

Bat Survey of 37 Kidmore End Road, Emer Green, Berkshire, RG4 8SN

Client Mrs J Lavell
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Non-technical Summary

Background

In May 2019, Crossman Associates was commissioned by Mrs J Lavell to undertake a bat and bird survey of a detached residential dwelling at 37 Kidmore End Road, Emmer Green, Reading, Berkshire, RG4 8SN.

Proposals involve the enlargement of the dwelling via ground floor and two storey extensions to the rear (western) elevation.

Methodology

The scoping survey was undertaken by Fairbrass Knowles, a fully licensed bat worker and experienced ecologist. The building was inspected both externally and internally for any evidence of bat / bird presence, such as droppings, food remains, staining or actual bats / birds.

Results

The property consists of a detached conventionally-built two-storey circa 1960's dwelling with an integral garage. The property is located within Emmer Green, a suburb of Reading and immediate surroundings is mainly composed of residential areas.

During the survey, there was evidence of usage by small numbers of long-eared bats and it is considered that the building is supporting a non-breeding day roost for small numbers of long-eared bat, very likely brown long-eared bat *Plecotus auritus*. **The proposed extension works will not directly affect the roost.**

Recommendations

It is recommended that the following be undertaken;

- Retention of the bat roost within the roof void
- Careful approach to extension works

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1. Background

- 1.1. In May 2019, Crossman Associates was commissioned by Mrs J Lavell to undertake a bat survey of a moderate-sized circa 1960's detached property at 37 Kidmore End Road, Emmer Green, Reading, Berkshire, RG4 8SN (site Ordnance Survey grid reference: SU 7178 7702). Figure 1, Appendix I provides a site location map.
- 1.2. Proposals involve the enlargement of the dwelling via ground floor and two storey extensions to the rear (western) elevation. Figure 2, Appendix I provides an annotated drawing of the proposals.
- 1.3. The objectives of the survey were to:
 - Make an assessment of the likely presence or absence of bats and birds
 - Identify any legislative or planning policy constraints relevant to the site
 - Determine the need for further surveys, compensation or mitigation

Site Description

- 1.4. The dwelling consists of a conventionally constructed two storey T-shaped four-bedroom dwelling with a pitched roof and integral two bay garage. Historically the building has been enlarged with additions that include a square-shaped ground floor extension added to the rear (western) elevation.
- 1.5. The property sits within its own grounds which include a front drive way with small area of garden while the main garden which is larger than average occupies the rear (western) side. Areas of garden tend to be well managed.

- 1.6. The property is located within Emmer Green which is the northern most district of Reading and immediate surroundings is characterised by moderately dense areas of urbanisation composed of further similar residential dwellings with good sized gardens, which lead to a green and leafy environment.
- 1.7. The wider landscape is characterised by further areas of urbanisation that make up the district of Emmer Green and consist of arms of urbanisation that extend into surrounding farmland, which includes numerous small blocks of mixed woodland and copses; one of which is Clayfield Copse, a Local Nature Reserve that is approximately 500 m to the east. Numerous public open spaces are also present, as well as The Reading Golf Club, which lies to the west and provides areas of naturalistic habitat.

Legislation

- 1.8. In the UK all species of bats are protected under the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations, 2017. Under this legislation it is a strict liability offence to injure or destroy a bat or to disturb damage or destroy the resting place of a bat. Under this legislation the UK is obliged to fully take into account bats within the planning process and the level of bat activity on-site must be fully assessed prior to the assessment the planning application
- 1.9. In Britain all wild birds are granted legal protection under the Wildlife & Countryside Act ((1981) (as amended)). This legislation protects the birds, their eggs and nests whilst being built or in use.

2. Methodology

Desktop Study

Data search

- 2.1. The MAGIC website was accessed to gain information on any statutory site designations within 4 km of the site that are designated for bats.

National Planning Policy

- 2.2. National Planning Policy has been reviewed for policies that relate to nature conservation relevant to the site.

