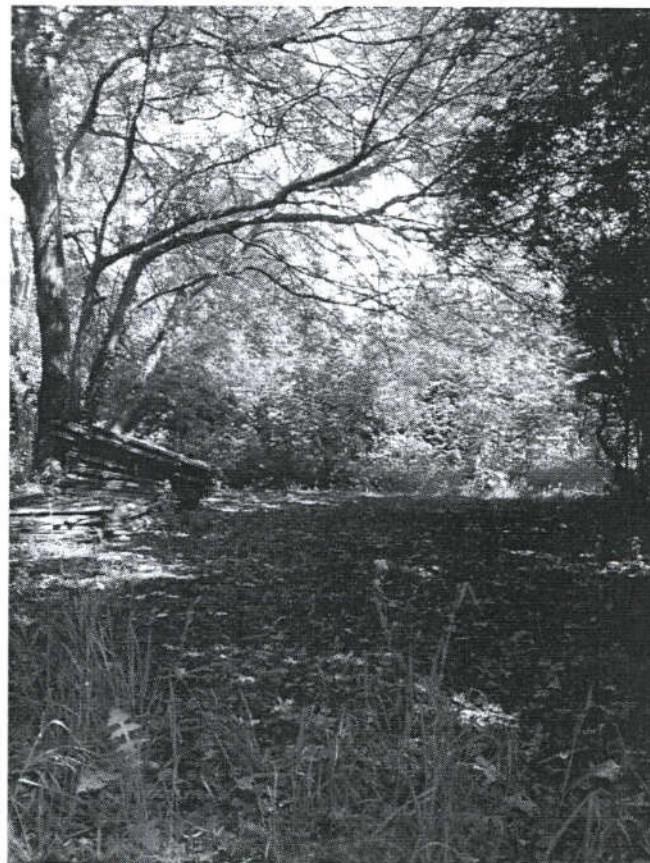




**Bat Survey**  
of  
**190 London Road, Rayleigh**  
on behalf of  
**Bellway Homes Ltd**



Reference: DFC 1069  
Written by: Liz Brooks BSc (Hons) MIEEM  
Checked by: David Smith BSc (Hons) PhD MIEEM  
Date: 26<sup>th</sup> July 2011

## 1.0 Summary

An earlier Phase 1 Habitat Survey carried out by Cresswell Associates in August 2010 identified potential for roosting bats in trees at the northern end of the site.

Dusk and dawn bat surveys were carried out during July 2011, targeting the three separate groups of trees identified as having potential for bats.

Two species of bat – common and soprano pipistrelle – were recorded on site, with activity concentrated close to the woodland adjacent the site to the west. No bat roosts were recorded on site, and it is unlikely that bats are using the oak trees along the eastern boundary, the EDF Energy compound buildings, the willow tree adjacent the stream or the trees along the western boundary to roost.

The proposed development may have an impact upon bats in terms of loss of foraging habitat and prospective roosting opportunities. Given the number of bats recorded and the habitats present in the adjacent woodland, the loss of these features is not considered likely to have a significant impact upon local bat populations.

However, it is recommended that any external lighting features close to the western boundary are designed to ensure that light does not spill into the adjacent woodland and adversely affect the value of this habitat to foraging and roosting bats.

### Key Recommendations

- Works to tidy or remove the western boundary trees and the willow adjacent the stream identified as having potential for bats should be carried out during April or mid-September to end of October
- Any such tree works should be carried out under the close supervision of a licensed bat ecologist who will need check crevices, possibly with an endoscope, immediately prior to works
- A 'soft fell' approach should be taken to tree or branch removal – removing small sections of the tree at a time, lowering each section carefully to the ground and leaving each section in-situ for at least 24 hours to allow any bats which may be present to leave of their own accord
- External lighting in the vicinity of the western boundary should be limited – any external lighting features should be located below 3m in height, be directed to the ground and use hoods, shields, and cowls to ensure light is directed at the ground where it is required and does not spill into the adjacent woodland

## **2.0 Introduction**

### **2.1 Instruction**

Earlier Extended Phase 1 Habitat Surveys by both Cresswell Associates and DF Clark Bionomique identified potential for roosting bats to be present in trees at the northern end of the site. Further to this, DF Clark Bionomique Ltd were instructed by Clive Bell of Bellway Homes Ltd on 10<sup>th</sup> June 2011 to undertake bat surveys of trees at 190 London Road, Rayleigh.

