absolute ecology LLP wildlife surveys

Preliminary Roost Assessment for Bats & Birds

Location: ASD Metal Services, Tunstall Road, Knypersley, Biddulph, Staffs, ST8 7AQ

Author: James Porter

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Notice to Readers

This report has been prepared by Absolute Ecology LLP with all reasonable skill, care and diligence, within the terms of the contract with the client. The actions of the surveyor on site and during the production of the report were undertaken in accordance with the Code of Professional Conduct for the chartered Institute of Ecology and Environmental Management (www.cieem.org.uk).

ExecutiveSummary

Absolute Ecology LLP was commissioned to undertake a Preliminary Roost Assessment for the bat roost potential at a siteknown as ASD Metal Services, Tunstall Road, Stoke-on-Trent, Staffordshire.

The former electrical substation (B9) showed several potential access and/or roosting sites for bats. This building also showed constraints on the inspection (areas between tiles and roofing felt could not be inspected), and so presence or probable absence could not be determined. Under the recommendations it is considered that further surveys will be required of this building.

The other buildings on site showed no such potential in terms of roosting sites or access constraints. It is therefore considered that no further surveys are required of these buildings

Contents

1. Introduction

1.1. Site Description

Absolute Ecology was commissioned to undertake a Preliminary Roost Assessment for the bat roost potential at a site known as ASD Metal Services, Tunstall Road. This is a steel stockholding and processing business, in the process of carrying out major modernisation/refurbishment works. Part of these works will involve demolition of lean-to's and derelict adjoining/adjacent buildings.

1.2. Proposed Works

1.3. Best Practice Guidance

The scope of this appraisal has been determined in line with the proportional approach to ecological survey, assessment and subsequent recommendations for avoidance and mitigation of impacts, which is encouraged in the emerging 'BS 42020: Biodiversity – Code of practice for planning and development'. This report has been prepared with du consideration for various best-practice guidance and methodologies including those of the Chartered Institute of Ecology and Environmental Management (CIEEM (2012)1, the emerging BS 42020 and the Bat Conservation Trust Best Practice 2012.

1.4. Aims of the Survey

1.3.1 The aims of the Preliminary Roost Assessment is to provide an ecological evaluation of the following species within the proposed application area:

Bats
• Probability of bats and their roost sites being present at the proposed re/development site.
• To assess the roost status.
• To assess suitable food resources and habitat requirements.
• If a roost site is found, to provide an impact assessment.

Table 1. Aims of survey in relation to bats.

1.3.2 A bat roost is interpreted as 'any structure or place, which any wild bat uses for shelter or protection'. Bats tend to show a high fidelity to roosts. Subsequently, legal opinion regards a roost to be protected whether or not the bats are present at the time. There are many types of roost used by temperate bats during their annual cycle: Any structures found having evidence of bats will be further evaluated to assess which of the following roost categories may be present onsite (if any):

Status	Description
Maternity / Nursery Roost	*used by breeding bats, where pups are born and raised to independence (Anecdotal evidence may support this prospect despite sub-optimal survey period).*
Hibernation Site	*where bats may be found during the winter. (This is assessed within the context of this report).*
Daytime Summer Roost	*used by males and/or non-breeding females (Seasonal limitations prevent robust analysis of this).*
Night Roost	*where bats rest between feeding bouts during the night but are rarely present during the day.*
Feeding Roost	*where bats temporarily utilize feeding perches and stations to eat an item of prey.*
Transitional (or Swarming) Site	*where bats may be present during the spring or autumn (This can not be assessed within the context of this report).*

Table 2. Bat roost status definitions

Birds
• Establish if birds are using the site.
• Locate nest sites, if present.
• Assess what types of activities were shown within the redevelopment site.
• Assess suitable food resources and habitat requirements.
• Provide an impact assessment, if nests are found.

Table 3. Aims of survey in relation to birds.

Barn Owl (*Tyto alba)*
• Establish presence onsite.
• Establish potential nest sites (PNS).
• Locate any active roost sites (ARS).
• Locate any temporary roost sites (TRS)
• Assess potential feeding and dispersal habitats (PFH)
• Provide an impact assessment, should barn owl(s) be present

Table 4. Aims of survey in relation to Barn Owl.

