

Our ref: P21-724 Begbroke Car Park Bat Assessment.docx

20 October 2021

Sebastian Balcombe  
Senior Land and Planning Manager,  
Oxford University Development Ltd  
Suite B,  
6 Worcester Street,  
Oxford  
OX1 2BX

By email only

Dear Sebastian

### **Bat Assessment for New Car Park at Begbroke Science Park**

BSG Ecology recently carried out an ecological impact assessment of a proposed new car park at Begbroke Science Park, Begbroke Hill, Begbroke, OX5 1PF (Cherwell District Council planning reference 21/03195/F). This assessment was reported in the *Ecological Assessment Report*<sup>1</sup> issued 27 August 2021 and submitted with the planning application.

The car park site is currently dominated by semi-improved grassland and is bordered to the north and west by a shelterbelt of semi-mature trees (planted in the early 2000s) that provide visual screening for the science park. The main buildings of the science park are to the south, and an area of hardstanding used for storage is present to the east.

The assessment identified that the grassland and shelterbelt at the car park site have some potential to provide a local foraging resource for bats and that the shelterbelt could provide very local habitat connectivity, within the science park, although there are no strong connecting habitat features to landscape features that are likely to be important for bats beyond the science park. The assessment report recommended a bat survey of the site to fully determine the value of the site for bats.

This letter reports the methods and results of this survey and assesses the impacts of the proposed new car park on bats. It forms an addendum to the *Ecological Assessment Report* and completes the ecological assessment for this development.

### **Method**

Historical records of bats from within 1 km of the site were obtained on 28 July 2021 from the Thames Valley Environmental Records Centre (TVERC).

The area around the science park is allocated for residential-led development under Policy PR8 in the Cherwell District local plan. As part of ecological surveys for this wider allocation, BSG Ecology has undertaken a range of bat surveys in 2018, including bat activity transect surveys, deployment of automated bat detectors, and roost emergence surveys of buildings at the Science Park. The results of

---

<sup>1</sup> BSG Ecology (2021) *Begbroke Science Park - New Car Park: Ecological Assessment*. <https://planningregister.cherwell.gov.uk/Document/Download?module=PLA&recordNumber=147098&planId=1756851&imageId=8&isPlan=False&fileName=Car%20Park%20Ecological%20Assessment%281%29.pdf> [accessed 20/10/21].

surveys undertaken in 2018 are reported in a separate report *Begbroke PR8 Ecology Baseline Report* submitted to Cherwell District Council in 2019. Results of these surveys are summarised below in order to provide contextual information on bat activity in the area surrounding the science park.

An additional, site-specific, bat activity survey was carried out at the site of the proposed car park in September 2021. This comprised the deployment of a Titley Scientific Anabat Express automated bat detector for eight consecutive nights between 13 and 21 September. The detector was positioned on the northern edge of the car park application site (on the southern edge of the shelterbelt) with the detector microphone facing south into the site. The purpose of the survey was to provide evidence on the use of the site by bats (including use of the grassland area for foraging and use of the southern edge of the shelterbelt along the northern edge of the site for commuting) prior to the assessment of the impacts of the new car park on bats.

Deployment of one static detector at the site for eight nights under suitable weather conditions (minimum night-time temperature over the period was around 11°C) is considered a proportionate level of survey effort for this assessment, given the limited extent of the development, the lack of roosting habitat on site, the limited potential of the existing habitat to provide important foraging or commuting habitat locally, and the extent of survey data that has been collected from the area previously.

**Results**

The desk study returned 62 records of bats, from the period 2004 to 2017. The closest was from 500 m east of the site, within Kidlington. The most common species recorded was common pipistrelle *Pipistrellus pipistrellus*, with brown long-eared bat *Plecotus auritus*, soprano pipistrelle *Pipistrellus pygmaeus*, Leisler’s bat *Nyctalus leisleri*, noctule *Nyctalus noctula*, and Natterer’s bat *Myotis nattereri* also recorded.

Surveys carried out in 2018 identified small roosts of common pipistrelle (around three individuals) and soprano pipistrelle (around one individual) bats in the Jacobean farmhouse and adjacent buildings in the southern part of the science park, located around 100 m south of the proposed car park site, beyond several large modern buildings. Bat activity transect and static detector surveys in 2018 found that the wider farmland around the science park was used by a range of bat species, with the vast majority of activity being of common pipistrelle, noctule and soprano pipistrelle. One pass each of two rarer species, barbastelle *Barbastella barbastellus* and lesser horseshoe *Rhinolophus hipposideros*, were detected.

A summary of the results of the 2021 static detector survey are shown in Table 1. This survey detected at least six species of bats, with a total of 415 bat passes being recorded over the eight nights. 95% of these passes were by soprano and common pipistrelles, 3% by noctules, and there were small numbers of passes by *Myotis* and *Nyctalus* species, and a single pass by a barbastelle.

