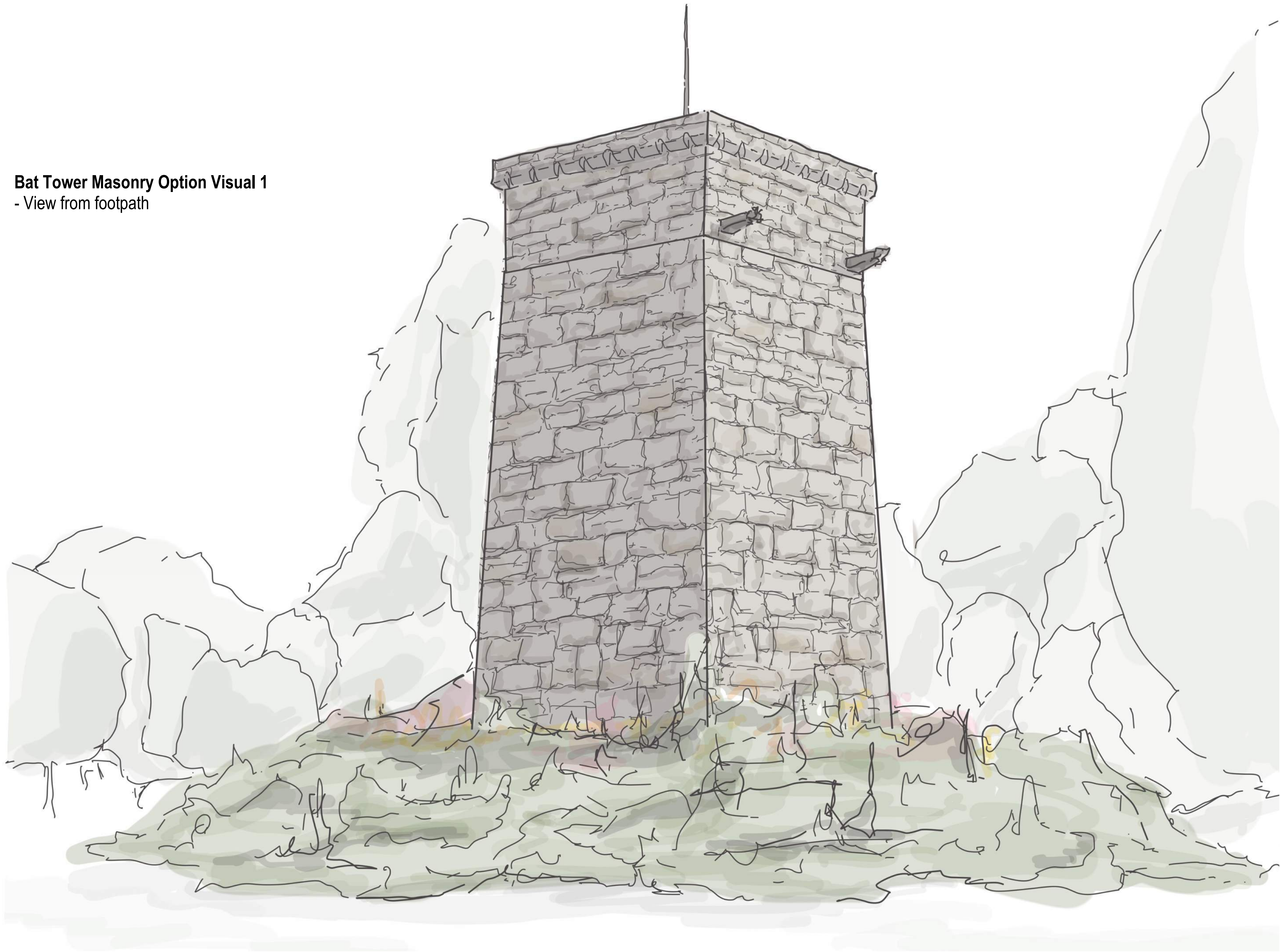


Bat Tower Masonry Option Visual 1
- View from footpath



Bat Tower Masonry Option Visual 3
- View of Hibernacula entrance



Bat Tower Masonry Option Visual 2
- View from river bank



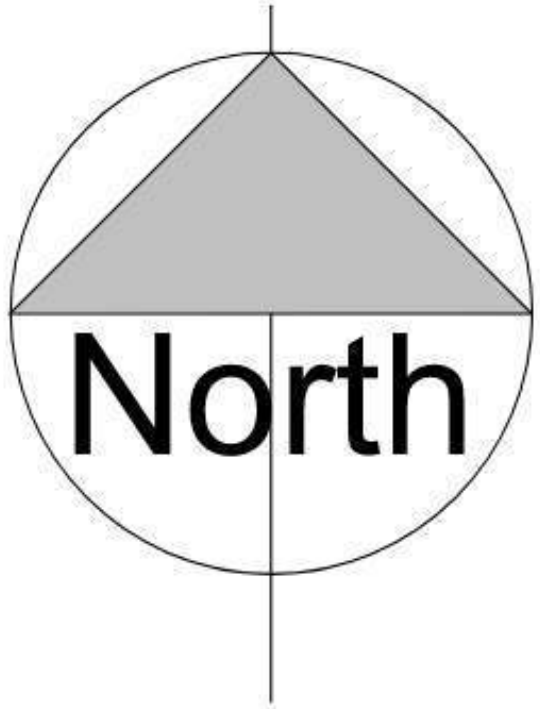
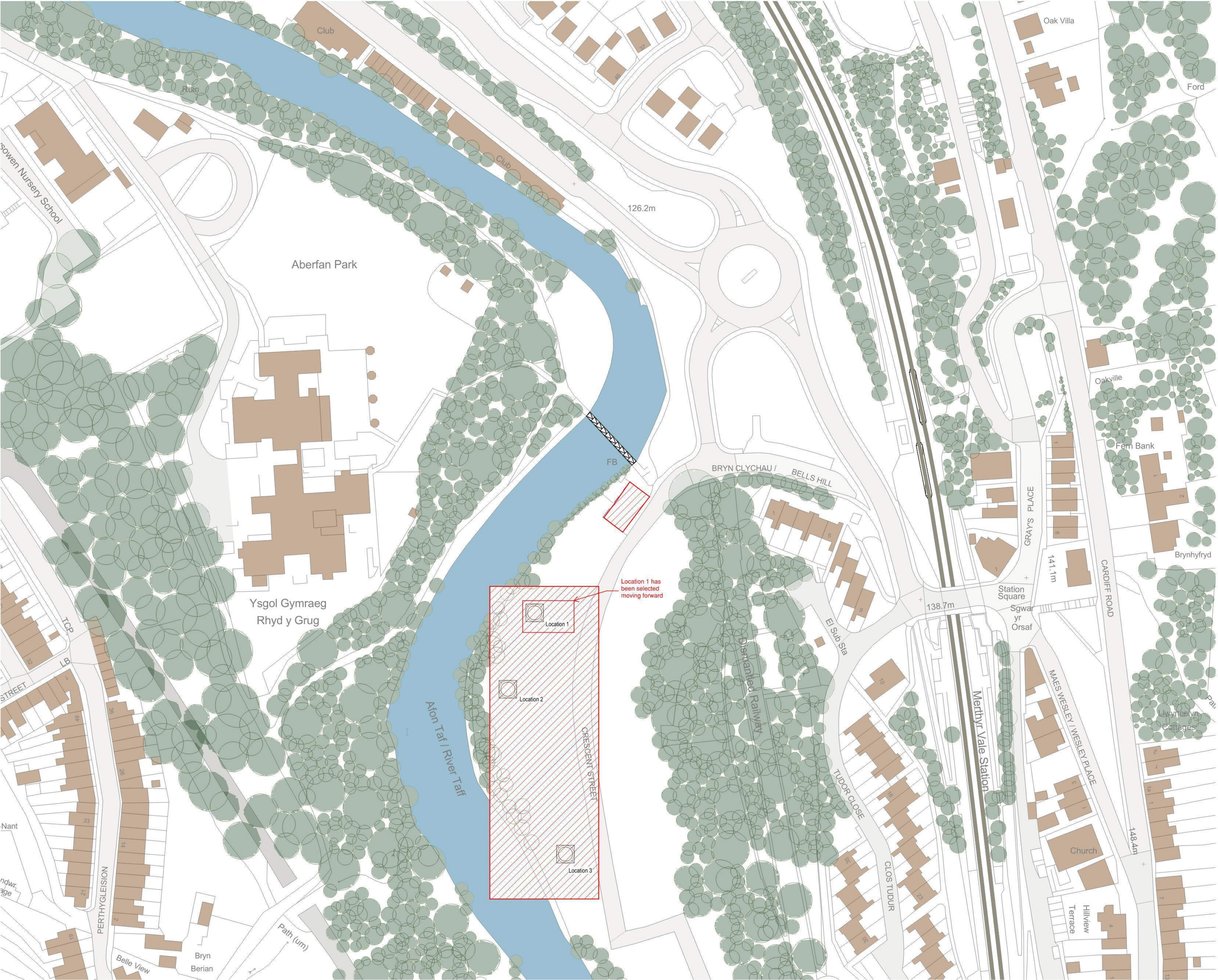
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- Unpublished representations of equipment on this drawing have been co-ordinated, but are approximate only. Please refer to the Specification and/or Details for actual sizes, or specific contractor construction information where only design intent is provided.
- The drawing is to be used in conjunction with all other relevant architectural drawings and specifications as well as the drawings and specifications of other design disciplines, including structural, engineering and building services engineers.
- The architect shall be liable for the drawing and be aware of a competent contractor aware of their duties under CDM regulations 2015 and working to construction phase plan developed by the Project Contractor.