Bat scoping survey

- 2.3. The building was methodically inspected internally and externally for any evidence of roosting bats, including actual bats, droppings, urine staining and evidence of feeding activity such as discarded insect wings and cases.
- 2.4. The building was also assessed for its suitability to support roosting bats by considering several factors including whether bats can access internal and external voids within the building and whether these voids provide adequate protection and shelter for roosting bats. If the building is not confirmed as a roost, it is assessed from High to Negligible Suitability as follows;
 - **High Suitability** – many roosting opportunities. Buildings tend to be old, large and rural
 - **Moderate Suitability** – some roosting opportunities. Building tend to be old, rural with some recent maintenance

- **Low Suitability** – few roosting opportunities. Buildings tend to be modern, urban and well maintained
- **Negligible Suitability** – insignificant roosting opportunities. Buildings tend to be small, modern, urban and very well maintained

Activity surveys

- 2.5. An evening emergence survey and dawn re-entry survey were conducted in July and August 2019. Two surveyors attended each survey and were positioned so that all aspects of the building suitable for roosting bats could be observed. Surveys were undertaken during suitable weather conditions. The emergence surveys commenced 15 minutes before sunset and continued for two hours. The dawn re-entry survey commenced 1.5 hours prior to sunrise and continued until 15 minutes after sunrise. All general bat activity on site was noted.
- 2.6. Anabat, SSF 2 and Echo Meter Touch bat detectors were used together with visual observations on flight patterns and feeding behaviour to aid identification to species level. Recordings of bat calls were made and later analysed using dedicated computer software BatScan.
- 2.7. Survey work was undertaken by Miguel Alvarez and Carla de Souza.

Birds

- 2.8. The building was also inspected for the presence of birds including barn owl *Tyto alba*, and barn swallow *Hirundo rustica*. The building was checked for field signs including nesting material, accumulations of droppings and/or pellets.

3. Results

Desktop Study

Data Search

- 3.1. The MAGIC website informed of the following statutory site within 2 km of the site;
- Clayfield Copse Local Nature Reserve – lies approximately 500 m west of the site and is designated for woodland habitat including hazel coppice and some ancient woodland areas. The survey site is not functionally connected to this designation.
- 3.2. that there are no statutory sites within 4 km of the site that are designated for bats;

Planning Policy

- 3.3. The National Planning Policy Framework (NPPF) contains sections of relevance to nature conservation that include:
- Paragraph 174: To protect and enhance biodiversity and geodiversity, plans should:
 - a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁵⁶; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation;

- b) and promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.
- Paragraph 175: When determining planning applications, local planning authorities should apply the following principles:
 - a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
 - b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
 - c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
 - d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

Field Survey

Bat scoping survey

- 3.4. Survey work was undertaken by Fairbrass Knowles an experienced ecologist and fully licensed bat worker (Natural England Licence Number: CLW2458), and took place on 13 May 2019. The building was fully accessible.
- 3.5. The external and internal conditions of the buildings are described in the table below and photographic reference can be found within Appendix II.
- 3.6. A table within Appendix III; information sheets set out the criteria for the way a building is assessed for its potential to support roosting bats.

Table 1; Building description

Building	Feature	Feature Description	Bat suitability
37 Kidmore End Road.	Overview	A larger than average sized detached two storey T shaped brick-built dwelling with an integral two bay garage. The dwelling is thought to date from the 1960's and overall remains in a sound state and is currently inhabited.	Confirmed roost — High Suitability — Moderate Suitability — Low Suitability — Negligible Suitability —
	Exterior	All supporting walls are formed from well rendered decorative red cavity brickwork with all elevations remaining in excellent condition with no evidence of any significant cracks or holes Windows and doors where present are in good condition and are well sealed within their respective reveals.	

