

BAT SURVEY REPORT

BAT EMERGENCE SURVEY
GRAVESHAM BOROUGH COUNCIL
CASCADES, GRAVESEND

CASCADES LEISURE CENTRE, THONG LANE, GRAVESEND DA12
4LG

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1. EXECUTIVE SUMMARY

- S.1 A bat emergence survey of Cascades Leisure Centre was undertaken in September 2022. No bats were recorded emerging from the building. Full details of the survey work completed are provided in this report.
- S.2 No additional bat survey or assessment is required to inform the determination of the planning application.
- S.3 During the survey, common pipistrelle bats were recorded using the site for foraging.
- S.4 In order to ensure the continued use of the site by foraging common pipistrelle bats and encourage other bat species to use the site, enhancement of the retained open green spaces should include native species shrub and tree planting that encourage a greater number and diversity of invertebrates and create more sheltered dark areas for foraging.
- S.5 In addition to the above, it is recommended that the proposals help to provide suitable roosting locations for bats by including at least six new bat boxes, installed onto retained existing trees along the boundaries of the site.
- S.6 The results of the survey and the conclusions of this report are valid for 12 months, after which time a suitably experienced ecologist will need to review whether any update survey work is required prior to the commencement of works on site.

2. INTRODUCTION

INSTRUCTION

- 2.1 This bat survey report has been prepared by Lloyd Bore Ltd to accompany a full planning application for the redevelopment of the Cascades Leisure Centre site in Gravesend. The application is submitted on behalf of Gravesham Borough Council
- 2.2 The bat survey was triggered as a result of a preliminary roost feature assessment of one building (Building B1) located on land at Cascades Leisure Centre, Thong Lane, Gravesend DA12 4LG (approximate centre: TQ 6705 7168).

PROPOSALS

- 2.3 The development proposals for the site comprise the demolition of the existing Cascades Leisure Centre and public house and redevelopment of the site to provide a new leisure centre with community pool, training pool, leisure water, café, soft play, 'clip n climb' facility, a six court sports hall, fitness suite, spin studio, 2 no. fitness studios and 2 no. squash courts.

SURVEY OBJECTIVES

- 2.4 The objectives of the survey and report are to: -
- Identify whether bats are roosting within the internal or external features of the leisure centre that have been assessed as suitable for roosting bats;
 - Determine whether a European Protected Species bat mitigation licence is likely to be required to facilitate development; and
 - Assess the ecological importance of the application site for roosting bats and, where appropriate and possible, provide information in relation to site use by foraging and commuting bats (as recorded during the emergence survey).

