



Former Troedyrhiw Library

Troedyrhiw

Bat and Nesting Bird Survey Report

September 2021

REPORT CONTENTS

1.	INTRODUCTION	1
1.1.	BRIEF	1
1.2.	SITE DESCRIPTION	1
1.3.	PROPOSED WORKS	1
1.4.	LEGISLATION AND PLANNING POLICY	1
1.5.	SURVEY SCOPE	2
1.6.	REPORTING	2
2.	METHODS.....	3
2.1.	DESK STUDY.....	3
2.2.	FIELD STUDY	3
3.	RESULTS	5
3.1.	DESK STUDY.....	5
3.2.	FIELD STUDY	6
4.	EVALUATION	11
4.1.	SUMMARY OF PRELIMINARY ROOST ASSESSMENT	11
4.2.	SUITABILITY OF SUMMER ROOSTS	11
4.3.	POTENTIAL WINTER ROOSTS	11
4.4.	BIRDS – INTERPRETATION OF NESTING BIRD SURVEY	11
5.	IMPACT ASSESSMENT	12
5.1.	POTENTIAL IMPACTS OF DEVELOPMENT ON BATS	12
5.2.	POTENTIAL IMPACTS OF DEVELOPMENT ON BIRDS.....	12
6.	REQUIRED ACTIONS	13
6.1.	FURTHER WORK AND LICENSING REQUIREMENTS	13
6.2.	PRECAUTIONARY MEASURES	13
6.3.	ECOLOGICAL ENHANCEMENT FOR BATS	14
6.4.	LONGEVITY OF REPORT	16
7.	REFERENCES	17

DRAWINGS AND PLANS

DRAWING 1: EXISTING SITE PLANS

DRAWING 2: PROPOSED DEVELOPMENT

PLAN 1: LOCATION PLAN

PLAN 2: PROTECTED SITES

PLAN 3: DUSK EMERGENCE SURVEY RESULTS (03/08/2021)

PLAN 4: MITIGATION PLAN

APPENDICES

APPENDIX 1: BAT ECOLOGY AND LEGISLATION PROTECTING BATS AND THEIR ROOSTS

APPENDIX 2A: GUIDELINES FOR ASSESSING POTENTIAL BAT ROOSTING SUITABILITY AND DETERMINING REQUIRED NUMBER OF DUSK/DAWN SURVEYS

APPENDIX 2B: JUSTIFICATION OF ASSESSMENT OF BAT ROOST

APPENDIX 3: GUIDELINES FOR ASSESSING BAT HABITAT SUITABILITY

APPENDIX 4: SURVEYOR EXPERIENCE

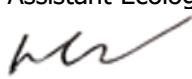
APPENDIX 5: SOFFIT / FASCIA BOARD ACCESS AT EAVES

APPENDIX 6: SOFFIT BAT BOX (WILDCARE NATIONWIDE ECOLOGY SUPPLIES, 2016)

APPENDIX 7: EXAMPLE OF SUITABLE WALL LIGHT FITTINGS

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DOCUMENT CONTROL

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Bat and Nesting Bird Survey Report				
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Summary

Brief and Site Location	This report presents the findings of a preliminary bat roost assessment and nesting bird survey of the Former Troedyrhiw Library located at Tyntaldwyn Road, Troedyrhiw, Merthyr Tydfil CF48 4NG (Ordnance Survey Grid reference SO 0720 0243).
Survey Methodology	The survey comprised the following: • A preliminary bat roost assessment of the former library searching for signs of bats and nesting birds; and • One dusk emergence survey of the former library.
Results of Dusk Emergence Survey	No bats emerged from the former library during the dusk emergence survey.
Nesting Birds	No evidence of past or current nesting by birds was recorded.
Requirements for Additional Survey	None required.
Predicted Impacts of Development on Bats and Nesting Birds	Based on the conclusion that bats are unlikely to be using the library as a roost site, no negative impacts on bats are anticipated. Based on the conclusion that birds are not currently nesting in the library, no negative impacts on birds are anticipated.
Licensing Requirements for Bats	None required.
Recommendations and Precautionary Measures	Detailed recommendations are given in Section 6 of this report. These include precautionary methods and guidance for action to take if bats are found during the works.

1. Introduction

1.1. Brief

This report presents the findings of a bat and nesting bird survey of the former Troedyrhiw Library located at Tyntaldwyn Road, Troedyrhiw, Merthyr Tydfil, CF48 4NG (Ordnance Survey Grid Reference: SO 0720 0243)¹. The building proposed for development is referred to as the 'former library' throughout the remainder of this report.

The former library is within the boundary of Merthyr Tydfil Council.

1.2. Site Description

The former library is situated within the village of Troedyrhiw which is to the south-east of the town Merthyr Tydfil. The former library is within a suburban area with residential properties to the north-west, west, south and south-east but to the north-east and east it is bordered by a woodland and grassland area with the wooded river corridor of the Afon Taf within 1km to the west.

The location of the former library is shown on Plan 1: Location Plan.

1.3. Proposed Works

The planning proposal consists of converting the former library into a detached three-bedroom residential property with associated parking and is currently pending consideration (Planning Reference Number: P/21/0134²). No works to the slate roof, external walls or the soffit boxes on the eastern, southern, northern or western elevations are proposed as part of the development. A metal flue on the western elevation of the former library is proposed to be fitted around the soffit and not impact it directly. Additionally, new windows are to be fitted which will impact the gaps in the window frames on the northern elevation. At the time of writing architectural plans have not been finalised.

1.4. Legislation and Planning Policy

1.4.1. Bats

All UK species of bat are protected species. Their breeding sites or resting places³ (roosts) are fully protected under the Wildlife and Countryside Act 1981⁴ (as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019⁵.

Works affecting bats are subject to licensing procedures by Natural Resources Wales (NRW). The legal protection and licensing procedures are summarised in Appendix 1.

¹ Latitude and Longitude: 51.712854 , -3.3445421 / what3words: camps.vest.race

² Planning Portal: <https://www.merthyr.gov.uk/resident/planning-and-building-control/planning-search-and-weekly-lists/>

³ Resting places are defined as 'areas that are essential to sustain an animal or group of animals when they are not active' (Anon 2007).

⁴ <https://www.legislation.gov.uk/ukpga/1981/69>

⁵ <https://www.legislation.gov.uk/ukdsi/2019/9780111179512>

1.4.2. Nesting Birds

All wild British birds (whilst building nests, nesting and sitting on eggs) and their nests and eggs, (with certain limited exceptions⁶) are protected by law under Section 1 of the Wildlife and Countryside Act 1981⁷ (as amended) and the Countryside and Rights of Way Act 2000⁸. Some species, such as barn owls (*Tyto alba*), are listed in Schedule 1 and have additional protection from disturbance during the breeding season, as do their nests, eggs and dependent young.

1.5. Survey Scope

The survey comprised the following:

- A preliminary bat roost assessment which included a survey for nesting birds; and
- One dusk emergence survey of the former library.

1.6. Reporting

This report aims to:

- Outline the survey methodology used;
- Present the results of the survey;
- Provide an interpretation of the survey results;
- Determine the need for further targeted surveys; and
- Provide suitable recommendations in line with planning policy and wildlife law, including potential licencing requirements, mitigation, compensation and enhancement measures.

⁶ Details of the exceptions are available at <https://bit.ly/2KiQTFH>

⁷ <https://www.legislation.gov.uk/ukpga/1981/69>

⁸ <https://www.legislation.gov.uk/ukpga/2000/37>

2. Methods

2.1. Desk Study

Maps and aerial photographs of the site and surrounding area, including existing habitats, were assessed. A search for statutory and non-statutory conservation designated sites for bats within 10km was undertaken using NRW Geographic Information System (GIS) data. A 2km search was undertaken for all other statutory and non-statutory conservation designated sites.

A local planning portal search was undertaken. This involved looking for other sites, within the same postcode area, which have previously had bat surveys submitted as a part of their planning applications.

2.2. Field Study

2.2.1. Daytime Internal and External Inspection

A systematic search of the exterior and interior of the former library was undertaken, looking for features that bats could use for entering/exiting and roosting⁹. In addition, a search was made for the presence of bats or evidence of bat use, such as droppings, feeding remains, urine staining, scratch marks and the remains of dead bats. The survey was undertaken on 8th June 2021 by Ffion Jones¹⁰ and Paul Hudson¹¹ MCIEEM (NRW Licence Number: S088190/1).

A high-powered torch (Clulite), an endoscope (Ridgid Micro CA-300) binoculars and a ladder were available for use, as appropriate during the survey.

2.2.2. Assessment of Bat Roost Suitability

The value of the site for bats (and any potential roost sites therein) was assessed, in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2016) (see Appendix 2A). The assessment was based on the relative abundance and quality of potential roost sites, and the habitat features within both the site and the surrounding landscape suitable for roosting, foraging and commuting bats.

⁹ Bats may utilise gaps 8mm by 20mm (Bat Conservation Trust, Cluster-flies leaflet).

¹⁰ Ffion graduated with a degree in Ecology and Conservation from the University of Exeter during which she studied modules on biodiversity, ecological consultancy, and conservation. She is an Assistant Ecologist with Acer Ecology working and has two seasons experience of bat survey work. She is listed as an accredited agent on Paul Hudson's bat licence (S088190/1) and has undergone training with Acer Ecology in basic bat ecology and bat survey techniques (including preliminary roost assessments and dusk emergence/dawn re-entry surveys). Further details of her qualifications and experience can be found at <https://www.linkedin.com/in/ffion-jones-17ab63197>.