	Interior	All living areas and the garage consist of well-sealed rooms with painted and plastered walls and ceilings. The property has one continuous L-shaped loft. The loft is created by a standard cut and pitch roof with timbers formed from gauged and exposed timbers with an average floor to ridge height of approximately 2.2 m. Type 1 f sarking felt is present throughout and overall appears to remain intact throughout. The loft is accessed via the northern section, which has been fully boarded out and used for storage. The southern section, due to the arrangement of the roof timbers, is less accessible and is not boarded out. A rendered chimney passes through the void. There are a small quantity of bat droppings in the southern section of the loft. The droppings, which numbered less than 50 were arranged below a ridge beam and a number were assessed as dating from the current (2019) season; for an annotated drawing showing the location of the droppings refer to Appendix I, Figure 2. The size, shape and context would strongly suggest that the droppings come from a species of long-eared bat <i>Plecotus sp.</i> very likely a brown	
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		long-eared bat <i>Plecotus auritus</i> ; which is a species known to roost within spacious lofts of domestic dwellings. No actual bats were observed.	
	Roof	The roof of the main and original dwelling consists of a double pitched and hipped roof aligned in an east – west direction, with a further smaller cross gable hipped roof constructed off the northern end of the main eastern roof. The square-shaped ground floor extension on the rear (western) elevation has a simple hipped roof that links on to the main dwellings western supporting wall. All roofs are clad with flat clay peg tiles and simple ridges; all are present and in the case of the tiles all are present and well seated in place and due to the flat design of the tiles no significant gaps or crevices are present. In the case of the ridges all are present; however, a number no longer remain well cemented in place with a number of gaps clearly visible; particularly on the northern end of the main roofs western elevation; refer to Photograph 6. Three dormers are present on the front roof (eastern) elevation. The southern and northern dormers have the sides clad with traditional clay hanging tiles. The tiles are all present but as is fairly typical with this type	

of cladding numerous small crevices are present along the tiles bases and while not leading to a building defect do provide significant access points that lead into the shallow, hidden cavities that lay below and are created by the battens that the tiles are hung from. Refer to photograph 2.

Current proposals will not see any alteration to the dormer windows.

The dwelling has a significant roof overhang and is fitted with a simple timber soffit arrangement. Soffits all remain in good order with no evidence of areas of rot, however a few small but significant gaps are present where the horizontal soffit base meets the brickwork and fails to seal tightly; this can be seen on the northern side elevation; refer to photograph 5.

The dwelling has two simple red brick chimney stacks, both chimneys remain in good order with all pointing remaining intact. Lead work seals the chimney bases to the roof and while lead work remains in place; there is some evidence of significant lifting on both chimneys; refer to photograph 7.

Emergence/re-entry survey

Survey Date	19/07/2019
Survey Type	Re-entry survey
Survey Conditions	Start temperature: 10°C End temperature: 11°C Wind level (1-12): 1 Cloud 50% Weather summary: Dry Sunrise time: 5.05
Re-entry data	No bats re-entered.
General data	A distant pass by a soprano pipistrelle at 4.04 bat not seen. A foraging activity by a common pipistrelle at 4.34 bat not seen. A pass by a common pipistrelle at 4.38 bat not seen.
Survey Date	5/8/2019
Survey Type	Emergence
Survey Conditions	Start temperature: 17°C End temperature: 15°C Wind level (1-12): 1 Cloud 90% Weather summary: Dry

	Sunset time 20.35
Emergence data	Single long-eared bat emerging from southern elevation of property in gap associated with flue.
General activity	Occasional common pipistrelle activity in surrounding gardens.

Birds

- 3.7. No bird nests or birds were noted during the survey in association with the dwelling.

Evaluation

- 3.8. **No bats were recorded emerging or re-entering any parts of the building that will be directly affected by the proposed extension works.**

Long-eared bat

- 3.9. The roof void is currently supporting a small roost of long-eared bats. Bat droppings are confined to the southern end of the loft which provides a more secluded area which is away from the loft hatch and where household items are stored. The access/egress point is also on the southern elevation of the roof.
- 3.10. During the internal survey, no bats were found to be present and the low quantity of droppings and low level of activity confirm that the building is functioning as a non-breeding day roost. The roof void is not considered to be supporting a maternity roost of long eared bats as in these situations, a larger quantity of droppings and other bat related evidence would be expected.