HEALTH & SAFETY SYMBOL KEY

- WARNING RISK**
Indicates a Residual Risk as a warning
- COMPULSORY RISK**
Indicates a Residual Risk requiring a compulsory action
- PROHIBITIVE RISK**
Indicates a Residual Risk requiring a prohibitive action
- INFORMATION RISK**
Indicates a Residual Risk for information

P00	First Issue	15/05/2024	
Rev	Description	(Checked / Approved) Date	
Status			
S5 - For client review and acceptance			
Classification			
Confidential			
Client			
Merthyr Tydfil County Borough Council			
Project			
Merthyr Vale Bat Tower			
Drawing			
Planning Drawings - Proposed Masonry Tower Option - Sheet 2			
Scale @ A1	Drawn	Checked	Approved
	EB	EB	MT
Project No	Date		
ED_000376-01	02/05/2024		
Drawing Identifier	Drawn	Checked	Approved
BAT-ESA-XX-XX-DR-A	061001		P00
Quest House, Fortman Rd, St Mellons, Cardiff, CF3 0EY			
info@esa-rid.com			
WSP (Real Estate & Infrastructure) Limited, Reg No. 12475960			



Key

- Existing site
- Trees
- Water - Taff River
- Buildings
- Railway
- Bat Tower Proposed Locations

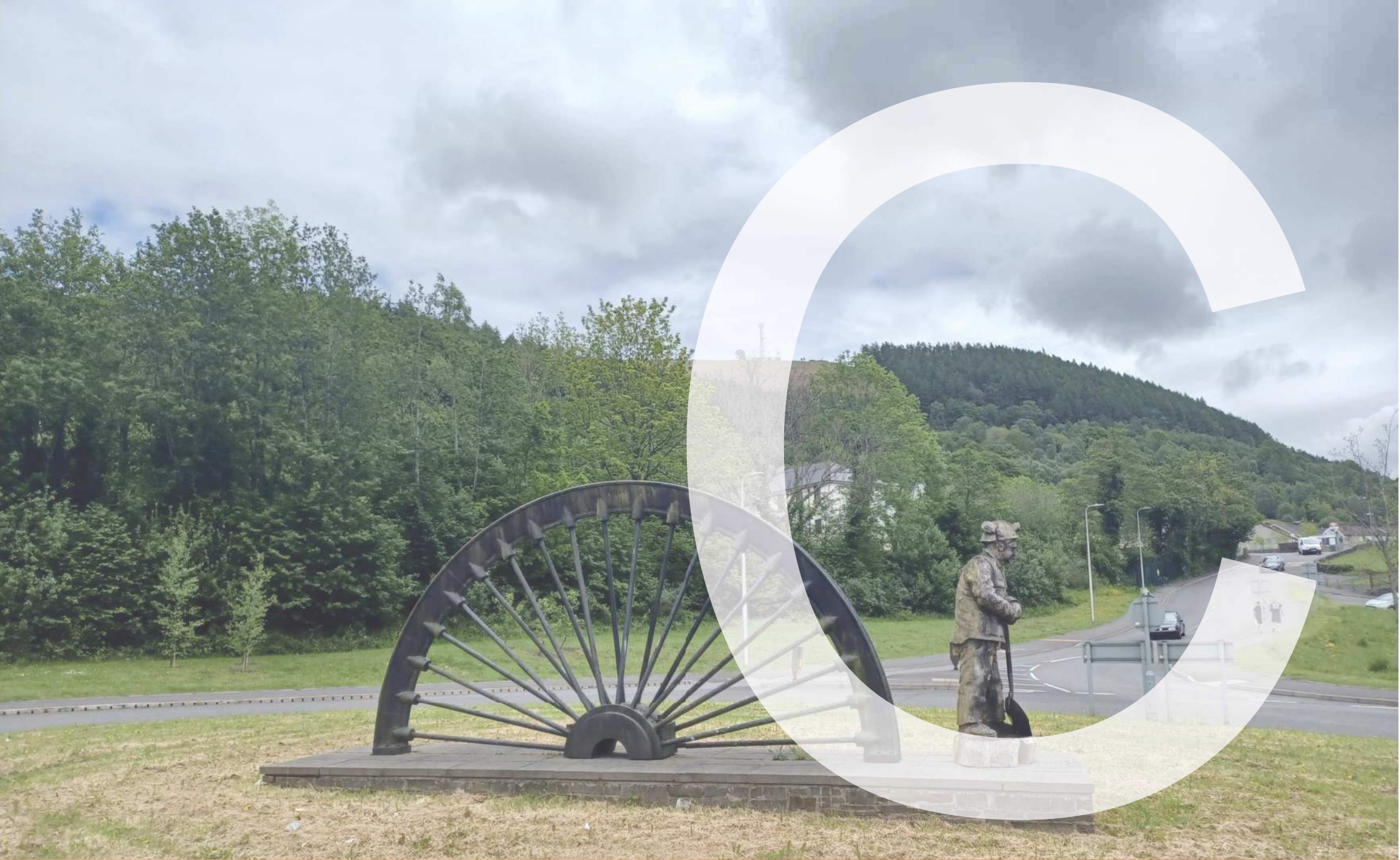
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 - The drawing is to be used in conjunction with all other relevant architectural drawings and specifications as well as the drawings and specifications of other design disciplines, including structural, mechanical, electrical, and civil engineering.
 - The architect shall not be liable for any errors or omissions in this drawing or for any consequences arising from its use under CDM regulations 2015 and working to a construction phase plan developed by the Project Controller.
- HEALTH & SAFETY SYMBOL KEY**
- WARNING RISK**
Indicates a Residual Risk as a warning
 - COMPULSORY RISK**
Indicates a Residual Risk requiring a compulsory action
 - PROHIBITIVE RISK**
Indicates a Residual Risk requiring a prohibitive action
 - INFORMATION RISK**
Indicates a Residual Risk for information

