Bat Survey Report – Preliminary Roost Assessment and Dusk / Dawn Surveys

99 Hartland Road, Reading, Berkshire

For

Reading Borough Council

July 2023
Updated July 2024

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Report conditions

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Summary

Bat survey work was carried out to assess the presence or likely absence of bats at 99 Hartland Road, Reading. This work is required to support a planning application with Reading Borough Council.

99 Hartland Road is a modern detached house in a mature residential area to the south of Reading. It is of traditional brick construction with a cavity wall and a timber framed pitched roof with Redland 49-type interlocking concrete tiles over a bitumen underfelt. It has a subservient gable end to the front of the house and small single-storey flat-roofed extensions to the east side and rear.

The house is set in a small domestic garden, with residential development in the surrounding area.

The proposal is for the demolition of the existing flat roofed single-storey extension and the construction of a new two-storey extension, together with re-cladding of the external walls and installation of solar panels.

Visual bat survey work finds no direct visual evidence of bat roosting activity either to the internals or externals of the property. However, a small number of gaps / crevices are identified on the externals that could potentially be exploited by individual bats.

The site lies in a landscape dominated by mature suburban residential development, but with good linkages to nearby areas of good quality foraging habitat.

Overall, the house is judged to present low, but not negligible, bat roost suitability.

Further dusk and dawn bat survey work did not record any bat emergences or entries. It was concluded that the house does not currently support roosting bats.

No further survey work is recommended.

July 2024 update: Amendment to the design of the development in 2024 for a two-storey rather than single-storey extension. The survey is still only a year old at this time, and thus the 2023 results are considered still relevant and appropriate, and no further survey work is recommended.

1. Introduction

Objectives

1.1. The purpose of this study was to provide information on the possible presence or likely absence of bats at 99 Hartland Road, Reading, to support a planning application with Reading Borough Council. Where bat roosts are identified, or where their presence cannot be confidently ruled out, the report sets out an assessment of the impacts to these and where necessary makes recommendations for measures to avoid, mitigate or compensate for impacts to bats as necessary, dependent on the nature and scale of the identified impacts.

Site Description

1.2. 99 Hartland Road is a modern detached house in a mature residential area to the south of Reading (see Figures A1.1 and A1.2 in Appendix 1). It is of traditional brick construction with a cavity wall. It has a timber-framed pitched roof. The roof has Redland 49-type interlocking concrete tiles and concrete half-round ridge tiles over a bitumen underfelt. The main ridge runs east-west, and the house faces south onto Hartland Road. There is a small subservient gable end to the front of the house. There is a small single-storey flat-roofed extension to the east side of the house and one to the rear.

1.3. The house is set in a small domestic garden, with residential development in the surrounding area. There is a large secondary school to the east of the house. Photos 1 and 2 in the photo sheet in Appendix 2 show the house and its setting.

Proposed works

1.4. The proposal is to demolish the existing single-storey side extension and extend the property with a new two-storey extension. In addition, the external walls are to be clad with an external insulation panel and render system to improve energy efficiency. Solar panels will be installed on the southern roof pitch. Figures A1.3 and A1.4 in Appendix 1 show existing and proposed elevations.

2. Methods

Desk-based assessment

2.1. A desk-based assessment was carried out by HCCET on 6 July 2023. Due to the tight project timescales, a formal records request to the Thames Valley Environmental Records Centre was not carried out. This is discussed further in the Limitations section. However, publicly available data on granted bat licences available from magic.gov was reviewed.

2.2. The desk study also used aerial photos and GIS to identify and assess habitats of particular value to bats such as woodlands, species-rich grasslands, and waterbodies / river corridors as well as to identify potential valuable linkages between the site and foraging resources in the wider landscape. The Reading Borough Council Proposals Map was also reviewed to identify any features of biodiversity interest, along with the adjacent Wokingham Borough Council Proposals Map.

Preliminary Roost Assessment

2.3. A visual daytime bat survey was carried out on 7 July 2023 by Adam Egglesfield, Lead Ecologist from the Hampshire County Council Ecology Team (HCCET), who holds a current licence to survey bat roosts assisted by Thomas Gray, Assistant Ecologist with HCCET. The weather was 25°C, minimal cloud cover, no rain, and calm with a wind force of between 0 and 1.

2.4. Survey methodology used during the work is guided by and consistent with that set out in the Bat Conservation Trust's '*Bat Surveys for Professional Ecologists: Good Practice Guidelines*' 3rd edition, (Collins, J. (ed) 2016).