3. SITE LOCATION

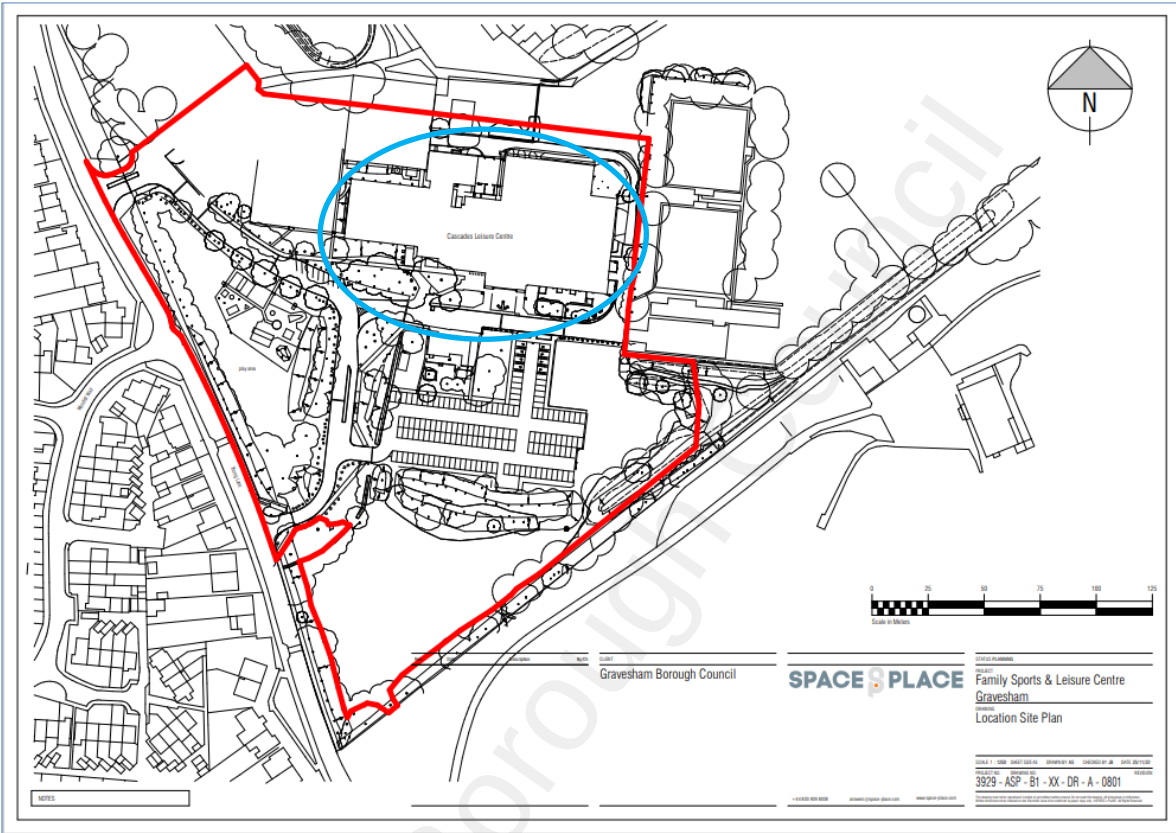


Figure 1 Location of the development proposal showing red line application site boundary (red line is approximate). Building B1 is indicated with a blue circle. Image courtesy of Space Place.

4. METHOD

DESK STUDY

- 4.1 A biological records search was undertaken by Kent and Medway Biological Records Centre (KMBRC) in October 2022. The data obtained through this search includes records of bats. The search radius was 5 km, measured from the application site boundary.
- 4.2 Records obtained within the ten-year period prior to the date of the record search are considered 'recent.' Records older than this are considered 'historic.'
- 4.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was used to identify approved bat European Protected Species Mitigation (EPSM) licences located within 5 km of the application site.

DETERMINING SURVEY EXTENTS

- 4.4 The potential impacts of a development are not always limited to the boundaries of the site concerned. The area over which a development may impact ecologically important features is known as the Zone of Influence (Zoi).
- 4.5 The Zoi is determined by the source / type of impact, the potential pathway(s) for that impact and the location and sensitivity of the ecologically important feature(s) beyond the site boundary.
- 4.6 The proposed development will result in the destruction of all on-site buildings and the removal of some on-site vegetation suitable for foraging bats. Impacts upon any roosts located within off-site structures or trees are significantly less likely due to distance from the works footprint and the fact that the habitats being removed are largely of low suitability for foraging bats.
- 4.7 Assuming that external lighting is comparable to existing light levels, the risk of ecologically significant adverse effects upon any bats that utilise off-site roosts / habitats are minimal.
- 4.8 Given the factors listed above, the survey study area was limited to building B1, which was assessed as suitable for roosting bats and is within the red line boundary of the application site.

PRELIMINARY HABITAT ASSESSMENT

- 4.9 A Preliminary Roost Assessment (PRA) of the Cascades Leisure Centre Complex was undertaken by Samuel Durham BSc (Hons) MCIEEM, on 1st September 2022. This visit comprised an assessment of the suitability of on-site and adjacent habitats for roosting, foraging and commuting bats.
- 4.10 Samuel is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM), has over 13 years of experience of bat building inspections, and is registered to use the level 2 class survey licence for bats (licence registration reference: 2017-31332-CLS-CLS).
- 4.11 The PRA concluded that the Cascades Leisure Centre main building (building B1), indicated in *Figure 1*, supports features suitable for roosting bats, and that a bat emergence survey was required to determine whether bats are roosting within the on-site structure.

EXTERNAL ASSESSMENT

- 4.12 An external inspection was carried out by Samuel Durham during the PRA.