1.3.2 Assessment also considers potential effects on valued ecological receptors (VERs) and zones of influence (ZoI) during pre and post development, both onsite and off- site. The term Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development. Should a likely significance of negative impacts be identified, further surveys, mitigation and enhancement measures will then be determined accordingly; to prevent, offset or reduce the degree of impact that may occur should development commence.

1.3.3 Should bats be present, or evidence of bats identified onsite, or constraints identified during the Preliminary Roost Assessment, then further survey would be required, if bat are identified then a European Protected Species (EPS) development license issued by Natural England (NE) may be required prior to any works taking place. If required, further presence/absence survey should be undertaken and a mitigation strategy be implemented with Natural England and the Local Planning Authority. Should no further surveying effort be considered, then the PEA report will include full justification and evaluation.

2. Methods

2.1. Summary of Survey Methods

All bat species resident in the UK have been recorded using trees, buildings and built structures, e.g. bridges, at some time during the year (Bat Conservation Trust, 2007 2nd edition 2012). The buildings were inspected externally and internally, where access was available, for signs of bat activity. These typically include bat presence, droppings, feeding remains, urine stains and grease marks. Notes were made on the following in accordance with the guidelines published by the BCT (2007 2nd edition 2012) for the surveying of buildings and built structures:

- Type and age of building
- Type of construction
- Presence of potential roost features, e.g. hanging tiles, raised tiles, roof voids
- Information or evidence of work having been undertaken that could affect use of the structure by bats
- Amount and location of evidence of bats such as presence of live or dead bats, droppings, grease marks, urine stains, characteristic smell of bats.

In the absence of any evidence, trees and structures have been assigned a rating of suitability from negligible to high potential for supporting bats. The rating is based on the location of the structure in the surrounding landscape, the number and type of features suitable for use by bats and the surveyor's experience. For example, a structure with a high level of regular disturbance and few opportunities for access by bats that is in a highly urbanised area with few or no mature trees, parkland, woodland or wetland would have negligible potential. Conversely, a pre-20th-century or early 20th-century building with many features suitable for use by bats close to good foraging habitat would have high potential.

Survey methodology also utilized a number of passive monitoring techniques including an infra-red night-vision camera (XLT Bushnell Trophy CamTM: USA) to qualitatively record any evidence of bat activity inside the building during surveying periods. Further equipment included a NVMT-12x24 night vision scope (Yukon: USA), a SeeSnake 2 video endoscope, a GPS eTrex Venture HC, a hand netand a CB2 Clubman Deluxe high-power lamp with filter.

2.2. Pre-Survey Data Search

A desktop study of the area using online resources was carried out, in order to provide an overview of the site and its importance within the landscape. A number of electronic sources were consulted, including www.magic.co.uk, www.naturalengland.org.uk, data.nbn.org.uk/ and Google Earth.

2.3. Surveyor Information

Surveyor 1

James Porter – BSc(Hons), MSc, MCIEEM, Natural England Bat Licence Number CLS03122 is an experienced bat surveyor. His main experience has been with a variety of ecological consultancies, working on residential properties, fields, and potential barn conversions, follow-up surveys for housing developments, a power substation, and a housing estate scheduled for demolition. He has gained competency in activity surveys, dawn and dusk bat roost assessments, daytime surveys for bat field signs, assessments of trees as potential bat roosts and the production of reports providing advice on best practice, mitigation and compensation works relating to bats as may be required.

2.4 Field Surveys

2.4.1. Habitat Survey

The habitat on site, and in the surrounding area, was assessed for its suitability to support bat roosts, foraging bats, and whether it provides suitable commuting routes for bats species.

2.4.2. Roost Surveys

Equipment used to aid the survey included low and high-powered torches, ladders, binoculars and an endoscope.

3. Results

3.1. Pre-Survey Data Search

3.1.1. Designated Sites

No designated sites for bats were identified within 5km of the proposed re/development.