2.5. The building was subject to a detailed internal and external search. The aims of this were to identify evidence of bat activity and/or identify the presence of any features that could potentially support roosting bats or features through which bats could gain access to possible roost locations. External areas were inspected to identify potential bat access points and roosting features. Such features typically include missing, slipped, broken or bowed roof tiles, gaps

around fascias and soffits, gaps in brickwork (such as missing mortar or expansion gaps), lifted chimney, roof, or window flashing, and gaps around window and door casements.

2.6. The external inspection also aimed to identify any direct evidence of bat use such as droppings adhering to walls, floors or windowsills below gaps, or staining around possible access gaps.

2.7. Features were inspected using Opticron Discovery 10x42 close-focusing binoculars and where necessary and safely possible, a ladder. High-powered torches (Clulite Clubman CB2 and Lenser P7.2) were used to illuminate potential roost and roost access features. A Ridgid Seesnake CA-330 endoscope was used to investigate any internal cavities where necessary and accessible.

2.8. Where present and safely accessible, any internal voids and similar spaces were inspected for evidence of bat presence such as live bats, corpses, droppings, feeding remains and staining. The building was subsequently assessed for its suitability to support roosting bats, from ‘Negligible’ to ‘High’, in line with the survey guidelines.

Habitat quality assessment

2.9. An assessment was made of the suitability of the site and the surrounding landscape to support foraging, commuting and other flying behaviours such as swarming and social interactions. The assessment was based on the presence of habitat features such as woodland, scrub, hedgerows, grassland, and open water and watercourses, which are highly attractive to bats as both a foraging resource and as commuting routes. The presence of such habitats, particularly in a mosaic with other suitable habitats, typically increases the potential for structures to be exploited by bats where suitable roost and access opportunities are present. The presence of unlit semi-natural vegetation and habitat linkages between the site and the surrounding landscape were also considered.

2.10. The table in Appendix 4 sets out the guidelines for assessing roost suitability and foraging habitat quality.

Emergence and re-entry survey work

2.11. A single dusk emergence survey visit was undertaken. The surveyors were Adam Egglesfield and Camilla Mitchell, both experienced bat surveyors. Table 1 provides details of the survey visits. The emergence surveys were planned to start at least 15 minutes prior to sunset and continued for at least 1.5 hours after sunset, while the dawn survey work started at least 1.5 hours before sunrise and continued for up to 15 minutes after sunrise. However, please note weather conditions and survey limitations.

Table 1 *Survey timings*

Date	*Type*	*Duration*	*Weather conditions*	*Sunset / Sunrise*
11 July 2023	*Dusk emergence*	*21:00 – 22:15*	*17-16°C; wind f2-3; clear and dry at start; heavy rain from 22:15*	*21:18*

2.12. The surveyors were equipped with Elekon Batlogger M full-spectrum bat detectors, which record bat calls directly onto an integral SD card. Survey work was supplemented by a Nightfox Whisker infrared (IR) camera and additional IR illuminators, and an Xinfrared T2Pro thermal imager attached to a Lenovo tablet.

2.13. Calls were identified in the field where possible, and later analysed if necessary, using Elekon BatExplorer or Wildlife Acoustics Kaleidoscope software to confirm the identity of any species encountered and any relevant behaviour. Analysis of bat calls was carried out with reference to standard texts and call reference libraries (Russ, 2012 and Middleton *et al*, 2014).

2.14. During each survey visit, the surveyors adopted primary surveying locations to enable all visible elevations of the surveyed building to be observed. However, during survey work – particularly during the dawn visit, when bats swarm around potential roost sites – the surveyors would move within the general survey area to gain better surveillance of features of interest at particular times.

Limitations

Preliminary Roost Assessment

2.16. Part of the loft area was not fully accessible due to a lack of boarding and concerns over safe access across the cluttered roof space. Nevertheless, a clear view of the internal features, including all ridge beam areas and all gable ends was possible using torches and binoculars. The need for emergence surveys included a consideration of this slight access limitation. Other than this, all other areas of the site were accessible and visible during the survey work.

2.17. External evidence of bat use, such as droppings stuck to walls or roof faces, are generally rapidly washed or weathered away. However, this is a typical and common factor of visual bat surveys.

