



Taf Crescent Bat Tower

Green Infrastructure Statement
BAT-ESA-XX-XX-RP-A-000221

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1.0 Document Control

Project Number	UK-62300140
Project Title	Taf Crescent Bat Tower
Client Name	Merthyr Tydfil County Borough Council
Document Name	Green Infrastructure Statement
Document Number	BAT-ESA-XX-XX-RP-A-000221
File Name	BAT-ESA-XX-XX-RP-A-000221_P01 - Green Infrastructure Statement
Date of Revision	20/02/2025
Revision	P01
Status	S2 – Suitable for Information
Classification	CONFIDENTIAL

1.1 Document Revisions

Revision	Amendments	Issue Date	Auth/ Chk/ App
P01	First Issue	28/03/2025	EBB/ EBB/ MGT

1.2 Executive Summary

This document has been prepared on behalf of Merthyr Tydfil County Borough Council for the proposed development of the Taf Crescent Bat Tower & demolition of Rechabite Hall.

The document demonstrates the suitability of the proposal for the site and its setting. It also explores how the local and historic context has influenced the design proposal. The report includes the assessment of the existing green infrastructure on site, and what is being proposed to be put in place.

This project presents the opportunity to introduce a purpose-built habitat for a range of native bat and bird species as well as encouraging an increase in biodiversity with insects and planting being introduced to the site.

1.3 Disclaimer

General Disclaimer

WSP UK Limited makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out in the contract under which it was supplied.

2.0 Introduction

Green Infrastructure Statement for Taf Crescent Bat Tower, Merthyr Tydfil

The report has been produced by ESA Architecture on behalf of the Client, Merthyr Tydfil County Borough Council for the purpose of PAC submission for the Merthyr Vale Bat Tower scheme.

The report presents the development of a Bat Tower, as part of Merthyr Vale Landscape to create a safe ecosystem for the bats and birds around the area.

Merthyr Tydfil County Borough Council have appointed ESA Architecture - WSP to oversee the demolition of Rechabite Hall, Crescent Street and the construction of a bat tower at Merthyr Tydfil Vale adjacent to the Taff River and pedestrian bridge crossing.

Rechabite Hall is a vacant semi-derelict residential four storey building which is deemed unsafe and unsuitable for further use/development. There has been historic use of the degraded roof by bats however, as recent surveys have identified the use of this roof is declining. As the roof degrades further it opens to the elements and becomes less suitable for use as a bat roost.

The project brief is constrained by a number of ecological factors for which Wildwood ecology have been appointed to advise and guide the design team. Delivery of the project on site is feasible in the next financial year following the completion of the final required bat surveys by Wildwood ecology in Summer 2024. The collaboration between ESA Architecture and Wildwood Ecology has ensured that all ecological considerations are meticulously addressed. The Bat Tower's design incorporates various features to support a thriving bat population, including roosting niches, insulated chambers, and specific entry points that cater to different bat species' needs.

The proposed construction site, adjacent to the Taff River and pedestrian bridge, offers a strategic location that maximizes the tower's ecological impact. The surrounding landscape will be enhanced with native plant species to attract insects, providing a natural food source for the bats.

The demolition of Rechabite Hall will be conducted with the utmost care to minimize disruption to the remaining bats and other wildlife. Temporary roosting solutions will be put in place during the construction phase to ensure the bats have a safe haven until the new Bat Tower is ready for occupancy.

Upon completion, the Bat Tower will not only serve as a crucial habitat for bats but also as an educational landmark. Information panels and observation points will be installed to educate the public about the importance of bats in the ecosystem and the efforts being made to protect them.

The Merthyr Vale Bat Tower scheme stands as a testament to the commitment of Merthyr Tydfil County Borough Council and ESA Architecture in promoting biodiversity and ecological sustainability in urban development.

2.1 Background to Green Infrastructure

Planning Policy Wales describes green infrastructure as a network of natural and semi-natural elements, such as green spaces, rivers, and lakes, that connect various locations. These elements can operate at different scales: on a landscape level, green infrastructure may include entire ecosystems like wetlands, waterways, and mountains. Locally, it could consist of parks, fields, public pathways, allotments, cemeteries, and gardens. On a smaller scale, individual urban features such as street trees, hedgerows, roadside verges, and green roofs/walls can all contribute to the green infrastructure network.