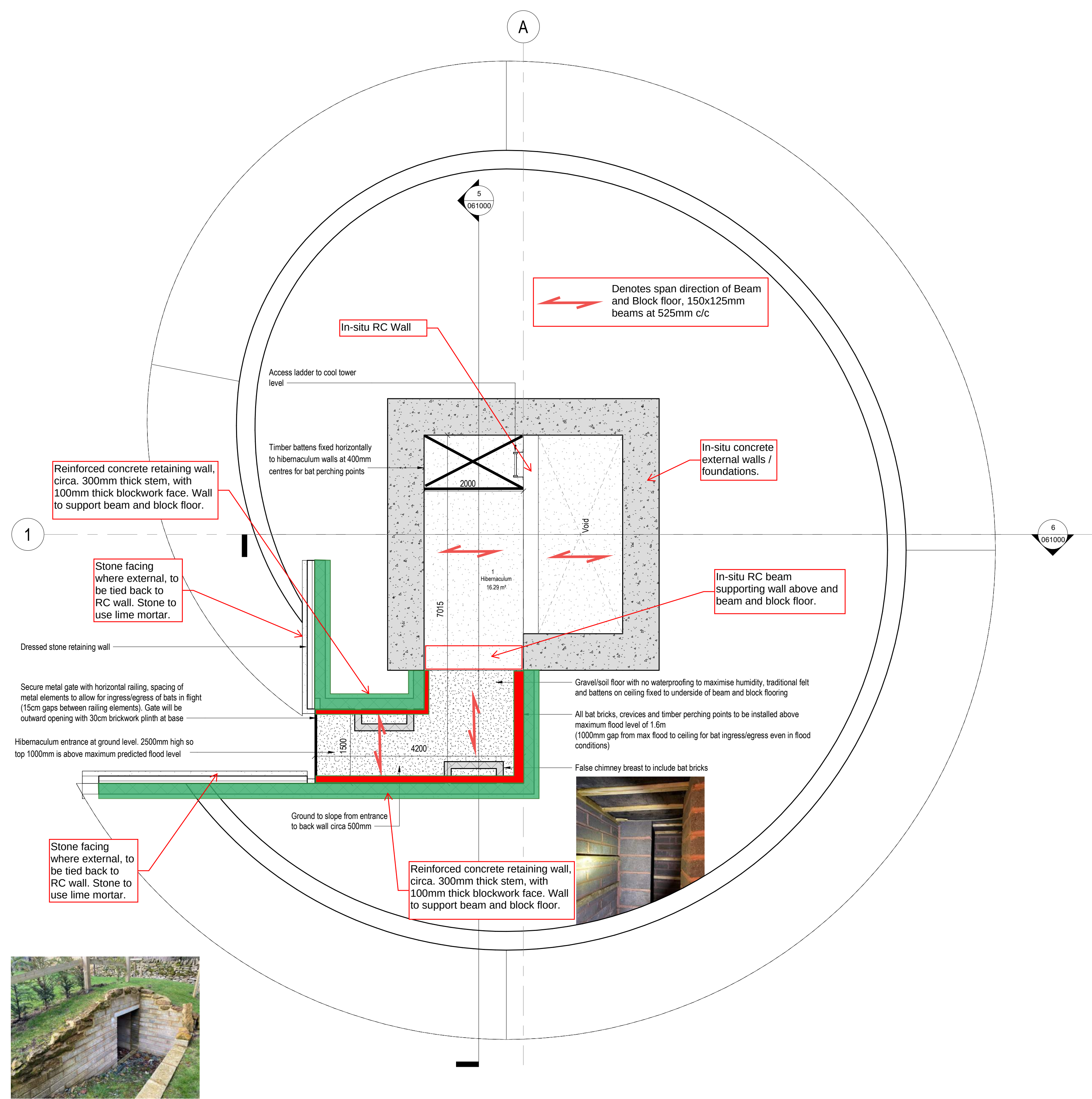
P00 First Issue for Masonry Option Pre-App 16/07/2024
Rev Description (Client / Appr) Date
Status
SS - For client review and acceptance
Classification
Confidential
Client
Merthyr Tydfil County Borough Council
Project
Merthyr Vale Bat Tower