2.18. There are therefore no significant limitations to the preliminary survey work.

Emergence and re-entry survey

2.19. The survey work was carried out at the optimum time of year, with suitable equipment, including night vision equipment with each surveyor. All elevations and relevant features were visible. While weather conditions were suitable at the start, light rain, followed by very heavy rain began at 22:10, at which time the survey was called off. As can be seen in the Results section, bat activity had commenced some time before this, and had been continuing for some time. Therefore, it is not considered that the shorter survey period resulted in any emergence behaviour being missed. The rain began substantially after the time when species such as Pipistrelles would have emerged.

2.20. Brown Long-eared Bats *Plecotus auritus* are often associated with dwellings in more urban areas and this species can emerge substantially later in a survey; however, this species also typically leaves large and conspicuous droppings evidence in lofts, and no such evidence was seen. Natterer's Bats *Myotis nattereri* are also a late-emerging species; however, this bat is far less typically associated with urban areas and would be unlikely to be roosting at this site.

2.21. Therefore, it is not considered that the earlier finish for the emergence survey has significantly limited the results and conclusions.

3. Results

Desk-based assessment

3.1. Appendix 1 shows the location of the site and its surrounding relevant ecological interest features produced during the desk-based assessment.

Designated sites and notable habitats

3.2. The map in Appendix 1 shows that 99 Hartland Road lies in an extensive and mature suburban / residential area to the south of Reading. There are nearby areas of urban greenspace including school fields, parks, and urban woodland.

3.3. The most notable habitats in the local area are area of deciduous woodland and grassland at The Cowseys, an urban woodland approximately 425m to the east. This is a Local Wildlife Site (LWS) managed by Reading Borough Council.

3.4. Nores Hill LWS, which is within Wokingham District, lies approximately 800m to the south-east of the site. This is a larger area of woodland, and includes areas of designated Ancient Woodland – i.e. land that has been continuously wooded for at least 400 years. This is less well linked to 99 Hartland Road.

3.5. The Cowseys woodland to the north appears to be reasonably well linked to 99 Hartland Road by mature tree lines between the site boundary, along and through the adjacent school, recreation ground, and up to the woodland edge.

3.6. Further afield, there is a network of watercourses associated with the River Kennet / Foudry Brook approximately 1.25km to the west. These are generally set within a predominantly urban / light industrial type environment with areas of more semi-natural habitats nearer the edge of the urban area. These habitats do not appear to be well linked to the residential areas around 99 Hartland Road.

Bat records

3.7. There is only one record of a bat mitigation licence having been granted within the search area. This was for a Common Pipistrelle *Pipistrellus pipistrellus*

roost, approximately 780m to the south. This was not a maternity or hibernation roost.

Preliminary Roost Assessment

3.8. The following sections describe the findings of the visual survey work. Photos of relevant features described below are shown in Appendix 2.

Internals

3.9. Internally, the loft was found to be somewhat cramped and cluttered, with a low roof height and with domestic services occupying much of the eastern part of the loft.

3.10. The loft is partly boarded around the loft hatch and adjacent areas. A close search of this area, including on top of the various domestic services (water tanks etc.), as well as stored household items found no direct evidence of bat roosting activity such as bat droppings or urine staining.

3.11. The adjacent areas of exposed loft insulation were searched and again, no evidence of bat activity noted. Spot checks beneath areas of insulation found no old bat droppings underneath. Areas of loft insulation further from the directly accessible areas around the hatch were searched using a torch and binoculars, and no bat droppings or other evidence was noted. See Photos 3 to 6.

3.12. The timbers were examined; no bat droppings, fur staining, or other evidence was seen. It was also noted that there were extensive cobwebs across all areas of the loft, including along the central ridge beam. See Photos 7 and 8

3.13. Inspection of the internal gable apexes, gable walls, and the floor areas beneath the gable apexes found no bat droppings. Again, extensive cobwebs were noted in these areas – see Photos 9 and 10.

3.14. The chimney breast, roof areas around the top of this, and the floor areas in the loft around the base of the chimney were inspected and as with other parts of the loft, no direct bat evidence noted, and these areas also exhibited substantial cobwebs. See Photo 11.

3.15. The roof underfelt was found to be in good condition with no noticeable damage, rips, tears or other features that could allow bats to access into the loft from the outside through the roof tiles.

3.16. In summary, no evidence of recent or historic bat activity was identified within the loft.

Externals

3.17. Externally, the roof tiles were generally in good condition and well fitting, with no gaps or damaged tiles across the majority of the roof faces. However, a small area of tiling along the western side of the southern roof face exhibited some slippage / gaps, likely where the natural setting of the timber roof frame against the external gable wall has resulted in a degree of unevenness. Down this section, some of the gaps – particularly lower down the roof – were found to be sufficiently large to allow bats to access and potentially roost in crevices between the tiles, battens, and the upper surface of the underfelt. See Photos 12 and 13.