The site comprises a large area of hard standing and existing, dis-used buildings with a small area of woodland and grassland at the northern end of the site. Through this area runs a small stream. A strip of woodland exists offsite to the west, running along the western site boundary. Residential developments exist to the north, east and south of the site. The site is proposed to be redeveloped for housing.

Recommendations included within this report are the professional opinion of an experienced ecologist based on the client's proposals for the site, as detailed on drawing No BW100-001B dated June 2010, survey results and a review of any existing ecological records.

The surveys were led by Liz Brooks, who holds Natural England bat licence number 20112847, has been a professional ecologist since 2005 and is a full member of the Institute of Ecology and Environmental Management (IEEM). Assistant surveyors were Kim Wallis AIEEM and Victoria Brooks.

### **2.2 Aims**

This survey and report aims to:

- Confirm presence / likely absence of roosting bats in trees
- Identify any bat species using the site
- Identify any important foraging and/or commuting habitats within the site
- Summarise the overall ecological value of the site for bats

See Appendix 3 for wildlife legislation and planning policies relevant to bats.

### **3.0 Method**

#### **3.1 Desk Study**

An extensive desk top search of records was carried out in 2010 by Cresswell Associates. A number of records of bats were found within 2km of the site, particularly to the north-east, east and south-east of the site. This included a number of brown long-eared *Plecotus auritus* roosts, and foraging common pipistrelles *Pipistrellus pipistrellus*.

#### **3.2 Dusk and Dawn Surveys**

Dusk emergence and dawn return surveys were carried out following standard survey methodology recommended in Bat Surveys: Good Practice Guidelines (BCT 2007).

The surveys were carried out in suitable weather conditions during July 2011, i.e. on nights with relatively dry conditions, low wind speeds and minimum temperature of at least 10°C.

Dusk surveys commenced at 0.5hrs before sunset and concluded 1.5-2hrs after sunset. Dawn surveys commenced at 2hrs before sunrise and concluded at sunrise. Sunrise and sunset times were taken from the online sunrise / sunset calendar at [www.sunrisesunsetmap.com](http://www.sunrisesunsetmap.com).

Surveyors were positioned at vantage points close to the target tree which would offer a clear view of any bats entering or exiting potential roost features and each surveyor was equipped with a Batbox Duet bat detector to allow otherwise unseen bats to be detected.

A total of eight trees were surveyed; these were four trees in the north western corner of the site, alongside the western woodland; one mature willow tree along the stream; and a line of three mature oak trees in the centre of the eastern site boundary, within the EDF Energy compound. The trees all possessed cracks and crevices suitable for roosting bats beneath bark, in rot holes and in woodpecker holes. The EDF Energy compound buildings also formed part of the survey in conjunction with the oak trees present inside the compound.

#### **3.3 Assessment**

The trees had been previously assessed in accordance with criteria outlined in Bat Surveys: Good Practice Guidelines (BCT 2007), and were considered to be of moderate to high potential for bats.

## 4.0 Survey Results

### 4.1 Summary

A total of two bat species were recorded on site. These were common pipistrelle and soprano pipistrelle *Pipistrellus pygmaeus*.

No roosts were recorded on site.

A summary of the bat activity recorded on site is provided within the table below, where 'western boundary' refers to the line of trees along the north western boundary, 'stream' refers to the willow adjacent the stream at the northern end of the site, and 'eastern oaks' refers to the oak trees in the centre of the eastern boundary within the EDF energy compound.