¹¹ Paul graduated with a degree in Environmental Biology from Reading University and a Postgraduate Diploma in Conservation Management from the University of East Anglia. He has worked within ecological consultancy since 2000 and has undertaken bat work since 2001. He holds licences to disturb bats in both Wales (S088190/1 valid until June 2022) and England (2018-36707-CLS-CLS valid until 2028). Further details of his qualifications and experience can be found at <http://linkd.in/19aGTf4>.

2.2.3. Dusk Emergence Survey

The evening dusk emergence survey commenced 25 minutes prior to sunset, and continued until 90 minutes after sunset. Ffion Jones conducted the dusk emergence survey on 3rd August 2021 (See Appendix 4 for details of surveyor experience). The surveyor was equipped Elekon Batlogger M bat detectors. The surveyor was positioned in a position where all potential roosting features could be observed to detect any bats emerging from, or re-entering, the former library. Bat activity near the former library was recorded to help ascertain flight lines.

In accordance with Section 2.6.1 of the Bat Conservation Trust's Bat Surveys for Professional Ecologists (Collins, 2016) surveys were undertaken during nights with temperatures above 10°C at sunset and during mornings where the previous sunset temperature was above 10°C. The survey was also undertaken in the absence of rain and strong wind (5.4 m/s or greater, which is equivalent to 13 mph or Beaufort 4).

2.2.4. Survey for Nesting Birds

A visual search was undertaken for active bird nests, as well as any signs which might indicate either past or current nesting, such as guano, singing birds, birds carrying nesting material, food items, faecal sacs and calling chicks.

2.2.5. Constraints

General Temporal Constraints

An ecological survey can only identify what is present on site at the time it is conducted. However, habitat usage by species can change over time.

Data Search

A Local Records Centre (LRC) data search was not undertaken due to the low impact and small-scale nature of the development. Current proposals suggest no land will be lost or linear features severed. The overall impact on biodiversity is likely to be localised and of low significance. It is very unlikely that the development will have any impact outside the footprint of the works. The data search results are considered unlikely to impact the decision-making process, and there is limited potential for key information to have been missed.

This approach is consistent with CIEEM's Guidelines for Accessing and Using Biodiversity Data (2020), which states that in low impact/small-scale scenarios, such as an extension to a residential property, loft conversions (full or partial), a LRC search may not be required.

3. Results

3.1. Desk Study

3.1.1. Bat Roosts Reported in Planning Applications Within the Same Postcode

The planning portal search returned no bat roost records within the same postcode area as the proposed development.

3.1.2. Protected Sites

The location of protected sites is shown in Plan 2: Protected Sites.

Statutory Sites Which Are Fully or Partially Designated for Bats (Special Areas of Conservation (SACs)) or Sites of Special Scientific Interest (SSSIs) Within 10km

No SACs that have been specially designated for bats lie within 10km of the former library.

Non-statutory Protected Sites

Sites of Importance for Nature Conservation (SINCs)

There are 16 SINCs within 2km, the nearest of which is Troed-y-Rhiw to the east of the former library. These sites are rich in wildlife and are considered important for their value for local biodiversity.

Ancient Woodland Sites

There are 42 areas of Ancient Semi-Natural Woodland (ASNW)¹², 13 Restored Ancient Woodland Sites (RAWS)¹³, five Plantations on Ancient Woodland Sites (PAWS)¹⁴, and three Ancient Woodland Sites of Unknown Category¹⁵, located within 2km of the site.

The nearest area of ancient woodland is an unnamed area of ASNW located 0.1km to the east of the site.

Protected Sites Summary

Given the small scale and localised nature of the proposed development, as well as the limited scope for impacts outside of the footprint of the proposed works, no adverse impacts to the protected sites are likely to occur. These sites are not mentioned further in this report.

¹² Ancient Semi-Natural Woodland (ASNW) – broadleaf woodlands comprising mainly native tree and shrub species which are believed to have been in existence for over 400 years.

¹³ Restored Ancient Woodland Sites (RAWS) – woodlands which are predominately broadleaved now and are believed to have been continually wooded for over 400 years. These woodlands will have gone through a phase when canopy cover was more than 50% non-native conifer tree species and now have a canopy cover of more than 50 percent broadleaf.

¹⁴ Plantation on Ancient Woodland Sites (PAWS) – sites which are believed to have been continuously wooded for over 400 years and currently have a canopy cover of more than 50 percent non-native conifer tree species.

¹⁵ Ancient Woodland Site of Unknown Category (AWSU) – woodlands which may be ASNW, RAWS or PAWS. These areas are predominantly in transition and existing tree cover is described as 'shrubs', 'young trees', 'felled' or 'ground prepared for planting'.

3.2. Field Study

3.2.1. Ecological Context of Site

Lighting

The site is assessed as being within Zone E3: Suburban lighting zone, with medium district brightness.

(Institute of Lighting Professionals, 2012).

Several streetlights are present on the road that the former library is situated on which generate extensive artificial lighting, somewhat decreasing the quality of foraging and commuting bat habitat¹⁶.

Site and Surrounding Habitats

The habitats surrounding the former library include linked back gardens of the residential properties which provide good ecological connectivity to the surrounding woodland areas. Though not completely continuous, these habitats act as an ecological corridor which may utilise for foraging and commute along to reach the wider landscape. There are numerous areas of woodland in close proximity where bats could forage including an unnamed area of ASNW to the east. As a result, the site provides moderate-quality bat foraging and commuting habitat.

The majority of the wider landscape, however, is urban in nature, thus limiting the overall value of the site.

3.2.2. Building Description from the Perspective of Bat Habitat

The table below summarises the key features of the former library.

Table 1: Key Features of Former library

Building Type	The former library is a two-storey derelict building which has not been used for a number of years (Photos 1-4).
Roof	The roof is pitched with a single subsidiary pitch on its southern elevation above the entrance. It is constructed from slate with clay ridge tiles (Photo 5). The roof is in good condition with no apparent raised, slipped or broken tiles.
Lead Flashing	There is lead flashing at the valley between the two pitches, which is well-sealed (Photo 5).
Soffits, Fascias and Bargeboards	The soffit boxes are of uPVC design and are in good condition, however there are several small gaps between the soffit and the external wall on the northern, southern and western elevations (Photos 6-8).
External Walls	The external walls are constructed from red brick with a concrete render, and are in good condition with no cracks or crevices.
Windows	The windows are framed with uPVC and are in good condition, however there are small gaps in the brickwork around the windows on the northern elevation (Photos 9-10).
Roof Void	There is no current roof void in the former library and internally it has been gutted (Photo 11). The roof is lined with timber beams and trusses in a typical A-frame design, and is lined with plastic sheeting (Photo 12).

¹⁶ Lighting can impact on bats' roosting sites, commuting routes and foraging areas.

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Photos Showing the Former library and its Features

Photo 1: Northern elevation



Photo 2: Western elevation



Photo 3: Southern elevation



Photo 4: Eastern elevation



Photo 5: Roof tiles and lead flashing



Photo 6: Gap behind uPVC soffit



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Photo 7: Gap in soffit box on north western corner



Photo 8: Gap between soffit and external wall on western elevation



Photo 9: Gaps in Soffit on western gable end with visible apex



Photo 10: Gaps above windows on the northern elevation



Photo 11: Gap around windows on the northern elevation

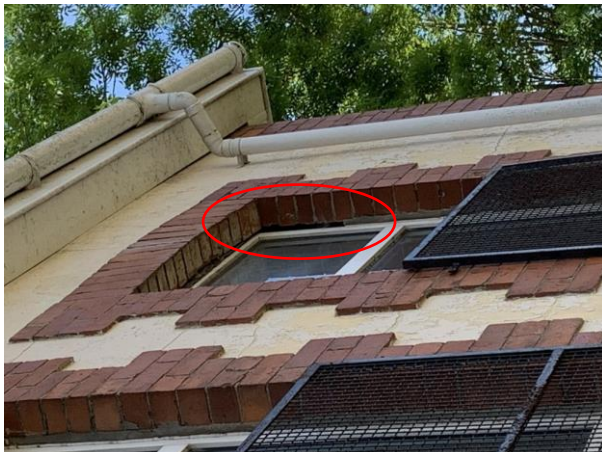


Photo 12: Gutted interior of former library



Photo 13: Timber beams and plastic lining



3.2.3. Potential Bat Access Points and Bat Roosting Locations

Potential Access Points for Bats in Former library

Bats could potentially gain access into the former library via the gaps between the soffit boxes and external walls, however none of the roof tiles or soffit boxes on the northern, eastern, southern and western elevations are proposed to be impacted as part of the works.

Potential Roosting Sites for Bats

The following potential roost sites were recorded:

- Within the gaps between the soffit box and external wall (see Photos 6-8); and
- Within the crevices in the brickwork around the windows on the northern elevation (see Photos 9-10).

3.2.4. Dusk Emergence Survey

Table 2: Summary of conditions during dawn re-entry survey

Date	03/08/2021
Sunset/Sunrise Time	21:00
Start Time	20:35
Finish Time	22:30
Sunset Temperature	15°C
Rain	None
Wind¹⁷	1
Cloud Cover	2/8 oktas

¹⁷ Estimated on site using the Beaufort scale.