3.18. The ridge tiles were well-fitting and although there was some slight deterioration of bedding mortar noted, this was not to the degree that gaps large or deep enough for bats to access had developed.

3.19. The verge tile bedding mortar around the gable ends was found to be in good condition with no gaps noted at all – see Photo 14.

3.20. The soffits were found to be in fair condition, with some slight deterioration and weathering, as well as occasional gaps and damage that had resulted in holes that could potentially allow bat access. However, these holes were generally directly adjacent to smooth metal security shuttering over the windows, which would not allow bats to grip onto it prior to crawling up into these gaps. See Photos 15 and 16.

3.21. To the rear of the house is a missing brick lower down the wall. No bat evidence was seen – however, this hole dies give direct access into the wall cavity and is large enough for bats to access. An old bird nest was also identified in this hole (see Photo 17)

3.22. Also to the rear of the house, an external box – possibly for communications / cable TV or similar – was noted just below the eaves. This was fixed so it was sitting slightly proud of the external wall, creating a small secure crevice between the rear of the box and the brickwork, with a gap suitable for bats to access and roost behind (Photo 18).

3.23. A slight area of lifted flashing was noted to one corner of the chimney (Photo 19), along with some slight mortar deterioration around the capping.

3.24. The fascias around the edges of the flat roof sections of the house were found to be flush to the external walls with no gaps behind (Photo 20). However, a small section of slightly raised flashing was noted to one former of the rear extension (see Photo 21).

Habitat quality assessment

3.25. The established residential areas immediately around the site are of lower value to bats as foraging and commuting habitat. However, the playing field and wooded boundaries of the adjacent John Madejski Academy and John Rabson Recreation Ground provide an area of darker, more suitable foraging habitat, and link the 99 Hartland Road site to the high-quality foraging habitat at The Cowsey.

3.26. The site itself comprises a small domestic garden, typical of the properties in the majority of the surrounding area.

3.27. Overall, the mosaic of garden habitats, comprising lawn, typical hedging and trees, in a more urban setting, is considered to offer locally useful habitat for foraging bats of low to moderate quality in habitat quality terms. The wider habitat around The Cowsey is of moderate to high quality.

Summary of Preliminary Roost Assessment

3.28. In summary, no direct evidence of bat use of the house was seen, although there were a small number of potential roost locations in the external features. The surrounding habitat is of lower value to bats, although there are good linkages to better quality habitat further afield.

3.29. The Bat Conservation Trust survey guidance identifies that a structure with low roost suitability is:

A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).

3.30. Consequently, it is concluded that the house at 99 Hartland Road offers low roost suitability.

Emergence and re-entry surveys

3.31. As discussed in the previous section, 99 Hartland Road was judged to present low bat roost suitability. Therefore, in line with the established survey methods, a single dusk survey was carried out. The limitations of the lack of full access across all areas of the loft was considered; however, in view of the lack of potential roost features around the externals of the gable ends (the areas that were less accessible internally), it was considered that additional emergence survey work to accommodate this was not required.

3.32. The following section describes the survey findings. Appendix 3 shows the key results and surveyor positions.

Visit 1 – 11 July 2023 (dusk emergence)

3.33. The first bat heard was a Common Pipistrelle at 21:36, approximately 18 minutes past sunset. This flew into the rear garden from a point north-east of the site then commenced foraging activity over the rear garden. A further Common Pipistrelle entered the garden from the north at 21:37 and also began foraging.

3.34. Between 21:37 and 21:54, further bats arrived on site and continued foraging over the rear garden and adjacent properties. A peak of four bats foraging was seen at any one time.

3.35. The activity slackened off and became only occasional and intermittent after 21:55.

3.36. At 21:58 a Noctule *Nyctalus noctula* was seen and heard commuting high over the site.

3.37. A brief Common Pipistrelle pass was recorded at 22:00.

3.38. At 22:10, light rain began to fall. This became heavier and the survey was called off at 22:15. As the rain advanced, the house was kept under observation, but no bats entered any of the potential roost locations to shelter.

3.39. No bats were seen to emerge from the house.

4. Discussion

Interpretation of survey results

4.1. No evidence of bat roosting activity was seen within the house or adhering to the externals.

4.2. The emergence survey recorded no bats emerging from or re-entering any features on the house. However, a small number of Common Pipistrelle bats were seen to use the rear garden as a foraging resource during the early part of the survey. These appeared shortly after sunset suggesting that they were roosting in a nearby property and using the gardens as an early evening foraging location prior to moving off to other foraging areas in the wider area.