Recently, there have been updates to Chapter 6 of the National Planning Policy, and Planning Policy Wales version 12 was released in February 2024. Now, all planning applications must include a green infrastructure statement detailing how green infrastructure is integrated into the development plans.

2.2 Green Infrastructure Assessment

The purpose of a Green Infrastructure Assessment (GIA) is to ensure that all aspects of green infrastructure are coordinated from the beginning. This includes biodiversity, trees, soils, landscaping, Sustainable Drainage Systems (SuDS), amenities, access, recreation, and climate change mitigation and adaptation, all integrated into a scheme that provides multiple benefits. Ideally, a GIA should serve as a strategy that guides the design and layout of a scheme, rather than retrospectively justifying its functionality.

2.3 Background to Proposed Development

Merthyr Tydfi is situated at the northern end of the Taff Valley, South Wales, approximately 30 kilometres to the Northwest of central Cardiff. The town centre stands on the East bank of the River Taff surrounded by a mountainous landscape setting. Historic road and rail links run through and into the town centre, including the Taff Valley Branch Railway Line, terminating at Merthyr Tydfil. The town contains the historic commercial, religious and administrative centre of the industrial district that developed between the mid-18th and early 20th centuries.

Taf Crescent was previously a residential street which sited rows of terrace houses. Due to constant issues with flooding the decision was made to relocate residents and demolish the houses. The existing site consists of a single four-storey building. The Afon Taf ran within 10m of the building's western aspect, which, along with woodland and scrub along its banks, provided connectivity to the wider landscape. Within 20m of the eastern aspect of the building there is another woodland block. To the south there is an area of scrub, tall ruderal and grassland – this area had naturally revegetated since the demolition of Taff and Crescent Streets.

With Rechabite Hall the only remaining building on the crescent it became home to a small number of bats and birds. As the building continues to degrade it is becoming a less suitable habitat for these species. There is an opportunity to create a purpose-built tower to mitigate and enhance the habitat loss of Rechabite Hall. The scheme has specific focus on habitat creation and providing a safe haven for local native species of primarily bat but also birds and insects.

3.0 Green Infrastructure (Existing & Proposed)

3.1 Existing Green Infrastructure

In recent years there have been multiple ecological surveys undertaken on site and in the surrounding area including:

- Desk study undertaken during July 2019 including:
South East Wales Biodiversity Records Centre (SEWBReC); and
Multi-Agency Geographic Information for the Countryside (MAGIC),
- Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) survey undertaken on 10/07/2019.
- Further surveys including:
Bat emergence and pre-dawn re-entry surveys (2019);
Static monitoring surveys (2019);
Monitoring survey, as per the license requirements (2022); and
Update bat surveys (2024).

Full information on the data sets and search buffers used can be found in the appendices of the two EcIA reports prepared by Wildwood Ecology:

- WWE19105 Taff and Crescent Streets, Merthyr Vale EcIA report FINAL (2024),
- 2019 EcIA report (report reference: WWE19105 ECIA REV B).

The most recent surveys and technical note concluded that there was some bat activity in Rechabite Hall as detailed in the table below. There was also some Jackdaw bird potential nesting within the deteriorated roof.

Date	Species	Roost type (number)	Structure reference	Roost location	Access points	Dimensions or description
06/06/2024	Common pipistrelle	Night roost (one entry)	Rechabite Hall	Southern gable end.	Above weatherboard.	Bat landed on weatherboard, climbed above weather board and entered building.
27/06/2024	Common pipistrelle	Day roost (two emergences)	Rechabite Hall	Eastern half of pitched roof.	Under tile.	Two bats emerged from under a tile next to a dormer on the eastern half of the building.]

Table 1 - Details of bat roosts identified (2024)

Due to the ongoing use of the Rechabite Hall by bats and birds, Wildwood Ecology have made several recommendations, compensation and enhancement suggestions as detailed in section 4 of the 2024 EcIA report. These recommendations focus primarily on bats and birds but also consider other wildlife in local proximity such as fish and otters using the River Taf. Notably, with the implementation of mitigation and precautionary measures proposed in the EcIA, the development is not anticipated to result in any significant impacts on important ecological features.

