Thomson
environmental
consultants



Bat Surveys

256 Gray's Inn Road

For

ISG Ltd

Project No.: OISG113/003/001/001

July 2020

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OISG113/003	001

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001	30/07/2020	Anna Clark	Oliver Silver

Disclaimer:

Contents

1. Summary and Main Recommendations

1.1 Summary

1.1.1 University College London is proposing the redevelopment and refurbishment of an area of land located at 256 Gray's Inn Road, London, WC1X 8LD. The proposals include the creation of a dementia and neurology research centre and additional academic space for University College London. The location of the site is shown on Figure 1.

1.1.2 Thomson Environmental Consultants previously undertook a Preliminary Ecological Appraisal, Preliminary Roost Assessment of buildings, Preliminary Ground Level Roost Assessment of trees and further dusk emergence/dawn re-entry surveys of the site in 2018 and 2019.

1.1.3 Planning condition 27 for the development states that "*If more than 12 months elapse between the date of the approved bat survey (March 2019) and commencement of development, an updated bat survey shall be submitted to and approved in writing by the local planning authority. Such survey to be carried out by a suitably qualified ecologist and accompanied by a report confirming the results and implications of the assessment, including any revised mitigation measures".* ISG Ltd commissioned Thomson Environmental Consultants on 3rd July 2020 to undertake the updated bat surveys for the development, comprising a Preliminary Roost Assessment of buildings, Preliminary Ground Level Roost Assessment of trees and dusk emergence surveys.

1.1.4 The updated Preliminary Roost Assessment of buildings and Preliminary Ground Level Roost Assessment of trees were undertaken on 20th July 2020. Two new Potential Roost Features in the form of damaged ventilation features were recorded on building B1, however the overall suitability of this building to support roosting bats was assessed as 'low' (see Figures 2 and 3). No new Potential Roost Features were recorded on buildings B2-B9 on site. Building B6 was assessed as having an overall low suitability to support roosting bats, and buildings B2-5 and B7-9 were assessed as having a negligible suitability to support roosting bats.

1.1.5 No new Potential Roost Features were recorded on trees on the site or directly adjacent to the site. Trees T1-22 and T26-29 were assessed as having a negligible suitability to support roosting bats and trees T23-25 were assessed as having a low suitability to support roosting bats (see Figure 2). This represents no change from previous assessments in the overall suitability assigned to the buildings and trees on site to support roosting bats.

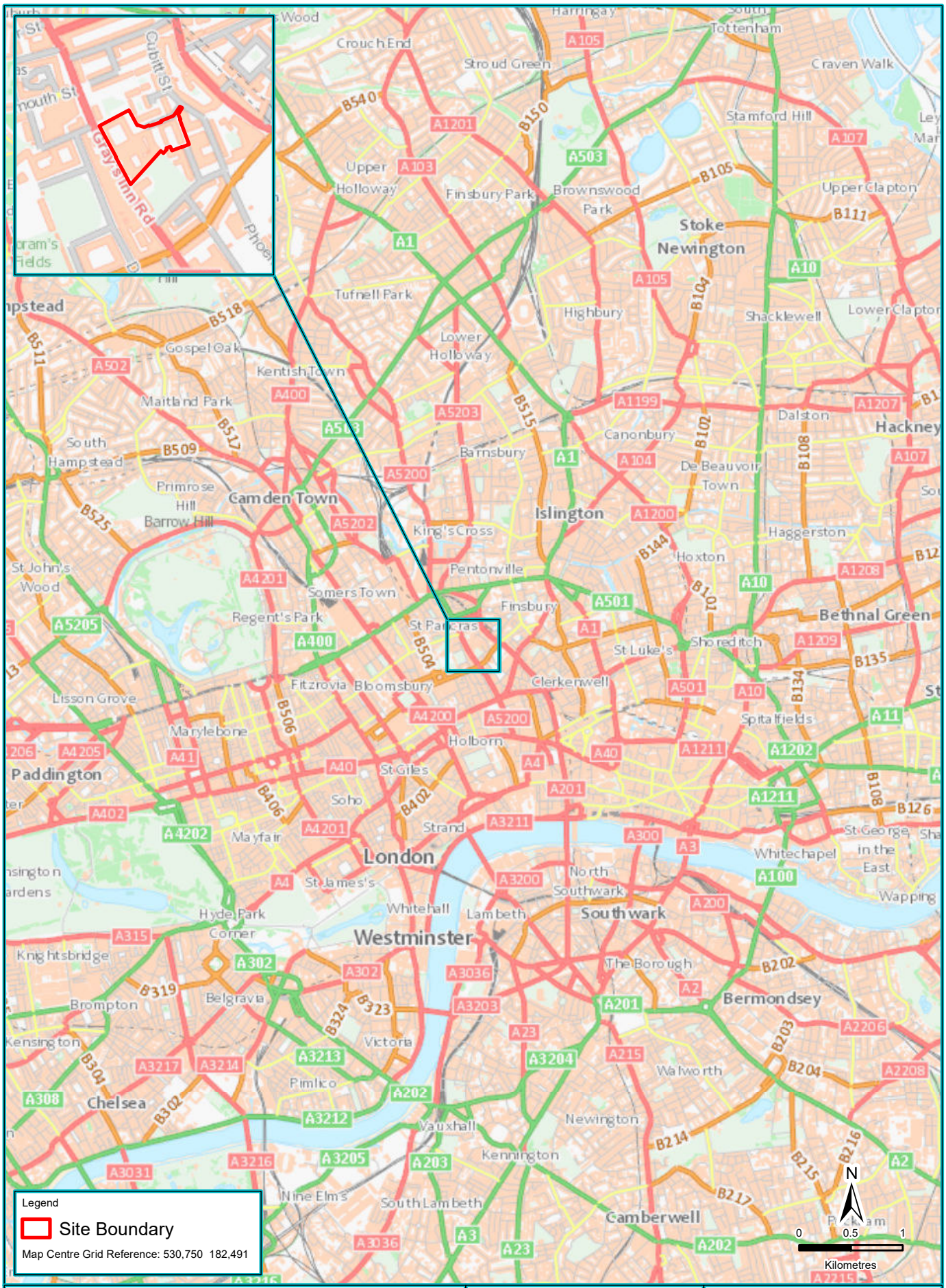
1.1.6 Further dusk emergence surveys were undertaken of buildings B1 and B6 on 20th July and 21st July, respectively, in line with the Bat Conservation Trust's Best Practice Guidelines. No bats were recorded emerging from or re-entering buildings B1 and B6 during the dusk emergence surveys. No incidental bat activity was recorded during the dusk emergence survey of building B1. Incidental common pipistrelle calls were recorded during the dusk emergence survey of building B6. The highest level of activity was recorded at surveyor location L9 which is adjacent to St. Andrew's Gardens, a small public park located immediately to the south of the site.