4.3. While rain is typically a constraint to emergence surveys, it can be useful if it starts to rain later on, as this can result in bats entering roost locations. However, in this instance, as well as no bats being seen emerging from the house, no bats were seen to seek shelter in any of the potential roost features identified at the house.

4.4. It is therefore concluded that 99 Hartland Road does not currently support any bat roosts.

Impact assessment

4.5. The proposed work at 99 Hartland Road will therefore have no adverse impacts on bats or bat roosts. The development would not result in the loss of any key areas of foraging or commuting habitat.

Legislation and planning policy

4.6. Bats are legally protected under both domestic and international law (the Wildlife and Countryside Act 1981 (as amended)[1] and the Conservation of Habitats and Species Regulations 2017[2] respectively). This legislation makes it an offence to kill, injure or disturb bats, or to destroy or damage their roosts,

[1] http://www.legislation.gov.uk/ukpga/1981/69

[2] https://www.legislation.gov.uk/uksi/2017/1012/contents/made

even when the bats are not present. It is also an offence to 'take' a bat – in the context of development work, this would include moving a bat out of harm's way and transferring it to a new, safe location.

4.7. For such work to legally proceed, Natural England (the Government's statutory nature conservation agency) will issue a European Protected Species Mitigation Licence (EPSML), subject to the proposals meeting three 'derogation' tests:

1. the consented operation must be for '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'; (Regulation 53(2)(e))

2. there must be 'no satisfactory alternative' (Regulation 53(9)(a)); and

3. 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' (Regulation 53(9)(b)).

4.8. Case-law (Morge *vs*. Hampshire County Council)[3] has clarified that planning authorities are able to grant permission for developments that may affect a European protected species to the extent that a breach of the Conservation of Habitats and Species Regulations is likely (i.e. in the case of this proposal, destruction of bat roosts), provided that sufficient information is provided to give the planning authority assurance that the relevant EPSM licence is not unlikely to be granted - i.e. planning authorities also have a duty to assess planning applications against these tests.

4.9. In view of the survey results, it can be concluded that the development proposals will not affect bats or bat roosts and would not be considered likely to result in a breach of the legislation.

[3] https://www.supremecourt.uk/cases/docs/uksc-2010-0120-judgment.pdf

5. Recommendations

5.1. The work at 99 Hartland Road will not adversely affect bats or bat roosts and therefore there are no specific recommendations to be made at this time regarding bats.

5.2. The visual survey identified a disused bird nest in the missing brickwork to the rear of the house. If the work is planned to occur between March and August, this area should be checked prior to the work starting to ensure that there are no active nests present.

6. Conclusions

6.1. Visual bat survey work at 99 Hartland Road found no direct visual evidence of bat roosting activity either to the internals or externals of the property.

6.2. However, a small number of gaps / crevices were identified on the externals that could potentially be exploited by individual bats.

6.3. The site lies in a landscape dominated by mature suburban residential development, but with good linkages to nearby areas of good quality foraging habitat.

6.4. Overall, the house was judged to be present low, but not negligible, bat roost suitability.

6.5. Further dusk and dawn bat survey work did not record any bat emergences or entries. It was concluded that the house does not currently support roosting bats.

6.6. Unless otherwise advised, the findings and recommendations in this report are solely based on the plans and brief provided to HCCET. The results and findings are valid for two years from the date of the initial field survey. HCCET should be contacted if this report is to be used after this period to check if any updating work needs to be undertaken.

References

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Appendix 1 – Plans and figures

