

PROTECTED SPECIES SURVEY: BATS

Little Pen Onn Bungalow, Llancarfan, Barry

BE ECOLOGY 2015



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EXECUTIVE SUMMARY

There is a proposal to demolish and rebuild Little Pen Onn, Llancarfan.

A bat inspection survey was carried out by Geri Thomas, Merlin Bio-surveys in 2014. The survey found the presence of droppings characteristic of pipistrelle species (DNA confirmed soprano pipistrelle) and thus recommended that further bat activity surveys were carried out at the site. The current document presents the results of the bat activity surveys carried out in 2015 by BE Ecology.

The surveys revealed that at least three soprano pipistrelles are using the bungalow as a day roost.

In the absence of mitigation, disturbance and injury to bats may occur should they be present at the time of works and all bat roosts would be destroyed and not replaced.

Mitigation can be taken to overcome the above issues and new roosts for bat species can be incorporated into the loft spaces of the new build.

The proposed demolition will require a Natural Resources Wales European Protected Species Licence (EPSL). Full details of methods, mitigation and replacement roosts will be required prior to works commencing in the form of a method statement in conjunction with the licence application.

| | |
|------------------------|--------------------------------------------------------|
| Client | Mr Philip Atkin & Charlotte Eckhardt |
| Site | Little Pen Onn Bungalow, Llancarfan, Vale of Glamorgan |
| Title | Protected Species Survey: Bats |
| Surveyor | Beth Evans (BE Ecology) |
| Agent/Architect | Reuben Evans |

| Version | Author | Date | Reviewed by | Date |
|---------|----------------------------|------------|-------------------------------------|------------|
| Draft | Beth Evans (BE Ecology) | 11/07/2015 | Geri Thomas (Merlin Bio-Surveys) | 13/07/2015 |
| Final | Beth Evans (BE Ecology) | | Beth Evans (BE ECOLOGY) | |

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1.0 INTRODUCTION/BACKGROUND

1.1 The original scoping survey carried out by Geri Thomas (Merlin Bio-surveys) during August 2014, found evidence of bat usage in the form of a small number of droppings present in the roof void. The survey also located a number of features suitable for bat access. As such MBS advised that 'bat activity surveys' in the form of two dusk emergence surveys and one dawn re-entry survey must be carried out. (*Merlin Bio-Surveys, 2015, Little Pen Onn Bungalow, Llancarfan, Barry*).

1.2 BE Ecology, sub-contracted to Merlin Bio-surveys was commissioned to undertake the aforementioned bat activity surveys by Reuben Evans (architect) on behalf of the clients Dr. Philip Atkin and Charlotte Eckhardt. Results of the bat activity surveys are contained within this report. This report should be read in conjunction with (*Merlin Bio-Surveys, 2015, Little Pen Onn Bungalow, Llancarfan, Barry*).

In addition to the bat inspection survey of the main building carried out by Merlin Bio-surveys, survey plans were modified to include an inspection survey of the small outbuilding to the west of the side. There was potential bat access into the outbuilding and a number of very old crumbling droppings, none of which were fresh, characteristic of pipistrelle were found attached to a polystyrene tile that was placed on the floor of the outbuilding. As such the decision was made to carry out two further surveys on the outbuilding.



Figure 1: outbuilding (left) and old crumbling droppings characteristic of a pipistrelle species (right)

2.0 LEGISLATION & POLICIES

Conservation of Habitats & Species Regulations 2010

2.1 The Conservation of Habitats and Species Regulations (2010) provides safeguards for European Protected Species (those listed under Annex IV Habitats Directive). With regards to bats, this makes it an offence to:

- Deliberately (or recklessly in Scotland) capture, injure or kill a bat.
- Deliberately (or recklessly in Scotland) disturb a bat in a way that would (significantly in Scotland) affect its ability to survive, breed or rear young (or hibernate or migrate in England, Wales and Northern Ireland) or (significantly in England, Wales and Scotland) affect the local distribution or abundance of the species.
- **Damage or destroy a roost (this is an 'absolute' offence)**
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.

Wildlife & Countryside Act 1981

2.2 The Wildlife & Countryside Act 1981 (as amended) is the legislation for England and Wales for nature conservation, making it an offence to

- Intentionally or recklessly disturb a bat at a roost.
- Intentionally or recklessly obstruct access to a roost.