1.1.7 All bat species are protected by the Conservation of Habitats and Species Regulations 2017, as amended. In addition, bats are also partially protected in England under the Wildlife and Countryside Act 1981, as amended. As no evidence of roosting bats was recorded during the updated Preliminary Roost Assessment, Preliminary Ground Level Roost Assessment and dusk emergence surveys, it can be concluded that bats are likely absent from all buildings and trees on site and the development should be compliant with legislation and policy relating to bats. However, as incidental bat activity was recorded during the dusk emergence survey of building B6, recommendations are made below to ensure that disturbance to bats in the local area is minimised during the development.

1.2 Main Recommendations

1.2.1 The main recommendations are set out below:

- No further surveys or mitigation with regards to bats is required for the buildings and trees within the site boundary and the proposed demolition works can proceed without delay.
- Site lighting should be directed away from the surrounding area, specifically St. Andrew's Gardens to the south of the site, during construction works to minimise disturbance to bats in the local area.
- Precautionary working methods should be employed during the development to minimise disturbance to trees T23-25. The following precautionary working methods should be implemented during the construction phase of the works:
    - All site lighting should be directional, sensor controlled, accurate and directed away from trees T23-25;
    - Heras fencing and dust sheets should be installed to keep dust produced from demolition and construction away from trees T23-25; and
    - A root protection zone should be established around trees T23-25 for the duration of the works. Should any pruning/removal of trees be necessary, ecological advice should be sought.
- Bat boxes suitable for common pipistrelle could be incorporated into the landscaping plans for the development to provide additional roosting opportunities for bats in the local area.
- An updated Preliminary Roost Assessment and Preliminary Ground Level Roost Assessment survey will be required should a period of two years elapse between the date of the survey (20th July 2020) and the commencement of construction activities.
- If a period of one year elapses between the date of the dusk emergence surveys (20th-21st July 2020) and the commencement of construction activities, these surveys should be updated.



Client: ISG Construction Ltd		Drawing Ref: OISG113/30136/1	
Figure Number: 1		Scale at A4: 1:50,000	
Figure Title: Site Location		Drawn: EA	Checked: AS
		Date: 27/07/2020	Date: 27/07/2020

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Sussex Wing
Victoria Wing
Alexandra Wing
Royal Free Hospital
Levy Wing
Eastman Dental Hospital
B1
B2
B3
B4
B5
B6
B7
B8
B9
SL01
SL02
SL03
SL04
SL05
SL06
SL07
SL08
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T19
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T25
T26
T27
T28
T29
T30
T31
A5200
St Andrew's
N
0
10
20
Metres

Filepath: S:\Guildford\Projects\OISG113 -Bat Surveys and Watching Brief 256 Gray's Inn Road\Mapping\Working\Quote 003\OISG113_Fig2_BatSurveyResults_EA_270720.mxd

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Legend

Surveyor Location and Direction

Potential Roost Feature (PRF)

- Damaged brick/stonework
- Missing brick/stonework
- Gap(s) behind gutter
- Hole in soffit
- Lifted/raised flashing
- Missing mortar
- Lifted/raised roof tile
- Gaps between cladding
- Open venilation feature
- Crack/Split(s) in render/plaster
- Damaged ventilation feature
- Exposed brick edge with multiple gaps between mortar and missing bricks
- Lifted wooden tiles (hanging)
- Missing mortar
- Raised flashing

Indicative Potential of Building/Tree to Support Bats

- Low
- Negligible
- Low
- Negligible
- Site Boundary

Site Grid Reference: 530,749 182,492

Drawing Ref	OISG113/30137/1
Scale at A3	1:550
Drawn: EA	Checked: AS
Date: 27/07/2020	Date: 27/07/2020
Client	ISG Construction Ltd
Figure Number	2

Figure Title

Preliminary Roost Assessment, Preliminary Ground Level Roost Assessment and Dusk Emergence Survey Results

Photograph 1:
Building B1 (Eastman Dental Hospital), assessed as having low suitability to support roosting bats during the PRA.

Photograph 2:
The first new damaged ventilation feature recorded at a height of 6m on the north east face of the Victoria Wing of building B1 during the PRA.

Photograph 3:
The second new damaged ventilation feature recorded at a height of 9m on the north east face of the Victoria Wing of building B1 during the PRA.