Drawing
Site Location Plan

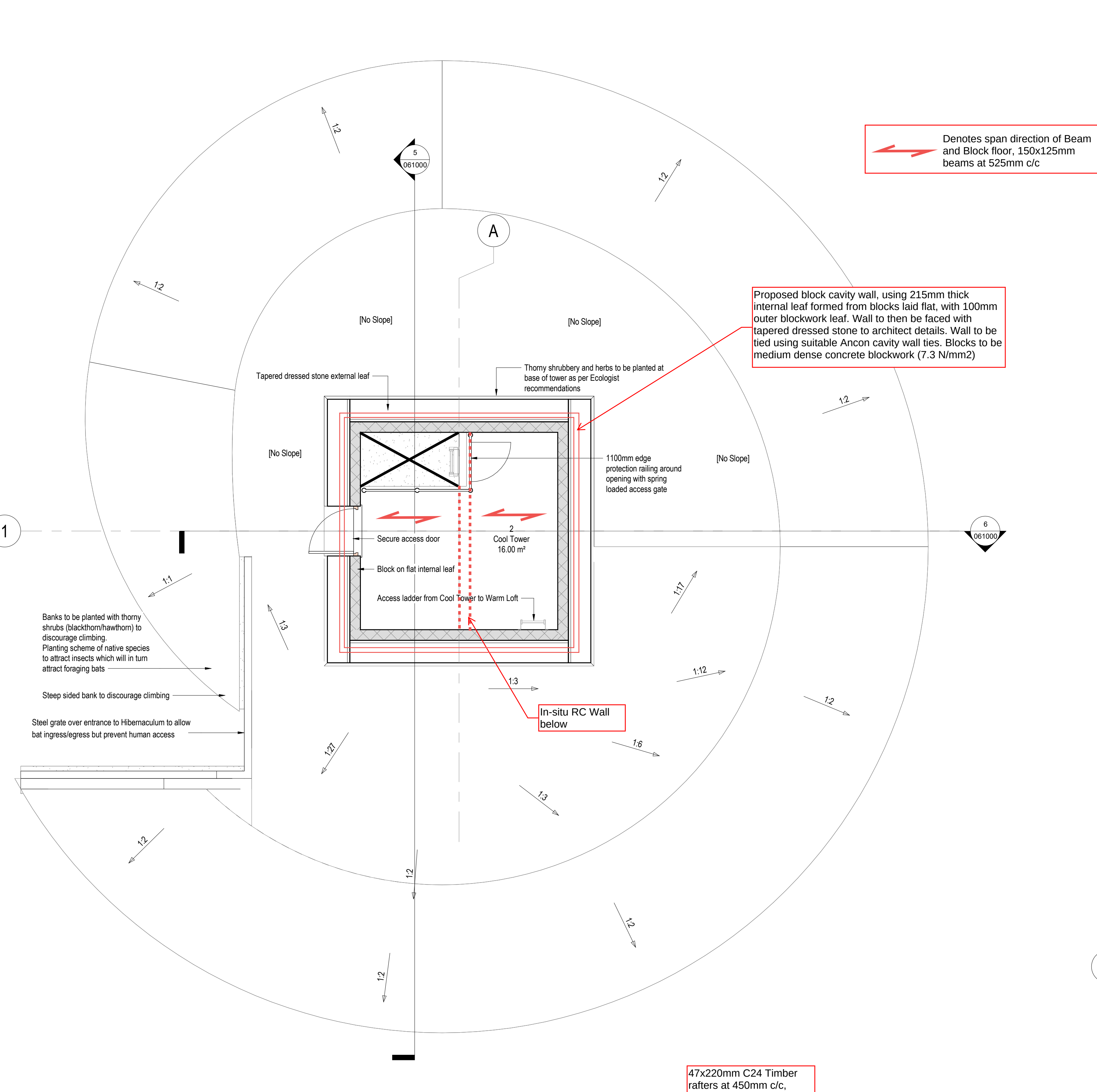
Scale @ A2
Drawn EB
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ED_000376-01
Date
