

11th October 2017
Our reference: 2017/04/22

Elite, Hornash Lane, Shadoxhurst
Re-development of the site

Following a 'Preliminary Ecological Appraisal' which identified the risk of bats being present under the wood cladding of the cold store building, KB Ecology Ltd has been commissioned to undertake one night-time bat survey. This was undertaken in mid-August 2017 by Katia Bresso¹ and Megan Austin, using Bat Box Duet heterodyne and frequency division and Pettersson D240x time expansion detectors. Bat echolocation calls were recorded onto digital mini-disc recorders for subsequent up-loading onto the computer software 'BatSound' for analysis; this allows sonograms of the bats echolocation and allows limited spectral analysis of the sonograms to be carried out, in particular the frequency components which can be examined and compared with known data. Infra-red night scopes were also used.

No bats were seen emerging from the cold store building. But common and soprano pipistrelle bats, one species of Myotis bat, brown long-eared bat and serotine bat were seen and heard commuting and foraging on site.

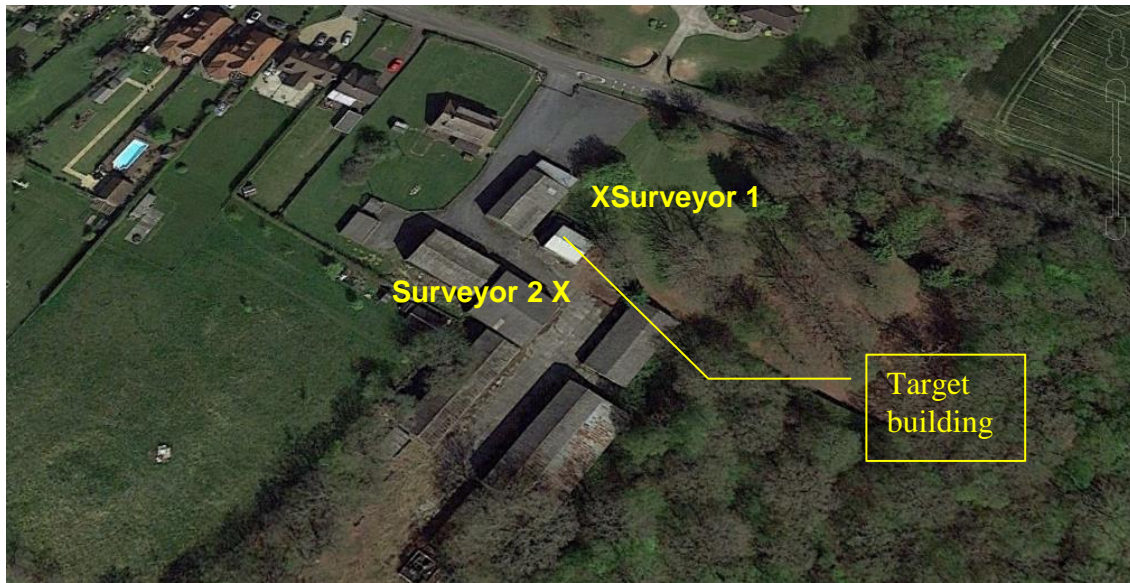
The cold store building is thus not considered as being used as a day roost and no mitigation or licences are expected to be needed prior to its demolition.

However, as lighting can be detrimental to roosting, foraging and commuting bats², the recommendations from the Bat Conservation Trust, titled Bats and Lighting in the UK, should be considered, when designing any lighting scheme for the proposed development.

¹ CEnv MCIEEM, a qualified professional consultant ecologist with over 15 years of experience¹, licensed bat surveyor (Class Survey Licence Registration Number 2015-11917-CLS-CLS (CL15 Bat Roost Visitor Level 1) and 2015-11918-CLS-CLS (CL18 Bat Survey Level 2)) and Registered Consultant of the Bat Low Impact Class Licence with Natural England

² http://www.bats.org.uk/pages/bats_and_lighting.html and <http://www.batsandlighting.co.uk/index.html> for more information

Detailed Results:



Site Name	Elite, Hornash Lane, Shadoxhurst	Surveyor Name	Katia Bresso
Weather Conditions	10% cloud, no wind	Date	15/08/2017
Start Time	20:00	Finish Time	21:45
Air Temperature (°C) at Start of Survey	15	Air Temperature (°C) at End of Survey	14
Sunset	20:18	Sunrise	

North of cold store building				
Time	Track Time	Species	Activity*	Comments
20:37		55pip	C	audio only
20:51-20:54		45pip	F	foraging in front of building on grass for 3min
21:03-21:13		45pip	F	foraging at edge of trees for 10min
21:17		Myotis sp.	C	commuting past north end of barn towards road
21:18		45pip	C	audio only
21:17-21:23		ble	F	foraging on and off for a few minutes
21:27		serotine	C	faint, not seen

Site Name	Elite, Hornash Lane, Shadoxhurst	Surveyor Name	Megan Austin
Weather Conditions	10% cloud, no wind	Date	15/08/2017
Start Time	20:00	Finish Time	21:45
Air Temperature (°C) at Start of Survey	15	Air Temperature (°C) at End of Survey	14
Sunset	20:18	Sunrise	

South of cold store building

Time	Track Time	Species	Activity*	Comments
20:34		45pip	C	audio only
20:37		55pip	C	audio only
20:41		45pip	F	in and around barns to the south, 8 passes
20:42		45pipx2	F	in and around barns
20:44-48		45pip	F	in and around barns to the south, continuously
20:47		Myotis sp.	C	audio only
20:51-21:04		45pip	F	in and around barns to the south, continuously
21:05-14		Myotis and 45pip	F	in and around barns to the south
21:14		Myotis sp.	F	south to north and then east around oak
21:15		45pip	C	audio only
21:17-20		Myotis sp. and 45pip	F	in and around barns to the south
21:20		Myotis sp.	F	below and around canopy of oak tree to east of cold store
21:24		Myotis sp.	C	overhead between coldstore and barns
21:24-32		45 pip	F	continuous in barn

Appendix A - Bats and Lighting in the UK

Bat Conservation Trust and Institution of Lighting Engineers Summary of requirements

The two most important features of street and security lighting with respect to bats are:

1. **The UV component.** Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.
2. **Restriction of the area illuminated.** Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:

Low

- Low pressure Sodium Lamps (SOX) emit a minimal UV component.
- High pressure Sodium Lamps (SON) emit a small UV component.
- White SON, though low in UV, emit more than regular SON.

High

- Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
- Mercury lamps (MBF) emit a high UV component.
- Tungsten Halogen, if unfiltered, emit a high UV component
- Compact Fluorescent (CFL), if unfiltered, emit a high UV component.

Variable

- Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.

Glass glazing and UV filtering lenses are recommended to reduce UV output.

Street lighting

Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.

Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.

If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

Security and domestic external lighting

The above recommendations concerning UV output and direction apply. In addition:

Lighting should illuminate only ground floor areas. Light should not leak upwards to illuminate first floor and higher levels.

Lamps of greater than 2000 lumens (150 W) must not be used.

Movement or similar sensors must be used. They must be carefully installed and aimed, to reduce the amount of time a light is on each night.

Light must illuminate only the immediate area required, by using as sharp a downward angle as possible. Light must not be directed at or close to bat roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit.

Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.