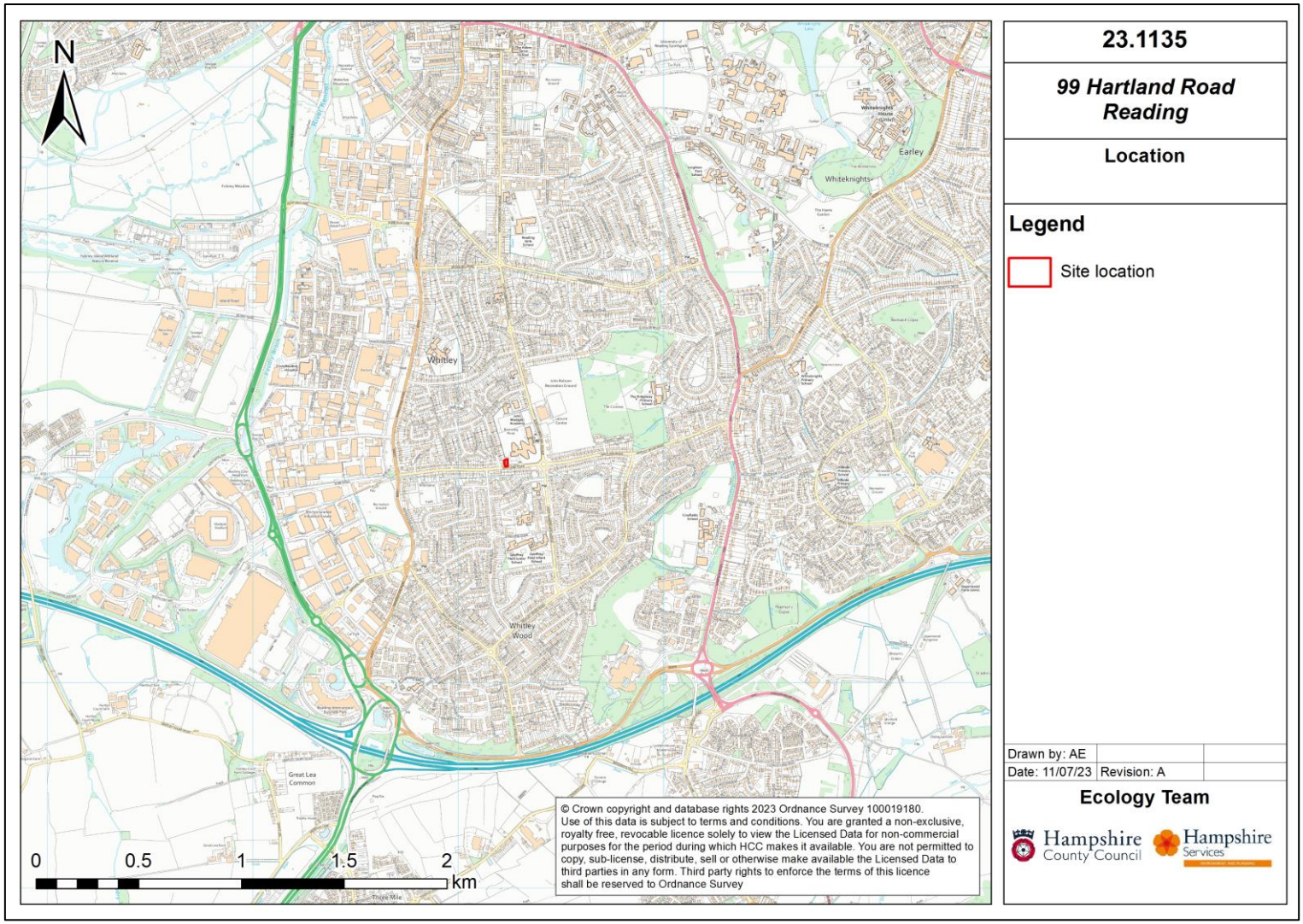


Figure A1.1 *Site location*

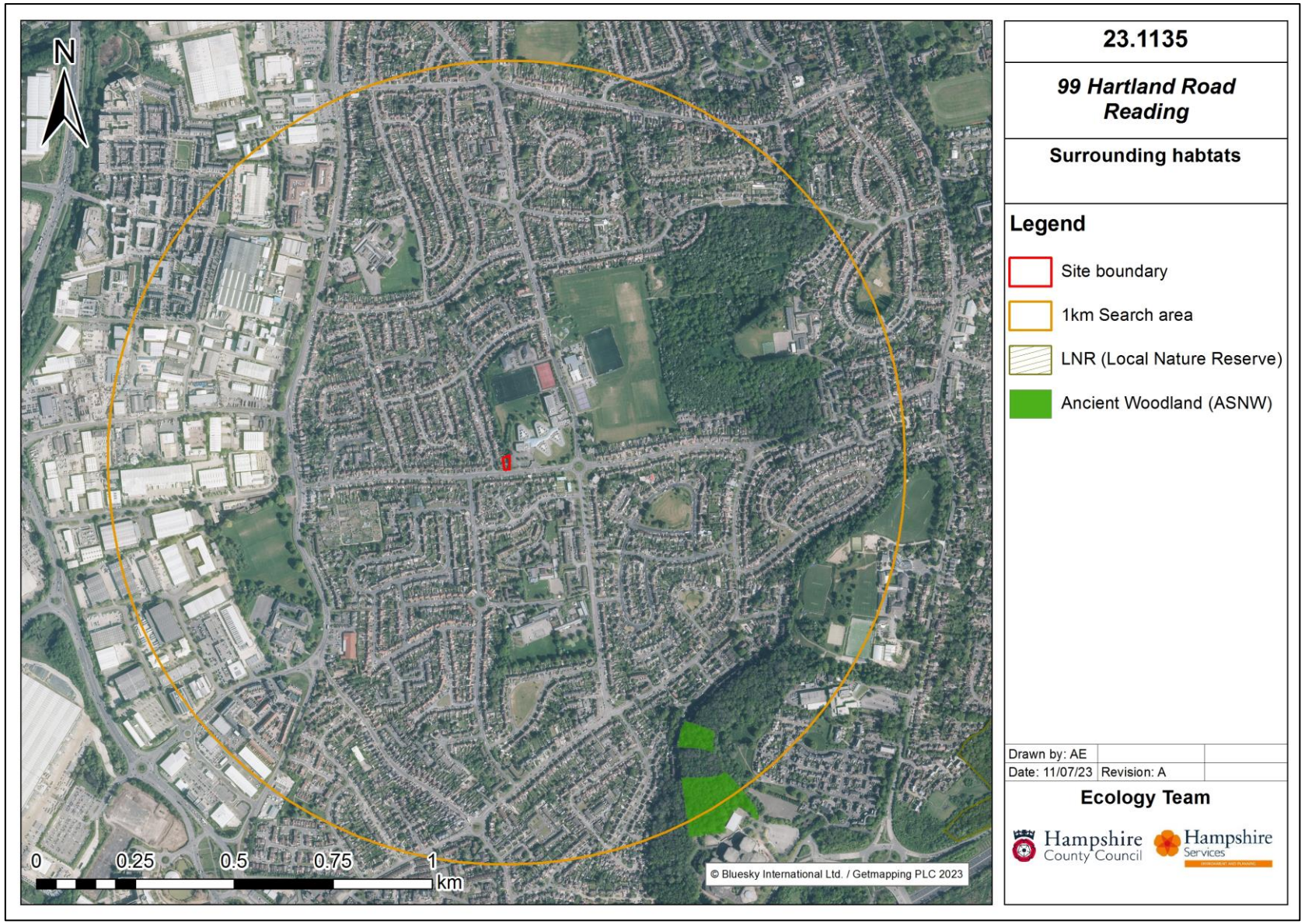


Figure A1.2 *Surrounding habitats and features of interest*

Figure A1.3 *Existing Elevations*

Figure A1.4 *Proposed Elevations*

Appendix 2 – Photos

Photo 1 *Front (south) elevation and east side elevation, showing flat roof extension*