Date	Weather conditions	Summary of Bat Activity
12 <sup>th</sup> July 2011	Temp 15°C at start, 14°C at finish, cloud cover 100% with intermittent drizzle, wind <5mph, insect activity high Sunset 21:12	First bat recorded – common pipistrelle along western boundary at 21:25. 1 x common pipistrelle recorded from 21:29 until 22:45 at less than 1 minute intervals. Foraging along western boundary and across vegetation at northern end of site. 21:32 – total 1 x common pipistrelle, and 2 x soprano pipistrelle along western boundary
13 <sup>th</sup> July 2011	Temp 15°C at start, 14°C at finish, cloud cover 90%, wind <2mph, insect activity high Sunset 21:11	First bat recorded – common pipistrelle along western boundary at 21:14. Regular passes until 21:39 when 2 x common pipistrelle recorded. Occasional soprano pipistrelle passes. Soprano pipistrelle pass east to west over stream at 21:41
26 <sup>th</sup> July 2011	Temp 15°C at start, 15°C at finish, cloud cover 100% with drizzle from 04:51, no wind, insect activity high Sunrise 05:12	2 x common pipistrelle and 1 x soprano pipistrelle foraging along western boundary and across vegetation at northern end of site. Passes every 1-2 minutes. Common pipistrelle recorded until 04:51. Soprano pipistrelle until 04:53

### 4.2 Dusk Surveys

Both surveys of 12<sup>th</sup> and 13<sup>th</sup> July commenced at 20:45 and finished at 22:45. On 12<sup>th</sup> July the first bat recordings were made at 21:25 along the western boundary where single common pipistrelles foraged beneath the tree canopy. Foraging extended into clearings in the centre of the vegetation at the northern end of the site, resulting in recordings of these bats being made by the surveyor located adjacent the stream. Bat activity continued with regular passes every minute until the survey finished. At 21:32 one common pipistrelle and two soprano pipistrelles were recorded along the western

boundary and in vegetation clearings. No activity was recorded around the willow tree adjacent the stream.

No bat activity was recorded along the eastern site boundary in the vicinity of the line of three oak trees, or within the EDF Energy compound. This is likely to be due to high intensity security lighting located along this boundary and within the compound.

On 13<sup>th</sup> July the first bat recorded was a common pipistrelle at 21:14, which again foraged beneath the tree canopy and then into nearby onsite clearings. Two common pipistrelles were recorded from 21:39, with passes every minute. A number of these passes were recorded behind the surveyor adjacent to the stream. No bat activity was recorded around the willow tree with the exception of one soprano pipistrelle pass over the tree at 21:41 from east to west. Occasional soprano pipistrelle passes were recorded at 21:54 and 21:55 in central clearings.

No activity was recorded in the vicinity of the three eastern oak trees or within the EDF Energy compound.

#### **4.3 Dawn Surveys**

The survey commenced at 03:00 and finished at 05:00 – ten minutes before sunrise due to rain. Up to three bats, comprising both common and soprano pipistrelle were recorded from the beginning of the survey foraging beneath trees along the western boundary and into central clearings. Passes were regular, around every 2-3 minutes. From 03:54 passes were noted to be more faint in the direction of the adjacent woodland.

Light drizzle began to fall at 04:51, and this coincided with the last recording of common pipistrelle. A single soprano pipistrelle was recorded until 04:53.

No bat activity was recorded around the willow adjacent the stream. The oak trees along the eastern boundary were observed to be very well lit as per the surveys of 12<sup>th</sup> and 13<sup>th</sup> July. It was therefore decided not to survey these trees and instead focus survey effort on the willow and trees along the north western boundary.

Survey ceased at 05:00 due to rainfall, and lack of bat activity.

## **5.0 Conclusions and Recommendations**

### **5.1 Foraging and/or Commuting Bats**

The northern end of the western site boundary is used by a small number of common and soprano pipistrelles as a regular foraging feature. This is likely to be due to its proximity to an area of woodland adjacent to the west. Clearings amongst vegetation at the northern end of the site were also used by foraging pipistrelles.

Bats do not appear to be using the area around the EDF Energy compound, which is located along the eastern boundary. Intensive security lighting and adjacent offsite street lighting is likely to discourage bats from this area. The lack of bat activity around the EDF Compound also indicates that bats are unlikely to be using the compound storage buildings to roost, which were identified as sub-optimal roosting features in the 2010 Cresswell Associates surveys report.

