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ECOLOGICAL CONSULTANTS
Limited Liability Partnership

Barton Pavilion Detailed External and Internal Bat Inspection

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1 Introduction

1.1 Site and Pavilion Description

An area of safeguarded land to the west of Barton, Oxford (OS grid ref. at approximate centre point of site: SP 545 082) is being considered within land allocation policies to meet future housing demand. At present this land includes areas of grazed pasture, recreation facilities and playing fields, allotments and car-parking areas. An electrical sub-station is located toward the centre of the site and a small nature park (public green space) is located adjacent to the allotments to the east. The site is bordered by the Barton housing area to the east, the northern bypass road (A40) to the south and farmland to the west and north.

A sports pavilion is located toward the eastern end of the site. This building is currently used as sports facilities for the associated playing fields. Internally, it is divided into areas used as changing rooms including toilets and showers with a bar and club-room in the north-west part. Storage cupboards, kitchen facilities and small office/staff rooms are also present.

1.2 Ecological Background

An extended Phase 1 habitat survey and report was previously completed by Baker Shepherd Gillespie (BSG) in February 2007 (BSG, 2007¹) covering the whole site. The 2007 Phase 1 survey included an assessment of the intrinsic value of the site to bats, although specific bat activity surveys were outside the scope of this survey. The assessment included an external inspection of the pavilion building. No internal inspection was completed at this time.

A detailed internal and external inspection of the existing pavilion building was completed in December 2009 by a licenced bat surveyor from BSG (BSG, 2010²). This did not find any evidence of roosting bats. However, the pavilion building was found to have low to medium potential to support roosting bats due to numerous potential access/egress points and a dry and open roof space.

A dusk bat emergence survey was undertaken at the pavilion on 2nd September 2010³. No bats were seen emerging from the building during this survey. Three bat species were recorded by the surveyors; noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*. Noctule recordings indicated low numbers of distant bats. Common and soprano pipistrelles were recorded foraging and commuting close to the pavilion building.

1.3 Proposed Works

Oxford City Council proposes to demolish the existing pavilion building as part of site redevelopment. It is understood that the demolition of the existing pavilion is proposed in May 2011. A prefabricated structure will be erected in place of the existing pavilion to provide continued sports facilities. This will be erected on the same site as the existing building but will have a square instead of t-shaped footprint. This building may ultimately be relocated if development of the wider site takes place.

¹ Baker Shepherd Gillespie (2007) Safeguarded Land West of Barton Biodiversity Assessment. Unpublished report for Oxfordshire City Council. BSG reference: 2755.X001_Report_MF_Final

² Baker Shepherd Gillespie (2010) Barton Fields Further Surveys: Bat Building Survey. Unpublished report for Oxfordshire City Council. BSG reference: 2755.02_X001_bat_rep_FINAL_EAHEKG_240101

³ Baker Shepherd Gillespie (2010) Barton Fields, Oxford. Further Bat and Badger Surveys 2010. . Unpublished report for Oxfordshire City Council. BSG reference: 2755.03_X001_rep_eahe_171010

1.4 Aims of Study

Although the previous building inspection and the single emergence survey did not record any evidence of bat occupation in the pavilion building, the current level of survey effort is not considered sufficient by established guidelines⁴ to provide confidence in a negative result.

In order to gain further information on whether there is any evidence that bats have used the pavilion building as a roost site a more intensive investigation is required. The main aim of this survey report is to provide further survey effort such that if no evidence of bats are seen, combined with previous data, this will provide confidence in a conclusion that bats do not currently use the pavilion as a roosting site. To this end, the following approach was devised:

- A detailed external investigation of those features on the building deemed to have the potential to support roosting bats or provide access into the roof space
- A repeat internal inspection of the roof spaces inside the pavilion to determine whether there is any new evidence of bat use since the last inspection in 2009.

This report presents the findings of the survey, including incidental observations relating to other species, and provides an evaluation of the results. It goes on to provide recommendations relating to the demolition and subsequent operation of the proposed new building.