The Natural Environment & Rural Communities Act 2006 (NERC Act, 2006)

2.3 The NERC Act (2006) is the Natural Environment and Rural Communities Act (2006). This legislation means that, from 1 October 2006, all local authorities and other public authorities in England and Wales have a duty to pay regard to biodiversity in all of their functions. The act aims to raise the profile of biodiversity and to make sure that it is considered in all local authority decisions. The official wording of the legislation, in section 40 of the Act, states that: **“Every 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.”**

2.4 It is possible to undertake damaging activities under a European Protected Species Licence issued by Natural Resources Wales.

3.0 METHODOLOGY

Surveyor Suitability

- 3.2 Both the field survey and report writing was undertaken by Beth Evans (**BE**) B.Sc., M.Sc. (BE Ecology). Beth has a postgraduate degree in Environmental Biology: Conservation & Resource Management, specialising in British bats. Beth has four years experience of ecological surveys, both in a small scale and large multi-disciplinary context. Beth also holds Natural Resources Wales and Natural England bat licences and is the Secretary and Events Organiser of the Valleys Bat Group.
- 3.3 BE was assisted during the activity surveys by Steve Shutt, Claire Davies, Hugh Dixon and Marie Beatrice Rose Pugh.
- 3.4 Steve Shutt (**SS**) (BSc) has experience of bat emergence/re-entry, building surveys, tree surveys, box and hibernation surveys and is currently working towards his bat licence. Steve currently volunteers with the Gwent Wildlife Trust as a nest box monitor and trainer and also as a monitor for mink rafts for the Magor Marsh water vole project. He is also a member of the Valleys Bat Group and Bat Conservation Trust.
- 3.5 Marie Pugh (**MP**) (BSc Hons) has worked in the sector for a number of years. She has been involved with ecological surveys, scoping surveys, species monitoring, habitat management and translocation work. Marie has also been involved in both large and small projects for companies on a voluntary and a freelance basis, working in particular on Bat, Reptile, Water Vole, Dormouse and Woodland Bird surveys.
- 3.6 Hugh Dixon is the owner of Celtic Ecology and has been licensed to work with bats in England and Wales since 2008. Hugh has experience of a number of ecological surveys in both a small consultancy and multi-disciplinary context and has over 18 years' experience in consultancy and countryside management. Hugh has held development licences in both England and Wales, working with a range of species.
- 3.7 Dr Claire Davies (CD) has a PHD in Water vole Ecology and has approximately 3 years' experience in various ecological surveys. Claire is a member of the Valleys Bat Group and is currently shadowing/gaining experience with BE and Celtic Ecology as an attempt to working towards her bat licence.

Survey Methodology

3.8 The survey method adopted was that laid down within; **'Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust'** as described below.

Bat Activity Surveys

3.9 Building 'emergence' and 're-entry' surveys were carried out on the following dates, times and weather conditions (Table 1). Climatic conditions including rain, wind, temperature and cloud cover were recorded for each survey using a hand held Kestrel 4500 weather station.

Table 1: Dates and weather conditions for activity surveys

| Visit | Date (sunrise) (sunset) | Start End | Time | Temp C | Wind | Cloud Cover | Notes |
|--------------------------------------------|-------------------------------|------------------|-------|---------------|----------|--------------------|--------------------------------------------|
| Main building Emergence 1 | 28/04/2015 | Start | 19:55 | 10.5 | 0.03m/s | 40% | Dry evening with midge activity |
| | 20:26 | End | 23:25 | 9.5 | 0.062m/s | 50% | |
| Main building Emergence 2 | 17/05/2015 | Start | 20:30 | 11.5 | 0.25m/s | 80% | Dry evening, insects flying |
| +- | 21:01 | End | 23:00 | 11 | 0.4m/s | 90% | |
| Main building & outbuilding Re-entry | 05/06/2015 | Start | 03:30 | 12 | 0.04m/s | 50% | Dry morning, no wind |
| | 05:10 | End | 05:30 | 11 | 0.03m/s | 30% | |
| Outbuilding emergence | 23/06/2015 | Start | 21:00 | 17 | 0.5m/s | 45% | Dry evening, midges flying. Slight wind |
| | 21:30 | End | 23:30 | 15 | 0.55m/s | 60% | |

3.10 In order to cover the main bungalow and outbuilding that was later added to the plans, three 'emergence' surveys at dusk and one 're-entry' survey at dawn was carried out. Full details of the surveys can be found on page 10. The surveys were conducted using the following equipment:

- Pettersson D240X stereo wired to a Zoom H2 recorder
- Batbox Baton XD stereo wired to a Zoom H1 recorder
- Batbox Duet positioned close to an anabat for recording purposes
- Elekon Batlogger

3.11 All recordings were later analysed with the relative computer sonogram analysis software programmes i.e. 'BatSound', 'Bat Explorer' and 'Analog'.