Photograph 4:
Trees T23-25, located adjacent to the site boundary and assessed as having low potential to support roosting bats during the PGLRA.

Photograph 5:
Building B6 (Frances Gardner House), assessed as having low suitability to support roosting bats during the PRA.

Photograph 6:
Raised flashing and missing mortar along the top of the exterior walls recorded on building B6 during the PRA.

Client: ISG Ltd		Drawing Ref: OISG113/30157/1	Thomson environmental consultants
Figure Number: 3		Drawn: AC / Checked: OS	
Figure Title: Photographs of the Site		Date: 27/07/2020	www.thomsonec.com enquiries@thomsonec.com

2. Introduction

2.1 Development Background

2.1.1 University College London is proposing the redevelopment and refurbishment of an area of land located within the London Borough of Camden. The proposals include the creation of a dementia and neurology research centre and additional academic space for University College London. These proposals are hereafter referred to collectively as the "development".

2.1.2 The development will be located on a 1.21 hectare area of land at 256 Gray's Inn Road, London WC1X 8LD. The land is bounded to the west by Gray's Inn Road, to the north by the Calthorpe Project and the New Calthorpe Estate, to the east by Langton Close, and to the south by Trinity Court and St Andrew's Gardens. The land currently comprises the vacant Eastman Dental Hospital. The rear part of the site comprises the student accommodation at Frances Gardner House. The area affected by the development is hereafter referred to as the "site". The location of the site is shown on Figure 1.

2.1.3 Full planning permission for the development, subject to a Section 106 legal agreement, was granted in March 2020 (application reference: 2019/2879/P).

2.2 Ecology Background

2.2.1 A Preliminary Ecological Appraisal (PEA), Preliminary Roost Assessment (PRA) and Preliminary Ground Level Roost Assessment (PGLRA) were undertaken of the site by Thomson Environmental Consultants in April and August 2018. A further PEA and PRA were undertaken of Frances Gardner House at the rear of the site in March 2019. During the extended Phase 1 habitat surveys, six habitats were identified at the site including buildings and hard standing, scattered broadleaved trees, introduced shrub and bare ground (Thomson Environmental Consultants, 2019). The Eastman Dental Hospital building (building B1) and Frances Gardner House (building B6) were assessed as having low overall suitability to support roosting bats, and as a result further surveys in the form of dusk emergence and dawn re-entry surveys were recommended.

2.2.2 Dusk emergence and dawn re-entry surveys were undertaken of building B1 in August 2018 and October 2019. Dusk emergence and dawn re-entry surveys were undertaken of building B6 in October 2019. No bats were recorded emerging from or re-entering building B1 during the 2018 dusk emergence and dawn re-entry surveys. Equally, no bats were recorded emerging from or re-entering either building B1 or B6 during the 2019 survey effort. The dusk emergence and dawn re-entry surveys undertaken in October 2019 did not conform to best practice guidance with respect to survey timings and weather conditions and as such roosting bats could not be assessed as 'likely absent' from the buildings (Thomson Environmental Consultants, 2019).

2.2.3 Planning condition 27 for the development states that "*If more than 12 months elapse between the date of the approved bat survey (March 2019) and commencement of development, an updated bat survey shall be submitted to and approved in writing by the local planning authority. Such survey to be carried out by a suitably qualified ecologist and accompanied by a report*

confirming the results and implications of the assessment, including any revised mitigation measures.". To satisfy this planning condition, updated bat surveys are required for both buildings.

2.2.4 A summary of the biology, conservation status and legal protection of bats is given in Appendix 1.

2.3 The Brief and Objectives

2.3.1 ISG Ltd commissioned Thomson Environmental Consultants on 3rd July 2020 to undertake an updated bat survey for the development. The brief was to:

- Carry out updated bat dusk emergence bat surveys for the Eastman Dental Hospital and Frances Gardner House buildings in line with best practice guidelines (Collins Ed., 2016) with one dusk emergence survey to be undertaken from approximately 12 surveyor locations. Immediately prior to the dusk survey, the buildings and trees on site to be inspected to identify any new potential roost features for bats; and
- Produce a technical bat report, supported by appropriate digitised mapping, for the updated bat surveys. The report to include the methods and results of the updated bat surveys, a discussion of any legal considerations and our recommendations as to how these may be overcome. The report to also include recommendations for further survey and mitigation, where necessary.

2.4 Limitations

2.4.1 This report is based on the development boundary and layout provided in the planning application. Subsequent changes to the development boundary may result in a requirement to reassess the potential impacts of the development and the requirements for avoidance, mitigation and enhancement.

2.5 Surveyors

2.5.1 The updated PRA and PGLRA surveys were undertaken by Anna Clark BSc (Hons) MSc ACIEEM. Anna holds a Natural England Level 1 Class Licence for bats (registration number: 2019-39181-CLS-CLS).

2.5.2 The dusk emergence surveys were undertaken by Anna Clark BSc (Hons) MSc ACIEEM, Alex Walker BSc BA ACIEEM, Laura Farrar BSc (Hons) MSc, Callum Parradine BSc (Hons), Gary Price FdSc, Georgina Hole BSc (Hons) and Eloise Stradling BSc.

3. Methodology

3.1 Background

3.1.1 Each building on site (buildings B1-9) and all trees on site and within 3m of the site (T1-29) were inspected to update the PRA and PGLRA surveys and assess their suitability to support roosting bats. This was followed by dusk emergence surveys of buildings B1 and B6, which were assessed as having a low overall suitability to support roosting bats. All surveys followed the Bat Conservation Trust's Best Practice Guidelines (Collins Ed., 2016).