3.1.2. Protected Species.

Seven British bat species are currently given UK BAP (2007) Priority Species Status:

UKBAP	Common name	Species	Staffordshire
☑	Brown long-eared bat	*Plecotus auritus*	☑
☑	Barbastelle bat	*Barbastella barbastellus*	☒
☑	Bechstein's bat	*Myotis bechsteinii*	☒
☑	Noctule	*Nyctalus noctula*	☑
☑	Greater horseshoe bat	*Rhinolophus ferrumequinum*	☒
☑	Lesser horseshoe bat	*Rhinolophus hipposideros*	☒
☑	Soprano pipistrelle	*Pipistrellus pygmaeus*	☑

UKBAP Bat species recorded within Staffordshire.

A further four/five bat species that are not currently given UK BAP consideration are also recorded within the county.

UKBAP	Common name	Species	Recorded within the county
☒	Natterer's bat	*Myotis Nattereri*	☑
☒	Daubenton's bat	*Myotis daubentonii*	☑
☒	Whiskered/ brandt bat	*Myotis mystacinus/brandtii*	☑
☒	Common pipistrelle	*Pipistrellus pipistrellus*	☑

Non UKBAP Bat species recorded within Staffordshire.

There are no known records of Barn Owl within a 2km radius of the application area.

3.2. Field Surveys

3.2.1. Habitat Description

The site is located on the south-eastern edge of the Brown Lees area of Knypersley, Staffordshire (to the north of Stoke-on-Trent). It is bounded by residential properties to the north, industrial units to the south, Tunstall Road to the east (with playing fields beyond) and a small woodland to the west (with a cycle route running through it).

The site itself is a metal works, comprising entirely of buildings, hardstanding, bare ground and scattered trees. There are nine buildings on site (discussed below). None of the trees on site were of a sufficient size or maturity to provide roosting potential for bats.

3.2.2. Roost Surveys *(buildings numbered as per the site map in Appendix 1)*

B1 – This is a two-storey brick building, with flat roof. No gaps, cracks or other suitable roosting sites were visible, and the proposed works for this building are entirely internal.

B2 – Single-storey brick building, with flat roof. No gaps, cracks or other suitable roosting sites were visible. The joins of the roof and walls is tight, with no gaps underneath the fascia boards.

B3 – Large warehouse structure. This is steel-framed, clad in a double layer of corrugated steel, with rock-wool style insulation, a low brick base, and a pitched corrugated steel roof. Large sections of transparent corrugated plastic are present both in the walls and ceiling. Due to the materials used in its construction, this building will undergo extreme temperature fluctuations, making it unsuitable for bats. The building interior is also very light, with no suitable roosting sites or dark corners evident.

B4 - Large warehouse structure. This is partially steel-framed, clad in a double layer of corrugated steel, with rock-wool style insulation, and partially has brick walls clad externally in a layer of corrugated steel. The roof is a series of pitched roof sections composed of corrugated steel. Large sections of transparent corrugated plastic are present both in the walls and ceiling. Due to the materials used in its construction, this building will undergo extreme temperature fluctuations, making it unsuitable for bats. The building interior is also very light, with no suitable roosting sites or dark corners evident.

B5 – This is a ‘lean-to’ style building, on the southern end of B4. It has rendered brick walls and a single-pitch corrugated steel roof. Soffits and fascias are tightly sealed, providing no suitable access points. The windows are shuttered with steel plating, leaving no suitable access points for bats. The interior is open to B4 on the northern side, and through a large doorway on the eastern side. No suitable crevices were found through internal or external inspection.

B6 - Small, single-storey, flat roofed, brick structure, with steel shuttered windows and no visible gaps for access or roosting.

B7 - Small, single-storey brick structure, with single-pitch corrugated steel roof. No windows are present, and no visible gaps for access or roosting.

B8 – Two-storey brick building, with pitched, steel-framed, corrugated roof. Much of the glazing is missing from the windows, leaving the interior very exposed to weather and daylight. Upon inspection of the interior it was found that a large number of pigeons are nesting within this building, further reducing its potential for bats through disturbance and fouling.