3.2 Proposed Green Infrastructure

The proposed design to replace one disused building with a purpose-built bat tower on a brownfield site will enhance the green infrastructure. The proposed site is currently a mix of rubble, from the previous demolition, and scrub. The proposal includes an elevated bank which will be planted in native species of hedgerow shrub to attract native birds, and wildflower mixes to attract native insect species. There are several key features of the proposed design that contribute and enhance the existing site include:

- **Proposed Bat Tower:** To provide a purpose-built continuous year-round habitat for wildlife and enhancing the visual appeal of the currently brownfield landscape. Specialist bird boxes will be installed and will offer a haven for birds such as sparrows and swifts. The tower has been designed to accommodate a range of bat species, from the smaller Pipistrelle to the larger Horseshoe, and their range of preferred thermal regimes and roosting, entry/egress requirements. Please refer to the Architectural drawings appended to the Stage 3 report for full details.
- **Proposed Hibernaculum:** Creation of new purpose-built hibernaculum with bat brick, faux chimney breasts and secure external ingress/egress for hibernating bats. This will ensure a year-round presence of native bat species present at the site whereas the current Rechabite Hall site is becoming more unsuitable for bat hibernation.
- **Native Planting:** Use of native Welsh plant species to ensure ecological compatibility and support local biodiversity. Planted banks to the base of the tower featuring a variety of native plants that enhance the aesthetic appeal and provide habitats for local wildlife.
- **Insect Enhancements:** Introduction of bee bricks into the south facing side of the tower to further attract bees. The hibernaculum will offer a great habitat for a wide-ranging selection of insects as will the tower itself.
- **Local Landmark:** The tower will be a poignant, well considered local landmark which is a huge improvement visually on the derelict Rechabite Hall but will likely also increase pedestrian use of the nearby walking routes. There is a great opportunity to display educational signage in front of the site, adjacent to the path, this will increase awareness of the local wildlife and green infrastructure which is so key to the wider Merthyr Tydfil, Wales and the United Kingdom.

These key features of the proposed design have all been incorporated to meet planning policy guidance and to allow the scheme to hit its key objectives which include:

Objectives:

1. **Enhance Biodiversity:** The scheme will introduce a variety of native Welsh plant species to create green spaces that support local wildlife. This includes the planting of trees, shrubs, and ground cover that provide habitats for birds, insects, and other fauna. The scheme also aims to increase the biodiversity of the bat and bird populations locally and will cater for their needs.
2. **Habitat Loss Mitigation & Habitat Creation:** The bat and bird roosting/nesting loss of Rechabite Hall will be fully mitigated by the proposed tower. Not only will the tower replace the opportunities of Rechabite Hall roof, but it will enhance them with purpose-built roosts, nesting boxes and hibernation chambers. The amount of opportunity for bats and birds will increase but also insects and planting.

3. **Enhance Aesthetic and Recreational Value:** Whilst the planners have welcomed the demolition of Rechabite Hall and replacement with a more fitting stone tower in their pre-application advice, it should also be recognised the enhanced aesthetic value the green infrastructure will bring. The green infrastructure (wildflower & shrub banking) will create an attractive space that encourage social interaction with the site and its educational values.
4. **Support Climate Resilience:** The scheme will incorporate a warm loft, cool tower and humid hibernacular which are all safe from the maximum recent recorded flood levels in the area. The use of traditional materials (including reclaimed stone) will provide stable internal temperature regimes for the inhabitants thus providing a resilient habitat for the targeted species. No electrical or gas services will be built into the tower so the carbon footprint after construction will be minimal.

Further details on the design of the proposed scheme (submitted with the planning application) can be found in:

BAT-ESA-XX-XX-RP-A-000010 - Stage 3 Report & Design and Access Statement

For applicable design information and drawings, please refer particularly to Section 6: STAGE 3 REPORT Appendices:

Specialist Ecology Report,
Architectural Drawings,
Structural Report,
Bat Tower Precedents,
Rechabite Hall Demolition Pack.



