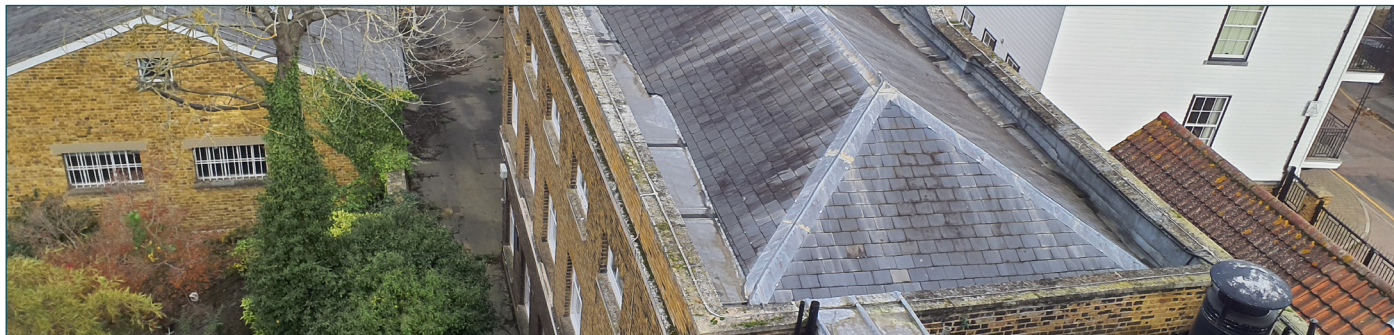




BAT SURVEY REPORT

CUSTOM HOUSE

GRAVESEND, KENT

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Report status	Information
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1. INTRODUCTION

- 1.1 This report details presence/ likely absence survey work for bats undertaken in respect of proposed development at Custom House, The Terrace, Gravesend, DA12 2BL.
- 1.2 Figure 1, Section 2 provides a site location plan.

COMMISSION

- 1.3 Native Ecology was commissioned by Mile Property Group to undertake bat presence/likely absence surveys for buildings within the Site.

APPLICATION SITE

- 1.4 For site location plan and survey site details please refer to PEA (ref: 1149_R02_PEA).

PROPOSED WORKS

- 1.5 Proposals include the redevelopment of the application site into residential use, including the demolition of the southern section of building B2, the extension of building B5 and part of B6 and the conversion of all buildings within the Site with the construction of a three storey building to the south of the Site.

ASSESSMENT

- 1.6 Native Ecology undertook a Preliminary Ecological Appraisal for the Site in November 2022. During the PEA the buildings within the Site were assessed for their suitability to support roosting bats. Following the initial assessment and emergence survey work for building B2, buildings within the Site were re-assessed.

Table 1. Building suitability assessment for roosting bats

<i>BUILDING NUMBER</i>	<i>ASSESSMENT</i>	<i>INITIAL SUITABILITY ASSESSMENT</i>	<i>AMENDED SUITABILITY ASSESSMENT</i>	<i>SURVEY REQUIREMENT</i>
B1	Concrete roof tiles appear in good condition, particularly on the southern elevation, with few opportunities for crevice roosting bats. Hanging tiles on the northern elevation are concreted in place, leaving some, but few opportunities for roosting bats. Security floodlight present on the northern elevation which illuminates the north and north-east elevation from dusk until dawn.	High	Moderate	2no. emergence / re-entry surveys.
B2	Low number of raised slates provide roosting locations for crevice dwelling bats	Low	Low	1no. emergence survey.
B3	No external features that could provide suitable roosting locations for bats	Negligible	Negligible	Survey not required
B4	No external features that could provide suitable roosting locations for bats	Negligible	Negligible	Survey not required