- 4.13 The inspection was undertaken during daylight and included an examination of the exterior of the building. Binoculars in conjunction with a high-powered torch were used to look for evidence of bats during the external assessment of the building. Evidence of bat presence could include: -
- Bats;
 - Bat droppings;
 - Signs of feeding; and
 - Staining.
- 4.14 Attention was given to areas where bats might have access to potential roost sites, such as dropped or missing boards and bricks, gaps between roofing felt and walls, weep holes above doors, and cracks and crevices in the external walls. Gaps between the walls and soffits were specifically checked for scratching and staining. Gaps between external weatherboarding and internal walls were examined where accessible.
- 4.15 Following the inspection, building B1 was categorised according to its suitability for roosting bats. Factors considered in this assessment include: -
- The age, condition, and design of the building;
 - The materials used in the building construction (i.e., slate / tile roof, hanging tiles / weatherboarding);
 - The presence of potential bat access points into the structure; and
 - The surrounding habitat.
- 4.16 The categories used to determine bat roost suitability were adapted from guidance provided in *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (BCT, 2016). The following categories were used: -
- 'Confirmed roost';
 - 'High suitability' for roosting bats;
 - 'Moderate suitability' for roosting bats;
 - 'Low suitability' for roosting bats; and
 - 'Negligible suitability' for roosting bats.

EMERGENCE SURVEY

- 4.17 Following the external / internal building inspection, building B1 was assessed as being of 'low' suitability for roosting bats and the public house was assessed as being of 'negligible' suitability for roosting bats.
- 4.18 A bat emergence survey of B1, comprising one dusk emergence visit, was undertaken in September 2022, which is outside of the optimal May to August survey period for structures of low suitability for roosting bats (BCT, 2016). However, general ambient weather conditions remained warm and bat activity from other sites across Kent demonstrated that summer bat roosting was still occurring. Therefore, September was taken to be a suitable survey period for the emergence survey and the timing of the survey is not considered a limitation.
- 4.19 During the survey, 13 surveyors were positioned at vantage points around the building. These vantage points gave adequate visual coverage of the most likely bat access / exit points.

- 4.20 Appendix 2 shows the locations where surveyors were positioned around building B1, and their coverage of building aspects where potential roost features were recorded.
- 4.21 Surveyors were equipped with an EchoMeter Touch detector and a tablet, or a Batlogger M detector with built-in recording device.
- 4.22 BatExplorer was used to verify species identifications when required or when identification was uncertain.
- 4.23 Each surveyor was equipped with an infra-red camera as a night vision aid (NVA).
- 4.24 NVAs increase precision during survey visits, particularly where there is potential for late-emerging species and in dark conditions and to help provide confirmation of bat emergence points or where 'possible' emergence was recorded.
- 4.25 Canon XA10, XA11, XA20 and Sony Handycam DCR-SR52 infra-red cameras (with additional infra-red spotlights or torches) were used during the survey visit.
- 4.26 These NVAs were positioned at locations in which potential roost features or aspects of the building with potential to support potential roost features could be recorded throughout the course of the survey visit. The NVAs were deployed at the beginning of the survey and set to record for the duration of the survey. Surveyors would switch to viewing the PRFs through the screen of their NVA once it became too dark to visibly see the features they were observing with the naked eye.
- 4.27 The *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys* (BCT, 2022) has been used as the standard survey protocol for use of NVAs and informed the scope of survey works undertaken using NVAs.
- 4.28 When required, the infra-red footage was also reviewed after the survey using VLC media player at normal review speed or slower, to ensure that any bat emergences within the range of the cameras were identified and analysed or to provide additional information on egress / ingress locations and number of bats present within the structure.
- 4.29 Table 1 provides details of the timings and weather conditions recorded during the surveys.

Table 1 Survey details

Date of survey visit	Survey type	Structure(s) surveyed	Start time	Finish time	Sunset	Surveyors	Start / End Weather Conditions
21/09/2022	Dusk emergence	B1	18:49	20:34	19:04	PA, LS, DM, JB, SD, BR, JY, JC, SP, CP, BG, EC, JC	Dry; 16°C / 13°C; 20% / 90% cloud cover; 1-2 on Beaufort wind scale.