Table 1: Numbers of bat passes recorded during eight nights of monitoring in September 2021.

Species	Minutes after sunset:						Night Period	Minutes before sunrise:						Total Passes	Passes per night
	0	21	41	61	81	101		120	100	80	60	40	0		
	-	-	-	-	-	-		-	-	-	-	-			
	20	40	60	80	100	120		101	81	61	41	21	20		
Soprano pipistrelle		173	68	61			4					2	1	309	38.6
Common pipistrelle		43	16	2		1	23							85	10.6
Noctule	3	6	1	1			2							13	1.6
<i>Myotis</i> species							3							3	0.4
<i>Nyctalus</i> species			1				2							3	0.4
Barbastelle bat							1							1	0.1
<i>Pipistrellus</i> species		1												1	0.1
<b>Total</b>	3	223	86	64	-	1	35	-	-	-	-	2	1	415	51.9

The majority of passes took place within 40 minutes of sunset, suggesting that bats using the site are roosting in the local vicinity (e.g., at the farmhouse within the science park<sup>2</sup>), initially foraging at the science park, and then moving on to other areas for the majority of their foraging. Given the extensive foraging habitats available in the general vicinity (e.g., along the wooded corridor of the Rowel Brook 240 m to the north, or the Oxford canal, 500 m to the east, and various meadows adjacent to the canal, including Rushy Meadows Site of Special Scientific interest, ca. 400 m to the north of the site), these results are unsurprising. Although these habitats are not strongly linked to the science park by connecting habitats, it is considered likely that bats roosting at the science park, and bats foraging at the car park site are likely to make use of these areas, because of the limited habitat available at the science park and the low levels of foraging activity recorded at the site during most of the night period. Since one bat may make multiple passes when foraging, the numbers of passes recorded (an average of 52 per night) are consistent with small numbers of bats foraging in this area.

The low levels of activity throughout most of the night period indicate that the site is not an important local foraging resource for bats. The low levels of activity in the pre-dawn period indicate that it is not an important commuting route for bats.

### **Impact Assessment**

Conversion of the grassland at the site to lit car parking will remove this foraging resource for bats.

The combined evidence of the desk study and survey work indicate that this grassland currently has a limited level of use by foraging bats and is not likely to be a significant local foraging resource or a significant commuting route. There are various habitat features in the local area that are likely to provide good foraging resources and potential commuting routes. These will be unaffected by the development.

The lighting scheme for the car park (attached) has been designed with input from BSG Ecology and with reference to industry guidance on bats and lighting<sup>3</sup>. In line with this guidance, all external lighting at the site will have a maximum colour temperature of 2,700°K, and the layout has been designed to avoid light spill beyond the screening vegetation which surrounds the science park. There will be no light spill onto any roosts that might be present, such as in the southern part of the science park.

A new Sustainable Drainage Scheme (SuDS) area and other planting adjacent to the eastern boundary of the car park will provide some foraging habitat for more light-tolerant species of bats such as pipistrelles (which dominate the current use of the site). Habitat creation and/or enhancement for the wider area, which will provide foraging habitat for bats, will be funded by the development through both biodiversity net gain and through the Naturespace district licence scheme for great crested newts.

Taking into account the habitats at the site, the level of use by bats and surrounding habitats and the proposed lighting scheme, the proposed development is not considered to have an impact on bat foraging habitat beyond the site itself. There will be no effect beyond the science park, and no effect on bat roosts or on commuting routes. Therefore, there will be no impact on bats at the local level and no significant impact on bats from the construction and operation of the proposed car park.

---

<sup>2</sup> They could potentially be from a wider area (bats flying at 10 km per hr, probably a conservative estimate, can cover 1 km in 6 mins), but given the limited foraging resource at the site and the limited habitat connectivity, it is considered likely that the majority of the bats recorded were from the Science Park, nearby trees or nearby areas of Begbroke.

<sup>3</sup> BCT/ILP (2018) *Guidance Note 8: Bats and artificial lighting*. BCT and LIP. <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/> [accessed September 2021].