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Table 3: Summary of dusk emergence survey results

Emergences/ Re-entries	No bats emerged from or interacted closely with the former library.
Important Commuting/ Foraging Routes	No noteworthy commuting routes were identified.
Bat Activity¹⁸	Overall, moderate levels of bat activity were recorded. Common pipistrelle (<i>Pipistrellus pipistrellus</i>) was regularly recorded throughout the survey. Lower levels of activity of soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) were recorded.
Bat Social Calls	Common pipistrelle Type D. social calls were recorded. This is an advertisement call made by males to attract females, indicating mating.

3.2.5. Nesting Bird Survey

No signs of recent nests were found within or on the exterior of the former library.

¹⁸ Activity thresholds have been quantified using personal judgement according to past experience of surveying similar sites.

4. Evaluation

4.1. Summary of Preliminary Roost Assessment

The preliminary roost assessment and dusk emergence survey found no evidence of bats roosting within the former library.

4.2. Suitability of Summer Roosts

The former library was assessed during the initial preliminary roost assessment survey as having low suitability for use by crevice-dwelling bats; low suitability for use by roof-void dwelling bats; and negligible suitability for use by direct access species (horseshoe species). Full justification of the assessment can be found in the Appendix 2B. This assessment was used to determine the number of dawn re-entry and emergence surveys required (see Appendix 2A).

4.3. Potential Winter Roosts

The gaps around the windows provide features which are suitable for non-classic over-wintering sites. The north-facing nature of these features increases the likelihood of such use. However, the presence of hibernating bats is considered unlikely due to the lack of direct evidence of bats found using the former library during the preliminary roost inspection and dusk emergence survey¹⁹.

4.4. Birds – Interpretation of Nesting Bird Survey

No evidence of past or current nesting by birds was noted during the preliminary roost assessment or the dusk emergence surveys, either within or on the exterior of the former library.

¹⁹ There is limited research on where pipistrelle bats hibernate, but current evidence suggests that they may hibernate adjacent to their breeding roosts in secure locations such as cavity walls that have relatively stable temperatures. Other individuals disperse to roost in small numbers in more exposed locations such as around window frames. In exposed locations pipistrelle bats typically hibernate as one or two individuals. Often there are often no obvious external signs of their presence (JNCC, 2004). Because of the highly exposed location of hibernation sites used by some individuals, it is therefore very difficult to completely rule out hibernation use by this species in almost any building that has some very shallow crevices, openings or gaps.

5. Impact Assessment

5.1. Potential Impacts of Development on Bats

Based on the conclusion that bats are unlikely to be roosting within the former library, no negative direct or indirect impacts on bats are anticipated.

5.2. Impact Assessment of Future Installation of Solar Panels

The central parts of the roof on the southern elevation where the solar panels may be installed is in good condition with limited features suitable for use by bats. Therefore, this work (if undertaken in the future) is considered unlikely to have any impact on bats.

5.3. Potential Impacts of Development on Birds

There are anticipated to be no potential direct impacts due to the absence of evidence of nesting birds in the former library.

6. Required Actions

6.1. Further Work and Licensing Requirements

No further survey work is considered necessary. A protected species licence is not required as the survey indicates a likely absence of roosting bats in the former library.

6.2. Roosting Provisions

6.2.1. External Roosting Opportunities (Fascias and Bargeboards etc.)

The existing exterior soffits around the building will be set off the face of the render/masonry to provide 'crawling bat access' spaces underneath. It is essential that the top of the wall beneath the bargeboards/fascia's will be sealed to prevent bats from gaining access into the roof structure and coming into contact with breathable roof membranes. The gaps behind the soffits will be positioned away from windows, doors and security lighting. Where soffits are to be used there will be a small gap between the wall and the soffit board (see Appendix 5). These gaps will be approximately 20mm wide x 100mm long and spaced at intervals around the building as shown on Plan 4. Ideally, the soffits and bargeboards will be of timber construction rather than uPVC plastic². Small holes at the top of the northern gable wall will be created. These will be covered with new timber fascia boards which will sit on spacers so that they stand proud of the wall with 'crawling bat access' spaces underneath. A 20mm wide gap will be maintained along the edge of the board where it abuts the wall. Care will be taken to ensure that bats have adequate access to the newly created gaps at the top of the wall.

6.3. Precautionary Measures

6.3.1. Timing of the works

Building work to the window frames on the northern elevation of the library will commence either during the spring months (i.e. March to early April inclusive¹) or preferably the autumn months (i.e. 15th September to 31st October inclusive), thus reducing the probability of encountering either summer roosting bats or winter hibernating bats.

No evidence of any use by roosting bats was recorded on site and it is therefore highly unlikely that bats or their roosts will be affected by the works. No precautionary timing conditions on works are required. However, it is not possible to rule out bat use entirely, and there is also a risk of an offence being committed if active birds' nests are present. The following recommendations are made to minimise risks to bats and birds:

- It will be clearly understood, and contractors made aware that in the event of any bats being found, the contractor must halt works (if bats are encountered, the bat will be carefully covered over again). Appropriate advice will be obtained from a suitably qualified bat consultant or Natural Resources Wales and, if necessary, a bat development licence obtained before work can resume;

- If any active bird nests are found these will be protected, along with an appropriate buffer zone of 5-10m, until the nesting is complete, and the young have fledged²⁰;
- Contractors will check for the possible presence of bats on the undersides of roofing tiles as they are lifted off. This is especially important at the outset of the works, since once the works have started, the disturbance is likely to drive any bats which are present away voluntarily; and
- The services of an appropriately qualified and licensed ecological consultant will be available on an 'on-call' basis at all stages of the works to deal with any unexpected encounters with bats or nesting birds. Contact details of such will be held on site. Acer Ecology Ltd. could be retained to provide this support.

6.3.2. 'Bat-Friendly' Roof Lining

There is no current plan to replace the roof of the building. If this is undertaken in the future the roof will be lined internally with 1F²¹ black bitumen felt which complies with BS8747:2007²² and BS 5250:2011. Non-woven roofing underlay (NWRU), or 'breathable membranes' (BRM)²³ as they are also known, will be avoided as they tend to rip due to wear and can give rise to dislodged fibres (spun-bond polypropylene) which can entrap bats.

The roof lining will be free for use by roosting bats and will not be covered with solid insulation or any other material. The roof void will be entirely dedicated to use by roosting bats, and not available for use for storage etc. If this is undertaken in the future ridge tile access points with gaps retained for use by bats will be installed.

6.3.3. Treatment of Existing and New Timbers

New timbers in the bat accessible areas will be tanalised (i.e. pre-treated with Tanalith E). All new timber will be pre-treated before arrival on site.

Retained or re-used timber requiring remedial pesticide treatment will only use chemicals listed on Natural England's Technical Information Note TIN092 Bat Roosts and Timber Treatment (2nd Edition dated 04 February 2013). The treatment of timbers will only take place between 1st of November and the 1st of March.

²⁰ Some bird species, especially raptors and owls remain dependent upon the nesting site after fledging and so depending upon the species the nest site may need to be protected for a period of time after fledging.

²¹ Type 5U bitumen felt contains non-woven polyester fibres which could possibly break up and entangle bats and therefore must be avoided. In addition, bitumen felt collects and retains heat better than alternative materials, and is generally favoured by bats in multi-felted roofs for this reason.

²²http://www.icopal.co.uk/Products/Pitched_Roofing_Underlay/Products/Roofing_Underlay/monartile-1f-underlay.aspx

²³ TLX Batsafe a breathable membrane is available which is marketed as being safe for use in bat roosts, however no test data is available to verify this, and consequently this product is not currently considered acceptable by the Bat Conservation Trust.

6.3.4. Lighting Strategy

External lighting will be absent from the northern elevations of the former library (see plan 4) apart from low key lighting of doorways, thus creating a 'dark corridor' to avoid causing disturbance to roosting bats that commute to and from the former library. The exact models of lighting are yet to be finalised.

The lighting design for the site will be of a 'bat-friendly' specification, complying with the Institute for Lighting Professionals and Bat Conservation Trust's guidance (2018) and kept to the minimum level which meets the needs of security and health and safety. The unnecessary lighting of habitats which could potentially be used by foraging bats such as nearby trees, hedgerows etc. will be avoided.

External lighting will be minimised and installed at low-level only (i.e. no higher than eaves level and lower than 2.4m) and directed downward (i.e. below the horizontal plane with no upward tilt). Fully shielded lights with front and side hoods/shields or cowls will be installed to prevent upwards and horizontal light spill. The lighting source will not be visible.

Lighting will not be located in the vicinity of, or shine towards, the bat access points or possible/actual commuting routes and flight lines, thus maintaining a 'dark corridor' and avoiding/minimising disturbance to roosting bats. Any security lights used will operate on a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The lights will either have an integrated LED light source, or use LED bulbs. They will be low intensity (i.e. circa 11 watts) and have a warm white colour temperature of 3000K or less (ideally 2700K if commercially available). White, blue and green² lighting sources including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs which have a significant effect on bats will be avoided. Examples of suitable light fittings are provided within Appendix 7.

6.4. Ecological Enhancement for Bats

The Environment (Wales) Act 2016, Planning Policy Wales (Edition 11, January 2021), TAN 5 *Nature Conservation and Planning* (2009) and Merthyr Tydfil Supplementary Planning Guidance Note 5: Nature and Development (2015)²⁴ stipulate that development projects minimise ecological damage and contain elements of ecological enhancement.

Ecological enhancements measures proposed by the county ecologist are deemed sufficient, the fascias, soffits and gutter-plates etc. will be left with small gaps beneath to allow access by crevice-dwelling bats behind them²⁵ (as detailed in section 6.2.1), or one soffit bat box manufactured from 12-18mm FSC hardwood exterior plywood (or equivalent) will be incorporated into the exterior wall of the former library (Appendix 6). The bat soffit box will be recessed into the in-situ soffit box. Ideally, the bat box should be installed in an unlit location close to connective features to allow bats undisturbed dispersal to local

²⁴ <https://www.merthyr.gov.uk/media/1594/spg-5-nature-and-development.pdf>

²⁵ This approach will only be acceptable if breathable membrane will not be installed within the building or the fascia, soffits etc. or the fascias, soffits etc. will be installed in a way where there is no potential for bats to gain access to the breathable membrane.

foraging habitat. The entrance slot will be 20mm, the roost will be 330mm in length and between 140-250mm in height. Other enhancement measures such as access tiles and retained roof voids are considered unsuitable as the roof of the former library is in good condition with no further works proposed.

6.5. Longevity of Report

Survey data should ideally be from the last survey season before a planning or licence application is submitted, although the length that survey data remain valid should be decided on a case-by-case basis and is dependent upon several factors²⁶ (Collins, 2016). If development works do not begin within eighteen months to two years of the date of this report, an updated survey may be required in accordance with guidance in BS 42020:2013²⁷ and CIEEM (2019), to determine if conditions and bat use has changed since described in the current report.

²⁶ The factors identified are as follows: Were the original surveys carried out according to good practice guidelines?; Were the original surveys constrained in any way?; Do the results of the original surveys support the original conclusions and are these still relevant?; Has the nature of the site or the surrounding area changed since the original surveys were undertaken; and are additional surveys likely to provide information that is material to a decision, the design of mitigation measures, or specific advice relating to a proposed activity.

²⁷ As set out in Section 6.2.1, Point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

7. References

Anonymous (2007) *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC*. Final version, February 2007.

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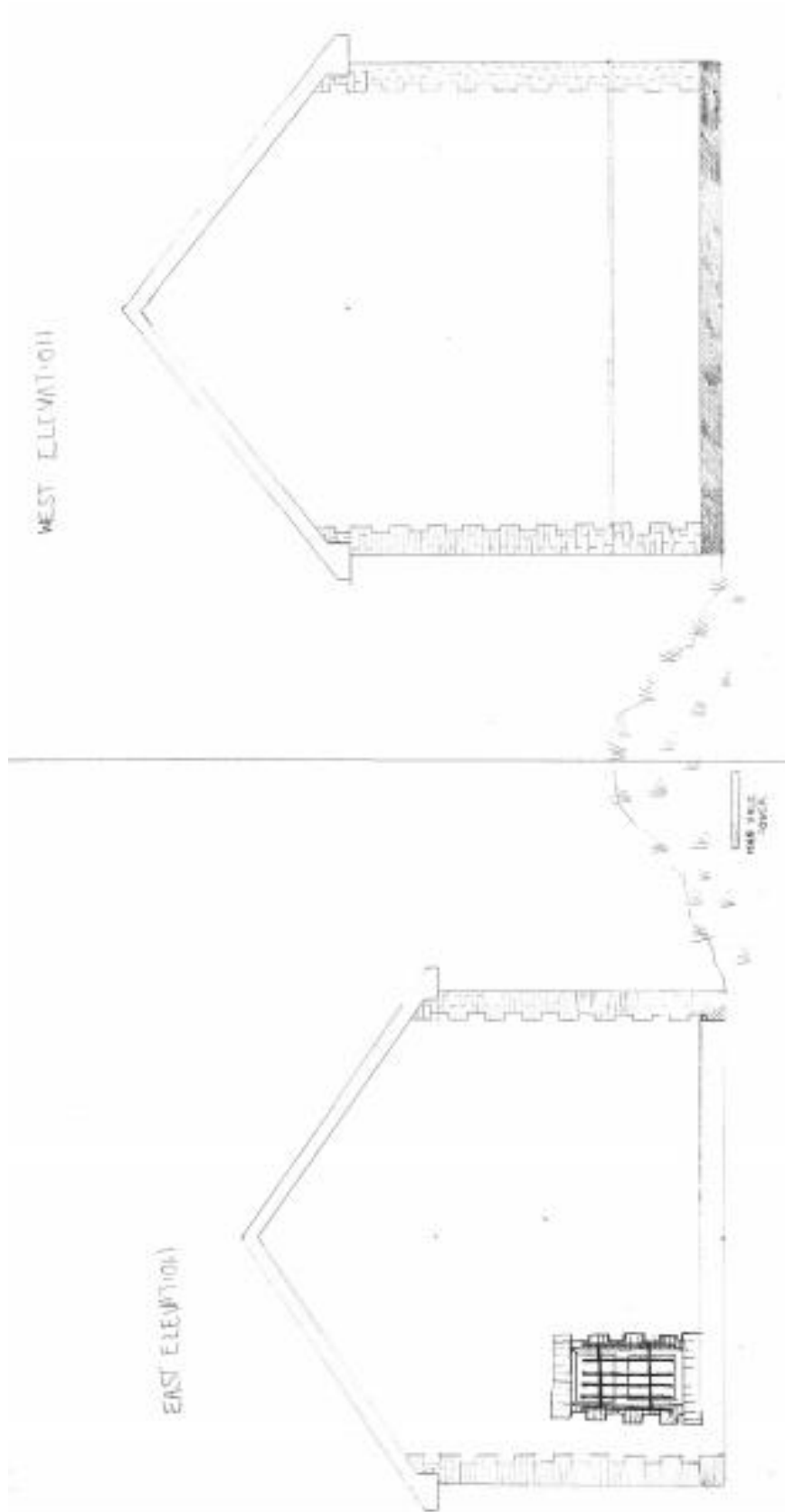
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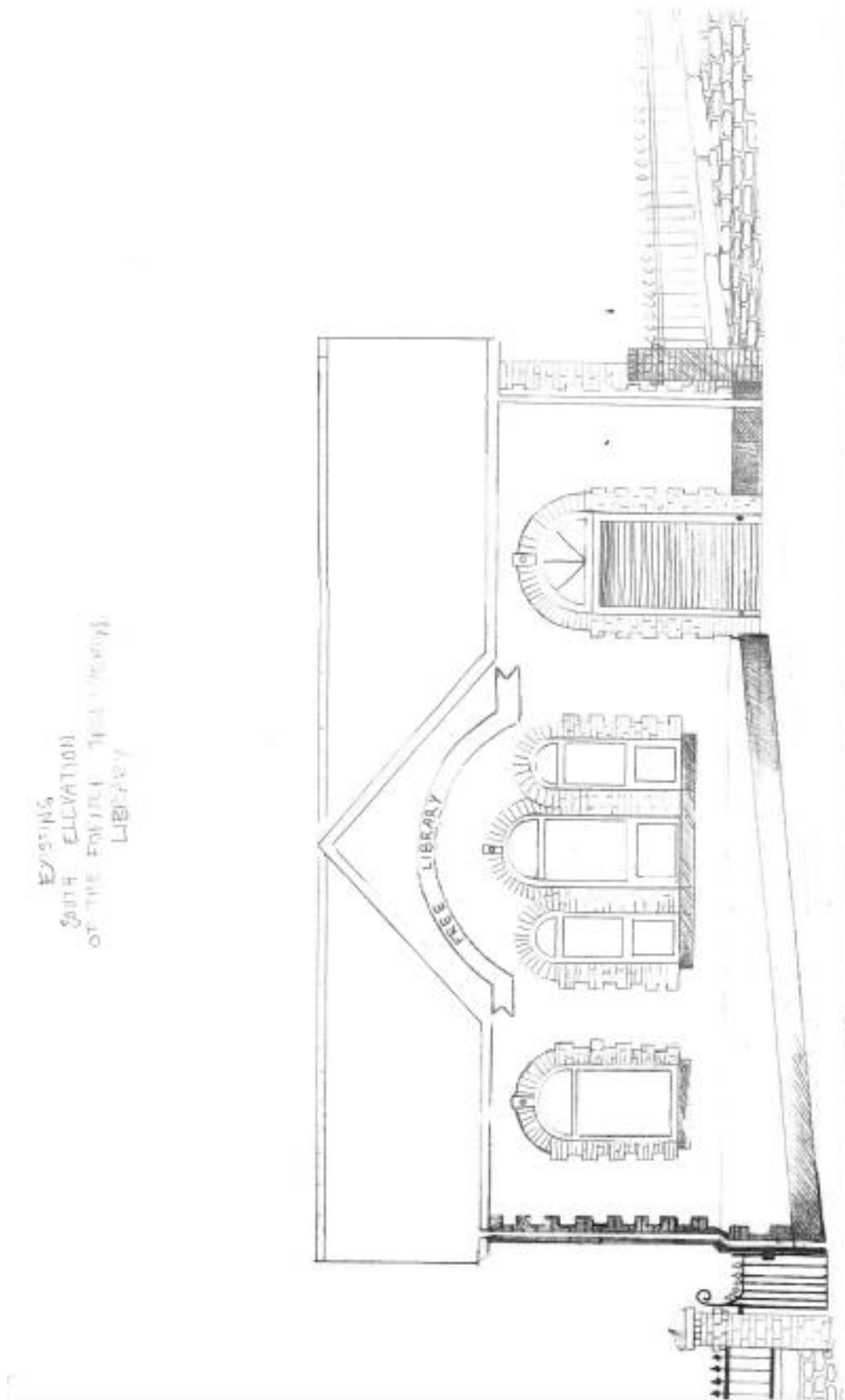
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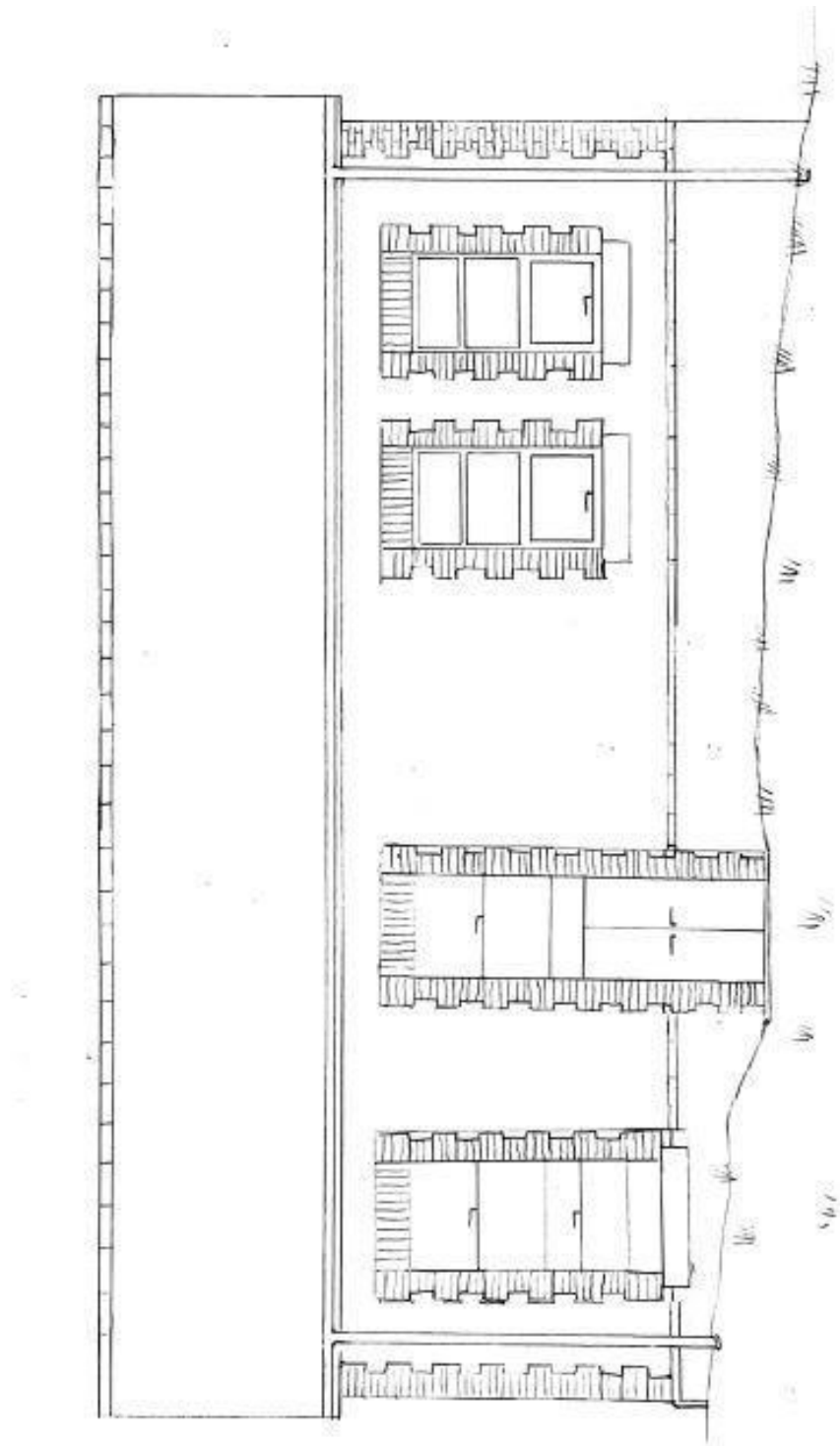
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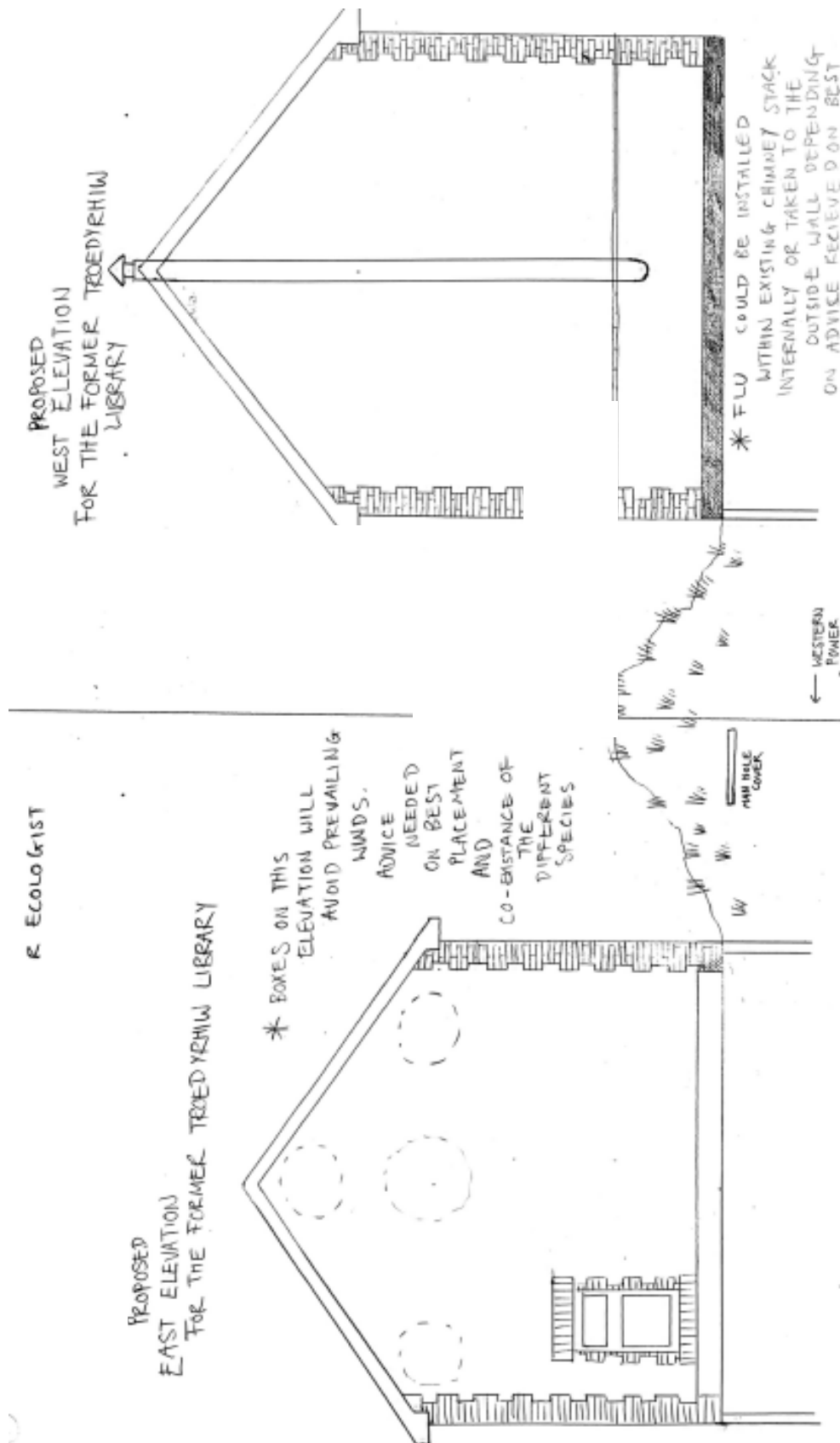
Drawing 1: Existing Site Plans







Drawing 2: Proposed Development



Plan 1: Location Plan



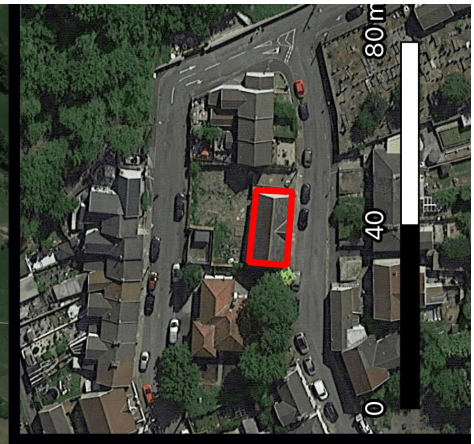
**Former Troedyrhiw Library
Troedyrhiw**