Figure 1 - Proposal Overview

3.3 Compensation & Enhancement Measures

There are a number of impacts and effects on ecological features which cannot be eliminated as a result of proposed mitigation measures. Due to these resulting impacts and effects, the following recommendations and/or compensation measures are suggested:

Recommendations / compensation measures

Designated sites

The proposed works lie within 10m of the Afon Taf (SINC). Therefore, a Constructional Environmental Management Plan (CEMP) will be required in order to avoid degradation of the river and its designated features.

Bats

Rechabite Hall was identified to be used by roosting common pipistrelle (maximum count two bats). Therefore, a European Protected Species Licence (EPSL) for bats will be required from Natural Resources Wales for the proposed works to legally proceed. The EPSL will require a detailed mitigation and compensation strategy to be devised in the form of a method statement. This will aim to ensure the maintenance of the roosts and that local bat populations are maintained at a favourable conservation status.

Full details of the bat **mitigation** measures will be subject to agreement by Natural Resources Wales during the licence process. However, general details of **proposed mitigation** are as follows:

- To replace Rechabite Hall, which was designated as a bat house as part of a previous license application (license number: S087946/1), a custom-built bat tower will be constructed. The bat tower will include a warm bat loft, with both crevice access (through bat tiles) and fly in access (via a lead-lined chute), a cool tower, and a hibernaculum. The full specifications of the bat tower can be seen section 6.0 of the Stage 3 report.
- Prior to commencement of works, a toolbox talk will be provided by a bat licensed ecologist to all contractors on site, advising them that the building is a confirmed bat roost, advising about permitted work methods/ timing of work, and what to do if a bat is found during works.
- Additionally, a pre-works check will be required prior to demolition works along with exclusion measures to prevent bats from entering the building during this time, as per the licence method statement. This will include endoscopying all crevices prior to demolition and blocking empty crevices with hessian cloth. Crevices that can't be endoscoped fully will be blocked up by hessian post-emergence, providing the three preceding nights had temperatures over 8°C and there had been no rain or high winds to ensure bats are not in torpor.
- Roof stripping works will be conducted under supervision of named ecologist or an accredited agent. If bats are found during demolition, they will be relocated by the licensed ecologist/ accredited agent by a gloved hand to the newly constructed bat tower.
- In order to mitigate for the disturbance to commuting and foraging bats, all works must be undertaken during daytime hours and no temporary lighting is to be installed. Daytime hours in this context are taken to mean works commencing at least 30 minutes after sunrise and works stopping at least 30 minutes prior to sunset.

The completed development will be monitored according to the requirements of the EPSL, to ensure that all mitigation is successful, or to inform modifications where appropriate, and to inform best practice. The roosts will be monitored by ecologists, likely in Year 2 and year 4 after the tower is completed (to be confirmed by the licence conditions). The monitoring will be an internal inspection of the tower followed by a dusk emergence survey

between May – August (inclusive). A daytime internal inspection of the hibernacula will be required in Year 2 and Year 4, between November and March (inclusive).

The method statement and the licence work schedule will detail the appropriate timing for works to the buildings. As maternity and hibernation roosts are not present, there are no timing constraints for the works. The bat tower must be ready for use prior to the demolition.

Only BS747 Type 1F traditional hessian bitumen roofing felt or wooden sarking will be used to line the roofs of the bat tower. Non-bitumen membranes will not be used as they are detrimental to the welfare of bats and cause bat death by entanglement in the fibres. Additionally, when non-bitumen membranes are used in bat roosts, they are known to lose their functionality over time and allow water/ bat urine to enter the roof void.

Birds

Demolition works and any associated vegetation clearance will take place outside of the bird nesting season. If work has to be undertaken during the nesting season (generally from 1st March until 31st August, although birds are known to nest outside of these dates in suitable conditions), a nesting bird check will be required; carried out by a suitably qualified person. Active nests will be protected by a suitable buffer, as directed by the ecologist, until the young have fledged, as confirmed by the ecologist.

Bird boxes will be included in the tower design to compensate the loss of nesting sites.