<i>BUILDING NUMBER</i>	<i>ASSESSMENT</i>	<i>INITIAL SUITABILITY ASSESSMENT</i>	<i>AMENDED SUITABILITY ASSESSMENT</i>	<i>SURVEY REQUIREMENT</i>
B5	No opportunities for roosting bats on brick wall elevations. Some opportunities for crevice dwelling bats underneath slipped and missing slates and raised lead flashing. Overall, the slate roof provides only a few opportunities.	High	Moderate	2no. emergence / re-entry surveys.
B6	No opportunities for roosting bats on brick wall elevations. Some opportunities for crevice dwelling bats underneath slipped and missing slates and raised lead flashing. Overall, the slate roof provides only a few opportunities. Gaps within second floor walkway due to decayed timber, provides some opportunities for crevice dwelling bats.	High	Moderate	2no. emergence / re-entry surveys.
B7	Small single-storey building heavily overgrown with ivy. Brick elevations provide no suitability for roosting bats. Slate roof provides a small number of opportunities for crevice roosting bats.	Moderate	Low	1no. emergence survey.

- 1.8 Overall, the site is location in an urban area, with limited opportunities for foraging and commuting bats. Whilst there are pockets of habitat, such as parkland and playing fields, in the surrounding landscape, there are few habitat corridors. The river to the north of the site offers some foraging and commuting opportunities, however, the margins of the river are urban and well lit, reducing suitability.

PURPOSE OF REPORT

- 1.9 The objectives of the report are to:
- To determine whether roosting bats are present; and
 - Establish whether the proposed development is likely to impact on roosting bats. The degree of impact is determined by a number of factors:
 - the species present;
 - number of bats present;
 - the type of roost present; and
 - location of roost and access points.

2. PHOTOGRAPHS



Photograph 1. Northern elevation of B1 showing location of security light



Photograph 2. B1 and B2 - showing well maintained roof tiles and slates



Photograph 3. West elevation of B5



Photograph 4. Slate roof of B5



Photograph 5. Slate roof of B6



Photograph 6. South elevation of B7

3. METHODOLOGY

PRESENCE/ABSENCE SURVEYS

- 3.1 Two dusk emergence surveys were undertaken for buildings B1, B5 and a section of building B6 in August and September 2023. One dusk emergence survey was undertaken for buildings B2 and B7 in August 2023.
- 3.2 All surveys were undertaken in accordance with the Bat Conservation Trust Good Practice Guidelines (Collins, 2016).

Table 2. Survey details for the dusk emergence surveys

SURVEY LOCATION	SURVEY NO.	SURVEY DATE	SURVEYORS	SUNRISE/ SUNSET TIME	TIME		WEATHER CONDITIONS			
							°C	WIND BF	PRECIPITATION	CLOUD COVER %
B2	1	25/07/23	CT, JF, TO, DS	20:58	Start	20:43	18	B3	None	30
					Finish	22:28	17	B3	None	30
B1, B5, B6, B7	1	31/08/23	AW, THu, TO, THow, MA, AB, TH & 5no. NVA (IR cameras)	19:48	Start	19:33	16	B0	None	100
					Finish	21:18	15	B0	None	100
B1, B5, B6	2	14/09/23	AW, CT, AB, MA, Thu, HB, MS, KF, JF & 3no. NVA (IR cameras)	19:16	Start	19:01	19	B2	None	40
					Finish	20:46	17	B2	None	30

- 3.3 The emergence surveys commenced 15 minutes prior to sunset and continued for 1.5 hours after sunset.
- 3.4 Surveyors (listed in Table 3 below) were positioned around the buildings so that the features with suitability to support roosting bats were visible and any emerging or re-entering bats could be observed. A survey plan is available in Appendix 3.
- 3.5 Each surveyor used an EMT Pro and a Elekon Bat Scanner to identify and record bat activity within the Site. Data was recorded as to the species, number of bats, any emergence or re-entry locations, time and general activity.
- 3.6 Night vision aids (NVAs) comprising InfaRed (IR) cameras were used to record bat activity during the surveys. Cameras comprised Canon XA60 Professional UHD 4K Camcorders with associated appropriate light sources, mounted on tripods and positioned to cover a full surveyor location. An EMT Pro 2 with an associated tablet was also mounted on a tripod close to the camera to record sound files for any bats emerging from or re-entering the building. Appendix 3 includes screen-shots of each IR camera position at the darkest point of the survey to show illumination.

- 3.7 On completion of the survey, the footage was reviewed using appropriate software and any emergence or re-entry activity recorded, including species (cross-referenced with the associated detector), emergence / re-entry location and behaviour. Any emergence / re-entry video clips were cut and saved for reference.

Table 3. Surveyor details

SURVEYOR NAME (INITIALS)	EXPERIENCE
Amy Wright (AW)	Class 2 bat licence: 2015-10994-CLS-CLS
Calista Tardivel (CT)	Class 1 bat licence: 2020-49197-CLS-CLS
Adam Bedwell (AB)	>10 years bat survey experience
Trevor O'Sullivan (TO)	>6 years bat survey experience
Miriam Anderson (MA)	<3 years bat survey experience
Katy Fuller (KF)	>3 years bat experience
Jonathan Fletcher (JF)	>2 years bat survey experience
Dani Sheehan (DS)	>2 year bat survey experience
Tom Hurst (THo)	>1 years bat survey experience
Tom Howland (THow)	>2 years bat survey experience
Harry Bolton (HB)	1 years bat survey experience
Mark Stelfox (MS)	1 years bat survey experience

LIMITATIONS

- 3.9 In accordance with CIEEM guidance, consideration should be given to the validity of survey data after a period of 12 month from the date of the survey. This may require a site visit to assess whether ecological conditions within the site have changed and may require further ecological survey work due to the transient nature of roosting bats.

4. RESULTS AND ASSESSMENT

PRESENCE/ LIKELY ABSENCE SURVEYS

Dusk Emergence Survey - 25th July 2023

- 4.1 There were no bats recorded emerging or re entering building B2 during the survey.
- 4.2 Bat activity during the survey was very low.
- 4.3 The first bat recorded was a common pipistrelle, at 21:20 (22 minutes after sunset). This bat foraged around the car park for approximately 10 minutes.
- 4.4 A single common pipistrelle pass was also recorded at 22:15.

Dusk Emergence Survey - 31st August 2023

- 4.5 There were no bats recorded emerging or entering into buildings B1, B5, B6 and B7 during the survey.
- 4.6 Bat activity was low, dominated by common pipistrelle, the first recording was at 19:58 (10 minutes after sunset) and the last recording at 21:05 with sporadic passes throughout and occasional foraging.
- 4.7 A single soprano pipistrelle was recorded at 20:47 and a single brown long-eared at 20:39.

Dusk Emergence Survey - 14th September 2023

- 4.8 There were no bats recorded emerging or entering into buildings B1, B5 or B6 during the survey.
- 4.9 Bat activity was low, with only common pipistrelle bats recorded. The first recording was at 19:44 (26 minutes after sunset) and the last recording at 20:20 with sporadic passes throughout and occasional foraging.

ASSESSMENT

- 4.10 Emergence surveys for buildings within the Site did not record any roosting bats. Therefore, roosting bats are considered to be likely absent from the buildings.
- 4.11 General bat activity within the Site was low, dominated by a small number of foraging common pipistrelle bats.
- 4.12 No further survey work or mitigation measures are recommended for roosting bats.

MITIGATION

4.13 In order to reduce a low potential, indirect impact on foraging and commuting bats to negligible, mitigation to reduce any effects of artificial lighting will be implemented, as far as possible and where applicable, in accordance with guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals (ILP, 2023):

- All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources will not be used.
- LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component
- Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights will be carefully considered to minimise light spill and glare visibility.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, will be considered.
- Luminaires will always be mounted horizontally, with no light output above 90° and/or no upward tilt
- Where appropriate, external security lighting will be set on motion- sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate
- Where appropriate, use a Central Management System (CMS) with additional web-enabled devices to light on demand.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged.
- If all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

ENHANCEMENT

- 4.14 Development provides an opportunity to enhance the site for bats via provision of roosting opportunities.
- 4.15 2no. integrated bat boxes, such as a 1F Schwegler Bat Tube, or similar, will be installed on the new building and building extensions within the Site within the Site. Integrated bat boxes will be primarily located on the south and west facing aspects located at least 3m above the ground.
- 4.16 2no. integrated bat boxes, such as a 1FQ Schwegler Bat Tube, or similar, will be installed on existing buildings within the Site.

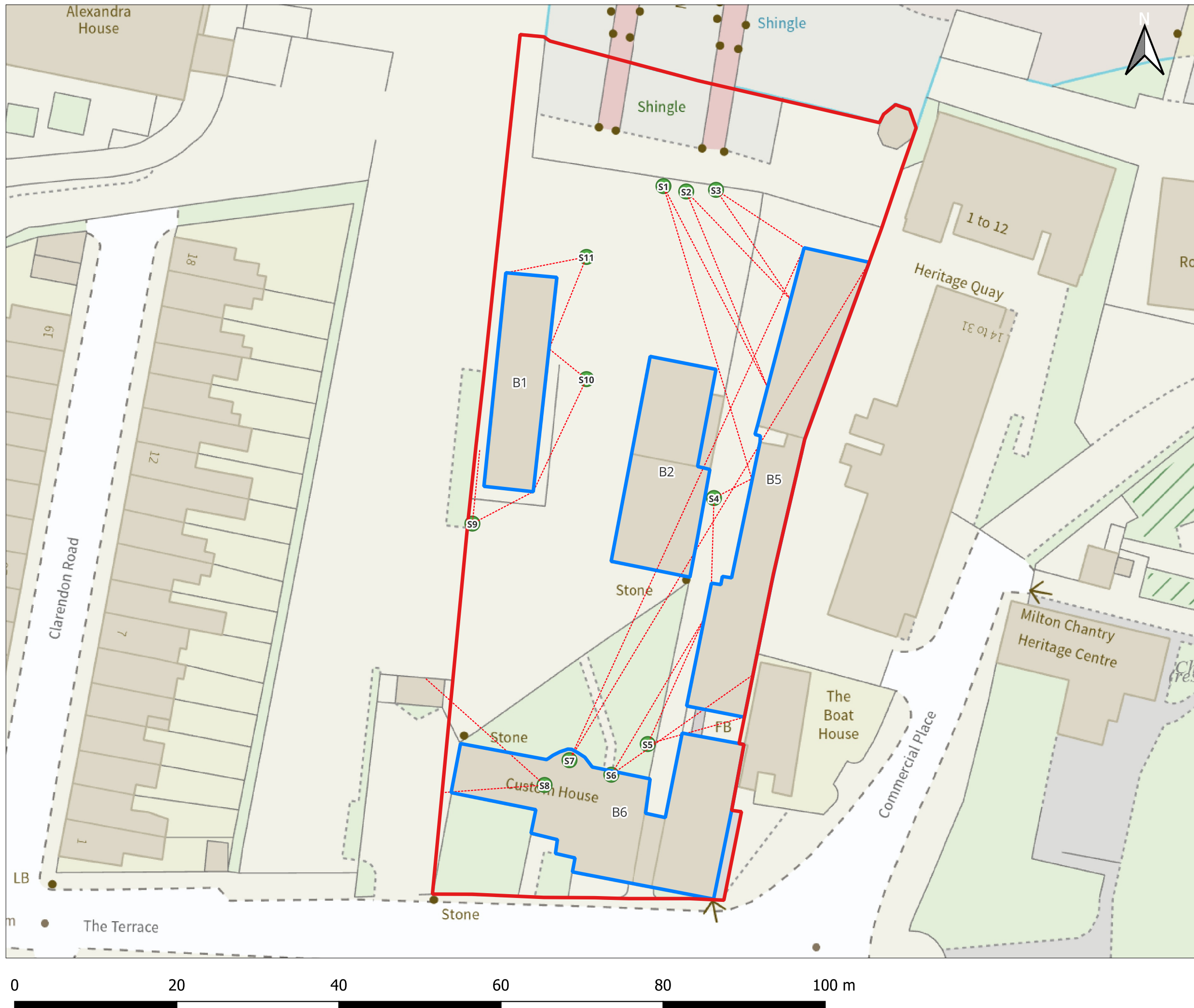
5. REFERENCES

- A. J. Mitchell-Jones (2004). Bat Mitigation Guidelines (Version. January 2004). English Nature 2004.
- CIEEM (2017a). Guidelines for Ecological Report Writing. Chartered Institute for Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- Native Ecology (2023) Preliminary Ecological Appraisal. Report reference 1149_R01, dated 10th February