Constraints

3.12 Any survey for bat species can only be a series of snapshots in time. Bats are highly mobile, long lived creatures (capable of living 30 years +) with complex social structures and utilising multiple roost sites within a year. The implications of this are that surveys and surveyors have to make informed assumptions based on observations, recorded data, local information and a detailed knowledge of the species.

3.13 The first bat activity survey was carried out during the last few days of April, which is just prior to the official start of the bat maternity season. However, the temperature was above that recommended for bat surveys, bats were active in the vicinity of the building and the building was confirmed as a roost on this date. As such the survey conditions were thought suitable to fulfil the aims of this report.

4.0 RESULTS

4.1 Surveyor locations can be found in Appendix 2 along with identified bat commuting routes.

Emergence survey 1 of main building, 24/04/2015

4.2 The first bats detected were soprano pipistrelles commuting north at 20:38, both of which were identified by BE emerging from the fascia boards on the north gable of the property. A total of 17 bat calls were recorded throughout the duration of the survey belonging to both soprano and common pipistrelles. Much of the property is relatively exposed to the elements and bat activity had generally ceased by approximately 21:40. The last bat call was from a common pipistrelle recorded by MP at 21:39.



Figure 2: Exit point for soprano pipistrelles

Emergence Survey 2 of main building, 17/05/2015

4.3 Bat activity was generally higher than the previous survey with 143 calls recorded throughout the duration of the survey. The first bat detected was a common pipistrelle at 21:15 which was shortly followed by all four surveyors observing both common and soprano pipistrelles commuting from east to west and west to north. At 21:35, again BE observed an undetected/non-echolocating bat emerge from beneath the fascia boards on the north gable of the property. A number of other species namely; noctule, myotis sp. and brown long-eared were detected foraging and commuting throughout the site; however no further bats emerged from the property.

Re-entry Survey of Main Building and Outbuilding, 05/06/2015

- 4.4 Bat activity was generally lower than that heard on the previous survey with a total of 89 calls recorded. The first bat detected was a soprano pipistrelle at 03:32. All five surveyors recorded both common and soprano pipistrelles foraging and commuting within the vicinity of the bungalow for the duration of the survey, none of which entered or interacted with the property. The last bat detected was a soprano pipistrelle at 04:46 recorded by HD that entered the property at a gap at eaves level on the west elevation. The surveyors watching the outbuilding saw no bats re-enter or interact with the building.



Figure 4: Gap beneath soffit box where single soprano pipistrelle entered

Additional Dusk survey of outbuilding, 23/06/2015

- 4.5 The first bat detected was a noctule detected by both surveyors at 21:53. A number of passes from various species namely; brown long-eared and soprano and common pipistrelles were heard within the vicinity of the outbuilding, all of which were either seen commuting or foraging within the vicinity. At 22:40, a common pipistrelle emerged from the gap adjacent to the broken window of the outbuilding. Given the circumstances and the time the bat was detected, it is thought that the bat was likely to have flown through the building rather than emerged from it. At 22:27 and 22:43, BE detected two very brief lesser horseshoe calls, both of which were heard not seen. Pipistrelle activity remained constant for the remainder of the survey but no further bats emerged from or interacted with the outbuilding.

5.0 ASSESSMENT & INTERPRETATION

Bat roosts (summer roosts)

5.1 It is considered that Little Pen Onn is used as a day roost for up to three soprano pipistrelles.

Bat roosts (winter roosts)

5.2 It is possible that the building is used as a winter hibernation roost for bat species, however this is thought unlikely.

Bat foraging and commuting habitat

5.3 The bungalow for demolition lies within relatively good bat foraging and commuting habitat, with light sensitive species such as lesser horseshoe bats using the vicinity of the property. As such it is of the opinion that this must be taken into consideration when considering the layout of the proposed development, it's landscaping and external lighting.