SURVEYOR EXPERIENCE

- 4.30 Philip Ames BSc (Hons) was the survey lead for the bat emergence survey. Philip is a Full Member of the Chartered Institute of Ecological and Environmental Management (CIEEM), has over 14 years of experience of bat building inspections and emergence surveys and is registered to use the level 2 class survey licence for bats (licence registration reference: 2015-11445-CLS-CLS).
- 4.31 Laragh Smyth BSc (Hons) has over five years bat survey experience, two years' experience using infra-red cameras for bat survey work and is registered to use the Level 1 Natural England class survey licence for bats (class reference: 2020-49436-CLS-CLS).

- 4.32 Philip Ames, Laragh Smyth, Samuel Durham, Jack Bage, Davey Monk, Bradley Rivers, John Young, Jack Clark, Susan Potts, Chris Potts, Bob Gomes, Ed Clark, Jeremy Coleman conducted the 2022 bat emergence / re-entry survey visit.

ASSESSMENT AND EVALUATION

- 4.33 BCT (2016) and the *Bat Workers Manual* (JNCC, 2004) have been used to: -
- Assess the suitability of the building for roosting bats;
 - Provide an indicative assessment, where possible and appropriate, of the suitability of the habitats for foraging and commuting bats; and
 - Inform the scope of survey works required to assess whether bats are using building B1 to roost.
- 4.34 Natural England standing advice (undated), which is a material consideration in planning, also provides details on standard survey methodology and factors that can influence survey effort.
- 4.35 The *Guidelines for Ecological Impact Assessment* (CIEEM, 2018) were used as guidance to determine the ecological importance of the site for bats.

SURVEY LIMITATIONS

- 4.36 One dusk survey visit was conducted. This is in accordance with current good practice guidance (BCT, 2016) for low suitability buildings. This is not considered to be a significant limitation because the external inspection concluded that the building was at the lower end of the 'low' suitability bracket for roosting bats (i.e. just above 'negligible' suitability) and the results of the emergence survey visit correlate with this conclusion - with very low levels of bat activity recorded on site and no evidence or indicators of bat roost presence.
- 4.37 Common pipistrelles, like other bat species, show a dynamic range of behaviours and often find and change roost locations based on their needs. As such, the survey provides a brief snapshot on the use and activity by bats around the leisure centre only.
- 4.38 It is difficult to assess the suitability of buildings for hibernating bats - because bats can hibernate within building features that cannot be accessed or seen during an external or internal inspection. Therefore, even an inspection during the hibernation period carries a large degree of uncertainty.
- 4.39 Precautionary measures will need to be adopted during demolition to ensure any risks to roosting bats (including hibernating bats) are minimised.
- 4.40 When bat calls could not be accurately identified to species level, the word 'likely' has been used in front of the species name to recognise the degree of uncertainty.
- 4.41 In spite of these minor limitations, this report provides a robust assessment of the site's importance for bats, the objectives of the report have been fulfilled and there are no ecologically significant limitations to the effectiveness of the survey conducted.

LIFESPAN OF SURVEY DATA

- 4.42 If more than 12 months elapse between the date of the final survey visit and the commencement of works affecting building B1, additional bat survey work may be required within the period May to August - to ensure the roost status of the building has not changed and to provide up-to date survey data. In this instance, a suitably experienced ecologist should be consulted for advice.

5. RESULTS

DESK STUDY

- 5.1 Data obtained from the KMBRC record search indicate recent and historic records of whiskered / Brandt's / Alcahoo bat (*Myotis sp.*), serotine bat (*Eptesicus serotinus*), pipistrelle bat (*Pipistrellus sp.*), noctule bat (*Nyctalus noctula*), Natterer's bat (*M. nattereri*), brown long-eared bat (*Plecotus auritus*), Leisler's bat (*N. leisleri*) and Daubenton's bat (*M. daubentonii*) within 5 km of the application site.
- 5.2 The desk study identified a maternity roost of pipistrelle bat (species not confirmed) located 4.5 km southeast of the site in 2014.
- 5.3 The desk study did not provide any detailed information regarding roost types present within 1 km of the Site.
- 5.4 A search of the MAGIC website identified three approved bat EPSM licence within a 5 km radius of the application site. This MAGIC search result evidences the presence of a breeding roost of common pipistrelle bat (*P. pipistrellus*), soprano pipistrelle bat (*P. pygmaeus*) and brown long-eared bat c.4.5 km north of the application site, in the period 2019 to 2025.
- 5.5 The closest bat EPSM licence, c.3.3 km south of the application site, evidences the presence of a non-breeding summer roost brown long-eared bat and whiskered bat (*M. mystacinus*) in the period 2020 to 2025.