6. APPENDIX 1: SUMMARY OF PLANNING POLICY AND LEGISLATION

LEGAL PROTECTION FOR BATS

- 6.1 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 are also known as European Protected Species. European Protected Species include all species of bat.
- 6.2 European Protected Species relate to those listed within the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and are afforded the highest level of protection. These species are also protected under the Wildlife and Countryside Act 1981. Taken together this level of protection makes it an offence to:
- deliberately capture, injure or kill any wild animal of a European protected species,
 - deliberately disturb wild animals of any such species
 - damage or destroy a breeding site or resting place of such an animal
- 6.3 Disturbance of animals includes in particular any disturbance which is likely:
- to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or
 - in the case of animals of a hibernating or migratory species, impair their ability to hibernate or migrate
 - to affect significantly the local distribution or abundance of the species to which they belong
- 6.4 The legislation requires that any derogation be dealt with by licencing through an appropriate licencing body (Natural England in England). In determining whether a licence can be granted the licencing body must apply the requirements of Regulation 53, and in particular, the three tests:
1. Regulation 55(2)(e) states: a licence can be granted for the purposes of “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.
 2. Regulation 55(9) states: The relevant licensing body must not grant a licence under this regulation unless it is satisfied—
 - (a) that there is no satisfactory alternative; and
 - (b) that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.



Legend

Application Site boundary

Buildings

Bat surveyor position

Surveyor field of view

native ecology PROMOTING BIODIVERSITY INTEGRATION	
Bat Surveyor Location Plan	
Custom House, The Terrace, Gravesend, DA12 2BL	
Drawing ref:	1149_DR04
Revision:	-
Date:	11/09/2023
Scale:	1:450
Paper size:	A3

8. APPENDIX 3: NIGHT VISION AID (IR CAMERA) SCREEN SHOTS



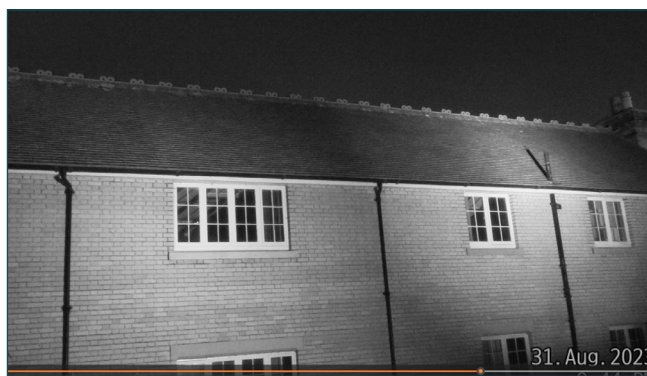
*Photograph 1. NVA - Surveyor Location 2.
Building B5*



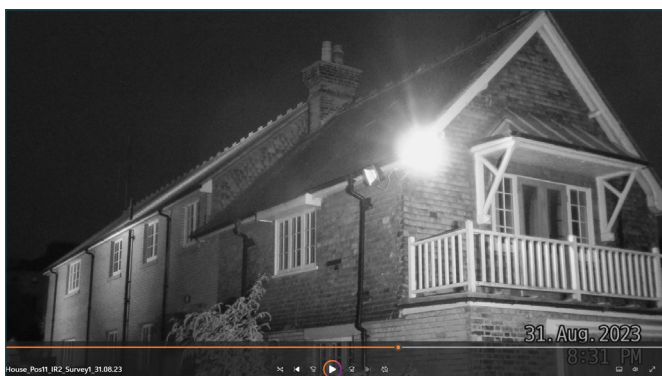
*Photograph 2. NVA - Surveyor Location 6.
Building B5*



*Photograph 3. NVA - Surveyor Location 7.
Building B5*



*Photograph 4. NVA - Surveyor Location 10.
Building B1*



*Photograph 5. NVA - Surveyor Location 11.
Building B1*