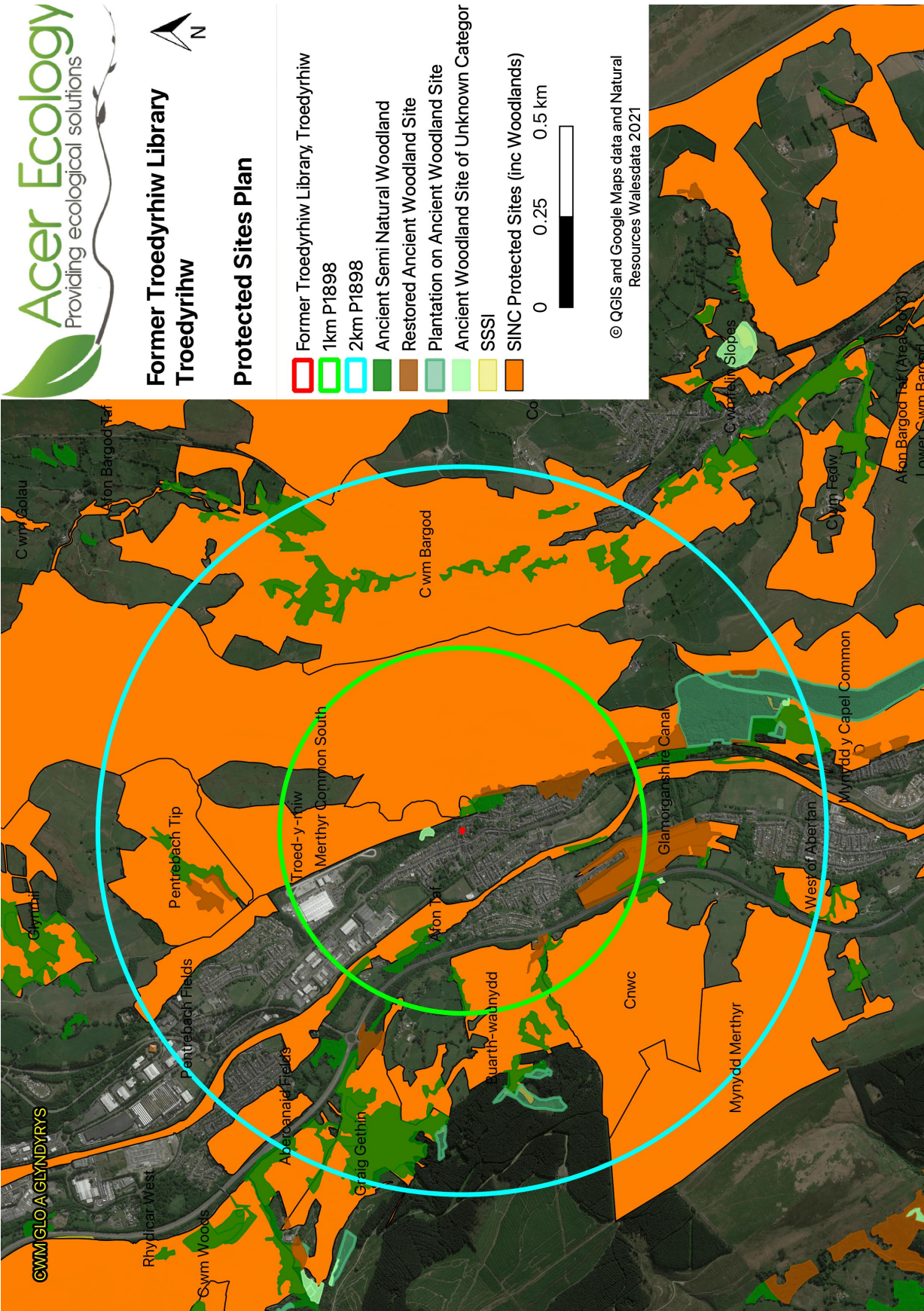
Location Plan

 **Former Troedyrhiw Library
Troedyrhiw**

© QGIS and Google Maps and Natural Resource
Wales data 2021



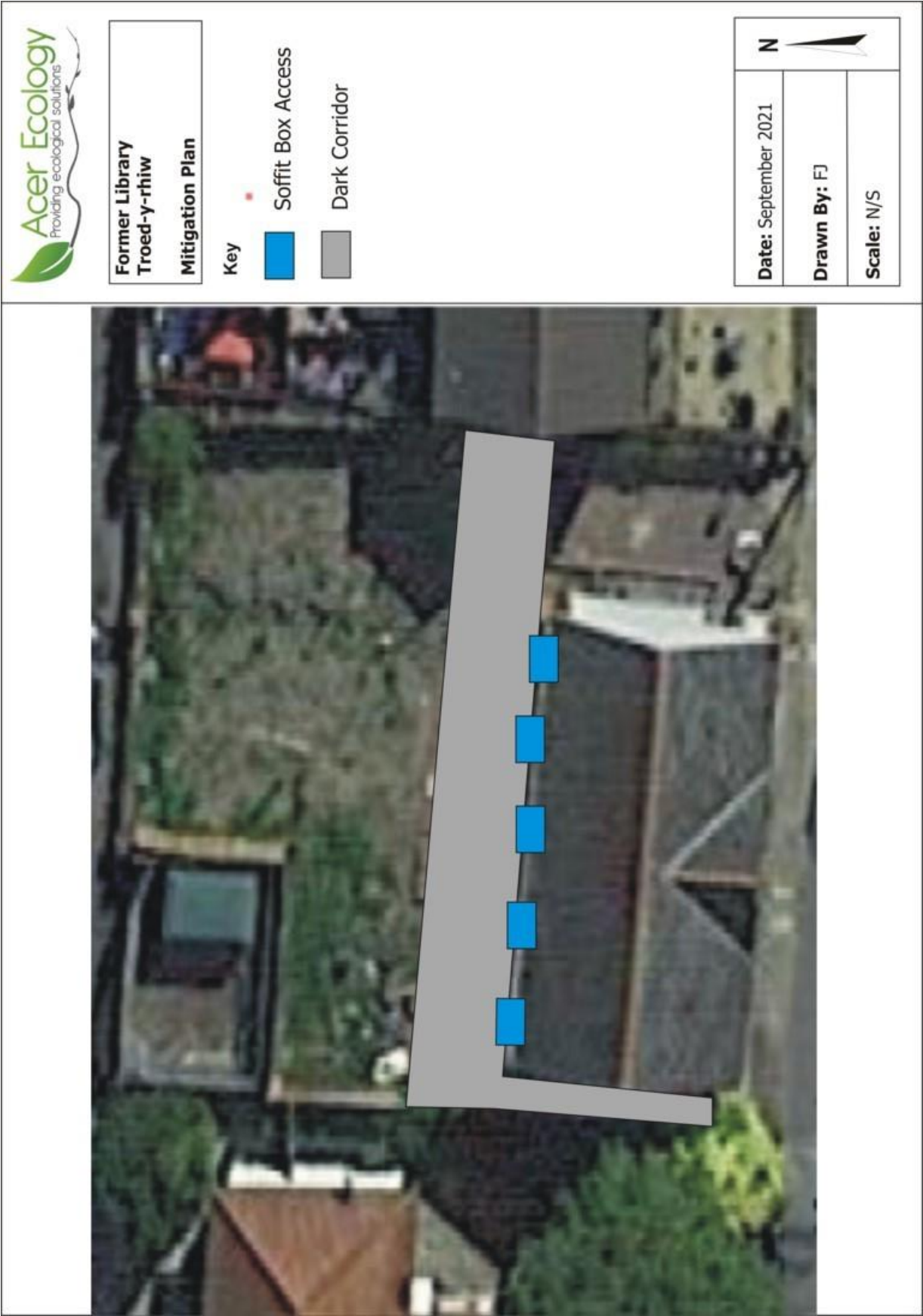
Plan 2: Protected Sites

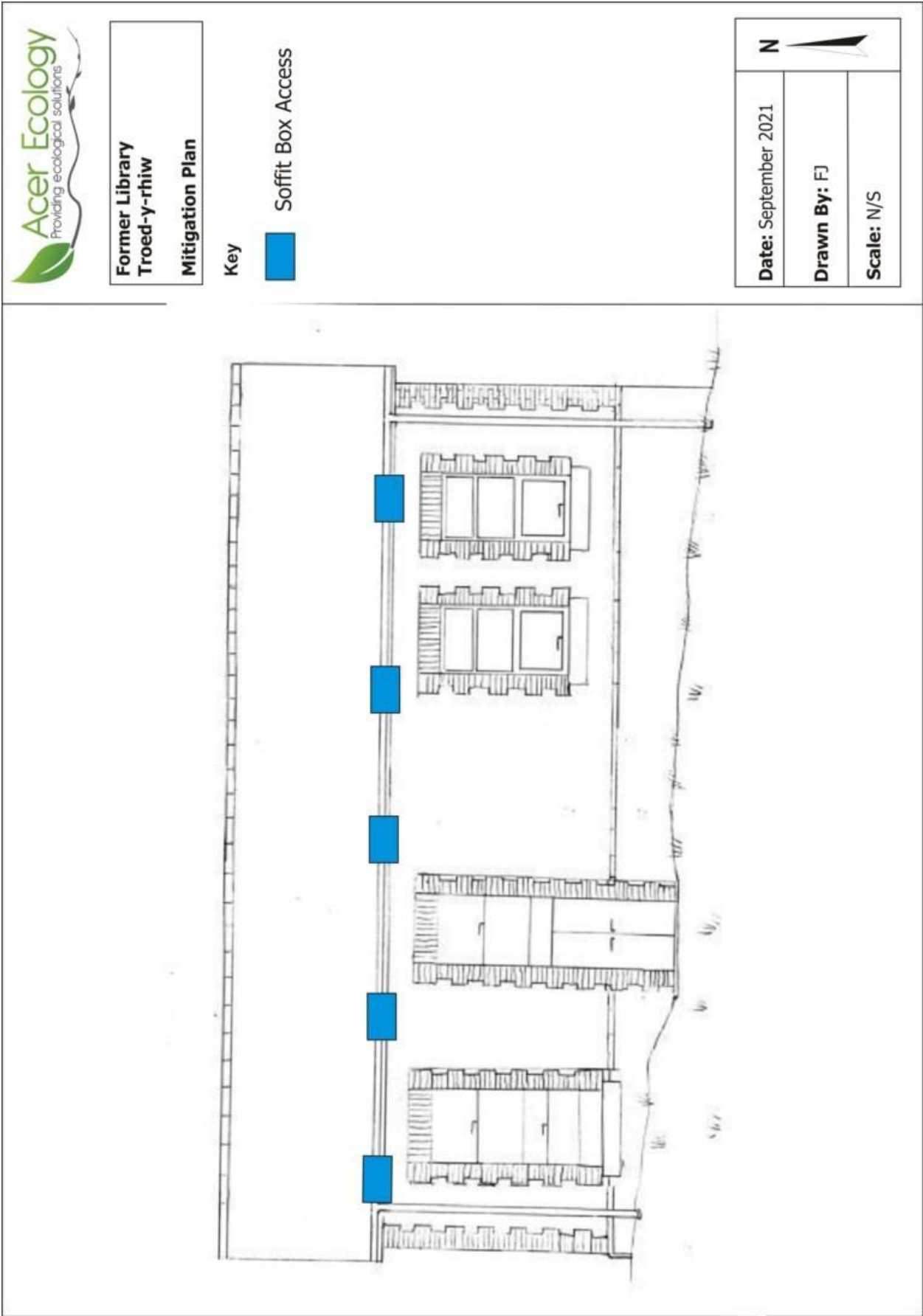


Plan 3: Dusk Emergence Survey Results (03/08/2021)



Plan 4: Mitigation Plan





Appendix 1: Bat Ecology and Legislation Protecting Bats and Their Roosts

Bat Ecology

There are 17 known breeding species of bat found in the UK, with additional species recorded as migrants or vagrants. All of them are small, nocturnal, flying, insectivorous mammals that are under conservation threat, and many having undergone massive population declines over the last century. Some species, such as common and soprano pipistrelle are relatively common and widespread in the UK, while others, such as greater horseshoe bats (*Rhinolophus ferrumequinum*), have an extremely restricted distribution.

Most bats will use a variety of roosts of different types throughout the year. The winter hibernation sites typically have cool, humid conditions with a stable microclimate and low levels of disturbance. Most British bats hibernate in caves or artificial structures that fulfil these requirements, such as mines, tunnels and cellars. Bats emerge from hibernation around late March or early April and move into transition or intermediary roosts. Around early May, female bats gather in colonies to form summer or maternity roosts, and it is here where they will give birth between late May and early July. A colony may consist of many individuals (sometimes hundreds of bats) of mixed age and sex. Roosts occur in a variety of habitat types, including tree-holes, caves, buildings and other secure crevices or internal spaces with appropriate stable temperatures and humidity. Bats may change roost locations many times during a year, and colonies may split up and reform during this period. Males occupy solitary roosts in autumn, to which they attract females for mating.

Legislation

All British bat species and any place used for shelter or protection, or a breeding site or resting place (their roosts) are fully protected under the amended Wildlife and Countryside Act 1981 through inclusion in Schedule 5. The roosts are protected irrespective of whether bats are present at the time. All bats fully protected under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019. These pieces of legislation make it illegal to deliberately or recklessly:

- kill, injure or capture bats;
- disturb bats;
- damage, destroy, or obstruct access to bat roosts (including sites that are currently unoccupied);
- possess or transport a bat or any part of a bat unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

Disturbance is defined as that which is likely to impair bats ability:

- to survive, to breed or reproduce, or to rear or nurture their young;
- to hibernate or migrate; or
- to significantly affect the local distribution or abundance of the species to which they belong.

Habitats Regulations Licensing

If a European Protected Species will be affected by a development, Natural Resources Wales (NRW) can issue licences under the Habitats Regulations to permit otherwise prohibited acts. Licences for certain activities can be granted providing “three tests” are satisfied, that is:

1. the purposes of “preserving public health or safety, or for reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment”;
2. there must be “no satisfactory alternative”; and,
3. the derogation is “not detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”.

Where Planning regulations apply, NRW will only issue a licence after planning consent has been granted. The licence application will require the production of a detailed method statement, which sets out the activities to be carried out under the licence to minimise the risk of bats being harmed during construction works and ensure that bats will be conserved during the development of the site. This will need to detail the mitigation proposed (such as the replacement or compensation roost), the timescale and schedule of works, the number, size and locations of bat access points to be provided, the type of materials to be used (roofing material, roof lining, fascias, soffits and bargeboards etc.), lighting proposals, action to be taken in the event bats are found during works and a post-development monitoring programme. The method statement will need to be accompanied by scaled plans and maps detailing the bat mitigation features. A cross-section of the access points and roost space is often required. The method statement must ensure that provision is made for new or continued roosting opportunities after the completion of development works. In some instances, a method statement is requested by the Local Planning Authority or Natural Resources Wales before the planning application is determined.

Planning Policy Wales

Section 6.4 Paragraph 6.4.5 of Planning Policy Wales Edition 11 (2021) that focuses on Biodiversity and Ecological Networks, Section 6 of The Environment (Wales) Act 2016²⁸ that details the requirement for enhanced biodiversity and resilience of ecosystems, TAN 5 and Section 40(1) of the Natural Environment and Rural Communities Act (NERC) 2006 all encourage developments in Wales to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally.

Part 1, Section 7 of the Environment (Wales) Act 2016 provides a list of the ‘*living organisms of principal importance for maintaining and enhancing biodiversity in relation to Wales*’. This includes seven bat species (soprano pipistrelle, barbastelle (*Barbastella barbastellus*), Bechstein’s (*Myotis bechsteini*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), lesser horseshoe (*Rhinolophus hipposideros*) and greater horseshoe bats).

²⁸ <http://www.legislation.gov.uk/anaw/2016/3/contents>

Appendix 2A: Guidelines for Assessing Potential Bat Roosting Suitability and Determining Required Number of Dusk/Dawn Surveys

Suitability	Description of Roosting Habitat	Minimum Number of Dusk/Dawn Surveys Required ²⁹
Negligible	Negligible habitat features on site likely to be used by roosting bats.	None.
Low	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 ³⁰ 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 ³¹ .	One survey visit. One dusk emergence or dawn re-entry survey (Survey period from May to August) (Collins 2016).
Moderate	A structure 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 ³² (with respect to roost type only) the assessments in this table are made irrespective of conservation status, which is established after presence is confirmed.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey ³³ . Surveys should be undertaken from May to September, with at least one of the survey between May and August (Collins 2016).
High	A structure 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 long periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. Surveys should be undertaken from May to September, with at least two of the surveys from May to August (Collins 2016).
Confirmed Roost	Evidence of bats or use of bats found.	Three separate surveys recommended to characterise the roost. If no evidence of bat roosting is detected during the dusk and dawn surveys, DNA analysis of the droppings may be required.

²⁹ Adapted from Tables 7.1 and 7.3 of the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).

³⁰ For example, in terms of temperature, humidity, height above ground levels, light levels or levels of disturbance.

³¹ Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for large numbers of this species to be present during the autumn and winter in large buildings in highly urbanized environments.

³² 'High roost status' is not defined within Collins, 2016. Acer Ecology Ltd. interpret maternity, hibernation, swarming sites, mating sites, and satellite roosts as being of 'high roost status' and exclude day roosts, night roosts, feeding roosts, transitional/occasional roosts from this definition. Pre-maternity/collecting roosts are not included within Collins, 2016 and will be assessed on an individual basis.

³³ Multiple surveys should be spread out to sample as much of the survey period as possible. It is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk survey is considered only one visit.

Appendix 2B: Justification of Assessment of Bat Roost

The former library is assessed as having:

- Low suitability for use by crevice-dwelling bats (*Pipistrellus* species and smaller *Myotis* species such as Brandt's (*Myotis brandtii*) and whiskered bats (*Myotis mystacinus*)), due to the gaps within the brickwork around the windows and the gaps between the soffit boxes and external walls;
- Low suitability for use by roof-void dwelling bats³⁴ (long-eared species and large *Myotis* bats, such as Natterer's bat (*Myotis nattereri*) and serotine bats (*Eptesicus serotinus*)) due to the gaps between the soffits and external walls which may provide access, despite being sub-optimal. However, droppings for these species usually persist and the absence of such droppings and increased disturbance suggest that these species are not roosting within the interior of the former library; and
- Negligible suitability for use by direct-access species requiring a large access point and large roost space (lesser horseshoe and greater horseshoe bats) due to the lack of suitably large access points for these species.

³⁴ It should be noted that, in non-maternity roosts, long-eared bats can make use of crevice features without gaining access into a roof void.