B9 – Small single-storey brick building to the west of the main site. This former electrical substation comprises of two sections. On the northern side is a small 'lean-to' style extension, with a single-pitch corrugated metal roof. The original building has a pitched tile roof; timber-framed, with open eaves and lined with bitumen-style roofing felt. The roof shows a number of slipped/raising/missing tiles; particularly at the northern gable end. Windows on the east and west sides of the building have been boarded up with chipboard, leaving gaps at the top, which may be used by bats for access and/or roosting opportunities. The building interior is very dark, with the only light entering coming from the gaps at the top of the window boards. No evidence of bat presence was discovered during the survey, although the presence of the roofing felt means that a space is present between the roof tiles and the felt; that could not be inspected without a destructive search (which is not legally permitted).

4. Assessment

4.1. Constraints on Survey Information

No activity surveys were conducted due to the yearly constraint when bats are in hibernation.

The former electrical substation showed constraints during the survey, i.e. the inspection between roofing felt and tiles.

4.2. Constraints on Equipment Used

No constraints were identified during the inspection of the buildings with regards to equipment.

4.3. Potential Impacts of Development

4.3.1. Designated Sites

As no designated sites for bats were identified within 5km of the proposed development, no impact would be envisaged.

4.3.2. Roosts

No potential roosting sites were found within buildings 1-8, and so no impact on bat roosts is anticipated from the works proposed to these buildings.

B9 shows potential for the presence of bats, and so works carried out to this building without further survey effort risks direct harm to any bats present. Any roost located in this building would also be lost. Any impact would be unknown until relevant activity surveys are conducted between May & September, with June to August being the optimal time.

4.3.3. Foraging and Commuting Habitat

Whilst the site boundaries provide potential foraging and commuting potential due to the connecting gardens, woodlands adjacent to site and nearby hedgerows, the proposed development should have impact on these sites. Therefore the development is unlikely to have any negative impact on commuting or foraging routes.

4.4. Legislation and Policy Guidance

Unlike many smaller mammals, bats have low fecundity with a long and complex life cycle, which is played out over a large spatial landscape. Bats show a strong fidelity to different types of roosts throughout their annual cycle i.e. hibernacula, maternity, bachelor, satellite roosts and feeding perches. Linear features within the landscape such as hedgerows and tree lines are often used by bats for commuting, predator avoidance and foraging. Bats are highly social animals and loss of a single habitat alone can have a serious impact on populations. The status of many bat populations is tentative, being based on relatively few records and are highly susceptible to habitat loss and fragmentation. As such bats are given protected consideration within the following legislation and policy guidelines:

Policy guidelines

PAS 2010	The published 'PAS 2010' 'Planning to halt the loss of biodiversity' which is the government's new policy aimed at all authorities and developers involved in the planning process in the UK to halt biodiversity decline by 2010 and deliver net biodiversity gains as part of the green infrastructure provisions.
National Planning Policy Framework, Section 11:	The recently published framework in 2012, replaces the previous Planning Policy Statement 9. Section 11: Conserving and enhancing the natural environment, reaffirms the Governments commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife, aims to improve the quality of the natural environment, and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.
Article 10 of the EC Habitats Directive:	The published Article requires government to develop features such as 'stepping stones' on the landscape, such as clusters of ponds, tracts of rough grassland or scrubland and vegetated railway line embankments.
Wildlife and Countryside Act 1981:	All species of bat are fully protected under the Wildlife and Countryside Act 1981, the European Conservation (Natural Habitats etc.) Regulations 1994, and the Countryside and Rights of Way Act 2000. This legislation makes it illegal to possess

	or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.
Conservation of Habitats and Species Regulations (2010)	The Conservation of Habitats and Species Regulations 2010 consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994, in respect of England and Wales. It is an offence to possess, sell or offer, or transport for sale any European species of bat or any part derived from such a species. These Regulations also remove the 'incidental result defence'. In other words, it is no longer a defence to show that the killing, capture or disturbance of a species covered by the Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of a lawful activity. Natural England can grant European Protected Species (EPS) licences in respect of development to permit activities that would otherwise be unlawful.
Natural Environment and Rural Communities Act (2006)	Under Section 40 of the Natural Environment and Rural Communities Act (2006), public bodies, including Local and Regional Planning Authorities, have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England. This is known as The England Biodiversity List, all of which make up the UK BAP Priority Species. Regional Planning Bodies and Local Planning Authorities will use it to identify the species that should be afforded priority to maintain, restore and enhance species and habitats.
Bird legislation	Most resident nesting birds are protected under the Wildlife and Countryside Act 1981, which protects birds, nests, eggs and nestlings. Some rarer species, such as barn owls, are afforded extra protection.