2 Methodology

A detailed external inspection and repeated internal inspection of the pavilion building was undertaken by Helen Evriviades MIEEM and Ed Austin MIEEM from Baker Shepherd Gillespie on 1st December 2010. Helen Evriviades holds a licence granted by Natural England that allows her to legally enter known or potential bat roosts for survey purposes (NE licence number 20103809).

Weather conditions were dry and cold with occasional sunny spells. Light snow that had fallen on the previous morning was still present in shaded or less exposed areas, but only as a thin dusting.

The external inspection involved a detailed search of potential access points and other features identified during the previous inspection in December 2009 (see Figure 1). These included loose ridge tiles, lifted lead flashing and holes in the gables and soffit boards. An adjustable hoist (operated by trained personnel from Oxford City Council) was used to enable the surveyor to gain direct access to features at height. Any additional features identified from the elevated position were also inspected. A powerful torch and flexible videoscope were used to investigate each point or feature. Evidence of bats or bat activity were searched for, including droppings, feeding remains, characteristic staining, scratch marks and live and dead bats.

The internal inspection survey involved a detailed search of the roof space of the pavilion. A ladder was used to gain access to ceiling hatches and a torch and videoscope were used as necessary to aid with the search. Characteristic evidence of the use of the building by bats (see above) was searched for.

During the external and internal inspections, incidental observations relating to evidence of species other than bats were also recorded.

⁴ Bat Conservation Trust (2007). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

3 Results

3.1 Overview

A description of the pavilion building can be found in the previous report prepared by BSG following the December 2009 survey⁵. During the latest December 2010 survey, the building was found to be in a similar condition with no structural alterations or significant additional features.

3.2 External Inspection

The external inspection did not find any evidence of bats, or bat use within the potential areas identified.

Old bird nesting material was identified within some of the soffit boxes.

3.3 Internal Inspection

The repeat internal inspection found the roof spaces to be in a similar condition to that recorded in 2009, with a few additional observations (as shown on Figure 1). The additional observations included more evidence of mouse and rat activity in the roof, particularly in the main roof space. It was also noted during this survey that the felt layer beneath the tiles had been installed to lie across the ridge beam, thereby restricting potential bat access routes into the roof space via loose ridge tiles. The butterfly wings recorded toward the centre of the roof were still present. These were not considered to be bat feeding remains as no other evidence was found.

At least two old bird nests and evidence of an old wasp nest (dead wasps and nest material) were also recorded within the roof space. Although the species could not be reliably identified due to the age of nesting material, it is thought that feral pigeons (*Columba livia domest.*) and possibly small passerines (e.g. house sparrows (*Passer domesticus*)) have used the building for nesting.

4 Discussion

4.1 Constraints on Study Information

The hoist used for the external survey allowed all necessary parts of the roof to be accessed. There were therefore no constraints to the external inspection.

A few piles of broken asbestos tiles were located within the internal roof space. However, it was possible to bypass these without disturbing them in order to gain safe access to all parts of the roof void. There were therefore no constraints to the internal inspection.

4.2 Assessment/Evaluation of Results

The results of the surveys indicate the pavilion building has not been used as a roost site by bat species. Although features and access points potentially suitable for bats are present, there is no evidence these have been used.

The pavilion is therefore not considered to contain any bat roosts.

There is evidence that the building has been used by mice, rats and nesting birds (pigeons and small passerines).