Acer Ecology

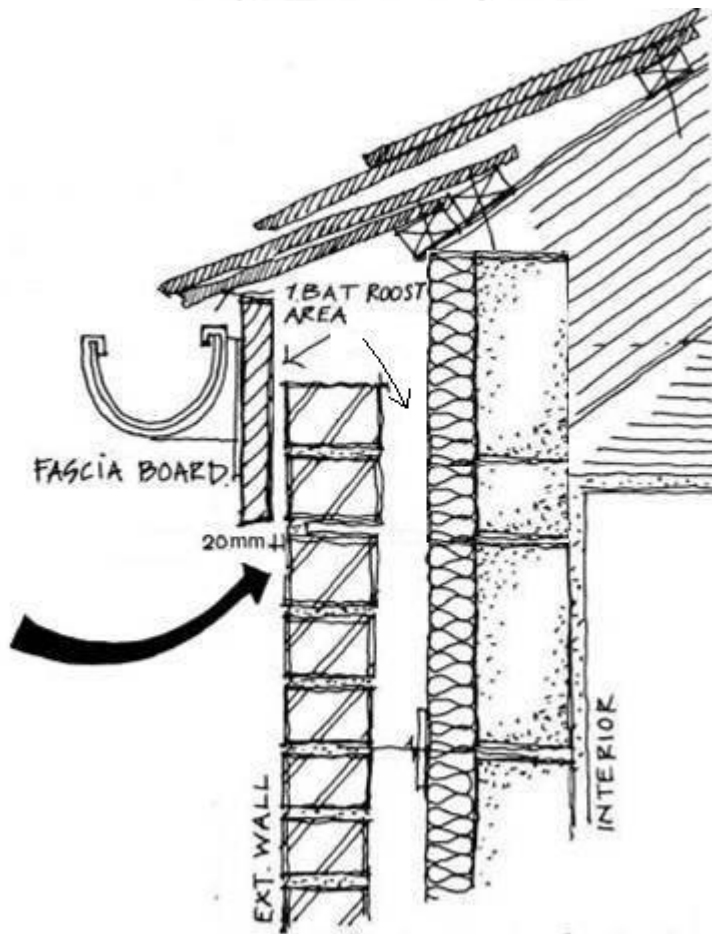
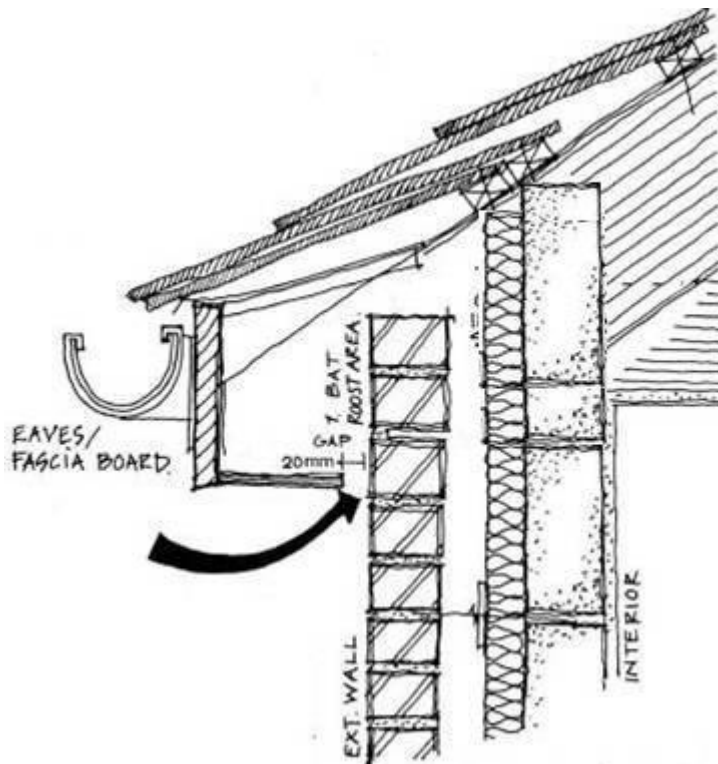
Appendix 3: Guidelines for Assessing Bat Habitat Suitability

Suitability	Commuting and Foraging Habitat
Negligible	Negligible habitat features on-site likely to be used by commuting and foraging bats.
Low	<u>Commuting Habitat</u> Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape. <u>Foraging Habitat</u> 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	<u>Commuting Habitat</u> Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens. <u>Foraging Habitat</u> Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	<u>Commuting Habitat</u> 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. <u>Foraging Habitat</u> 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. <u>Proximity to Known Bat Roosts</u> The site is close to and connected to known roosts.

Appendix 4: Surveyor Experience

Ffion Jones – Ffion graduated with a degree in Conservation and Ecology at the University of Exeter. As part of her degree, she undertook an Ecological Consultancy module where she learnt about bat ecology, survey methods and bat call analysis. She has undertaken training with Acer Ecology, including bat ecology, emergence/re-entry surveys and transect surveys and is in her third season of conducting bat surveys. Further details of her qualifications and experience can be found at <https://www.linkedin.com/in/ffion-jones-17ab63197>.

Appendix 5: Soffit / Fascia Board Access at Eaves

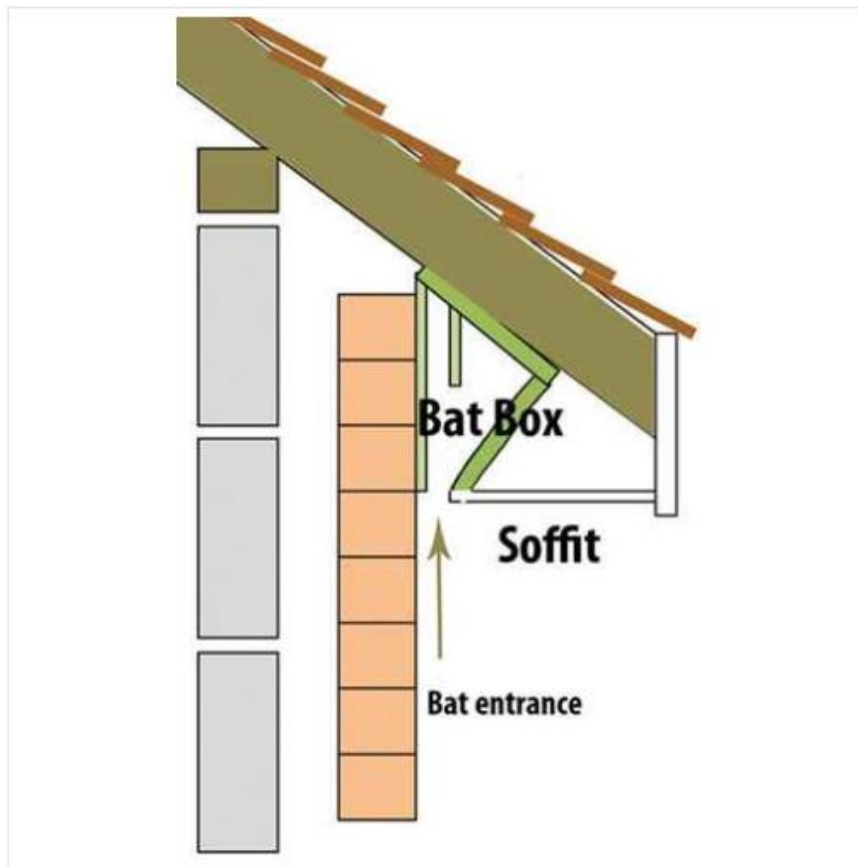


Closed without access into roof space

Bat access gaps should be located away from windows, doors and other light sources.

Closed without access into roof space

Appendix 6: Soffit Bat Box (Wildcare Nationwide Ecology Supplies, 2016)



Acer Ecology

Unique to Wildcare, the soffit bat box utilises the wasted space above the soffit on a standard roost structure. The entrance is formed by cutting away a 20mm slot in the back of the soffit board against the external wall, and a specially designed plate is then screwed through into the bat box to secure it and to make it a tidy finish.

Virtually invisible and self-emptying, this product provides a permanent and successful solution to the problems of fixing ugly concrete structures to the outside of new housing.

Appendix 7: Example of Suitable Wall Light Fittings

	Description
	Light fitting sourced from http://www.energylightbulbs.co.uk/products/single-outdoor-wall-with-pir-movement-sensor-stainless-steel?gclid=CLuf2c63hM4CFYVAGwod0sYPvg
	Light fitting sourced from https://www.kichler.com/kichler/products/outdoor-lighting/outdoor-wall-lights/outdoor-wall-lights-no-arms/outdoor-wall-1lt-led-azt/
	Lighting sourced from https://www.kichler.com/kichler/products/outdoor-lighting/outdoor-wall-lights/outdoor-wall-lights-no-arms/3000-k-led-outdoor-lantern-bkt/
	Light fitting sourced from https://hammertonstudio.com/products/arch-sconce-24-h/
	Lighting sourced from https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/#!/Aged-Bronze-Bell-Shaped-Dark-Sky-Outdoor-Wall-Lantern/p/116556105/category=12541418
	Lighting sourced from https://www.homedepot.com/p/Home-Decorators-Collection-1-Light-Champagne-Silver-Outdoor-Wall-Mount-Barn-Lantern-Sconce-22999/302006431
	Lightng sourced from https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/#!/Bronze-Outdoor-LED-Wall-Lantern-Sconce/p/50117847/category=12541418
	Lighting sourced from http://www.theopenboxshop.com/hampton-bay-lexington-collection-outdoor-rustic-bronze-led-medium-wall-lantern/

A tool for finding 'bat-friendly' lighting is available at <https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/>