Breeding birds

5.4 No evidence of breeding birds was observed within the bungalow; therefore no mitigation for birds will be required.

IMPACTS: Bats

Impacts without mitigation and compensation

5.5 Potentially bats could be disturbed, injured or killed throughout the development phase and all of the identified bat roosts would be destroyed. However, measures can be taken to mitigate and compensate for these impacts.

Short term impacts: disturbance

5.6 During the development phase, there is the potential for bats to be disturbed by dust, vibrations, noise, lighting and obstruction to their roosts.

Long term impacts: modification of roosts

5.7 The proposed development would result in the loss of all of the identified roosts present, rather than retain or modify them.

Long term impacts: roost loss

5.8 The proposed development will result in the destruction of roosts for at least three soprano pipistrelles. However, with appropriate and alternative roosting sites constructed on site to replace those roosts lost, the impact will be considered to be low following mitigation and compensation.

6.0 CONCLUSIONS

- 6.1 The survey found evidence that at least three soprano pipistrelles are using the bungalow as a day roost.
- 6.2 With due regard to the above BE Ecology is of the opinion that the proposed development cannot proceed until a European Protected Species Licence (EPSL) has been issued by Natural Resources Wales. This will include a completed licence application and detailed method statement.
- 6.3 As the property is used as a bat roost, there will be a requirement for mitigation and/or compensation.

7.0 RECOMMENDATIONS/MITIGATION & COMPENSATION

7.1 The proposed demolish and rebuild will require a European Protected Species Licence to be agreed and issued from Natural Resources Wales. Detailed methods and mitigation proposals will be set out prior to works commencing in the form of a method statement that forms part of the licence application. An Ecological Clerk of Works (ECoW) will need to be present for the duration of the roof removal.

Permanent mitigation

7.2 The drawings for the site were revised on 29th October 2014 following a meeting with the planning ecologist and planning officer on 28th October 2014 in order to include mitigation for the bat species identified within the initial scoping survey. No further species were identified during the emergence and re-entry surveys and as such, the mitigation is considered more than appropriate for the current value of the soprano pipistrelle roost. Mitigation will entail the creation of bat access into two new roof voids via 70mm x 20mm slots into the ridge and eaves and gables of the new build and 20mm gaps beneath fascias (see Appendix A for locations of bat access and sizing of roof voids). The area of loft spaces will be dedicated for sole use by bats.

Timescales

7.3 Whilst it is preferable to undertake the demolition between October and March in order to avoid the period where bats are likely to be present, due to the fact that the roost is not a maternity roost and only a small number of bats were identified, it may be possible to undertake works outside of this time period on consultation with Natural Resources Wales. If at any time, greater than five bats are found within the property, all works must cease and Natural Resources Wales consulted.

Temporary mitigation

7.4 As a precautionary approach to finding less than five bats on site during the development phase, temporary mitigation will be installed in the form of a tree mounted bat box. Only the ECoW or assistants will handle any bats discovered during the development phase.

Lighting

7.5 External lighting should be similar to what is in place currently to avoid any impacts on bats using the vicinity of the property. There will be a need for all lighting to be mounted below eaves level and directed away from any bat entry and exit points.

Materials

7.6 If timber treatment is required, all timber surrounding the loft space with bat access will be treated with chemicals safe to use in a bat roost, with only the external surfaces painted, leaving the interior chemical free. **Breathable roofing membranes must not be used in ANY**

location. This is because bats can get tangled in the fibres resulting in mortality and bats also damage the material, not allowing it to fulfil its role. It is required that bitumen roofing felt is used as an under tile layer and that ventilation is provided in the form of gaps along the wall plates.