### **5.2 Roosting Bats**

The survey results indicate that bats are very unlikely to be using the three oak trees along the eastern boundary to roost, and very unlikely to be using the willow tree alongside the stream to roost.

The survey results also indicate that it is unlikely that bats are roosting in the trees along the western site boundary, as no bats were seen to emerge from or enter these trees. However, these trees have the greatest potential to be used at any point in time by roosting bats, as they are located close to identified foraging routes. The loss of the trees as potential roosting sites is not considered likely to have a significant impact upon the local bat population given the small numbers of bats recorded on site and the presence of many alternative roosting opportunities in the adjacent woodland.

### **5.3 Licensing**

No licence will be required before undertaking the tree works. Works on the three oak trees can take place at any time of year without supervision from an ecologist, however, tree surgeons should be made aware of the presence of bats on site.

Whilst the surveys indicate that the willow tree and the trees adjacent the western boundary are not used by bats, they are located in an area which is frequently used by small numbers of bats. These bats may at any time use these trees, as they are highly mobile creatures with changing roosting requirements which may or may not be provided for by different tree roost locations. It is therefore recommended that mitigation measures

are put in place to further avoid the likelihood of disturbing or harming bats – see section 5.4 below.

#### **5.4 Outline Mitigation Measures**

Mitigation is defined as measures to minimise and/or avoid impacts on bats. Compensation is defined as measures to compensate for unavoidable impacts. The term mitigation is frequently used to combine these two elements and is used in that context in this report.

- Works to tidy or remove the western boundary trees and the willow adjacent the stream identified as having potential for bats should be carried out during April or mid-September to end of October
- Any such tree works should be carried out under the close supervision of a licensed bat ecologist who will need check crevices, possibly with an endoscope, immediately prior to works
- A 'soft fell' approach should be taken to tree or branch removal – removing small sections of the tree at a time, lowering each section carefully to the ground and leaving each section in-situ for at least 24 hours to allow any bats which may be present to leave of their own accord
- As part of the new development, bat boxes should be installed in any mature trees which are to be retained on site. Ideally roosting opportunities should be provided on houses which are located along the western boundary adjacent the offsite woodland. Opportunities may range from the provision of external bat boxes, to bat bricks or tubes incorporated into the building walls, to simply leaving the internal mesh out of ventilation ridge tiles to allow bats access beneath the ridge tiles
- External lighting in the vicinity of the western boundary should be limited – any external lighting features should be located below 3m in height, be directed to the ground and use hoods, shields and cowls to ensure light is directed at the ground where it is required and does not spill into the adjacent woodland



## 6.0 References

Bat Conservation Trust (2007) *Bat surveys: good practice guidelines*

Institute for Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom*

Stone, G. (2010) 190 London Road, Rayleigh, Essex – Ecological Appraisal. Cresswell Associates