16/07/2024
Drawing Identifier
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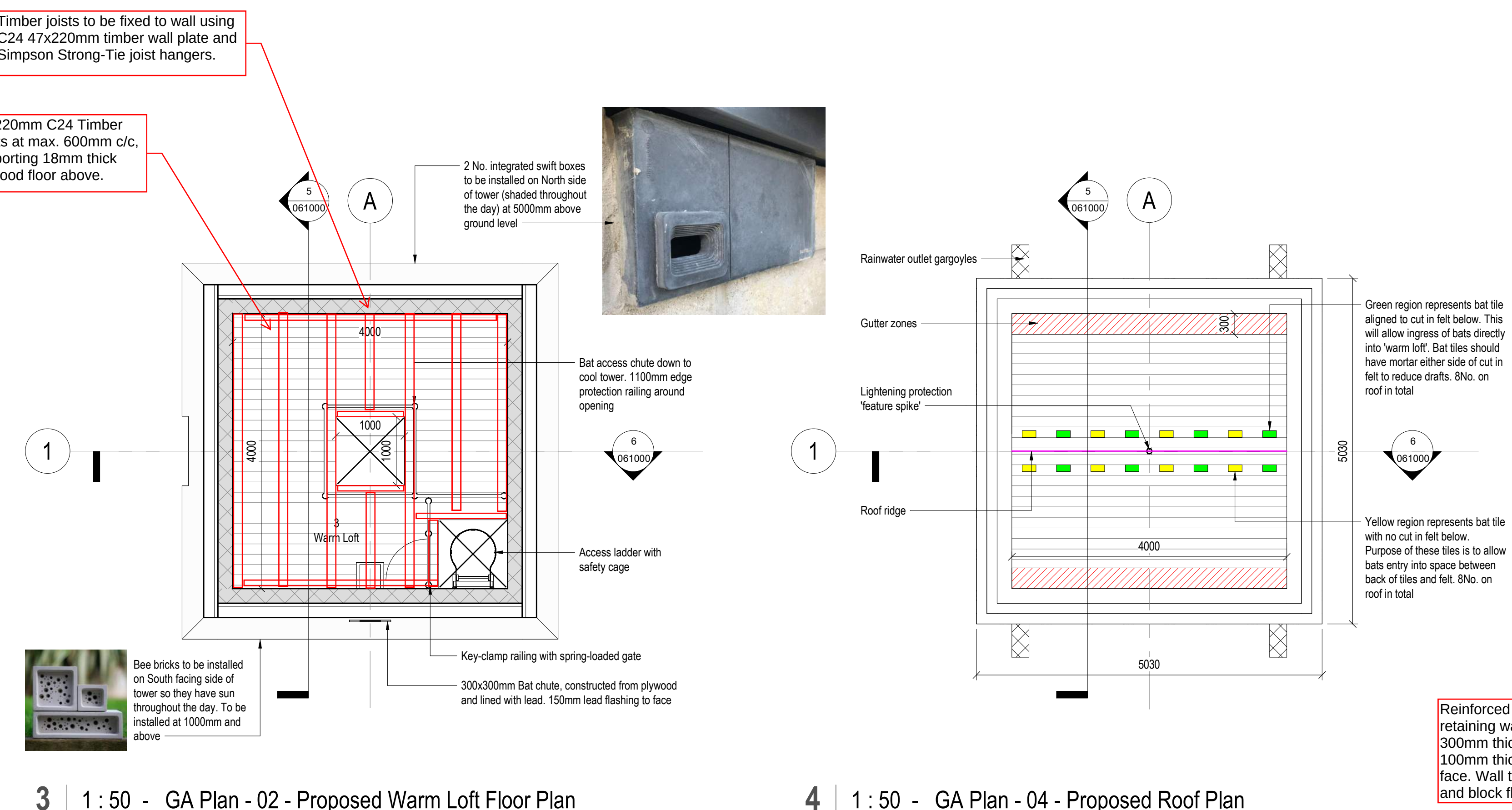
Appendix C - Structural Report