Please note: If bat species are present at the site, the purpose of this report will only summarize the potential requirements for a bat mitigation package or project. A separate mitigation report or project will include the necessary compensation measures to maintain the conservation status of a European Protected Species.

5. Recommendations and Mitigation

5.1. Further Surveys

The former electrical substation shows moderate potential to support bats, although no evidence of bat activity was identified. Coupled with the inspection constraint identified during the inspection, it is considered that further surveys would need to be conducted in the primary timing of year when bats are active and roosts are established. This period is May to September, with the optimal time being June to August. The activity surveys should consist of at least two activity surveys, which will comprise of either two dusk emergence surveys, or a dusk emergence survey and dawn re-entry survey (not within one 24 hour period, as this would class as one survey visit). If bats are identified using the building, then further activity surveys maybe required to obtain sufficient information for a Natural England Licence application. All surveys will be In accordance with the Bat Conservation Trust guidelines (BCT, 2012).

5.2. Mitigation Measures

5.2.1. Proposed Mitigation for Roost Sites

Proposed mitigation may follow from the further surveys recommended above.

Additionally, advice is given below to enhance the site for roosting bats in future, including the provision of bat boxes:

The development should incorporate a number of bat boxes; where possible, developments should include small access points suitable for bat access and/or wall-mounted bat boxes (1FQ-style bat box), rendered into new buildings. Further information for providing access to roosting bats can be found on the Bat Conservation Trust website at http://www.bats.org.uk/pages/new_build.html. It is recommended that bat boxes, such as the Schwegler 2F-DFP, are installed within trees surrounding the site.

Illustration of recommended bat 1FQ designs

Any landscaping relating to the proposed development should also take into consideration bats and other wildlife and it is recommended that only native tree and shrub species are planted. In particular, no plant species listed on Schedule 9 of the

Wildlife and Countryside Act 1981 should be planted during the landscaping of this development. For further details of Schedule 9 plants, visit the Defra website: www.defra.gov.uk/wildlife-pets/non-native.

Any lighting design around the new development should be considered at an early stage. Light spill can affect the foraging and commuting strategy of many species and should be avoided onto nearby trees and hedges/shrubs, and should not exceed 200 lumens (150 watts). Any security lighting should be on a timer setting and faced down to prevent spillage onto nearby habitats. The height of any lighting columns around the development should not exceed eight metres to reduce further any ecological impact of light pollution. Low-pressure sodium lamps (SOX) fitted with hoods are recommended to direct light below the horizontal plane to minimize upward light spill.

Recommendations are given to enhance the site for nesting birds in future, including the provision of bird boxes.

Further details regarding birds can be found at the following websites:

http://www.rspb.org.uk/wildlife/birdguide/name/s/swallow/encouraging.aspx

http://www.rspb.org.uk/advice/helpingbirds/roofs/internal_boxes.aspx

House sparrow nest

Swallows' nest

5.2.2. Proposed Mitigation for Foraging and Commuting Habitat

No loss of foraging or commuting habitat will occur as a result of the development.

6. Summary

The former electrical substation (B9) showed several potential access and/or roosting sites for bats. This building also showed constraints on the inspection (areas between tiles and roofing felt could not be inspected), and so presence or probable absence could not be determined. Under the recommendations it is considered that further surveys will be required of this building.

The other buildings on site showed no such potential in terms of roosting sites or access constraints. It is therefore considered that no further surveys are required of these buildings.

7. References

Bat Conservation Trust (2007). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust: London.

BSBI (2008). *BSBI 2007 List.* [Online]. Available at: http://www.bsbi.org.uk/html/database.html [accessed on 20th October 2010].

The Conservation of Habitats and Species Regulations 2010.SI 2010/490.

The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007. SI2007/1843,London: HMSO.

Countryside and Rights of Way Act 2000 (c.37). London: HMSO.