Fish

As fish species are known to be present within the adjacent Afon Taf, a CEMP will be required and approved by the council prior to the works commencing. The CEMP will outline precautionary measures to prevent soil run off and chemical pollution, incursion into the retained habitat by inappropriate material storage/ plant movement, and avoidance of potential impacts relating to noise, vibration, and lighting spill.

Otter

4Although no evidence of otter was identified onsite, it is considered likely that otter are using the Afon Taf adjacent to site.

A Precautionary Working Methods Statement (PWMS) will be required in order to avoid killing/injuring/disturbing otter during the works. Precautionary working methods will include:

- pre-works walkover by an ecologist to check that there are no new halts within 30m of the works area to avoid impacts on holts/ otter;
 - open excavations/ trenches will be covered overnight during the works (or adding a plank as a means of escape). All pipes will also be capped;
 - storing any onsite chemicals/ fuel within a locked shed/building overnight to avoid any spillage into the nearby waterbody; and
 - avoiding work at night in order to minimise disturbance to otter.
- 4.14 The CEMP will also outline mitigation measures to avoid soil run off and chemical pollution, and potential impacts relating to noise, vibration and additional lighting spill.

Enhancements

Local authorities have a duty to seek to maintain and enhance biodiversity in the exercise of their functions.

Where possible the existing onsite habitat of ecological importance will be retained to ensure that habitats and species that rely on them are not adversely affected by the development. Further enhancements include:

- Native species of local provenance or ornamental plants with known wildlife value (all grown in the UK) will be used for new planting on the site.
- Bee bricks to be installed on south facing side of tower.

The following bird box enhancements will be incorporated into the design:

- Two integrated swift boxes will be installed on north side of tower at 5000mm above ground level.
- Four bird nesting boxes will be fitted to suitable trees adjacent to the development.
- A range of box types will be used to provide opportunities for a number of species. The following designs are recommended (or similar, if they are not available):
 - birds - general purpose, small bird species (Schwegler 1B, Schwegler 2M, Woodstone Nest Box - 32mm / 28mm);
 - birds - sparrows (Woodstone Sparrow Nest Box, Wildcare House Sparrow Nest box); and
 - birds – jackdaw (Schwegler No.29 Jackdaw Nest Box).

In the absence of mitigation measures, the proposed development would have the potential to result in significant negative impacts on designated sites and protected species, triggering legislation. With the implementation of mitigation and precautionary measures proposed above, the development is not anticipated to result in any significant impacts on important ecological features – this is the expert assessment and conclusion of Wildwood Ecology.

3.4 Planning Policies Considered in the Proposal

Planning policies applicable directly to the GIS have been noted below, for further information please also refer to:

- BAT-ESA-XX-XX-RP-A-000010 - Stage 3 Report & Design and Access Statement
- Wildwood Ecological Impact Assessment Report - APPENDIX IX

National Planning Policy

The Planning Policy Wales (PPW) document sets out land use planning policies and provides the policy framework for the preparation of local planning authorities' development plans. This document sets out the underlining basis for the formulation of development management policies and can therefore be a 'material consideration'. Paragraph 1.2 states that "The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation and resultant duties such as the Socio-economic Duty. A well-functioning planning system is fundamental for sustainable development and achieving sustainable places." Paragraph 1.18 states that "Legislation secures a presumption in favour of sustainable development in accordance with the development plan unless material considerations indicate otherwise to ensure that social, economic, cultural and environmental issues are balanced and integrated." Paragraph 1.22 states that "Planning applications must be determined in accordance with the adopted plan, unless material considerations indicate otherwise."

Green Infrastructure

Paragraph 6.2.1 defines green infrastructure as a network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places. Component elements of green infrastructure can function at different scales. At a local scale, it might comprise parks, fields, public rights of way etc. The planning system should protect and enhance green infrastructure assets and networks.

Securing Biodiversity Enhancements

Planning Policy Wales (PPW) 12 Paragraph 6.4.2 identifies that the Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). It is recognised that the planning system has a key role in helping to reverse the decline in biodiversity and increasing resilience of ecosystems. The policy states that it is important that biodiversity and resilience considerations are taken into account at an early stage in both development plan preparation and when proposing or considering development proposals.