⁵ Baker Shepherd Gillespie (2010) Barton Fields Further Surveys: Bat Building Survey. Unpublished report for Oxfordshire City Council. BSG reference: 2755.02_X001_bat_rep_FINAL_EAHEKG_240101

4.3 Legislation and Policy Guidance

4.3.1 Bats

All species of bat and their roosts are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended by the Countryside and Rights of Way Act 2000) and by the Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations). Jointly these pieces of legislation make it an offence to:

- Intentionally or deliberately kill, injure or take a bat;
- Intentionally or recklessly obstruct access to, damage or destroy a breeding site or resting place used by bats (even if bats are not occupying the roost at the time);
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection;
- Deliberately disturb a bat, in particular any disturbance which is likely to:
 - impair the ability of bats to survive, breed or reproduce, or to rear or nurture their young; or
 - impair the ability of bats to hibernate or migrate; or
 - affect significantly the local distribution or abundance of bats

A bat roost can be defined as any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

Certain species of bat are listed as priority species in the UK BAP (e.g. the soprano pipistrelle and noctule). Under section 41 of the Natural Environment and Rural Communities Act 2006 (NERC), these species are also considered to be Species of Principal Importance (SPI) for the conservation of biodiversity in England. Under NERC, the Secretary of State must take such steps as appear to be reasonable practicable to further the conservation of such species or promote the taking of such steps by others. In practice, the Local Planning Authority can use the SPI lists as a guide when implementing its duty under section 40 of NERC (to have regard to the conservation of biodiversity when carrying out its normal functions).

4.3.2 Nesting Birds

All wild birds in the UK plus their active nests and eggs are fully protected under the Wildlife and Countryside Act 1981 (WCA) as amended. This legislation makes it an offence to intentionally:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird
- Disturb any wild bird listed on Schedule 1 while it is nest building, at a nest containing eggs or young, or to disturb the dependent young of such a bird.

4.4 Potential Impacts

It is not considered that the proposed demolition will lead to any direct impacts on bats or their roosts as no evidence of roosting bats has been found within the building.

Indirect impacts on bats could include disturbance through the use of artificial lighting after dark. Foraging and commuting activity was observed close to the building during the emergence survey undertaken in September 2010. The proposed demolition in May would be within the period when bats are active. However, during May daylight length should exceed a normal working day, so it is unlikely that demolition works would continue after dark (i.e. floodlighting should not be required).

It is possible that security lighting may be used around the building during construction and/or operation for safety reasons. This could lead to localised effects on bats by causing them to avoid lit areas. However, as the species recorded around the pavilion are common and widespread in urban areas and that suitable alternative foraging habitat occurs close-by, it is unlikely that this would lead to significant impacts beyond the immediate zone of influence (i.e. the area immediately surrounding the work site).

May is within the peak nesting season of many UK bird species. It is therefore possible that demolition works could lead to impacts on nesting birds using the building. Impacts could include killing or injury of birds (particularly young birds) if they are unable to escape from harm. Damage and destruction of active nests and eggs could also occur. Although this impact (without appropriate mitigation or avoidance steps) would only be likely to affect small numbers of common and widespread bird species, it would contravene current UK legislation.

5 Recommendations

5.1 Further Survey

No further surveys are considered necessary before the pavilion is demolished in May 2011. This may need to be revised if the demolition does not take place at this time; particularly if the building conditions change (e.g. it falls into disuse in the interim).

5.2 Mitigation, Compensation and Enhancement Measures

The use of artificial lighting after dark should be avoided or kept to a minimum. Any lighting should be directed toward the building using hooded lights to avoid or reduce light spill onto the surrounding area.

Birds should be discouraged from nesting in the building by blocking up all potential access points. This should include the holes in the soffit boxes and around the eaves and the currently open gable-end of the roof on the east-facing wing (nearest to the Bowling Green). Fine mesh, netting or wooden planking could be used to seal the holes. If mesh or netting is used, it would need to be fine enough to prevent small birds from accessing; 19mm mesh is sold commercially to deter smaller birds such as house sparrows. In order to prevent birds, holes and gaps would need to be blocked up during the winter (before late February) as some birds may try to nest early in the spring.

6 Summary

An external and internal inspection of the pavilion at Barton, Oxford had been completed in December 2009. This found no evidence of bats but features of potential value to bats were identified. A single dusk emergence survey completed in September 2010 recorded bats using the area close to the pavilion, but no bats were seen to emerge from the building.