3.2 Updated Preliminary Roost Assessment and Preliminary Ground Level Roost Assessment

Preliminary Roost Assessment

3.2.1 Each building was searched for Potential Roost Features (PRFs) which provide potential roosting opportunities for bats. Potential access and egress points were also searched for.

3.2.2 Any features which provide potential roost sites identified during the survey were then subject to more detailed inspection.

3.2.3 Evidence of roosting bats searched for included:

- Bat droppings, feeding remains and corpses (with notes made on quantity, freshness and type);
- Dark staining below an access point that may be caused by bat faeces or urine; and
- Staining around a hole that may be caused by the natural oils in bat fur.

3.2.4 Any evidence of bats found was recorded together with a note on the location. If any bat droppings were found, their location, spread, approximate number and age were recorded on a GPS enabled mobile mapper.

3.2.5 A PRA includes the systematic external and internal inspection of a building or structure. The methods are detailed below.

External Inspection of Buildings

3.2.6 Where possible to determine, the following information was recorded for each building present:

- Type (House, flats, barn, wall, church, commercial, public or other);
- Year built (present -1960, 1960 – 1914, before-1914 or unknown);
- Wall material (brick, stone, wood, concrete, metal or other), construction (solid, cavity or filled cavity) and presence of other materials (rendering, hanging tiles, wooden weather boards, plastic or metal cladding);
- Presence and form of roof (absent, pitched (gable end or hipped) or flat), presence of roof void, type of roof covering (tiles, slates, felt or similar, thatched or corrugated sheet) and condition of roof covering (no, minor, moderate or severe damage/decay/gaps); and

- Presence and condition of flashing (no, minor, moderate or severe damage/decay/gaps).

3.2.7 The exterior of all buildings was then searched for potential roosting opportunities for bats and evidence of bats. The search was made from the ground with the aid of binoculars and a high-powered torch. Potential roosting opportunities looked for included:

- Presence of loft voids and cavities;
- Gaps around windows, doors and lintels;
- Lifted lead flashing;
- Loose or missing roof, ridge or hanging tiles;
- Gaps between stones or bricks where mortar is absent;
- Other gaps or cracks between various elements of the building structure; and
- Potential access points to an internal cavity such as a cavity wall, loft space, eaves or behind cladding (such as hanging tiles and weather boarding).

3.2.8 The search for bats and evidence of bats focused on the following key areas:

- The ground and walls below potential access points and wall cladding;
- Window recesses, especially window sills; and
- Accessible cracks and crevices.

3.2.9 The location of the potential roosting opportunities and any evidence found were recorded using photographs and diagrams of the building or structure.

Internal Inspection of Buildings

3.2.10 Where safe to do so, buildings were entered and a systematic search for potential roosting opportunities for bats and evidence of bats was undertaken.

3.2.11 The following information was recorded for each roof void:

- Presence and position of insulation;
- Presence of water tanks and whether covered; and
- Structure of interior timbers.

3.2.12 The search for bats and evidence of bats focused on the following key areas within the roof void:

- Along and on top of all beams and the floor or surfaces immediately below them;
- On and around dividing walls, gable end walls and chimney breasts;
- Within gaps in the structure, such as mortise joints and gaps in mortar; and
- Between the tiles and the roof lining, if accessible without causing damage.

Preliminary Ground Level Roost Assessment of Trees

3.2.13 An updated PGLRA was undertaken of trees likely to be impacted by the development. During the assessment a detailed and systematic inspection of the exterior of the tree was undertaken to look for PRFs that could be used by bats. Close-focusing binoculars and a high-powered torch were used to undertake the assessment. Potential roosting opportunities searched for included:

- Natural crevices and holes;
- Woodpecker and rot holes;
- Loose bark, splits and cracks;
- Bird and bat boxes; and
- Presence or absence of dense ivy or dense epicormic growth.

3.2.14 The search for bats and evidence of bats focused on these roosting opportunities and the surfaces and ground beneath them.

Categorisation of Results

3.2.15 After each survey type, the building or tree was assigned a level of suitability to support a bat roost and the level of suitability was identified as per Table 1. Roost types were defined as per Table 2.

Table 1 Bat roosting suitability categories

Suitability	Roosting Habitat (adapted from Collins, Ed. 2016)
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roosting sites that can be used by individual bats opportunistically. Generally, these would be built post-1960 using modern construction methods. Where crevices are present, these would generally be exposed and of a size and character that would only offer protection for a small number of bats on an occasional basis due to the size and condition of the PRFs. A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen only with very limited roosting potential. Habitat connectivity from the PRFs to the wider landscape is generally poor. The roosting habitat is generally located in an area with high disturbance or lighting.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, condition and surrounding habitat, but unlikely to support a roost of high conservation status (i.e. maternity or hibernation roost).

Suitability	Roosting Habitat (adapted from Collins, Ed. 2016)
	Often the structure would be built between 1914 and 1960 and unlikely to have a cavity wall. Construction materials would generally be modern and potential PRFs moderately exposed. Connectivity from the roost site to the wider landscape would be moderate, as would the level of disturbance and lighting.
High	A structure or tree with one or more PRFs that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, condition and surrounding habitat. These generally include structures built before 1914 that are traditional constructions. Such structures would often have a cavity wall and any PRFs would have a low exposure to the elements. Connectivity to the landscape, with particular reference to foraging and commuting habitat would be high.