9.0 REFERENCES

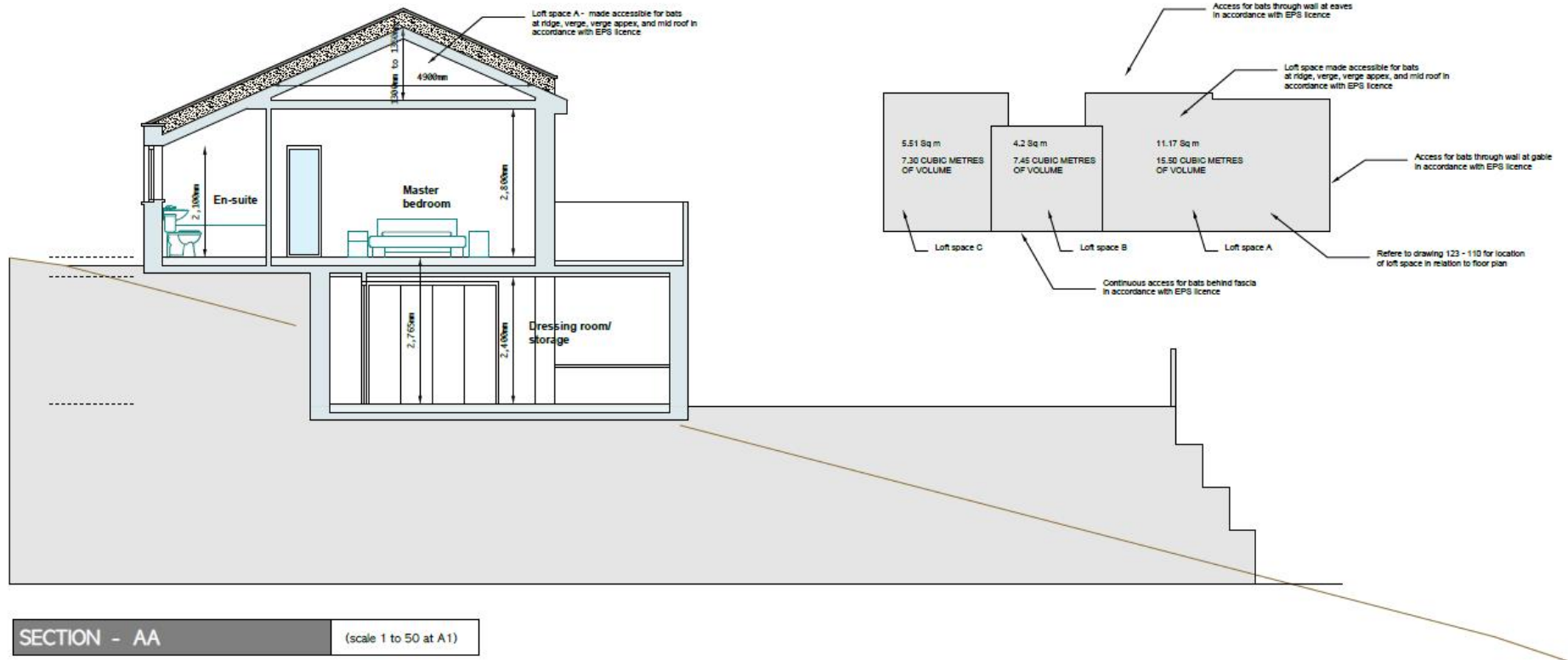
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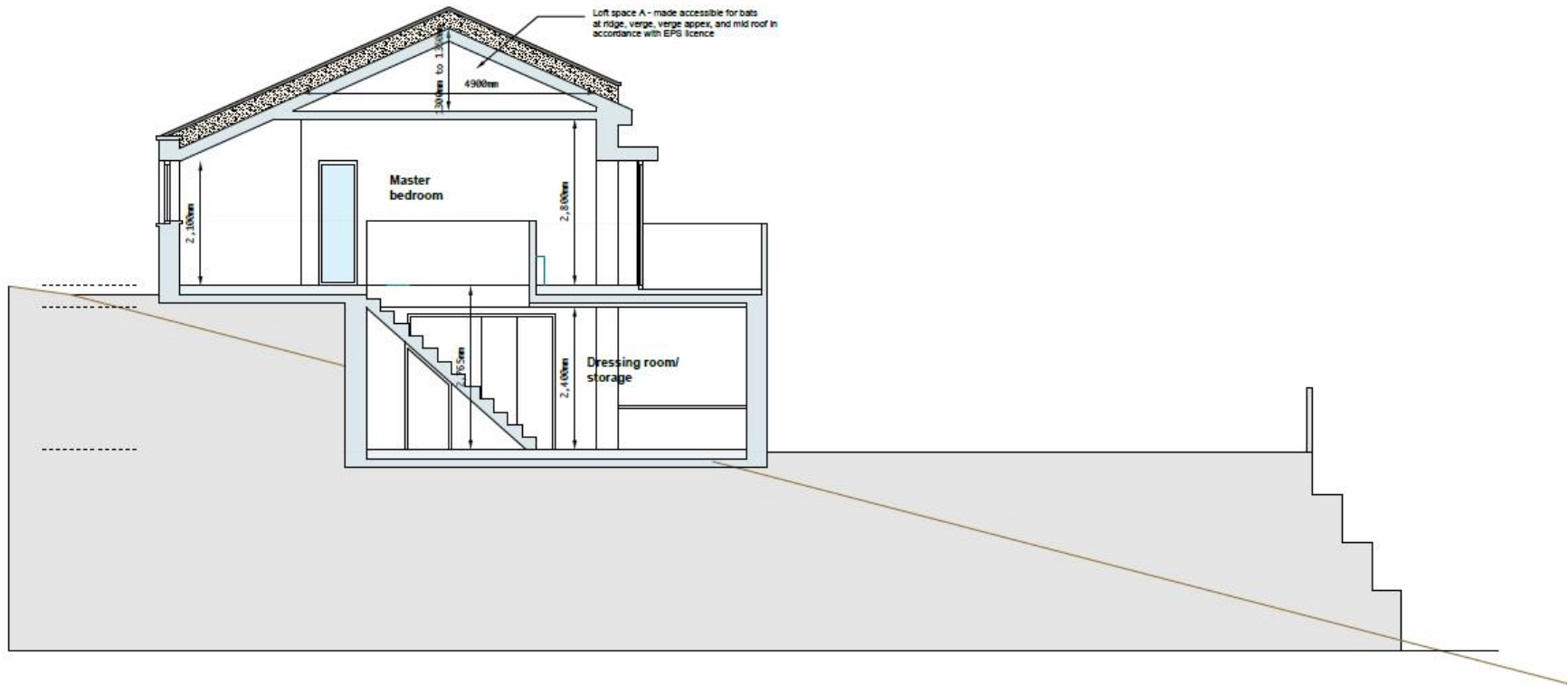