- 3.11. Long-eared bats do sometimes make use of roof voids as hibernation sites; however, the roof void is considered to be sub-optimal as a hibernation site for this species.
- 3.12. There are two species of long-eared bat in the UK. The widespread and relatively abundant brown long-eared bat *Plecotus auritus* and the grey long-eared bat *Plecotus austriacus*, a species which has a more restricted distribution and is less often encountered. The most likely long-eared bat present is the brown long-eared bat a species strongly associated with older style roof voids of rural dwellings. The two species are difficult to distinguish and the species could not be identified within this survey.

Behaviour and habitat

- 3.13. Long-eared bats are a roof void and crevice dwelling bat, particularly favouring older buildings particularly ones with large open roof spaces. Bats roost singly or in small groups among the roof timbers of the apex, especially around ridge ends, chimneys and in crevices at the top of gable walls.

Crevice dwelling bats

Hanging tiles

- 3.14. The two dormers present on the eastern roof elevation provide significant, shallow hidden cavities which are accessible to crevice dwelling bats and such features are considered suitable in providing potential roosting features for crevice dwelling bats; typically pipistrelle bats *Pipistrellus spp.* During the activity survey, so bats were observed exiting or entering these areas of the building.
- 3.15. Current proposals are restricted to the extension works on the rear (western) elevation and the dormers will remain unaltered.

4. Recommendations

- 4.1. The recommendations in the paragraphs below are provided to help ensure that wildlife and important ecological features are protected during the course of works. Recommendations also set out mitigation measures to minimise harm where this cannot be avoided and provide compensation measures to allow the proposals to meet current legislative and planning policy objectives.
- 4.2. Under the Government's National Planning Policy Framework (NPPF) opportunities to incorporate biodiversity in and around developments should be encouraged.
- 4.3. The Natural Environment and Rural Communities (NERC) Act (2006) states that a public authority must 'in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity; Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat'.
- 4.4. Paragraph 174b) of the NPPF (2018) states 'Plans should ...identify and pursue opportunities for securing measurable net gains for biodiversity' and Paragraph 175d) states that '...opportunities to incorporate biodiversity improvements in and around developments should be encouraged especially where this can secure measurable net gains for biodiversity'.

Bats

- 4.5. The property is proposed for extension. Under the Wildlife and Countryside Act and the Habitats Regulations it is a strict liability offence to damage or destroy a roost site, which means that even accidental acts that may damage or destroy a roost are covered by the legislation. The objective of this prohibition is to protect the continued ecological functionality (CEF) of the resting place (roost) of bats. In this case, it is considered that the long-eared bat roost occupies the loft space and

activity is focused at the southern end of the loft and the identified access/egress point is also at the southern end of the building. After the development works, bats will still be able to use the same access and egress point and will be able to use the loft space as before. It is considered that the extension works will not affect the CEF of the roost providing that the following mitigation strategy is followed. Any deviation from this strategy may require that the site is registered under the Mitigation Class Licence Scheme.

- 4.6. Although the long-eared bat roost is not being destroyed or damaged, the works do have the potential to cause disturbance to bat which is also an offence under the Wildlife and Countryside Act and the Habitats Regulations. Timing of works is key to preventing disturbance to bats, and consideration should be made to following a method statement during works. The roost has been categorised as a day roost and is therefore only occupied during the summer months. Certain works that may cause disturbance to the roost must therefore be undertaken outside of this period and should proceed between 1st September and 1st May. This timeframe is only a guide and it would be prudent to consider allowing as much of a margin from either end of the optimum period as possible.

Proposed mitigation

- 4.7. The following method statement is considered to be the best way to execute the project successfully while continuing to maintain the bat population at a favourable conservation status, and at the same time avoiding the need for registration under the Mitigation Class Licence Scheme.
- 4.8. Supporting walls of the extension will be constructed in the first phase to eaves height. Once this has been completed the new cross gable roof of the extension will need to be constructed; this involves splicing it into the existing roof of the house. This can be done without entering the roof void and thus the bat roost will not be significantly disturbed. The procedure should thus follow:
- To avoid undue noise all fixings should be screwed rather than hammered