Table 2 Roost classification types (Collins Ed., 2016)

Roost Type	Definition
Day roost	Where bats shelter as individuals or small groups of males but are rarely found at night.
Feeding roost	Used by individuals or small groups for feeding, rarely used during the day.
Hibernation roost	Where bats are found individually or in groups during winter. These needs to have cool temperature and high humidity.
Maternity roost	Mainly dominated by females where they give birth to young and raise these. Maternity roost characteristic preferences differ between species, however warm conditions are generally favoured.
Night roost	Where bats shelter at night by individuals or a whole colony, rarely used in the day.
Satellite roost	An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Roost Type	Definition
Transitional/ occasional roost	Used by a few individuals or small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.

Survey Dates

3.2.16 The updated PRA and PGLRA surveys were undertaken on 20th July 2020.

3.3 Updated Dusk Emergence Surveys

3.3.1 Following the updated PRA and PGLRA surveys, dusk emergence surveys were carried out to ascertain the presence or likely absence of roosting bats on site. The number and timing of the survey visits was as determined by the level of suitability of each building and tree to support roosting bats, see Table 3.

Table 3 Survey effort according to the suitability of the potential bat roost

Suitability	Buildings	Trees
Negligible	None	None
Low	One survey visit at dusk or dawn, May to August inclusive	None
Moderate	Two separate survey visits, one at dusk and one at dawn separated by a minimum of two weeks, between May and September with at least one visit between May and August	
High or Confirmed Roost	Three separate survey visits, one at dusk, one at dawn and one at dusk or dawn, separated by a minimum of two weeks, between May and September with at least two visits between May and August	

3.3.2 The emergence surveys began 15 minutes before sunset and ended 90 minutes after sunset. The survey effort, number of survey visits, timeframes and survey start and finish times follows best practice guidelines (Collins Ed., 2016).

3.3.3 Weather conditions including the air temperature at 1m, windspeed and precipitation were recorded by the lead surveyor at the start and end of each survey. The suitability of weather conditions for the bat surveys were then categorised as per Table 4. Any limitations that could affect bat behaviour were recorded. The GPS location of each surveyor was recorded and a photograph was taken of their survey view.

Table 4 Guidance on weather conditions for bat surveys (based on Slack and Tinsley, 2015)

Conditions	Temperature at Dusk or Dawn (°C)	Wind Speed (Beaufort Wind Scale)	Precipitation
Optimal	>14	0 to 3 (calm to slight wind)	Dry
Acceptable	10-14	4 to 6.5 (moderate to strong breeze)	Light showers to moderate rainfall
Unsuitable	<10	6.5 and above (high wind and stronger)	Heavy rainfall

3.3.4 The overall suitability of the conditions is determined by the least suitable of the three parameters.

3.3.5 Based upon the results of the PRA, the number of surveyor locations at each building is provided in Table 5. The locations of the surveyors were selected to ensure that all Potential Roost Features (PRFs) could be viewed by the surveyors without obstruction (see Figure 2).

Table 5 Number of surveyor locations at each building

Building	Number of Surveyor Locations	Surveyor Location Numbers
B1	7	L1-7
B6	5	L8-12

3.3.6 During the emergence surveys, access points/PRFs were watched continuously by the surveyors, whilst during the re-entry surveys bats were tracked back to any access points/PRFs within the view of the surveyors.

3.3.7 Recordings of bats were made using Elekon Batloggers and any bats seen to emerge or return to roost were noted, along with the flight direction. The recordings were retained for later analysis to identify the species. Incidental bat activity, including likely species, number of passes, direction of flight paths and number of bats was recorded by the surveyor but only where doing so would not compromise the dusk emergence/dawn re-entry surveys.

Definition of a Bat Pass

3.3.8 A pass is defined as an unbroken stream of echolocation calls up to five seconds long, heard as a series of 'clicks, slaps, ticks or warbles' on a bat detector as the bat passes in and out of the detector's range (Barataud, 2002; Barataud & Giosa, 2012, 2014). Where more than one bat was observed, up to a maximum of five bats, the number of bat passes is calculated as below:

$$Bat\ Pass = \left(\frac{Bat\ call\ sequence}{5}\right) * Number\ of\ each\ bat\ species$$

Data Analysis

3.3.9 All bat calls were recorded and these were analysed using BatExplorer software. Quality assurance was undertaken on 10% of the bat call sound and noise files, and any rare or notable species.

3.3.10 Bat activity score was calculated at each survey point using the following formula:

$$Bat\ Activity\ Score = \left(\frac{Total\ number\ of\ passes}{Survey\ Duration\ (min)}\right) * 100$$

3.3.11 The activity level was then determined as set out in Table 6.

Table 6 Categorisation of activity level based on an analysis undertaken by Thomson Ecology between 2006 and 2007

Assessment of Activity Level	Activity Score
Very Low	≤ 5
Low	6 - 30
Medium	31-50
High	51-90
Very High	> 90

3.3.12 The activity score allows us to broadly standardise activity levels between survey locations across and within sites. The activity level is not necessarily a reflection of the level of importance of the survey location for bats and must be considered in conjunction with other data for that location. For example, a high level of activity could be due to 30 bats commuting along a hedgerow or one bat foraging beneath a tree for 30 minutes. Likewise, a low level of activity could be one bat emerging from a building and commuting away or one bat commuting along the edge of the site.

Dates of Survey and Weather Conditions

3.3.13 The details of the weather conditions for the emergence and re-entry surveys are summarised in Table 7 below.

Table 7 Dusk emergence survey dates and weather conditions

Building	Visit No.	Survey Type	Date	Conditions	Temperature (°C)		Precipita-tion	Beaufort Wind Force Scale
					Start	Finish		
B1	1	Dusk	20/07/2020	Optimal	17	16	Dry	2
B6	1	Dusk	21/07/2020	Optimal	19	18	Dry	2

4. Results

4.1 Updated Preliminary Roost Assessment and Preliminary Ground Level Roost Assessment

4.1.1 No evidence of roosting bats was recorded during the updated PRA and PGLRA surveys.

4.1.2 Two new PRFs were recorded in building B1. These comprise damaged ventilation features on the north eastern side of the Victoria Wing (see Figures 2 and 3). Despite the presence of new PRFs, the overall suitability of the building to support roosting bats was assessed as low.

4.1.3 No new PRFs were recorded in buildings B2-B9. Buildings B2-5 and buildings B7-9 were assessed as having negligible overall suitability to support roosting bats. Building B6 was assessed as having low overall suitability to support roosting bats (see Figure 2). There is therefore no change to the level of suitability of any of the buildings on site to support roosting bats from previous assessments (Thomson Environmental Consultants, 2019).

4.1.4 No new PRFs were recorded in any of the trees within the site boundary or within 3m of the site boundary. Trees T1-22 and T26-29, which includes all trees present within the site boundary, were assessed as having a negligible suitability to support roosting bats. Three trees (T23-25) located within 3m of the site boundary were assessed as having low overall suitability to support roosting bats (see Figure 2).

4.2 Updated Dusk Emergence Surveys

4.2.1 No bats were recorded emerging from or re-entering buildings B1 and B6 during the updated dusk emergence surveys.

4.2.2 No incidental bat activity was recorded during the dusk emergence survey of building B1. Incidental common pipistrelle (*Pipistrellus pipistrellus*) calls were recorded during the dusk emergence survey of building B6. The levels of incidental activity of common pipistrelle recorded from all surveyor locations ranged from low to high activity. The highest level of activity was recorded at surveyor location L9 which is adjacent to St. Andrew's Gardens, a small public park located immediately to the south of the site.

5. Legal and Planning Policy Considerations

5.1 Background

5.1.1 The content of the legislation and planning policy section is the legislation and planning policy considerations that we know are relevant based on the updated PRA, PGLRA and dusk emergence surveys for bats.

5.2 Legislation

5.2.1 All bat species are protected by the Conservation of Habitats and Species Regulations 2017, as amended. The Regulations make it an offence, with very few exceptions, to:

- Deliberately capture, injure or kill a bat;
- Deliberately disturb a bat in such a way as to be likely:
    i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
    ii. to impair its ability to hibernate or migrate; or
    iii. to affect significantly the local distribution or abundance of the species to which they belong.
- Damage or destroy a breeding site or resting place of a bat; or
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

5.2.2 In addition to the protection given to bats under the Conservation of Habitats and Species Regulations 2017, as amended, already described, bats are also partially protected in England under the Wildlife and Countryside Act 1981, as amended, which adds the following offences (with certain exceptions):

- Disturbance while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructing access to any structure or place used for shelter or protection.

5.3 Planning Policy

5.3.1 The National Planning Policy Framework (NPPF) 2019 gives further direction with respect to biodiversity conservation and land use change/development. Through the NPPF, local planning authorities are encouraged to identify, conserve and restore, ecological networks, which should benefit bats, and it also states that planning permission should be refused if significant harm to biodiversity cannot be avoided, mitigated or compensated (Ministry of Housing, Communities & Local Government, 2019). In addition, the Office of the Deputy Prime Minister (ODPM) Government Circular 06/05, which relates to biodiversity conservation, states that all protected

species, such as bats, are a material consideration for the planning authority when considering proposed developments (ODPM, 2005).

5.3.2 Policy A3 of the Camden Local Plan (2017) states that the Council will "*designate and protect nature conservation sites and safeguard protected and priority habitats and species*" (London Borough of Camden, 2017).

5.3.3 No bats were recorded roosting within buildings B1 and B6 during the dusk emergence surveys. It has been assessed that bats are likely absent from all buildings and trees on site and the development should be compliant with legislation and policy relating to bats. As incidental bat activity was recorded during the dusk emergence survey of building B6 and trees with a low suitability to support roosting bats were identified adjacent to the site, recommendations are made in Section 6 to ensure that disturbance to bats in the local area is minimised during the development.

6. Recommendations

6.1 Mitigation

Buildings

6.1.1 Buildings B1 and B6 were assessed as having low suitability to support roosting bats, however following dusk emergence surveys it was determined that roosting bats are likely absent from these buildings. Therefore, no further survey or mitigation with regards to bats and buildings B1 and B6 is required and the proposed demolition works can proceed without delay.

6.1.2 As incidental bat activity was recorded during the dusk emergence survey of building B6, site lighting should be directed away from the surrounding area, specifically St. Andrew's Gardens to the south of the site, during construction works. This will minimise disturbance to habitat that may provide commuting and foraging habitat for bats in the local area.

Trees

6.1.3 All trees within the site boundary are considered to have negligible suitability to support roosting bats, therefore no further survey for bats is required for these trees. However, three trees (T23-25) immediately outside the site boundary were assessed as having low suitability to support roosting bats.

6.1.4 As trees T23-25 fall outside of the site boundary and will therefore be retained, a number of precautionary working methods should be employed to protect individual bats if they use these trees at any point during the development. The following precautionary working methods should be implemented during construction:

- All site lighting should be directional, sensor controlled, accurate and directed away from trees T23-25;
- Heras fencing and dust sheets should be installed to keep dust produced from demolition and construction away from trees T23-25; and
- A root protection zone should be established around trees T23-25 for the duration of the works. Should any pruning/removal of trees be necessary, ecological advice should be sought.