Masterplan layout drawing

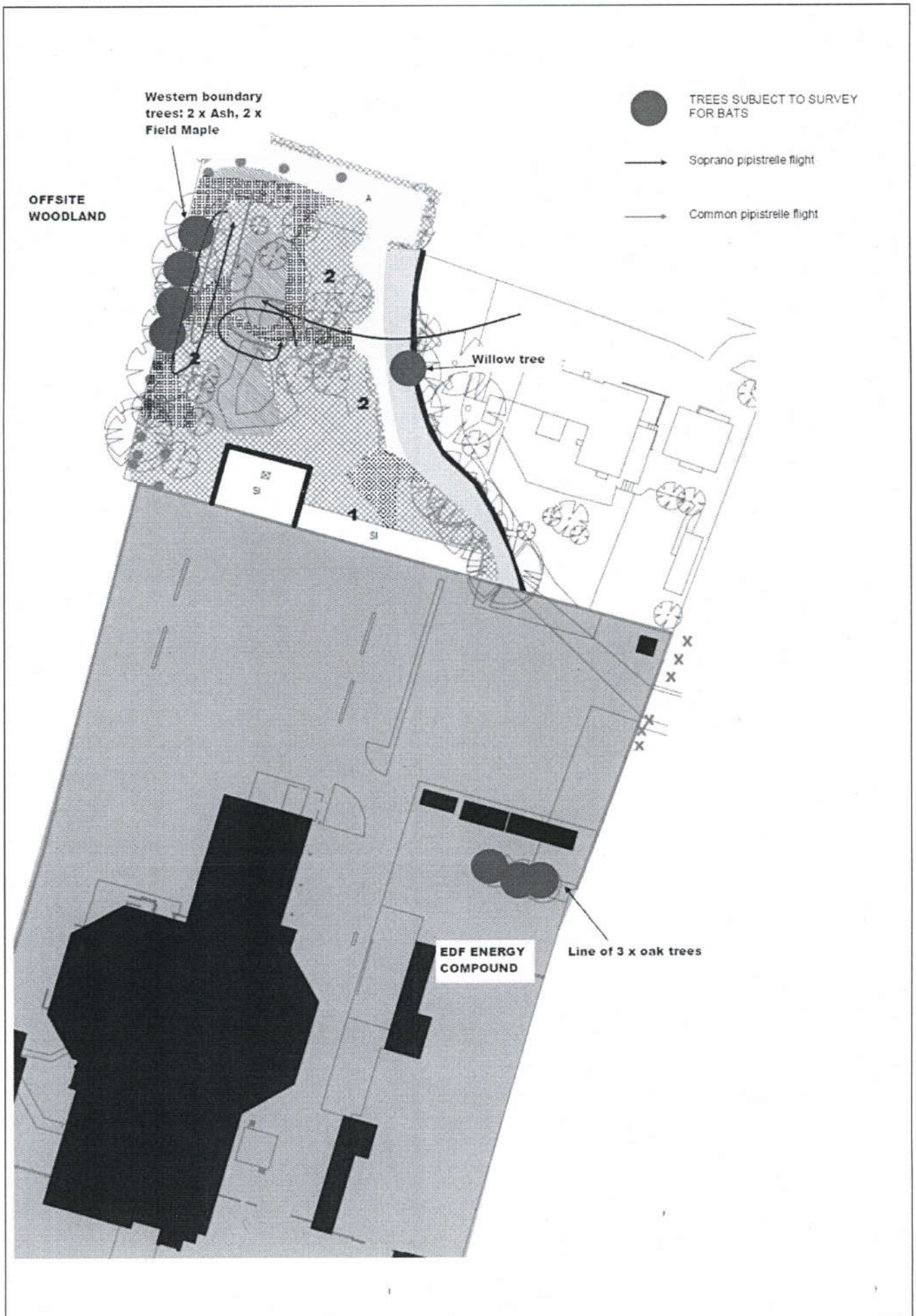
Mitchell-Jones A. J. and McLeish A.P. (2004) (rev). *The Bat Workers' Manual*

Mitchell-Jones A. J. (2004). *Bat Mitigation Guidelines*

Sunrise and sunset times for UK

[www.sunrisesunsetmap.com](http://www.sunrisesunsetmap.com)

**Appendix 1:**  
**Bat Activity Map**



## **Appendix 2:**

### **Bat Boxes**

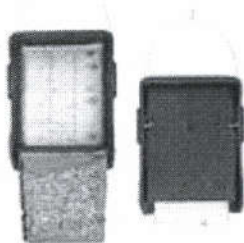
## Bat boxes



### Schwegler 2F Woodcrete Bat Box

General purpose bat box attractive to the smaller species of bat, found to be used by pipistrelles and brown long-eared bats.

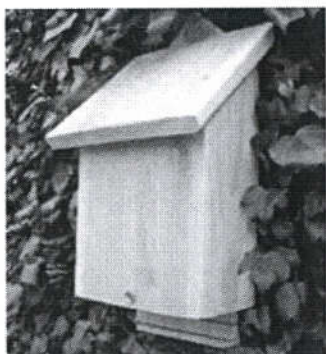
From: [www.alanaecology.com](http://www.alanaecology.com)



### 1FF long lasting Woodcrete Bat Box

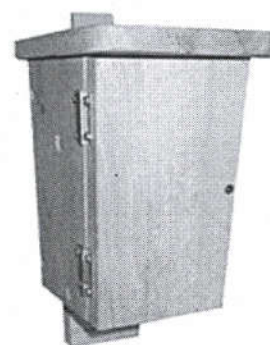
The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

From: [www.alanaecology.com](http://www.alanaecology.com)



Large timber bat box suitable for fixing to building walls or trees

From: <http://www.noahsarkgardens.co.uk>



Beech double chambered bat box. Heavy construction, long lasting and provides for a variety of bat species

From: [www.alanaecology.com](http://www.alanaecology.com)



### 1FD long lasting Woodcrete Bat Box

The 1FD box has been specially developed as a nursing area for smaller bats and has proved highly effective in practice.

From: [www.jacobijayne.co.uk](http://www.jacobijayne.co.uk)



### Schwegler 2F-DFP Bat Box with double front panel

Long lasting, easily hung from trees and very successful with Pipistrelles and Daubenton's bats

From: [www.alanaecology.com](http://www.alanaecology.com)





#### Schwegler 1WQ Bat Box

Specifically designed for fixing to building walls. Provides heavily insulated walls for protection during hibernation. Requires no maintenance or cleaning, looks smart on building walls.

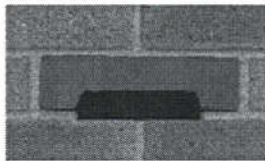
From: [www.alanaecology.com](http://www.alanaecology.com)



#### Schwegler 1FQ Bat Box

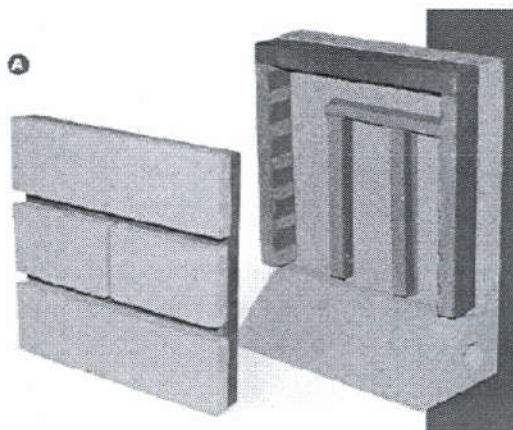
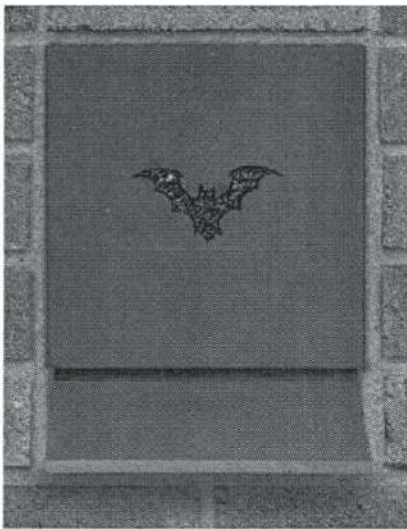
Specifically designed for fixing to building walls. Provides a range of conditions provided by bats throughout the year. Requires no maintenance or cleaning, looks smart on building walls.

From: [www.alanaecology.com](http://www.alanaecology.com)

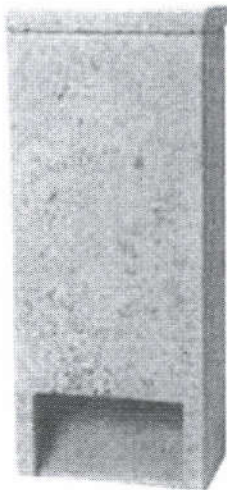


A bat brick which allows natural access into a wall cavity, although such access points can also be provided in stone from Marshall's Clay Products. For the brick, contact Istock on 0870 903 4010.