- Carefully remove tiles over the overlap area on the existing roof
 - Carefully cut and remove batten as necessary leaving existing sarking timbers in place
 - Fix over felt lay boards; which will receive the feet of the new rafters.
 - When the new structure is complete lay new roofing felt (which should be of the bitumastic type 1f) over the existing, lapping in new to existing under valley and construct new valley gutter over.
- 4.9. It is strongly recommended that modern breathable roofing membrane (BRM) is not used on the roof of the new extension as it is not suitable for bat roosts or buildings associated with bat roosts as they may become entangled within the fibres. BRM is also known to sometimes deteriorate more rapidly when installed in bat roosts. Bitumastic roofing underlay is very durable if laid correctly and not regularly exposed to water; such exposure can lead to 'felt rot' at the eaves. To prevent this problem the eaves course should be of non-degradable sarking felt, such as one of the Monarflex products. Where the eaves are suitable, a semi-rigid system such as Moanarflex EavesGuard is the best choice and keeps the bitumastic felt well away from water.

Timing

- 4.10. The roost has been classified as a day roost and is occupied in the summer months, typically between April and September. All roofing works detailed above may cause disturbance to the roost and must therefore be undertaken outside of the summer season and should proceed between October and March of any given year. If work is delayed and still ongoing at the start of April, then Crossman Associates should be contacted for further advice.
- 4.11. **If roof works are likely to overrun beyond the start of April, then the site should be registered under the Mitigation Class Licence Scheme, which would take approximately 10-15 days to organise.**



5. Limitations

- 5.1. This report records wildlife found during the survey and anecdotal evidence of sightings. It does not record any plants or animals that may appear at other times of the year and were therefore not evident at the time of visit.
- 5.2. This report represents a preliminary assessment only. Recommendations and conclusions are subject to change should further findings significantly differ from those collected from the survey efforts to date.
- 5.3. The advice contained in this report relate primarily to factual survey results and general guidance only. On all legal matters you are advised to take legal advice.

6. References

Bat Conservation Trust (BCT) *Bats and Lighting in the UK*. BCT

Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)* The Bat Conservation Trust, London.

HMSO (1981) *Wildlife and Countryside Act 1981 (and subsequent amendments)*. HMSO

Mitchell-Jones, A.J (2004) *Bat Mitigation Guidelines* English Nature

Mitchell-Jones, A.J , & McLeish A.P. (2012) *The Bat Worker's Manual* (4th Edition)

Multi-Agency Geographical Information for the Countryside (MAGIC)

Website at www.magic.gov.uk

Appendix I – Site Figures



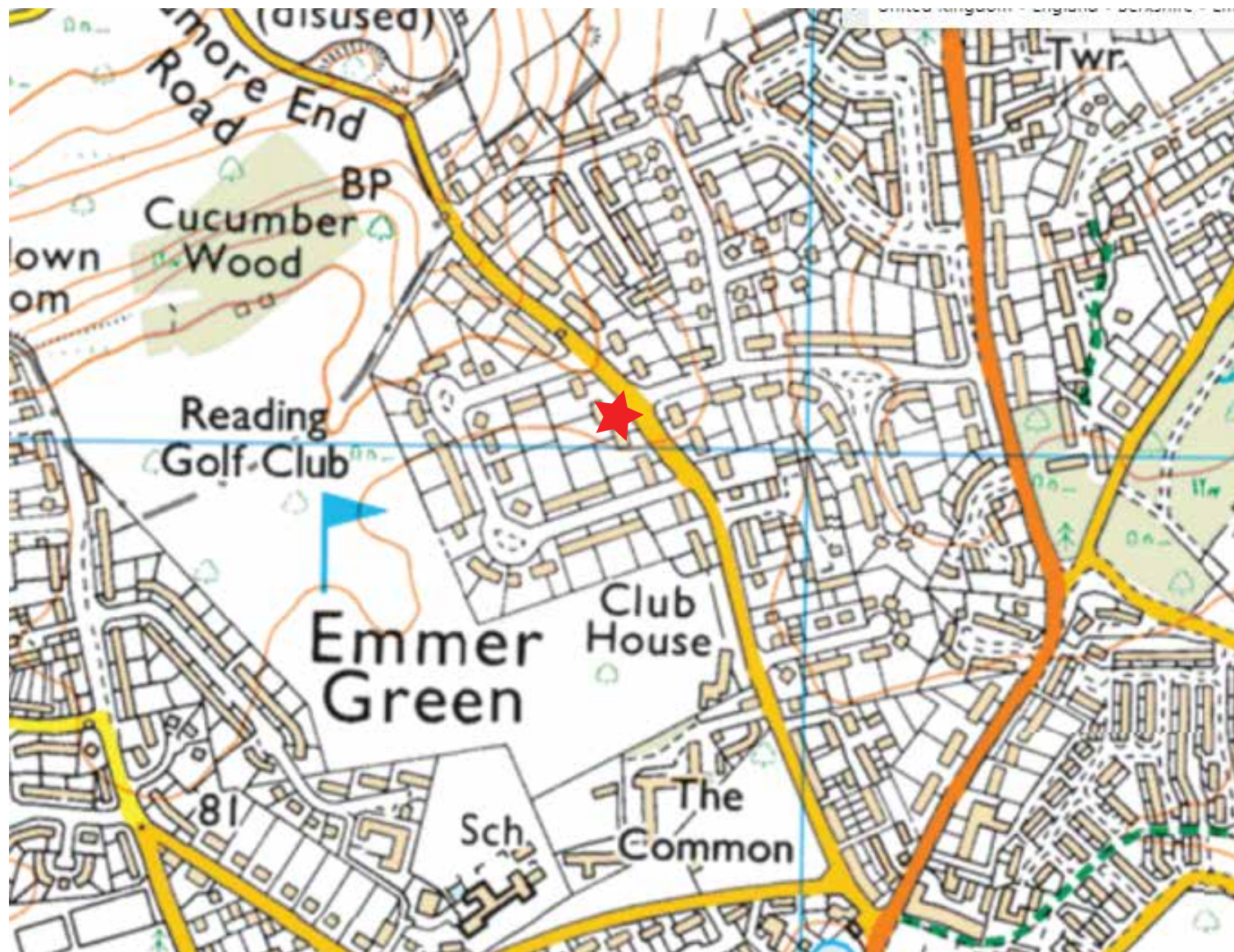
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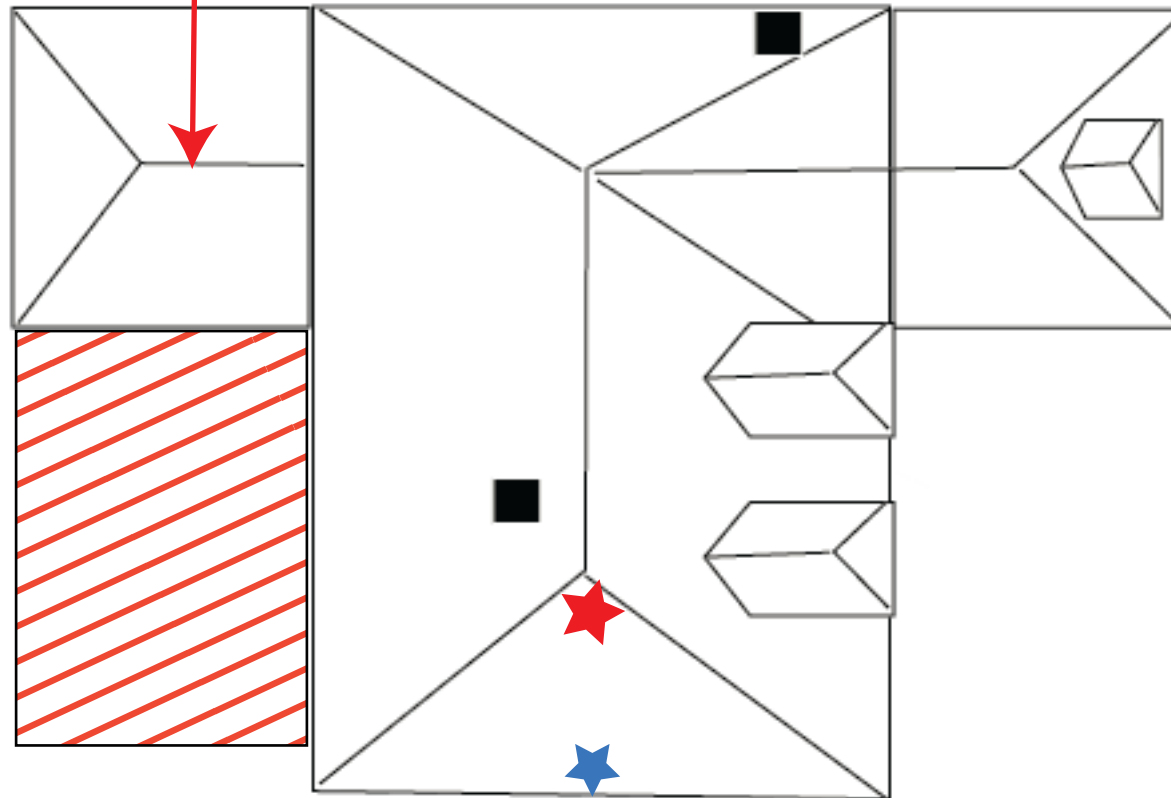
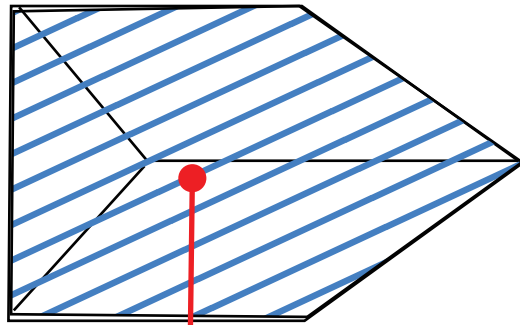
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Site Location



Client Mrs J Lavell
Title Site Location Map
Site 37 Kidmore End Road
Figure 1
Date 10 May 2019
Scale Indicative



Proposed first floor extension
 to be added to existing
 ground floor extension



Proposed new ground floor
 extension



Location of bat droppings



Chimneys



Bat access/egress point

Client Mrs J Lavell
Title Survey Results / Proposals
Site 37 Kidmore End Road
Figure 2
Date 9 November 2019
Scale Indicative



Appendix II– Site Photographs

Photographs 1- 3



Photograph 1:

Front; eastern elevation



Photograph 2:

Detail illustrating gaps associated with hanging tiles that clad the northern and southern dormers. Neither dormer is planned for any alterations and will remain in situ.



Photograph 3:

Rear; western elevation

Location of proposed first floor extension

Location of proposed ground floor extension

Photographs 4 - 6



Photograph 4:

Side; northern elevation; the southern elevation is similar



Photograph 5:

Example of soffit; the majority fit well; however a few small but significant crevices are present; as highlighted.



Photograph 6:

Example of ridge tiles; all are present, however a few e.g. on the north-west elevation appear to have areas of missing bedding mortar; as highlighted

Photographs 7 - 9



Photograph 7:

Crevices associated with leadwork around southern chimney base



Photograph 8:

Roof void; Northern end



Photograph 9:

Roof void; southern end; location of bat droppings. Refer to Target Note 2 within the report and on Figure 2; the survey results drawing.



Appendix III– Information Sheets

Bat Habitat Suitably Criteria

Bat Roosting Suitability	Criteria	Survey requirement to prove likely absence
Negligible	Negligible habitat features on site likely to be used by roosting bats.	No further survey work required
Low	A building, structure or tree with one or more potential roosting sites that could be used by individual bats opportunistically; however, these possible roost sites do not provide enough space, shelter, protection and/or suitable surrounding habitat to be used by large numbers of bats and are unlikely to be suitable for maternity or hibernation roosts.	One activity survey
Medium	A building, structure or tree with one or more potential roost sites that could be used by bats due to the size, shelter, protection, conditions and surrounding habit, but is unlikely to support a roost of high conservation status.	Two activity surveys
High	A building, 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.	Three activity surveys

Survey requirements are taken from Bat Surveys for Professional Ecologists: Good Practice Guidelines (2016), which is the recognised industry standard guidance used by local planning authorities and other statutory consultees.