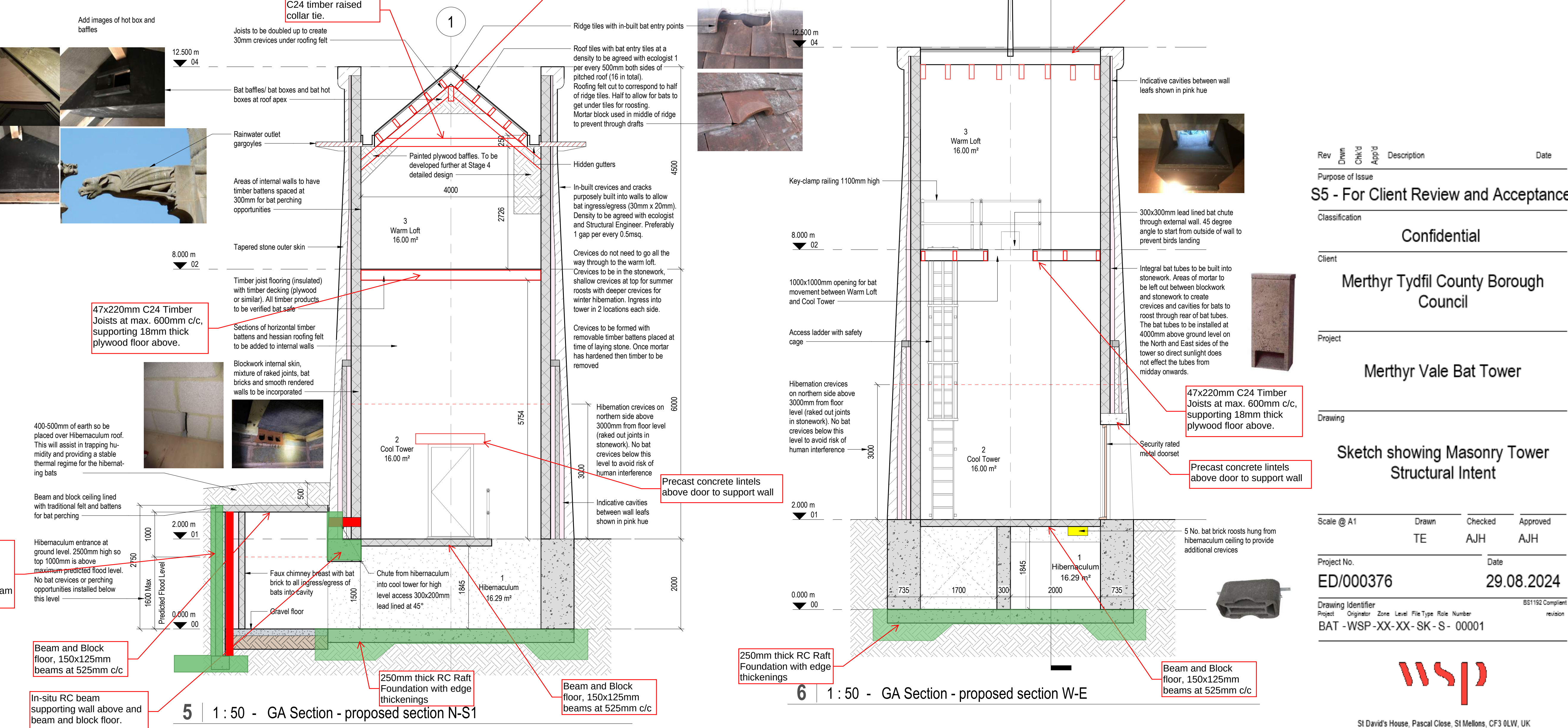
1 | 1 : 50 - GA Plan - 00 - Proposed Hibernaculum Floor Plan



2 | 1 : 50 - GA Plan - 01 - Proposed First Floor Plan



3 | 1 : 50 - GA Plan - 02 - Proposed Warm Loft Floor Plan



5 | 1 : 50 - GA Section - proposed section N-S1

GENERAL NOTES

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- b. Dimensions are not to be scaled from this drawing. Discrepancies and/or ambiguities within this drawing between different information providers must be reported immediately to the architect for clarification before proceeding.
- c. Graphical representations of equipment on this drawing have been coordinated, but are not necessarily complete. Please refer to the relevant drawings for actual sizes, or specific contractor construction information where only design intent is provided.
- d. This drawing is to be used in conjunction with all other relevant architectural drawings and specifications as well as the relevant specifications of other design disciplines, including structural, mechanical, electrical, plumbing, civil, and other disciplines, and the specifications of building services engineers and building services engineers.
- e. It is assumed that all works on this drawing will be carried out by a competent contractor, aware of their duties under CDM Regulations 2015 and working to a construction phase plan developed by the Project Manager.