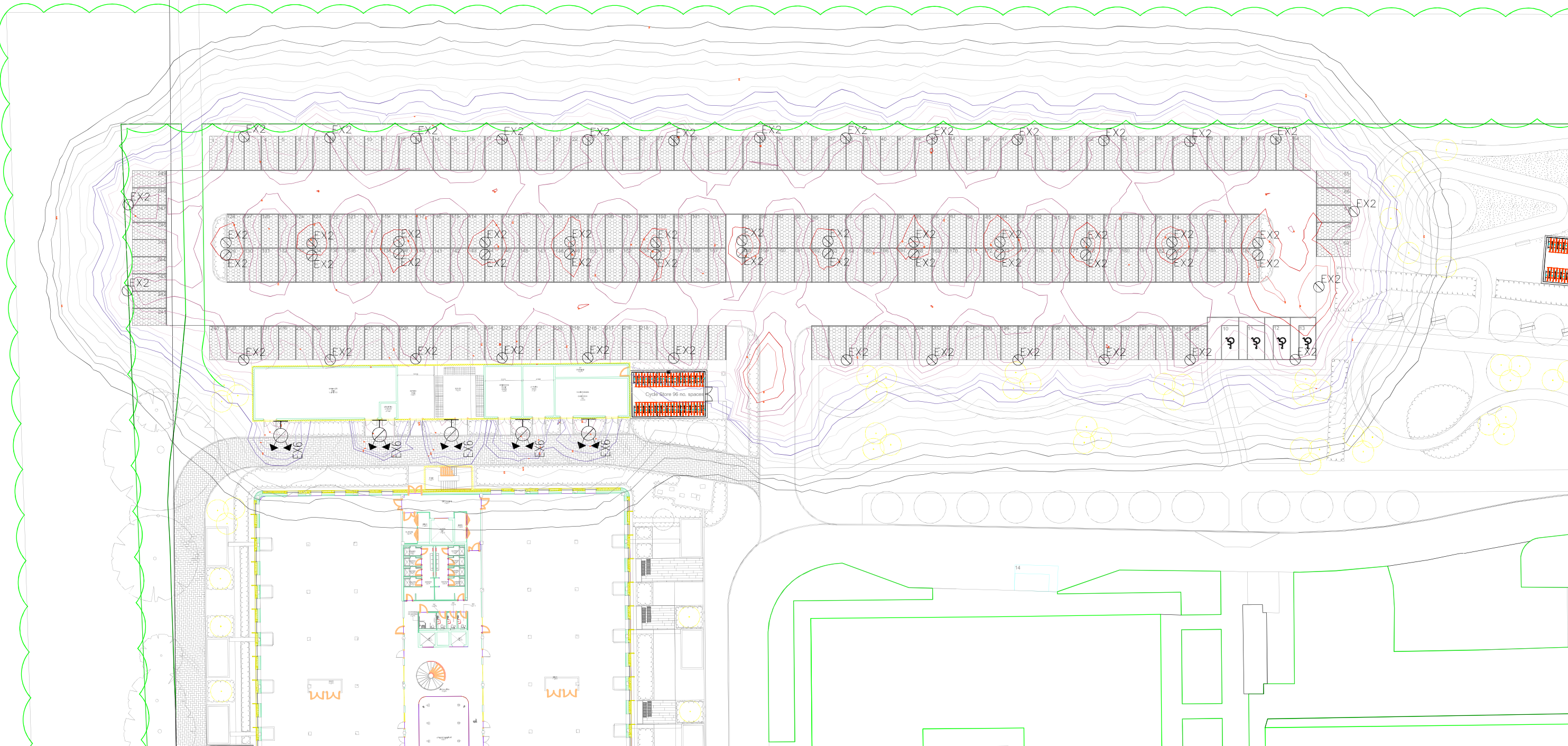
Yours Sincerely



Tom Flynn  
Principal Ecologist  
For and on behalf of BSG Ecology



This drawing shall not be scaled.  
Work from the dimensions shown in the drawing or given in relevant specifications.



**CDM Regulations:**  
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Register for information on residual risks.

**General Notes:**

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

- Project Notes:**
- Final quantities and locations to be confirmed with architect, landscape architect and client, and coordinated with final building and landscaping layout.
  - This drawing is to be read in conjunction with Hoare Lea luminaire schedule.
  - All external lighting served from DB/EXT/01.
  - All external lighting to be controlled and grouped as outlined in the External Lighting Report.

Legend	
EX2	Column mounted luminaire
EX3	Column mounted luminaire
EX4	Ballast luminaire
EX5	Pole mounted luminaire
EX6	Column mounted luminaire
EX7	Pole mounted luminaire
EX8	Linear LED strip
EX9	Recessed, soffit mounted
50 lx	5 lx
30 lx	3 lx
20 lx	2 lx
15 lx	1.5 lx
10 lx	1 lx
7.5 lx	0.75 lx

<b>ARCHITECT:</b> HBBU	<b>PROJECT TITLE:</b> Begbroke Science Park	<b>HOARE LEA (H.L.)</b>
<b>CLIENT:</b> Oxford University Developments	<b>DRAWING TITLE:</b> Electrical Engineering Systems Car Park Lighting Layout	
<b>Preliminary Issue</b>		
<b>PERSON RESPONSIBLE FOR:</b>		
Design: MSJ	Review: LS	Authorising Issue: MSJ
Project No: 3103719	Date: August 2021	Scale @ A0: 1:5000
DRAWING NUMBER: BBSP-HLEA-XX-XX-DR-E-708-002		Revision: P1

P1	Stage 3 Issue	JK	LS	MSJ	DB/21
REVISIONS:	Drawn by	Checked	Approved	Authorised	Date