TAN 5

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

3.4.1 Development Plan

The following demonstrates the compliance of the scheme in relation to the relevant policies within the Merthyr Tydfil County Borough Council Replacement Local Development Plan (LDP) 2016- 2031:

Policy SW4: Settlement Boundaries

Policy SW11: Sustainable Design and Place Making

Policy EnW1: Nature Conservation and Ecosystem Resilience

Policy EnW4: Environmental Protection

Policy EnW5: Landscape Protection

Improving Social Well Being

- Policy SW11: Sustainable Design and Place Making

In reference to Policy SW11, the development must contribute to the creation of attractive and sustainable places through high quality, sustainable and inclusive design. The scheme ensures that it does not negatively impact on the environment or the existing infrastructure at large. The design of the development has been considered carefully and the proposed scale, form, mass and materials used in the construction of the bat tower will not detract from the character of the surrounding built environment, but it will in fact enhance it.

The construction will utilise high-quality materials and meticulous detailing, ensuring consistency with the character and aesthetics that will fit into the surrounding area. The natural materials will work to blend the tower into the landscape as it ages, and the scale will ensure the surrounding mature trees soften its appearance.

The goal is to create a functional, healthy, visually appealing tower while reducing opportunity for anti-social behaviour with design and secure features.

The proposed scheme ensures minimal negative impact on its locality, light, and privacy to nearby building is not affected. Measures to enhance biodiversity through diverse plant species are incorporated. The level of planting and green space being proposed far exceeds the existing site (Rechabite Hall & adjacent brownfield scrubland).

Improving Environmental Well Being

- Policy ENW1: Nature Conservation and Ecosystem Resilience

Policy EnW1 necessitates that the development proposal must prioritise the promotion of ecosystem resilience and the preservation and enhancement of biodiversity. Despite the current biodiversity value of the site, the proposal recognises the need for development and presents opportunities for improving the natural environment in the area.

The Bat Tower concept is carefully designed to align with the local context and established landscape styles while actively seeking opportunities to enhance ecosystem resilience and biodiversity conservation.

This is achieved through the implementation extensive habitat compensation and creation along with biodiversity enhancements and the incorporation of diverse planting strategies. Any potential impacts of the scheme will be mitigated and effectively managed through future maintenance and management practices.

- Policy ENW4: Environmental Protection

Development proposals must comply with Policy EnW4, ensuring that they do not have an unacceptable impact on people, residential amenity, property, or the natural environment. The design of the project is dedicated to enhancing the well-being of individuals, safeguarding property, and promoting a sustainable built environment through the creation of a high-quality Public Realm.

In terms of flood risk, the design of the Bat Tower considers appropriate measures to avoid unnecessary risks and align with the requirements outlined in Technical Advice Note 15 (TAN 15). The tower has to be located as close to the existing Rechabite Hall as possible which is in a C2 flood risk zone. To mitigate risk and ongoing maintenance the tower has been proposed on a raised bank; this will also safeguard the wildlife inhabitants.

The scheme ensures that there will be no presence of hazardous substances, land contamination, or land instability, guaranteeing a safe and secure environment for residents and the surrounding area. Furthermore, design considerations have been made towards minimising any noise, vibration, odour, and light pollution associated with the development. This commitment ensures a pleasant atmosphere for residents, visitors, and the wider community.

- Policy ENW5 - Landscape Protection

Policy EnW5 states that the development should not cause unacceptable harm to the character and quality of the landscape setting of the County Borough. The Bat Tower development respects the local distinctiveness and historic character of the landscape, use of locally sourced natural products and an appropriate scale have been used. The development will safeguard local landscape character and landscape features, including views, which make a significant contribution to the character, history and setting of the locality. The Bat Tower secures the enhancement of the character, appearance and quality of the landscape, through restoration, management or enhancement where possible; it is replaced a derelict, unsightly block of flats with something far more appropriate to the locality and landscaping.

There is no satisfactory alternative to the Bat Tower and the benefits associated with the development can be demonstrated to outweigh the harm. This has been picked up in the pre-application opinion of the planners and the Wildwood Ecology EclA where the benefits of bat/bird habitat compensation and enhancement of the proposed tower far outweighs the negative impact of the development on the landscape.

