



MERTHYR VALE BAT TOWER

BAT TOWER - STAGE 3 REPORT & DAS

BAT-ESA-XX-XX-RP-A-000010

January 2025



Prepared by ESA Architecture part of
WSP (Real Estate and Infrastructure) Limited

Document Control

Project Number	ED 000376
Project Title	Merthyr Vale Bat Tower
Client Name	Merthyr Tydfil County Borough Council
Document Name	Stage 3 Report & DAS_Bat Tower
Document Number	BAT-ESA-XX-XX-RP-000010
File Name	BAT-ESA-XX-XX-RP-A-000010 - Stage 3 Report & DAS
Date of Revision	28/03/2025
Revision	P00 28/03/2025
Status	S2 - Suitable for Information
Classification	Confidential

Document Revisions

Revision	Amendments	Issue Date	Auth/ Chk/ App
P00	Final Issue	28/03/2025	EB / EB / MT

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Introduction

INTRODUCTION

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.



Figure 1_Existing Site showing Rechabite Hall and pedestrian river crossing bridge adjacent to the site



Figure 2_Aerial View



Architectural Brief

The client has requested that there is a replacement for the likely bat roost and habitat that currently exists in and around the site of the derelict building, Rechabite Hall. Confirmation and development of the bat roost site and likely ecological requirements for this project are the subject of this architectural brief.

Rechabite Hall will be demolished subject to the restrictions imposed by ecological constraints for protected species and in particular roosting bats which are known to inhabit the building and use the adjacent river/valley as a navigation route. These species have surveyed over the past few years to determine type of use and numbers. For further information on the surveys and finding, please refer to the Ecology Appendix at the end of this report.

The option for the development of the site is as follows:

I. Build a new bat tower in another part of the client owned site away from the building bat roost. Max distance to be defined. Three different locations for the new structure have been considered and assessed for suitability.

The architectural brief from the client requires a bat roost provision in a tower structure, that it is robust and fireproof. It is at least as tall as the existing roof eaves of Rechabite Hall and that it is within the site owned by the client running along the river from the footbridge south. The local planning authority will require a sensitive architectural design in this location with views into the site from the local area taken in to account in the design and siting.

This RIBA Stage 2 concept design development has had the input of an expert ecologist (Wildwood Ecology) to advice in the tower design and assess the likely location of the tower and possible local habitat and landscape works required. This collaboration with Wildwood continued throughout RIBA Stage 3 and with further input from the Local Authority Ecologist, a robust solution to meet the needs of the local bat population has been designed.

An architectural design will need to incorporate the functional requirements of this type of bat roost. See later research section.

The design will need to reference the local context, history, and heritage of the site to make a sculptural/artistic interpretation with value to the local community beyond its functional requirements. Reference to archaeology, Welsh myth and legend, and industrial heritage will inform the architectural, artistic design response. Use of traditional Welsh materials in the construction is preferable.

In addition, the tower design must take into account possible flooding of the site from the River Taff adjacent. It has been necessary to elevate the tower by approximately 2m to mitigate risk to the bats. A thorn planted mound will be incorporated to separate the public from the tower. Maintenance and inspection are also accounted for.

Key Brief Elements & Responses:

- Design features and ecological considerations:
The Bat Tower's design reflects the careful attention ESA Architecture and Wildwood Ecology have given to meet the needs of various bat species. The tower includes several features to support a thriving bat population all year round. The tower will also be used to encourage local bird and insect populations to use the area.
- Strategic Location and Surrounding Landscape:
The Bat Tower will be built next to the Taff River and a pedestrian bridge, maximizing its ecological impact. This location offers an abundant insect source, a primary food for the bats.
- Minimizing Disruption During Construction:
The demolition of Rechabite Hall will be conducted with utmost care to minimize disruption to the remaining bats and other wildlife. ESA Architecture and Wildwood Ecology plan to provide temporary roosting solutions during construction to ensure the bats have a safe haven until the new tower is ready.

- Educational and Community Engagement:
Once completed, the Bat Tower will serve as a crucial habitat for bats and an educational landmark. The tower will feature information panels and observation points to educate the public about the importance of bats in the ecosystem and the efforts to protect them.
- Commitment to Biodiversity:
The collaboration between ESA Architecture and Wildwood Ecology emphasizes the importance of integrating ecological considerations into urban development. By prioritizing the needs of local wildlife, this project sets a precedent for future developments, encouraging a more holistic approach to urban planning.
- Community Benefits:
Besides its ecological benefits, the Bat Tower will serve as a valuable community asset. It will offer educational opportunities for schools, local groups, and visitors, fostering greater environmental stewardship. The tower will also enhance the area's aesthetic appeal, potentially attracting tourists and boosting local economic activity.

Welsh Castle Towers

Fable

Corn-egg

tree root castle in the sky

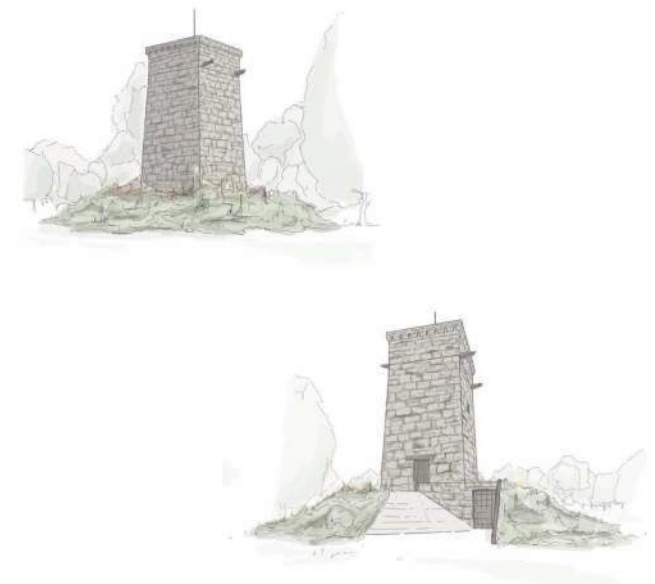
28' headed / rough tree

Larry shell

Landing area

Coalmine → 'Engine of Empire'

The proposed bat tower will be constructed from traditional, local stone, chosen for its inherent fire resistance and robustness. This tapered square structure will blend seamlessly with its surroundings while providing a safe and durable habitat for bats. Incorporating an externally accessible hibernaculum designed to imitate a natural 'cave' is a key feature, ensuring that bats have a secure place to roost and hibernate. To address potential flooding from the River Taf, the tower will be strategically sited on a raised bank, protecting it and its inhabitants from floodwaters. Using traditional stone is a tried and tested method for creating comfortable environments for roosting and hibernating bats, as the stone's natural properties help maintain a stable internal temperature. The design focuses on bat conservation while respecting and integrating with the surrounding environment, preserving the area's aesthetic and cultural heritage. This bat tower represents a blend of traditional building methods and modern conservation needs, providing a safe, naturalistic habitat for bats and enhancing the landscape with a structure that honors local architectural heritage.



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