As additional activity surveys were not possible in advance of demolition works in spring 2011, it was decided to complete an updated internal inspection and detailed external inspection of possible features using a hoist. The aim of this was to search for any evidence of roosting bats and/or to provide confidence in a negative result.

During the repeat inspection, no signs of bats or bat activity were found. In combination with the negative results from previous surveys, it is therefore considered that the building is not currently used as a bat roost. Some evidence of the use of the building by nesting birds was found.

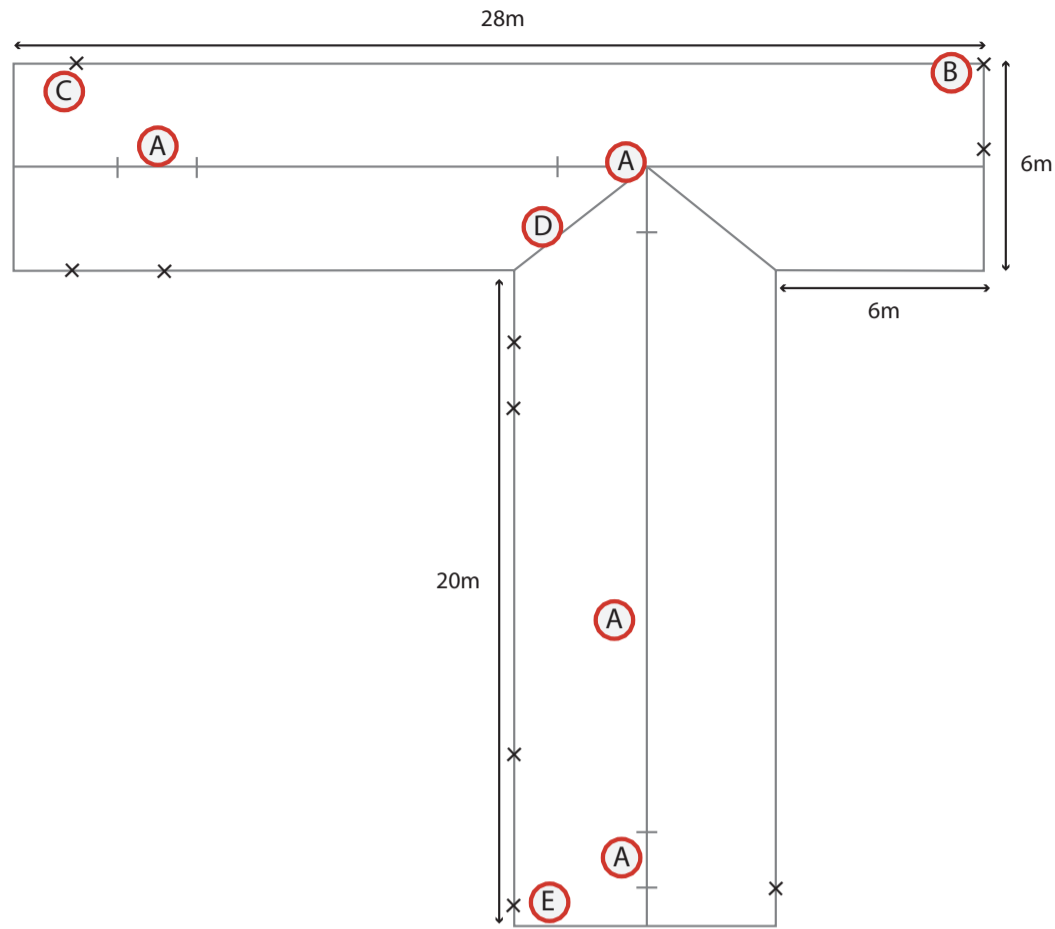
Scheduled demolition of the pavilion building in May 2011 can therefore proceed without any implications on bat species. However, it is recommended that artificial lighting is minimised after dark during demolition and construction of the replacement facilities, and during ongoing operation of the new facilities, in order to avoid or minimise possible disturbance of bats foraging and commuting nearby. It is also advised that the situation is reviewed should the demolition be delayed significantly or not proceed in 2011.