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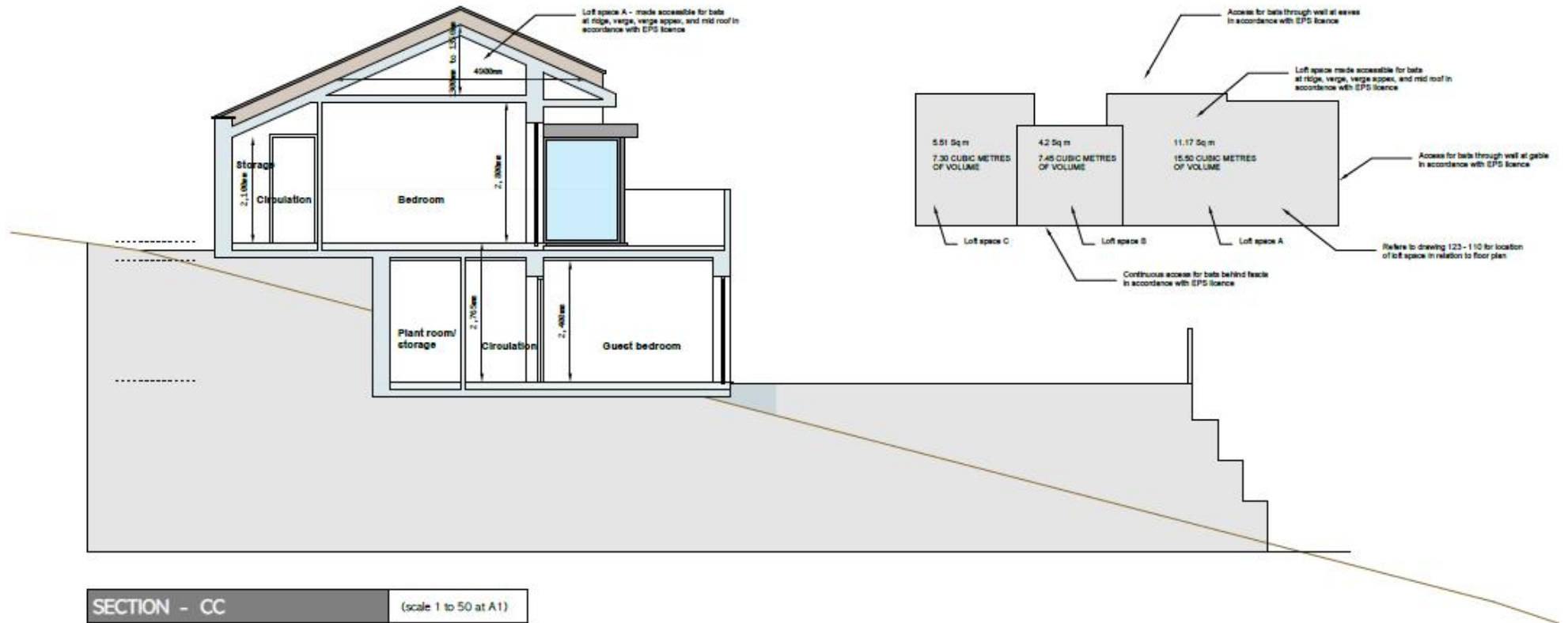
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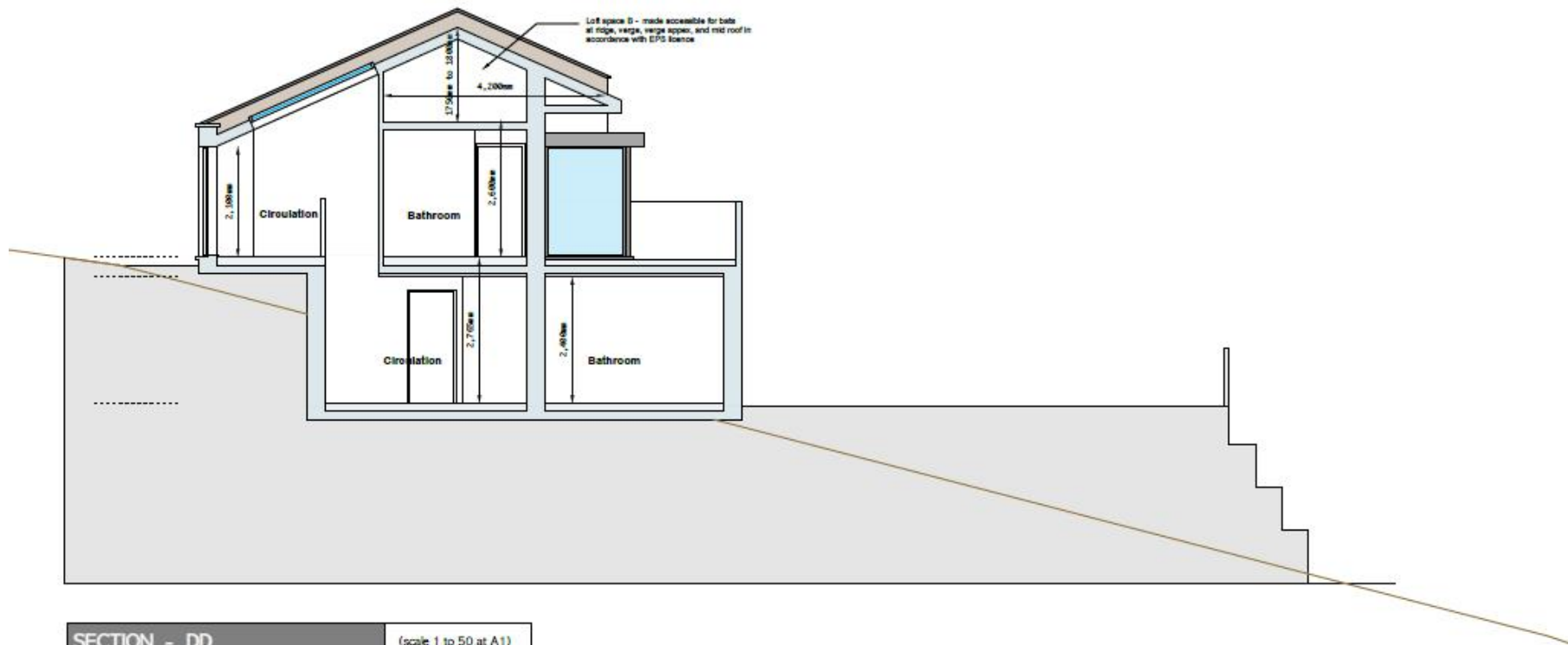
Appendix A: Architectural drawings with proposed mitigation





SECTION - BB (scale 1 to 50 at A1)





Appendix 1: Surveyor location and identified commuting routes