PRELIMINARY ROOST ASSESSMENT

- 5.6 An external inspection of Building B1 and the public house to the south of B1 found no physical evidence of bats using the buildings.
- 5.7 During the inspection, several potential bat roosting features were identified on all sides of building B1. No potential roost features were recorded on the public house.
- 5.8 Suitable features identified on B1 included dropped or missing boards and bricks, gaps between roofing felt and walls, weep holes above doors, and cracks and crevices in the external walls.
- 5.9 No evidence or indicators of bat roosting (such as droppings or indicative staining) were observed during the inspection.
- 5.10 Appendix 3 provides detail of the potential bat roost features recorded on building B1.

EMERGENCE SURVEY

Table 2 Summary of data obtained during the emergence survey visit

Date of survey visit	Bat emergence observed?	Summary of bat activity
21/09/2022	No	The first bat was recorded on site at 19:11. Three species of bat were recorded during the survey visit; common pipistrelle, soprano pipistrelle and noctule. Common pipistrelles were observed flying and foraging over and around the main building in very low numbers throughout the duration of the survey visit. One or two individual soprano pipistrelle and noctule bats flew past or across the site (unseen). These bats are likely to have entered the site from neighbouring off-site habitat.

6. EVALUATION AND RECOMMENDATIONS

ROOSTING BATS

- 6.1 No bats were recorded emerging from building B1.
- 6.2 The results indicate that bats are likely not using any of the identified PRFs and are likely not roosting within building B1.

FORAGING AND COMMUTING BATS

- 6.3 No dedicated bat activity survey was undertaken. However, general observations relating to on-site bat activity (species, behaviour and, where possible, spatial use of the site by bats) were recorded during the emergence survey visit.
- 6.4 These general observations evidence use of the site by common pipistrelle, soprano pipistrelle and noctule bats, with common pipistrelle noted foraging around or near to building B1 on site in low numbers.

RECOMMENDATIONS

- 6.5 To ensure suitable foraging habitat is provided within the proposed development, it is recommended that retained areas of open green space (especially around the site boundaries) are planted with native shrub and scrub cover, and/or native tall grassland margins - to create darker, more sheltered areas for foraging bats and help increase the numbers of insects these areas will support.
- 6.6 In addition to the above, it is recommended that features suitable for crevice dwelling bat species such as common and soprano pipistrelle (recorded on site) are included to enhance the site for roosting bats by incorporating a minimum of six roosting boxes (such as Kent bat boxes or equivalent). These boxes would need to be located on existing mature trees along the boundary of the site a minimum of three metres from the ground in a sheltered location with flightlines over open green space unaffected by direct lighting or light spill.
- 6.7 As a precaution, cladding, flashing, soffits, and eaves on building B1 will need to be removed by hand, under the supervision of a licenced bat ecologist.
- 6.8 Because no bats were recorded roosting within B1, and on-site bat activity levels were low (indicating low risk of bat roost presence in the near future), these features can be removed at any time of year. However, as a precaution, this work should be undertaken in September, October, or March if possible. This avoids the most sensitive periods for bats. Conducting works in October would be ideal as this is outside of the typical bird nesting season.
- 6.9 In the unlikely event that a bat or bats are discovered during demolition of the main building, all works within and adjacent to the building must cease immediately. In this instance, a bat mitigation licence will need to be secured from Natural England before work can resume.

ZONE OF INFLUENCE

- 6.10 If the avoidance, mitigation, compensation, and enhancement measures set out in the associated *Preliminary Ecological Appraisal* report are effectively implemented, the ZoI of the proposed development in relation to ecologically significant adverse effects upon bats is likely to be limited to the application site.

7. REFERENCES

- Andrews & Pearson (2022) *Review of empirical data in respect of emergence and return times reported for the UK's native bat species*. Version 6. Accessed via: <https://drive.google.com/file/d/1DeGHxyr9-p5XH6R6CRimsmquVD188WY8/view> [Accessed 18/06/2022].
- Bat Conservation Trust (BCT) (2016) *Bat surveys for Professional Ecologists: Good Practice Guidelines*. 3rd edition. BCT, London.
- BCT and Institution of Lighting Professionals (ILP) (2018). *Guidance Note 08/18: Bats and artificial lighting in the UK*. Bats and the Built Environment series. BCT, London. ILP, Warwickshire.
- Bat Conservation Trust (BCT) (2022) *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys*. BCT, London.
- CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.1 (Updated September 2019). Chartered Institute of Ecology and Environmental Management, Winchester.
- Joint Nature Conservation Committee (JNCC) (2004). *Bat Workers' Manual*. 3rd edition.
- Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.
- Natural England (undated). *Standing Advice Species Sheet: Bats*

8. APPENDIX 1: LEGISLATION AND PLANNING POLICY

- 8.1 The Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended) afford legal protection to bats.
- 8.2 The specific legal protection afforded to bats can be found within the Sections and Schedules of the relevant legislation and relevant case law.
- 8.3 In general, any person and/or activity that: -
- Damages or destroys a breeding or resting place of bats. (This is sometimes referred to as the strict liability or absolute offence);
 - Deliberately captures, injures or kills a bat/s;
 - Deliberately disturbs bats in a way likely to impair animals' ability to survive, breed or nurture young, their ability to hibernate and migrate and disturbance likely to have a significant effect on local distribution and abundance;
 - Intentionally or recklessly disturbs a bat/s while occupying a structure or place used for shelter and/or protection (Wildlife and Countryside Act 1981 (as amended)); and
 - Intentionally or recklessly obstructs access to any structure or place that bat / bats use for shelter or protection (Wildlife and Countryside Act 1981 (as amended)).
- ...may be guilty of an offence.
- 8.4 The legislation applies to bat roosts even when they are not occupied.
- 8.5 Actions affecting multiple animals can be construed as separate offences and therefore penalties can be applied per animal impacted.
- 8.6 Under certain circumstances licences can be granted by the Statutory Nature Conservation Organisation (Natural England in England) to permit actions that would otherwise be unlawful.
- 8.7 There are some very specific defences associated with the Conservation of Habitats and Species Regulations 2017 (as amended), however these are unlikely to apply to construction related projects. The Sections of the Regulations provide further details of these defences.
- 8.8 The Wildlife and Countryside Act (1981) includes defence for those aspects of the legislation that apply to bats. These defences are unlikely to apply to construction related projects and do not apply to those acts included in the Conservation of Habitats and Species Regulations 2017 (as amended). The Schedules of the Act provide further details of defences.
- 8.9 Local authorities have obligations under sections 40 and 41 of the Natural Environment and Rural Communities Act (NERC) 2006 to have regard to the purpose of conserving biodiversity in carrying out their duties. Seven species of bat species are listed on Section 41 the NERC Act.

9. APPENDIX 2: SURVEYOR LOCATION PLAN (EMERGENCE SURVEY)



Legend:

- Bat surveyor location
- Bat surveyor field of view
- Application site boundary
Total area approx: 4.472 ha.