Photo 2 *Rear (north) elevation showing flat roof rear extension*

Photo 3 *Loft internals*

Photo 4 *Loft internals*

Photo 5 *Loft internals*

Photo 6 *Spot checks under insulation*

Photo 7 *Ridge beam*

Photo 8 *Beams*

Photo 9 *Gable apex*

Photo 10 *Floor at base of gable apex*

Photo 11 *Chimney breast*

Photo 12 *Roof tiles*

Photo 13 *Lifting to tiles on eastern edge of south roof face*

Photo 14 *Verge mortar*

Photo 15 *Soffit to rear well sealed, but damage present*

Photo 16 *Gap to soffit*

Photo 17 *Missing brick with bird nest and potential bat access to wall cavity*

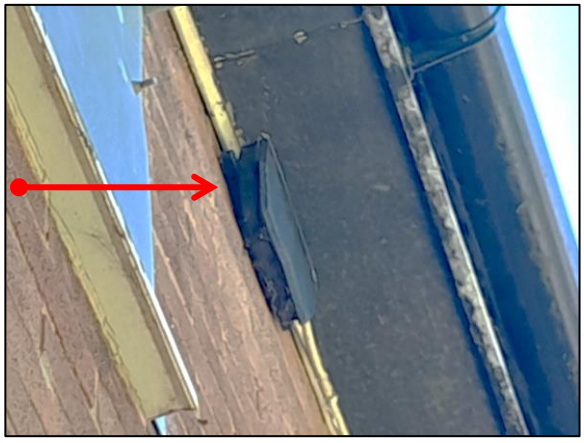


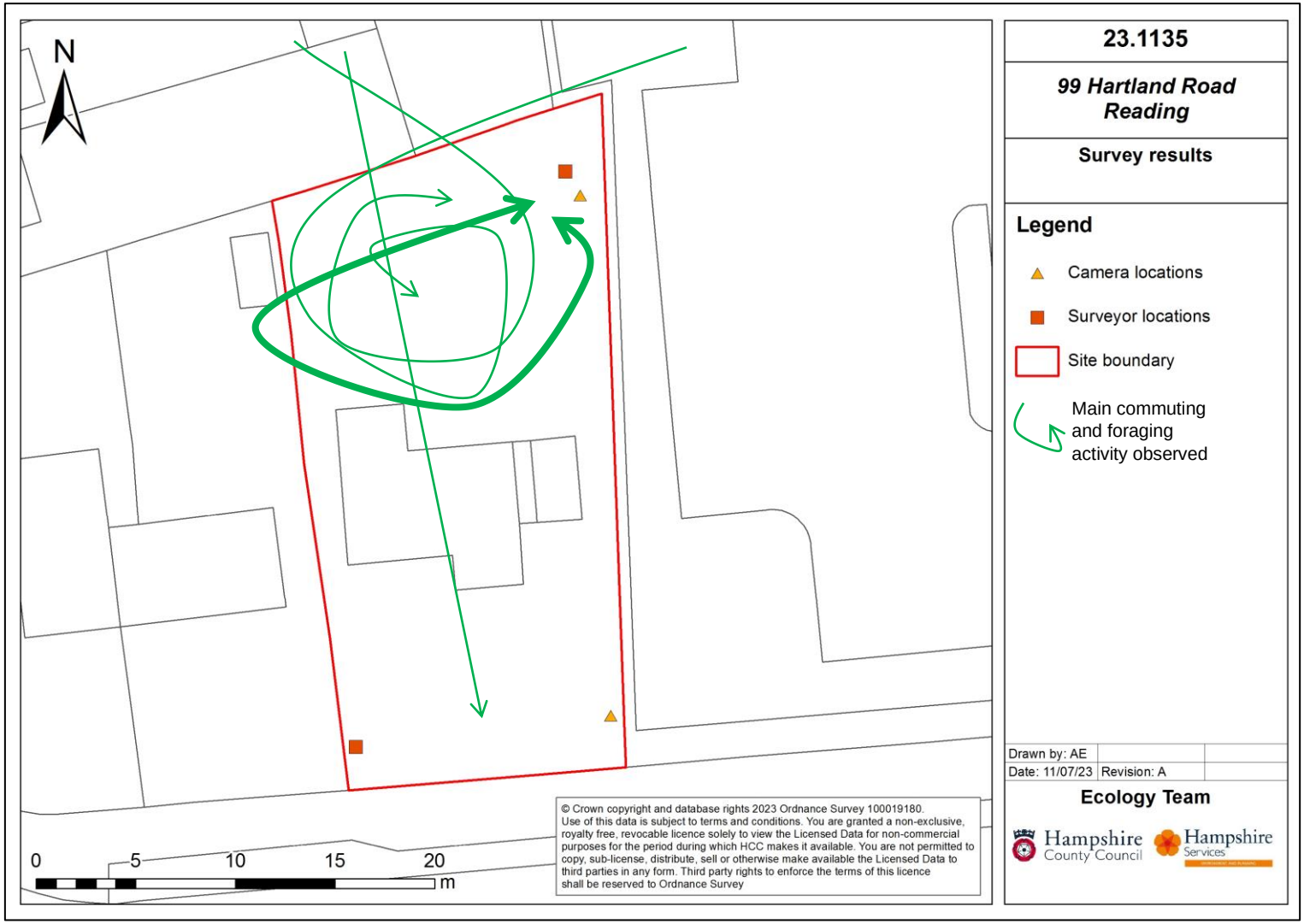
Photo 18 *Gap behind wall box*

Photo 19 *Lifted flashing behind chimney*

Photo 20 *Flat roof fascia tight to wall*

Photo 21 *Gap to flashing to rear flat roof extension*

Appendix 3 – Survey results



Appendix 4 – Roost and activity habitat suitability criteria

Table A4.1 *Roost and activity habitat suitability criteria*

Suitability	Roosting habitat	Habitat for foraging, commuting and other activity
Negligible	Negligible habitat features on site likely to be used by bats	Negligible habitat features on site likely to be used by bats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However these potential roost sits do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain Potential Roost Features (PRFs) but with none seen from the ground or features seen with only very limited roost potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites 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, conditions and surrounding habitat	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland