

Winter bat habitat assessment *with* Spring addendum
at
the Drama Hall, Computer Suite and Prayer Huts
Kingston University,
Kingston Hill,
Kingston upon Thames.

Furesfen



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CONTROL SHEET

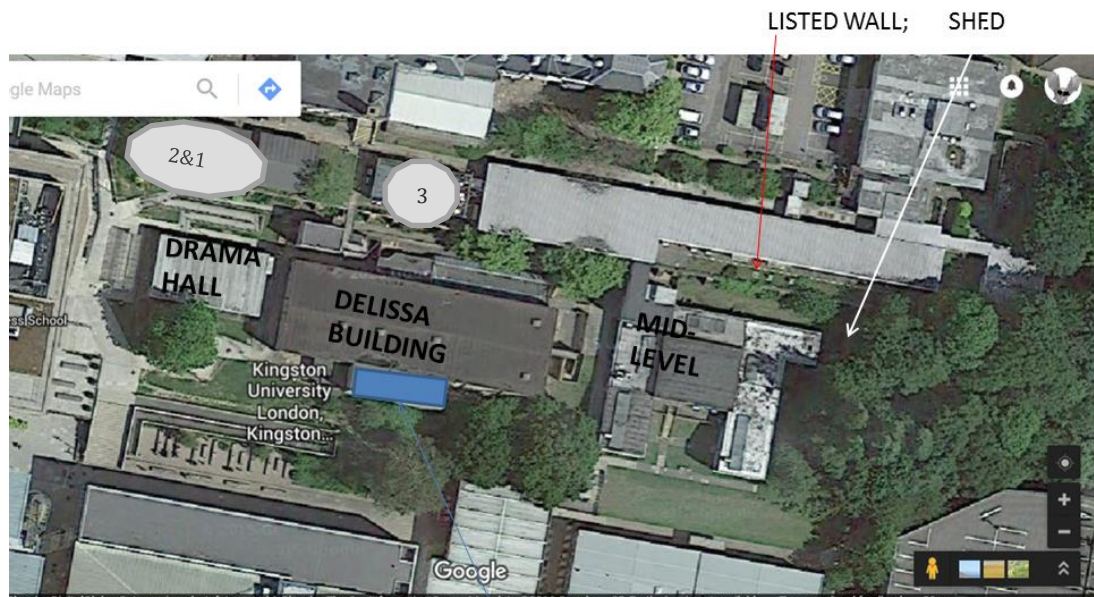
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Job Title. Rev.2 Dismantling of the Drama hall, Computer Suite and Prayer Huts

Purpose External use

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Fig.1 to show the Drama hall and ancillary structures mentioned in this report: 1&2 indicate the Prayer huts and 3 is the location of the computer suite.



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Mapdata Google

ADD-ON

Introduction

Background

- 1.1 Furesfen was asked to undertake Winter Preliminary bat habitat assessment (PBHA) at Kingston Hill University Campus, Kingston upon Thames (TQ206715) on four buildings and structures: the Drama hall, Computer suite and Prayer Huts 1 & 2.
- 1.2 The survey found that a bat emergence survey was required. This was undertaken in May, 2021 prior to planning submission and reported as an Addendum to the PBHA.

Site Description and habitat

- 1.3 The Drama hall is constructed along the 'mid-level' of an escarpment next to the De Lissa building. On the top terrace the Prayer Huts are situated (number 2 is opposite Kenry House) on the west side of the path and the Computer suite is located on the east side. The dividing line between the two levels is a fine old wall that is a listed structure.
- 1.4 The mid-level buildings described in this report are known as (from west to east) the Drama Hall, and the De Lissa Building.
- 1.5 From west to east the mid-level vegetation is on an urban - parkland gradient as follows:
 - A semi-mature horse chestnut tree set in paving outside the Drama hall;
 - Semi-improved grassland and semi-mature oak trees on the south elevation of the De Lissa Building;
 - Lawns on the front terrace at the Mid-level Building;
 - Community garden (raised beds) to the east of the Mid-level Building; and
 - Beyond the community garden lies the ancient woodland described below.
- 1.6 The London Ecology Handbook 1992 describes the habitat on-site as follows: a large area of the campus is designated a Site of Grade 1 Nature Conservation Interest (SNCI). The woodland here was once part of the ancient Coombe Wood, consisting mainly of oak *Quercus robur* with some old planted beech *Fagus sylvatica* and sweet chestnut *Castanea sativa*.
- 1.7 The De Lissa Building hosts the largest roost of common pipistrelles *Pipistrellus pipistrellus* known in the borough, comprising of almost 160 bats. It is a mixed roost; up to a third of the bats can be soprano pipistrelles *P. pygmaeus*.

Proposals

- 1.8 The proposals entail the dismantling of the four structures, and returning the area to a landscaped garden.

Aims of Assessment

- 1.9 The purpose of this assessment was to:
- (a) Determine whether there is any potential for winter or summer roosting at the structures and the Drama Hall;
 - (b) Advise of any mitigation measures that may be required to minimise the impact of the proposed works on the bat colony known to roost at the De Lissa building (situated to the east of the Drama Hall).
- 1.10 This reports on the findings of the bat assessment and gives details of appropriate mitigation and proportional enhancement measures that may be required to proceed lawfully with the proposed works.

METHODOLOGY

Desk study

2.1 A desk study was undertaken using widely available information as follows:

- Roost counts from the De Lissa building;
- Emergence and Activity Surveys at the Drama Hall from the end of May through to July 2016. These surveys incorporated the nearby features such as the horse chestnut tree.
- MAGIC (Multi Agency Geographic Information for the Countryside) website (<http://magic.defra.gov.uk/>).

Building Inspection

2.2 All buildings were inspected for the potential for bat ingress as Winter surveys are basically a risk assessment; there will be no sign of any droppings or signs of staining on the elevations or window sills, when bats have been in hibernation for some time. Instead, low, medium or high potential scores are used to determine the level of risk of bat interest.

2.3 The survey was carried out using binoculars and high-powered torches.

2.4 The surveys were conducted during suitable temperature 8 degrees and bright weather conditions.

2.5 The survey methods were in accordance with The Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines - 3rd Edition* (Collins, 2016), and *The Bat Worker's Manual* (Mitchell-Jones and McLeish, 2004).

Surveyor Information

2.6 The surveys were undertaken by A. Fure Class 2 Bat Licence (Natural England licence number 2015-10381-CLS-CLS) a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Limitations

2.7 There is restricted visibility to all the roof areas. The roof of the Drama Hall and Computer suite cannot be seen, emergence surveys would usually cover this limitation.

2.8 However, this assessment was sufficient to inform mitigation measures required to avoid impacts to features with potential to support roosting bats.

- 2.9 This was not a badger survey and further checks might be required to ensure that there are no mammals under the buildings.

RESULTS

Bat Records

- 3.1 London Bat Group records ten bat species within 1 km of the application site. This includes colonies of two species on the campus, including a large *P. Pipistrellus* maternity colony. The colony has been known to use different access points and roost sites in the same building. This is a mixed roost with soprano pipistrelle bats.
- 3.2 Bats use the southern elevation and exit via the expansion joints from two locations in the same panel as well as other location along the southern elevation.
- 3.3 The metal structure supporting the block work is trussed together internally. The further the area of wall from these ties, the larger the gaps between 'steel's and walls. The bats are able to exploit these gaps and exit and enter to the cavity underneath windows at the south elevation.
- 3.4 Bats also use the flat-roof at the add-on situated along the south elevation. The roost has been monitored for previous works. This is the largest and most important colony of common pipistrelles known in the borough. Bats hibernate in winter and there are no records only of transitional roosts.
- 3.5 A surveyor at the Drama Hall 2016 recorded no emergence at the building and no bat passes. The building was well lit, particularly on the northern elevation where light levels were thought to be beyond the tolerance of pipistrelle bats.
- 3.6 During 2016 surveys seventy five percent of the bats moved in a southerly direction from their roost. The remainder chose an easterly direction across the roof of the Mid-level Building (some using the arch and travelling along the wall). **No bats moved west** without re-orientated themselves south. A commuting route was established into the woodland.

Table 1: Status of bats recorded in the local catchment.

Species	Frequency	Main roosts sites
Common pipistrelle	Common	Usually roosts in buildings Large colony on site and another within 1 km
Soprano pipistrelle	Common	Buildings and trees especially near water Communal roost at the De Lissa Building Transitional roost at Dorich house
Nathusius' pipistrelle	Rare	Flight records 825m north
Brown Long-eared bat	Common	Roosts at two locations within 820m west
Daubenton's bat Myotis daubentonii	Relatively common	Trees, structures and underground sites. Roosts within 1km
Natterer's bat Myotis nattereri	Fairly common	Trees and barns Roosts within 1 km
Whiskered/ Brandt	Uncommon (3 species in the group)	Old buildings and trees Records within 1 km
Leisler's bat	Rare	Flight records nearby
Noctule bat <i>Nyctalus noctula</i>	Becoming less common	Trees – Flight records on campus
Serotine bat <i>Eptesicus serotinus</i>	One of the rarer species in London	Flight records in Richmond Park and from Kingston Hill campus

Adapted from Mitchell-Jones (2007)

LBG=London Bat Group records

Building Inspection

Drama Hall

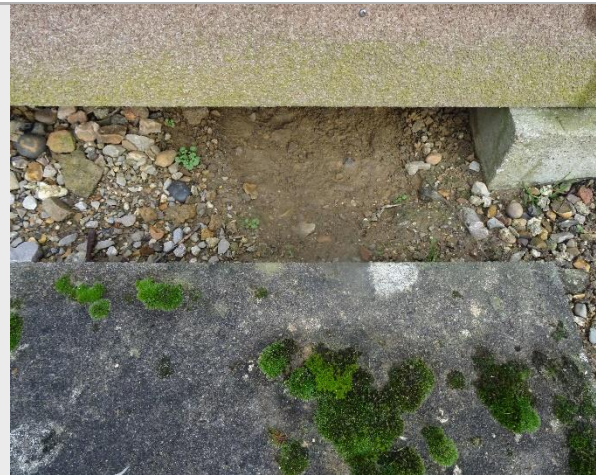
- 3.7 The Drama Hall presented as a steel framed portacabin located to the west of the Delissa hall. It was in an urban setting with no vegetation links except the semi-mature horse chestnut tree. The desk study revealed that no bats were recorded around the building during an emergence survey (2016).
- 3.8 There were no gaps at the windows or under the roof. The metal 'stringers' across the elevations are sealed leaving no gaps.
- 3.9 The roof material was steel corrugated sheeting. There was an upstand on the north elevation and the roof slopes towards it. No rebated material could be located with binoculars when viewed from the top terrace and no soft flashings could be seen.
- 3.10 The desk study indicated that the building is well lit with lights at every corner. The north elevation is lit from additional luminaires along the pathway.

- 3.11 A mammal 'smeuse' or trail was noted going under the building at the south east corner and the soil board was removed with the help of staff. Hardboard flooring had collapsed to block a clear view of the area, but no burrows or dens could be seen.
- 3.12 Mammal hair was noted along with feathers, which might have resulted from an old nest of mouse or bird.
- 3.13 The Drama Hall has no potential for bat ingress. There was potential for larger mammals to go underneath the building.

Table 2. Photographs – External Building Inspection Drama Hall



Photograph 1. South elevation: arrow marks location of animal ingress



Photograph 2. Animal ingress beneath the building



Photograph 3. Upstand of roof: photo taken from Top level- indicates there is no flashing material that bats can infiltrate.



Photograph 4. Indicating the lights that exist at each corner of the building

Computer Suite

- 3.14 The computer suite was a featureless brick-built block. The roof was asphalted and was secured by a metal finishing strip, which should be difficult for any animal ingress.
- 3.15 However, this is a repeatable feature at the university and bats have been located at the flat roofs (the De Lissa add-on, Bridge House). Although it is unlikely, the possibility must be considered.
- 3.16 For this reason, the building has been determined as no-low potential. The 'low' score, will mean mitigation during demolition will be required.
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Table 3. Photographs – External Building Inspection Computer suite and Prayer Hut 2



Photograph 5. South elevation of computer suite



Photograph 6. Services link has cladding but no suitable gaps were found



Photograph 7 Hut 2 with access ramp



Photograph 8 may have limited potential for access on east flank wall as cladding has gaps

Prayer Hut

Prayer Hut 2

- 3.17 Prayer Hut 2 was located close to the archway and the wall and is distinguished in this report by its access ramp. The roof line was constructed slightly differently to Hut 1. This involved the eaves construction and the courses of cladding beneath the soffit.
- 3.18 There was damaged cladding on the east wall that could allow bat ingress to the cavity. The potential for bat interest at Hut 2 is no to low potential and the mitigation will be the same as for the Computer suite.

Prayer hut 1

- 3.19 Prayer Hut 1 had several features that would allow bat ingress. These included:
- a large gap in the fascia above windows at the south elevation. This might allow access to the soffit box (photo 10).
 - missing plywood at the soffit box on the south-west corner of the building.
 - a gap in the barge board at the gable apex at the west flank wall (photo 11).
 - gaps in the cladding that would allow access to the cavity. The fabric of the interior wall could be seen using a torch (photo 12).
- 3.20 The potential for bat interest at Hut 1 is scored as 'medium' and the mitigation will be a requirement for a bat emergence survey prior to dismantling.
- 3.21 This survey cannot be undertaken until Spring rising temperatures. The building will need to be dismantled at a later date.

Table 3. Photographs – Prayer Hut 1



Photo 9. South facing elevation



Photo 10. Hole in fascia marked by arrow at photo 9



Photo 11. West flank wall gable apex



Photo 12. Cladding on west elevation

ASSESSMENT

Discussion of Findings

- 4.1 There is no potential for bats to roost at the Drama Hall. The building has no features that could be of bat interest and is lit beyond the tolerance of most bat species. The vegetation links are also poor with the exception of a horse chestnut tree.
- 4.2 It must be considered that animals could be denning underneath the building, as ingress has been noted.
- 4.3 There is no-low potential for bats to roost at the Computer suite and Prayer Hut 2 and the dismantling can occur with a team talk and short watching brief on the areas mentioned at any time over the winter.
- 4.4 There is medium potential for bats to use the Prayer Hut 1 and for this reason an emergence survey must be performed prior to dismantling. This means that the building cannot be dismantled until milder temperatures occur (> 10 degrees centigrade night time temperatures).
- 4.5 All species of bat found in Britain, and their roosts, receive protection under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended) and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). These legislative tools make it an offence for any person to:
- Deliberately **capture, injure or kill a bat**;
 - Intentionally or recklessly **destroy a breeding or resting place (roost) of a bat**; and,
 - Intentionally or recklessly **obstruct access for bats to a roost** or to otherwise significantly alter the structure of a roost so as to render it unsuitable to support roosting bats.
- 4.6 Therefore, the mitigation measures provided below must be implemented in order to ensure impacts to bats, or their roosts, are avoided during, or as a result of, the works. The following are suggestions.

RECOMMENDATIONS

Mitigation

4.7 Mitigation measures to avoid direct impacts to bats and features with potential to support roosting bats

Table 4. Preliminary steps

Building or tree	Bat Potential or use	Summary Mitigation
Prayer hut 1	medium	There is bat potential for bat ingress at the south elevation and the building should have a bat emergence survey before demolition. This is dependent on the time of year. If bats are found during the emergence survey a European Protected Species licence will be necessary.
Computer Suite & Prayer hut 2	Low	<ul style="list-style-type: none">• Undertake a team talk to the dismantling team; and a• Soft strip certain areas of the buildings.
Drama Hall	None	The building can be demolished immediately Regard to mammal ingress under the building

Precautionary Approach

4.8 In the unlikely event that bats are encountered during the proposed works then all works must cease immediately and a licensed bat ecologist must be called to site. In this event, works may not recommence until the ecologist has consulted Natural England and agreed a suitable and lawful way to proceed.

REFERENCES

Archer J., 1992 London Ecology Unit Handbook

Furesfen 2016 Mid-level building and Drama hall emergence surveys

HMSO (2006) Natural Environment and Rural Communities Act 2006. HMSO, London.

HMSO (2010) Conservation of Habitats and Species Regulations 2010. HMSO,

<http://www.magic.defra.gov.uk>

Collins (2016) Third Edition Bat Surveys, Good Practice Guidelines. Bat Conservation Trust, London.