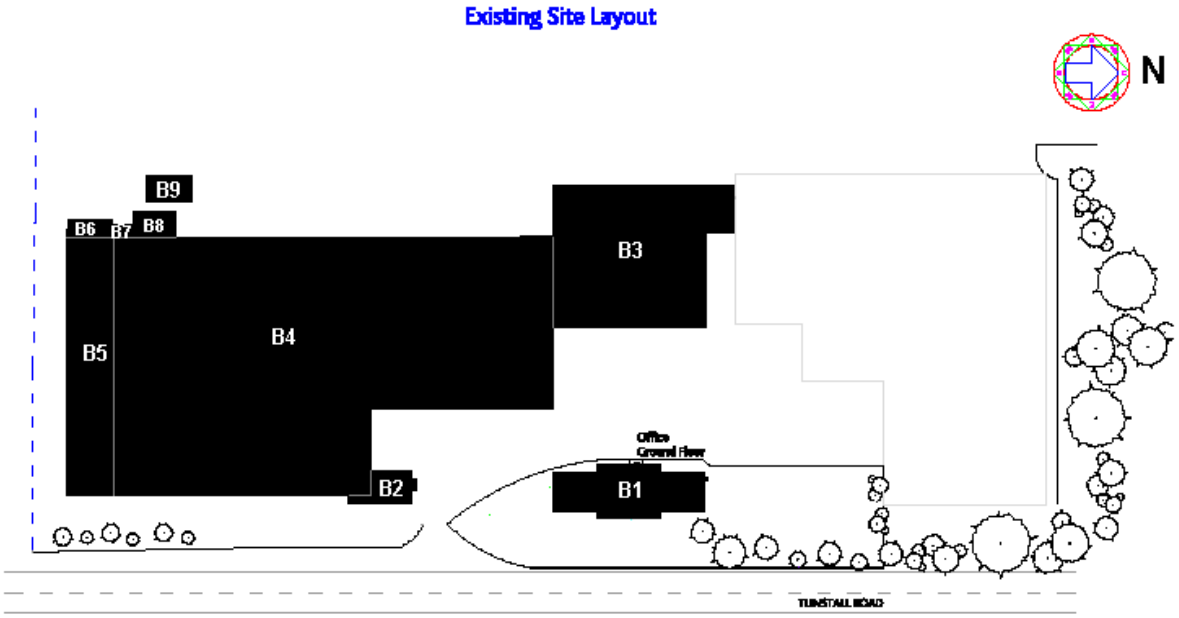
Office of the Deputy Prime Minister (2005) *Planning Policy Statement 9: Biodiversity and Geological Conservation*. The Stationery Office, Norwich.

UK Biodiversity Action Plan (2007). *UK List of Priority Species.* Joint Nature Conservation Committee.[Online]. Available at: http://www.ukbap.org.uk/NewPriorityList.aspx [accessed on 20th October 2010].

Biodiversity Action Reporting System (2010). *Biodiversity Action in Staffordshire.* BARS.[Online]. Available at: http://ukbap-reporting.org.uk/plans/map_county.asp?X=%7BD7D87E4F%2D9520%2D48D6%2D93E0%2DD2698BA05B9D%7D&CTRY=%7B7C884413%2D1AC7%2D48B6%2DADCD%2D23CBA1482CD6%7D&WES= [accessed on 20th October 2010].

Wildlife and Countryside Act 1981 (and amendments) (c.69). London: HMSO.

Appendix 1 Site Map



Appendix 2 Photographs

Image 1: B2

Image 2: B3 exterior

Image 3: B3 interior

Image 4: B4 exterior

Image 5: B4 exterior

Image 6: B4 interior

Image 7: B5

Image 8: B6 & B7

Image 9: B8 exterior

Image 10: B8 interior

Image 11: B9 – northern and eastern elevations

Image 12: B9 – lifted tiles & missing mortar at northern gable end

Image 13: B9 – missing tile on eastern side of roof

Image 14: B9 – Gaps at eaves on eastern side of roof

Image 15: B9 – Boarded window on eastern side, with gap at top

Image 16: B9 – western elevation – showing gaps in roof and boarded windows with gaps

Image 17: B9 interior

Image 18: B9 – interior of ‘lean to’