6.2 Opportunities for Enhancement

6.2.1 Bat boxes suitable for common pipistrelle could be incorporated into the landscaping plans for the development to provide additional roosting opportunities for bats in the local area.

6.3 Further Survey

6.3.1 An updated PRA and PGLRA survey will be required should a period of two years elapse between the date of the PRA and PGLRA survey (20th July 2020) and the commencement of construction activities.

6.3.2 If a period of one year elapses between the date of the dusk emergence surveys (20th-21st July 2020) and the commencement of construction activities, these surveys should be updated.

7. Conclusion

7.1.1 Updated bat surveys were carried out of buildings within the site boundary, and trees within the site boundary and directly adjacent to the site. Two buildings (buildings B1 and B6) were assessed as having low overall suitability to support roosting bats, however no evidence of roosting bats was recorded during the further dusk emergence surveys undertaken of these buildings. All other buildings and trees within the site boundary were assessed as having negligible suitability to support roosting bats. No further surveys or mitigation with regards to bats and the buildings and trees within the site boundary are therefore required, and the proposed demolition works can proceed without delay.

7.1.2 Incidental bat activity was recorded during the dusk emergence survey of building B6 and three trees (T23-25) with a low suitability are present immediately adjacent to the site boundary within St. Andrew's Gardens. Measures to protect these trees against disturbance from construction activities are recommended. Provided that these measures are followed, the development is likely to be compliant with the relevant legislation and planning policy with regards to bats.

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Appendix 1 - British Bats

8.2 Introduction

8.2.1 A summary of the biology of British bats and the legislation and policy that protects them is provided below.

8.3 Biology

8.3.1 There are 18 British species of bats, belonging to two families; the horseshoe bats (*Rhinolophidae*) and vesper bats (*Vespertilionidae*). Of the 18 species, two species are horseshoe bats and belong to the genus *Rhinolophus*, The remaining 16 species are vesper bats and are sub-divided between six genera; *Myotis, Eptesicus, Nyctalus, Pipistrellus, Plecotus* and *Barbastella*. Whilst there are many differences in the biology of the different species, all share certain characteristics and these are described below.

Roosting

8.3.2 Bat species utilise roost sites of varying character; some preferring tree roosts whilst others are thought to be almost entirely dependent on built structures. Most bats will have a number of available roosting sites within their range, which they move between throughout the year. They are generally faithful to their roosts and a colony of bats may use the same roost site(s) year after year.

8.3.3 Bats hibernate during the winter and will often gather to hibernate communally, remaining in the same hibernation roost from November to February/March. Hibernation roost sites typically have a constant low temperature and high humidity levels. Sites include caves, mines, thick walled buildings and hollow trees. With the arrival of spring, the ambient temperature and day length increase and bats begin to leave their hibernation roosts, either moving immediately to summer roost sites or occasionally, to a transitional roost.

8.3.4 By June, breeding females will begin to congregate in maternity roost sites where they will give birth to and nurture their young. Male bats are also occasionally found roosting in maternity roosts but during this period they mostly roost alone. Maternity roost sites include hollowed out trees, buildings and bridges. Male bats may use similar sites but also cracks and crevices in trees, under loose tiles or even amongst dense ivy growth during the summer period. Similar sites may be used by bats for brief periods during the night when they are resting or feeding on recently caught prey. In autumn, male bats establish mating roosts and are visited by females. A variety of roost sites may be used until the bats return to their hibernation roosts.

Foraging

8.3.5 All British bat species feed on invertebrates, with flies, beetles, moths and other insects making up much of their diet. Areas with an abundance of insect prey, such as woodlands, scrub, wetlands, river corridors and flower rich grasslands are therefore favoured foraging sites for bats. Habitats such as intensively farmed arable land, and amenity grassland support a much lower invertebrate abundance and are therefore less favoured foraging habitats for bats.

Commuting

8.3.6 Bats favour roost sites in close proximity to suitable foraging habitat, however, given variation in prey availability, land-use change, and competition with other bats, for at least part of the year bats must commute between their roosts and foraging habitat.

8.3.7 Commuting routes tend to follow linear features in the landscape such as hedgerows, woodland edges, rivers and other watercourses, particularly when crossing areas of less favourable habitat. The distance that bats commute between roost sites and foraging areas is dependent on local geography and also the species of bat. Some species will travel up to 18km, though shorter distances are more typical.

8.4 Site Designation

8.4.1 All bat roosts in the UK receive protection under the following legislation:

Conservation of Habitats and Species Regulations 2017 as amended (which replaces the Conservation (Habitats &c) Regulations 1994 as amended)

Wildlife and Countryside Act 1981, as amended;

The Countryside and Rights of Way Act 2000 (which amends the Wildlife and Countryside Act); and

Natural Environment and Rural Communities Act 2006 (which amends the Wildlife and Countryside Act).

8.4.2 This is described in more detail under 'Species Protection' below. In addition, the most important sites for certain bat species in the UK receive further statutory protection through designation of Special Areas of Conservation (SACs) and/or Sites of Special Scientific Interest (SSSIs).

8.4.3 Four UK bat species, the greater and lesser horseshoe, barbastelle and Bechstein's bats, are included on Annex II of the European Community Directive of the Conservation of Natural Habitats and of Wild Fauna and Flora, referred to as the Habitats Directive. The Habitats Directive is transposed into UK law by the Conservation of Habitats and Species Regulations 2017 as amended. This legislation requires that areas are designated as Special Areas of Conservation (SACs) to protect populations of these 4 bat species. To date, 26 SACs have been designated specifically to protect these species, and these sites are of international importance for the populations of bats that they support. A further 5 SACs have been designated, where the presence of at least one of the 4 bat species is a qualifying feature but not the primary reason for the statutory designation.