Mitchell –Jones A.J. & McLeish A. P. (Ed's). (2004) 'Bat workers Manual' JNCC

ADDENDUM

Author	Alison Fure BSc, MSc C.ENV MCIEEM
Job Title.	Drama hall, Computer Suite and Prayer Hut dismantling 17.5.21
Purpose	External use

Emergence survey

Survey 14.5.21

- 1.1 An emergence survey was carried out during the evening of 14.5.21. The survey was carried out in suitable temperatures of 13 degrees centigrade, after five days of comparable evening temperatures, when it can be considered that bats are active.
- 1.2 The survey was undertaken by A. Fure Class 2 Bat Licence (Natural England licence number 2015-10381-CLS-CLS) assisted by S. Sivanesan. A. Fure is a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 1.3 Static detectors (EMT and SD1) were placed at the west flank of Prayer Hut 2 (Location A) and the service link bridging the computer suite (Location B). Surveyor 1 was located to the south-west of the flank wall of Prayer Hut 1 (which was also the south-east flank wall of Prayer Hut 2) and Surveyor 2 at the south-east flank wall of Prayer Hut 1.
- 1.4 During the emergence survey of the Prayer Huts, no bats were recorded *exiting the buildings* by the two surveyors located at the south-west and south-south elevations of the Prayer Huts.

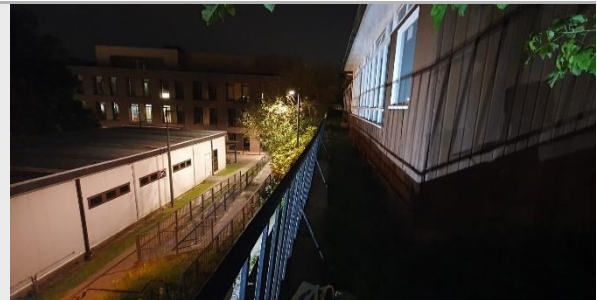


- 1.5 A high-flying noctule bat was recorded at 21.39 the west flank of Prayer Hut 2 on the static detector (Location A) and by Surveyor 1 at Prayer hut 2.
- 1.6 No additional bat activity was logged, although bats could be seen flying over the woodland canopy to the north of the study site.

Table 1. Photographs



Photograph 1. Nearby lights reflecting onto north elevation of buildings



Photograph 2. Reflected light onto the south elevation of the Prayer Hut 1 and the Drama Hall (Photo: S. Sivanesan).



Photograph 3. The area under the buildings has been sealed against animal ingress



Photograph 4. Static bat detector placed under the service link



Findings

- 1.7 No bats were recorded emerging from the buildings. Only one bat species was recorded flying within range of the bat detectors, and that was a noctule bat. Noctule bats are associated with trees and do not roost in buildings (in this country).
- 1.8 Light spillage was noted on features that might be of potential bat interest, identified in the PBHA report, especially along the south and north elevations (*refer to Photo 2*). At the north elevation there was a faulty light flickering at intermittent intervals. *The features of potential bat interest were therefore not optimised.*
- 1.9 The lack of bat activity is consistent with previous surveys that indicate that, bats do not use this corridor as a flyway, possibly due to the amount of light pollution from direct light spillage and glare. However, there is vegetation at this location that could screen out light spillage depending on how it is managed in the months prior to demolition.
- 1.10 For this reason, and in line with the PBHA, a bat emergence survey will be required *within 10 days of the demolition of Prayer Hut 1*. It will act as a check on the continued efficacy of the one-way gates installed to prevent animal ingress underneath the buildings (including the Drama Hall).

Mitigation

- 1.11 The Demolition Method Statement (KPH May 2021) has been received and agreed. The demolition will be undertaken by hand and the soffits boxes soft - stripped. The route to demolition was described at Table 4 in the PBHA. A second bat emergence survey will be undertaken within 10 days of demolition - provided it occurs before October 2021 - repeating the methodology described above.
- 1.12 A Team Talk will be given prior to the soft strip. This will relay to the operatives any features of particular interest where cladding should be inspected for signs of bat droppings. These talks are routinely undertaken at the University and the team are usually shown *sample* bat droppings. A contingency will be in place should any droppings or animals be found.



Post - demolition

1.13 A formal landscaped garden will replace the buildings. This will be designed by consultants.

The railings between the huts and the edge of the terrace are entirely suitable for climbing plants. It would be good for insects, particularly for night flying moth species, if some of the following species of climber could be incorporated into the landscape plan:

- Winter-flowering honeysuckle,
- Winter- flowering clematis,
- Winter jasmine, and
- Golden hops.

Appendix

Table 3 Bat activity (14.5.21)

Conditions: Sunset: 20.44. Cloud Cover 3/8. Temperature 13°C at start. Wind at Beaufort 2.

Time	Detectors used: Duet. EMT Pro, SD1 AF (Surveyor 1) SS (Surveyor 2)
20.30	Start time
21.39	Noctule bat overhead
22.00	Survey ends