4.0 Stepwise Approach

The below table shows how the project has implemented the Stepwise approach during the design of this proposed development:

Table 2 - Stepwise Approach

	Steps	Assessment	Enhancement	Long Term Maintenance	Net Benefits
1	Avoid	The existing Rechabite Hall will be retained until after completion on the proposed bat tower therefore avoiding total habitat loss. Retention of all mature trees and shrubs between the Hall and proposed site.	Existing shrubs and mature trees adjacent to and along the river bank will be complemented with newly planted hedgerows.	N/A	Preserved existing habitats adjacent to the site and along the river bank. Increased bio-diversity in planting.
2	Minimise	To minimise disruption to existing habitats, all work will take place in daytime hours. The demolition of Rechabite Hall will be completed outside of the nesting seasons with a trained ecologist on site to relocate any bats found to the new tower. The footprint of the proposed tower has been minimised to the required size from the bats, this minimises impact on the surrounding existing landscape.	N/A	N/A	N/A
3	Mitigation / Restore	Restoration of the existing Rechabite Hall roof is not possible and does not fit into the wider plan for the Taf Crescent area. The loss of this habitat is unavoidable. Whilst disruption to existing habitat will be minimised during construction/demolition, the proposed bat tower design incorporates mitigation measures to replace lost habitats in excess of what was existing. The proposed tower will be built before demolition of Rechabite hall therefore no time lag between the two habitats is applicable. One of the main aims of the new tower is to build in ecosystem resilience through providing secure, varied habitats that can be used throughout the year.	Bird nesting boxes and bat boxes fixed to mature trees surrounding Rechabite Hall and along the river bank. Additional habitats and diversity of habitats to be created in the proposed tower design.	Annual visual inspection of boxes to assess if replacements are required.	Habitat creation, more diverse range of habitats, more appropriate for a wider range of wildlife, safe guards the habitats for a long time into the future (whereas current habitat is degrading and becoming less suitable).

4	Compensate on site	In conjunction with Wildwood Ecology and the LA Ecologist it was been established that to properly negate and compensate for the damage to local biodiversity with the removal of Rechabite Hall, a new purpose-built bat tower would be required. The proposed tower will provide a range of newly created habitats far in excess of the derelict Rechabite Hall. The proposed design of this tower has been carefully considered in conjunction of Wildwood Ecology, with bats the primary focus. The tower will more than compensate for the loss of a rapidly deteriorating Rechabite Hall roof. Additional wildflower planting and hedgerow shrubs to be planted around the base of the tower to deter human interference and attract insects, birds and bats.	The proposed bat tower will incorporate a warm loft, cool tower and hibernacular. Other features include a bat chute, faux chimney breasts, bat entry roof tiles, hotboxes, roof tile ingress/egress, bat tubes, accessible cavities, integrated bat bricks, integrated swift boxes, integrated bee bricks, bat baffle, jackdaw boxes, bird boxes.	Long term maintenance in continued up-keep of newly formed habitats. This will take the form of bi-annual inspections externally and internally of the new tower to clear waste etc. Trained Ecologist will need to be present years 2 and 4.	Increased habitat diversity and creation, increased climate resilience through design and planting, increased ecological connectivity, Safeguarding of habitats from human activity and climate.
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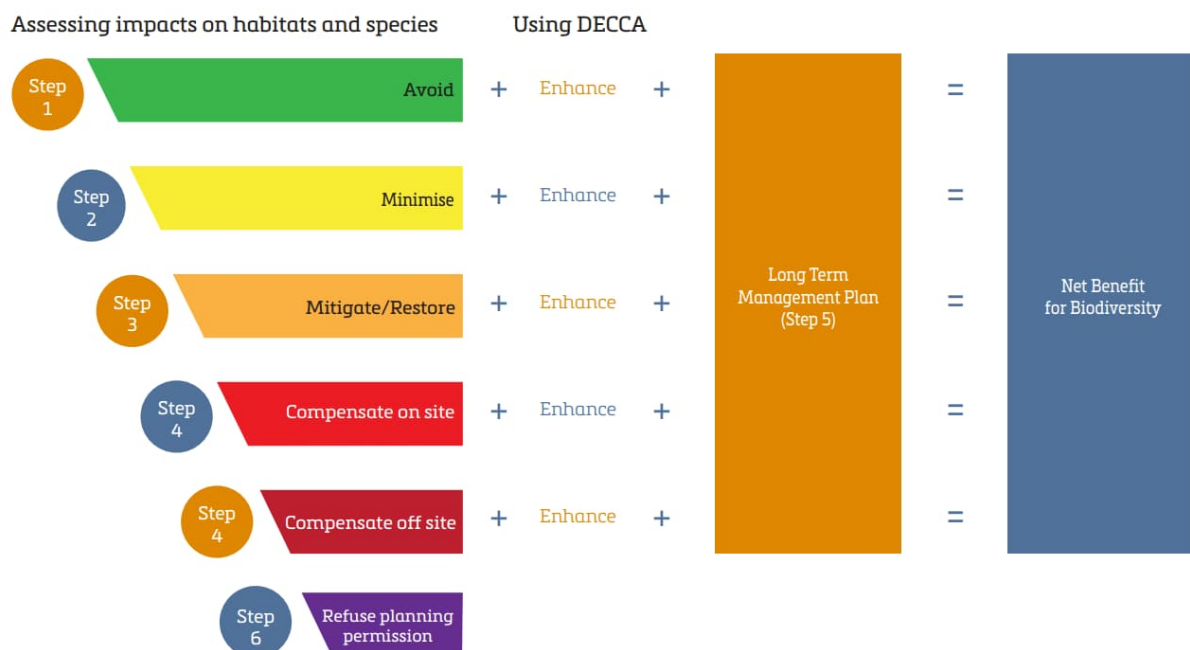