8.4.4 Sites designated under the Wildlife and Countryside Act 1981 (WCA) are known as Sites of Special Scientific Interest (SSSIs). SSSIs received further protection under the Countryside and Rights of Way Act 2000 (CRoW) and the Natural Environment and Rural Communities (NERC) Act 2006.

8.4.5 Some SSSIs are designated for the population(s) of bats that they support. The criteria for selecting SSSIs on the basis of their bat populations are provided in Guidelines for the Selection of Biological SSSIs (NCC, 1989):

Greater horseshoe bat – all main breeding roosts and all winter roosts with 50 or more adult bats;

Lesser horseshoe bat - all main breeding roosts containing 100 or more adult bats and all winter roosts containing 50 or more bats;

Barbastelle, Bechstein's and grey long-eared bats – any traditional breeding roosts;

Natterer's, Daubenton's, whiskered, Brandt's, serotine, noctule and Leisler's bats – only exceptionally large breeding roosts or those with a long history of use; and

Mixed Roost sites – all hibernacula containing four or more species and more than 50 individuals or three species and 100 or more individuals or two species and 150 or more individuals, though these criteria may be lower in some parts of the UK.

8.4.6 Sites that qualify as SSSIs for the bat populations they support are considered to be of at least national importance.

8.4.7 Sites designated for nature conservation at the county level may also include bat populations as part of the site qualifying criteria, although the criteria used may vary from county to county. Such sites are protected through the planning system and there is generally a presumption against development that affects such sites in local authority development plans.

Planning Policy

8.4.8 The National Planning Policy Framework (NPPF) 2019, gives further direction with respect to biodiversity conservation and land use change / development. The NPPF encourages local planning authorities to identify, conserve and restore, ecological networks, which should benefit bats, and it also states that planning permission should be refused if significant harm to biodiversity cannot be avoided, mitigated or compensated. In addition, the Government Circular 06/05, which relates to biodiversity conservation, states that all protected species, such as bats, are a material consideration for the planning authority when considering proposed developments.

8.5 Species Protection

Legislation

8.5.1 All bat species are protected by the Conservation of Habitats and Species Regulations 2017 as amended. The Regulations make it an offence, with very few exceptions, to:

Deliberately capture, injure or kill a bat;

Deliberately disturb a bat in such a way as to be likely:

i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or

ii. to impair its ability to hibernate or migrate; or

iii. to affect significantly the local distribution or abundance of the species to which they belong.

Damage or destroy a breeding site or resting place of a bat; or

Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

8.5.2 In addition to the protection given to bats under the Conservation of Habitats and Species Regulations 2017 as amended already described, bats are also partially protected in England under the Wildlife and Countryside Act 1981 (as amended), which adds the following offences (with certain exceptions):

Disturbance while it is occupying a structure or place which it uses for shelter or protection; or

Obstructing access to any structure or place used for shelter or protection.

8.5.3 A roost is any structure or place used by bats for shelter or protection. As bats tend to re-use the same roosts year after year, the roost is protected whether bats are present or not, at the time.

8.5.4 In this context of the legislation, 'damage' would include such operations as treatment of wood with toxic preservatives or use of rodenticides near roosting bats while 'disturbance' includes any work in or affecting a bat roost.

8.5.5 If proposed actions, such as redevelopment of an existing building may lead to an offence under the above legislation, appropriate mitigation which seeks to avoid these impacts should be devised and implemented under licence from Natural England to allow the activity to proceed legally.

8.5.6 In addition to the above legislation, all bats are protected under the Bonn Convention, within which the Agreement on the Conservation of Bats in Europe (1991) or EUROBAT, establishes a mechanism for international collaboration to conserve bats and their habitats, including foraging habitats. All European bat species are covered under Appendix II of the Conservation of Migratory Species of Wild Animals (CMS).

8.5.7 The Hedgerow Regulations 1997 provide for the conservation of 'important' hedgerows and their constituent trees. The presence of a protected species such as bats is included in the assessment of whether a hedgerow is considered 'important' and applications to remove such hedgerows must be made to the planning authority.

8.6 UK Post-2010 Biodiversity Framework and Species of Principal Importance

8.6.1 Published by the Joint Nature Conservation Committee (JNCC) and the Department for Environment, Farming and Rural Affairs (Defra) in July 2012, the UK Post-2010 Biodiversity Framework identifies UK-scale activities and priority works that are required to deliver the EU Biodiversity Strategy. Following a process of devolution, the framework is underpinned by country level strategies which are now largely responsible for continuing the work carried out under the former UK Biodiversity Action Plans (UK BAP). JNCC guidance dictates that UK BAP background information on priority species and habitats still remains relevant and it now forms the basis of

country specific priority lists, which for England, are specified under Section 41 of the Natural Environment and Rural Communities Act 2006 (the NERC Act). Targets for England's biodiversity strategy 'Biodiversity 2020': A strategy for England's wildlife and ecosystem services, are informed by this list.

8.6.2 Seven species of bats (Barbastelle, Bechstein's, greater and lesser horseshoe, brown long-eared, noctule and soprano pipistrelle) have been adopted as Species of Principal Importance for the Conservation of Biodiversity in England. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species. Furthermore, the NPPF states that local planning authorities should promote the protection and recovery of priority species populations linked to national and local targets, which presumably means those listed under the Section 41 of the NERC Act, the former UK BAP and on Local or Regional priorities species lists.

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