0 5 10 m
1:500

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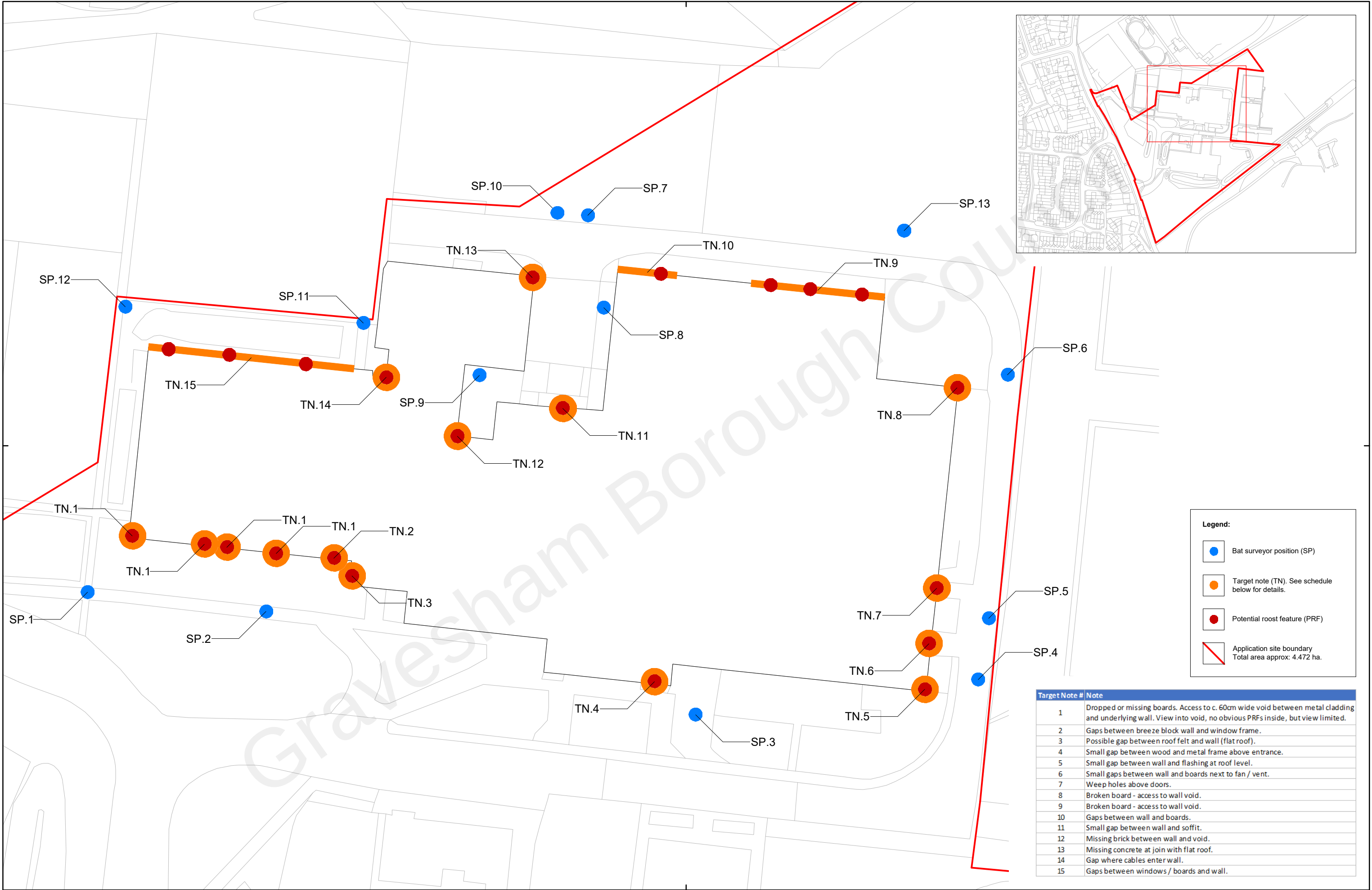
client. **Space Place**
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Cascades, Gravesend
Cascades Leisure Centre
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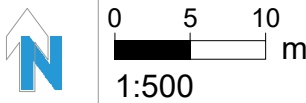
10. APPENDIX 3: LOCATIONS AND DETAIL OF POTENTIAL BAT ROOST FEATURES



Legend:

- Bat surveyor position (SP)
- Target note (TN). See schedule below for details.
- Potential roost feature (PRF)
- Application site boundary
Total area approx: 4.472 ha.

Target Note #	Note
1	Dropped or missing boards. Access to c. 60cm wide void between metal cladding and underlying wall. View into void, no obvious PRFs inside, but view limited.
2	Gaps between breeze block wall and window frame.
3	Possible gap between roof felt and wall (flat roof).
4	Small gap between wood and metal frame above entrance.
5	Small gap between wall and flashing at roof level.
6	Small gaps between wall and boards next to fan / vent.
7	Weep holes above doors.
8	Broken board - access to wall void.
9	Broken board - access to wall void.
10	Gaps between wall and boards.
11	Small gap between wall and soffit.
12	Missing brick between wall and void.
13	Missing concrete at join with flat roof.
14	Gap where cables enter wall.
15	Gaps between windows / boards and wall.



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client. **Space Place**
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Cascades Leisure Centre
Thong Lane, Gravesend DA12 4LG

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