Holes and gaps in the roof, eaves and soffits should be blocked up in the winter using small mesh, netting or planking to prevent birds from nesting in the spring.

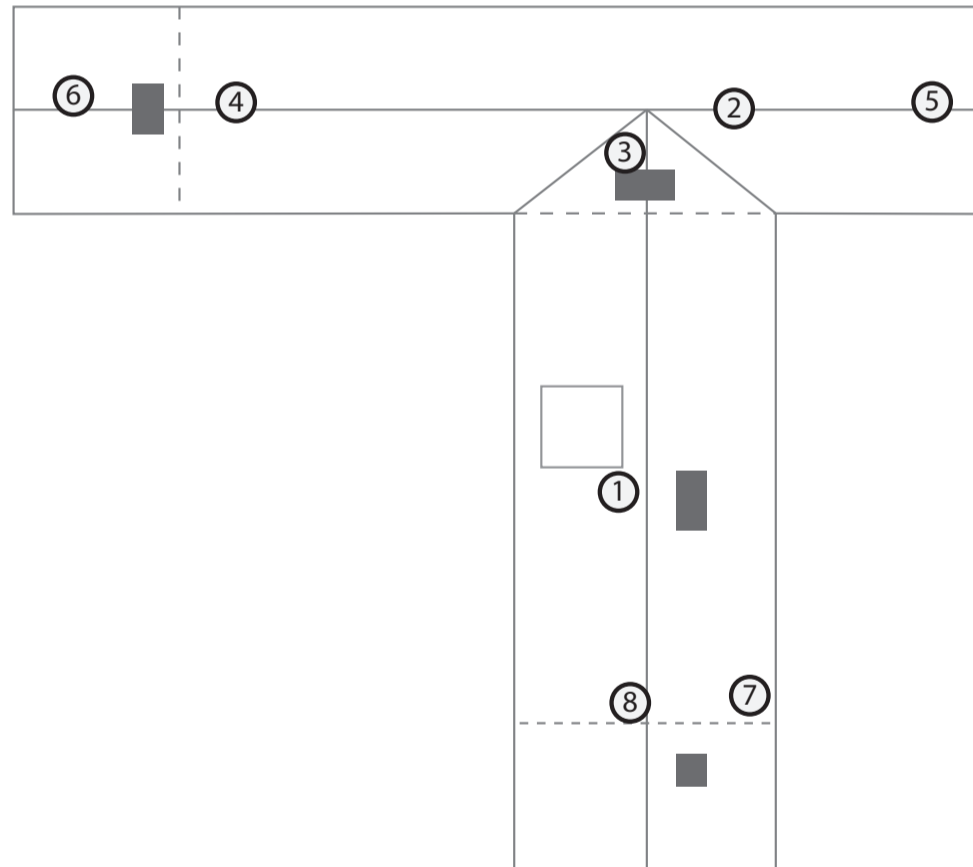
7 Figures

7.1 Figure 1

External sketch



Internal sketch



Legend

	Holes in soffit		Mouse and rat droppings
	Ridge tiles replaced by lead flashing - loose		Mouse and rat droppings
	Bird nesting material evident in hole		Old bird nest
	Lots of bird droppings inside and outside hole of soffit		Old wasp nest
	Lead flashing in valley		Hatch
	Large hole in soffit		Water tank
	Butterfly wings. Scattered mouse droppings throughout. Rat droppings present.		Internal wall to ridge
	Loose, hanging felt		
	Broken asbestos tiles		
	Mouse and rat droppings		

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BARTON FIELDS

Results of Bat Building Survey (Pavilion)

Date	DEC'10	Checked	EA	Scale	NTS
Drawn	SW	Approved	EA	Job Ref	2755.04
Status	FINAL	Dwg No.			FIGURE 1