Size: 215mm x 65mm

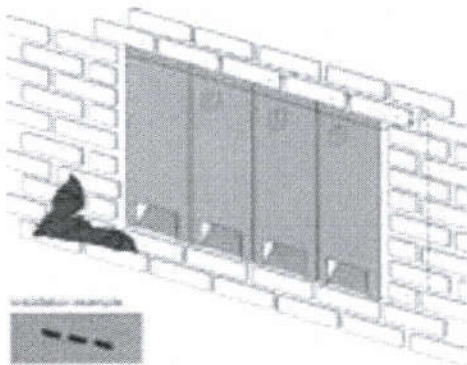


Alternatively, an external bat box can be incorporated into the walls to provide a crevice environment often found in wall cavities. Available in two sizes - 215mm x 215mm or 215mm x 290mm.



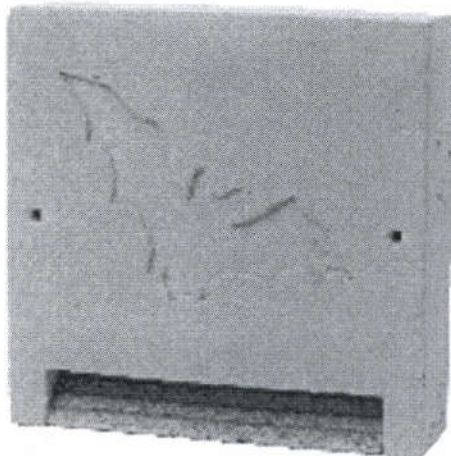
#### **Schwegler 1FR Bat Tube**

Can be installed within brick masonry, beneath plasterwork or wood panelling or incorporated into concrete structures such as buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits. It is maintenance-free as the entrance slit is at the bottom



#### **Schwegler 2FR Bat Tubes**

This maintenance-free concept enables bat tubes to be built into the masonry of a wall. A number of tubes can be placed next to one another in modular form to create much larger spaces with transverse connecting holes. Each tube has three different types of internal partition



#### **Schwegler 1FE Bat Panel**

This is a panel for installing on or in the surface of exterior walls. The open back enables bats to continue to use existing nesting sites in walls. The 1FE is especially suitable for use during conversions, renovations or insulation work on older types of buildings and historic buildings.

**Appendix 3:**  
**Legislation & Planning Policy**



## Legislation

All species of British Bats are fully protected through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats & Species Regulations 2010.

Combined, these two Acts make it an offence to:

- Kill, injure or capture a bat
- Disturb a bat
- Deliberately or recklessly destroy or obstruct access to a bat roost (even if bats are not present at the time)
- Possess, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.

These offences are punishable with fines of up to £5000 and up to 6 months imprisonment. It should be noted that actions affecting multiple bats can be construed as separate offences and therefore penalties can be applied *per animal* affected.

Under certain circumstances licences can be granted by the Statutory Nature Conservation Organisation (Natural England in England) to permit actions that would otherwise be unlawful.

In addition to the above legislation, the Protection of Mammals Act (1996) provides protection for all wild mammals from certain cruel acts including crushing and asphyxiation with the intention of causing unnecessary suffering.

## Planning Policy

The UKBAP is used as a guide for decision makers such as local authorities to fulfil their obligations under sections 40 and 41 of the Natural Environment and Rural Communities Act 2006 to have regard to the purpose of conserving biodiversity in carrying out their duties. All species of British bats are listed on the UK Biodiversity Action Plan (UKBAP) as priority species of conservation concern and the Local Biodiversity Action Plan (LBAP) for Essex also includes a targeted action plan for bats.

Planning Policy Statement 9 (PPS9) states that the presence of a protected species is a material planning consideration. It also places a clear responsibility on Local Planning Authorities to further the conservation of habitats and species of principal importance where a planning proposal may adversely affect them.



Arboriculture   Landscape Architecture   Ecology

Tel: 01621 740876  
Fax: 01621 742242

[www.dfclark.co.uk](http://www.dfclark.co.uk)

Email:  
[liz.brooks@dfclark.co.uk](mailto:liz.brooks@dfclark.co.uk)

Andrews Farm  
Burnham Road  
Althorne  
Essex  
CM3 6DS