Figure 2 - Stepwise Approach Diagram

4.1 Summary

Avoid: Multiple surveys conducted to establish to viable or currently used habitats present on site prior to demolition of existing building to make way for proposed scheme. Based on survey evidence the existing roof of Rechabite Hall appears to be in use by a small number of bats and Jackdaws. Therefore, a comprehensive proposal has been put together to compensate for the loss of this habitat and to also enhance the biodiversity of the area.

Minimise: Disruption is unavoidable due to the need to demolish the Rechabite Hall building currently on site.

Mitigation/Restore: Due to full demolition of the building there is no opportunity to repair or restore the Rechabite Hall habitat however, the proposed tower will mitigate the loss. Rechabite Hall will not be demolished until after the proposed tower has been completed and inspected. A trained ecologist will be on hand during the demolition of the Rechabite Hall roof to relocate any bats found to the new tower.

Compensate on site: As explained throughout this report and accompanying Design & Access Statement, the project is introducing a raft of new green infrastructure across the site. The net benefit of the proposed design in this case far outweighs the existing condition of the Rechabite Hall site. In conjunction with Wildwood Ecology the proposed design and methodology is a robust response to the loss of Rechabite Hall which will provide significant benefits to local wildlife far into the future whereas, the deteriorating Hall roof is becoming less suitable every year.

In the absence of mitigation measures, the proposed development would have the potential to result in significant negative impacts on designated sites and protected species, triggering legislation. With the implementation of mitigation and enhancement measures, the development is not anticipated to result in any significant impacts on important ecological features as confirmed by Wildwood Ecology in their EclA report.

4.2 Management Plan

The project team has undertaken extensive stakeholder engagement where long term maintenance of the site has been discussed. The scheme it's a nature is an unoccupied building with no MEP services so very little maintenance will be required other than bi-annual inspections. The tower has been designed to minimise the level of regular maintenance required through materials (hard-wearing stone and traditional pitched roof).

The project team in conjunction with the appointed Contractor will prepare a manual containing O&Ms upon completion of the works however, ultimately the responsibility to maintain the site for the next 25-years falls to the Local Authority. The Local Authority will need to be consulted on their proposed methodology, funding mechanism and plans for ongoing long-term maintenance of the site once works complete.

The site is owned by the Merthyr Tydfil County Borough Council (MTCBC), who will be responsible for its management and maintenance.

With reference to Hedgerow maintenance (for the newly planted hedgerow to the base of the tower bank) please refer to – <https://www.wildlifetrusts.org/how-manage-hedgerow-wildlife>