HEALTH & SAFETY SYMBOL KEY



Notes

1. Sketch based on the Architect's drawing BAT-ESA-XXX-DR-A-06100_P03.
2. All dimensions are given in millimetres (mm) and all levels are given in metres (m) unless noted otherwise.
3. Dimensions are not to be scaled from the drawings.
4. Where proprietary products are referenced, "or similar" is acceptable.
5. All concrete generally to be Grade RC32/40, in accordance with BS 8500-2.
6. All timber shall comply with BS EN 1996 and BS EN 14083-1, and is to be suitable treated to suit an external environment.
7. All masonry to be compliant with PD 6697:1919. Cementitious mortars to be used with concrete blockwork. Natural hydraulic lime mortar to be used with stone masonry.

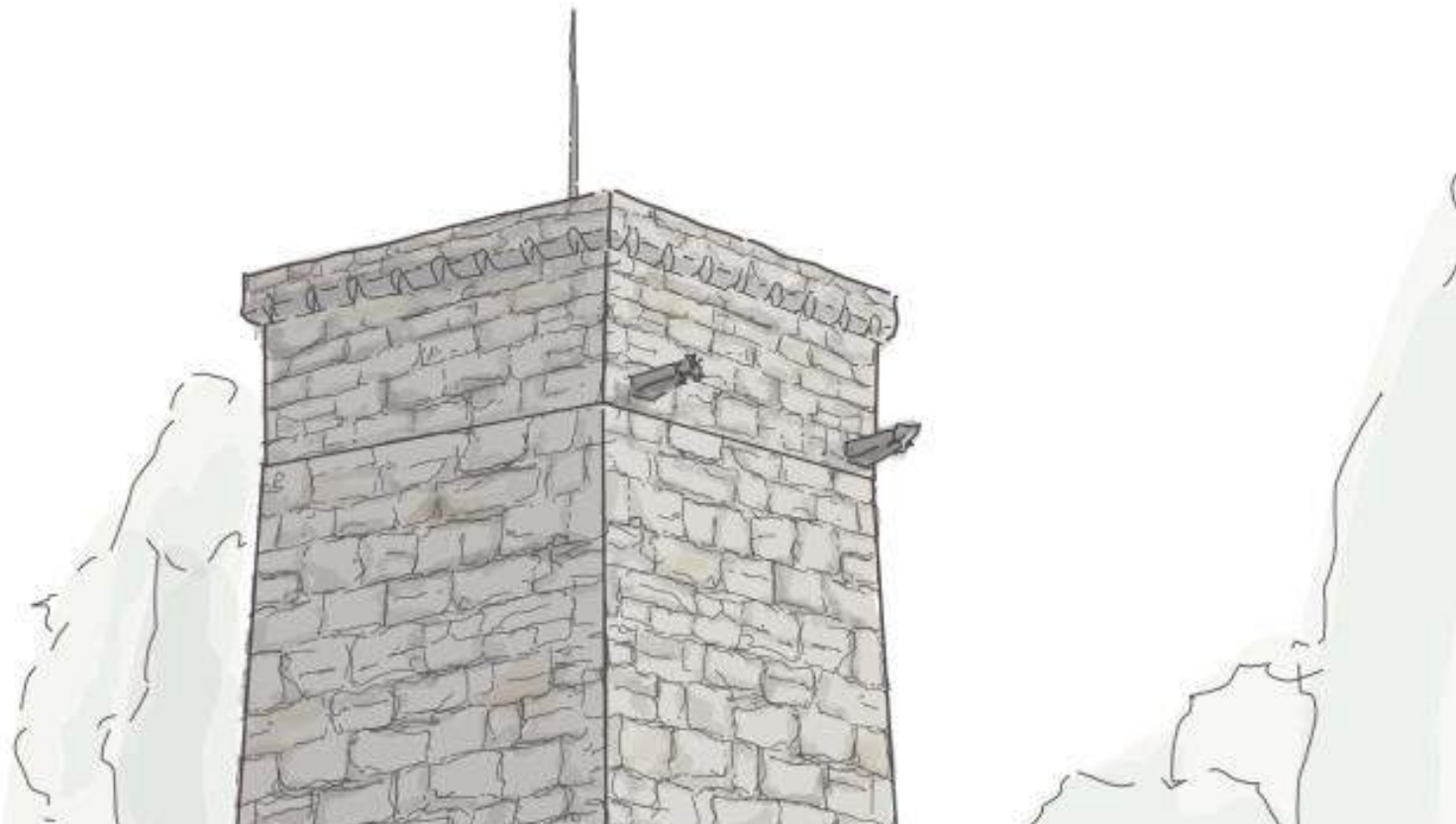
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wsp.com



Merthyr Tydfil County Borough Council

MERTHYR VALE BAT TOWER

RIBA Stage 3 - Structural Intent





Merthyr Tydfil County Borough Council

MERTHYR VALE BAT TOWER

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TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 62300140-002

DATE: FEBRUARY 2025

WSP

1st Floor, Quest House
St Mellons Business Park, Fortran Road
St Mellons, Cardiff
CF3 0EY

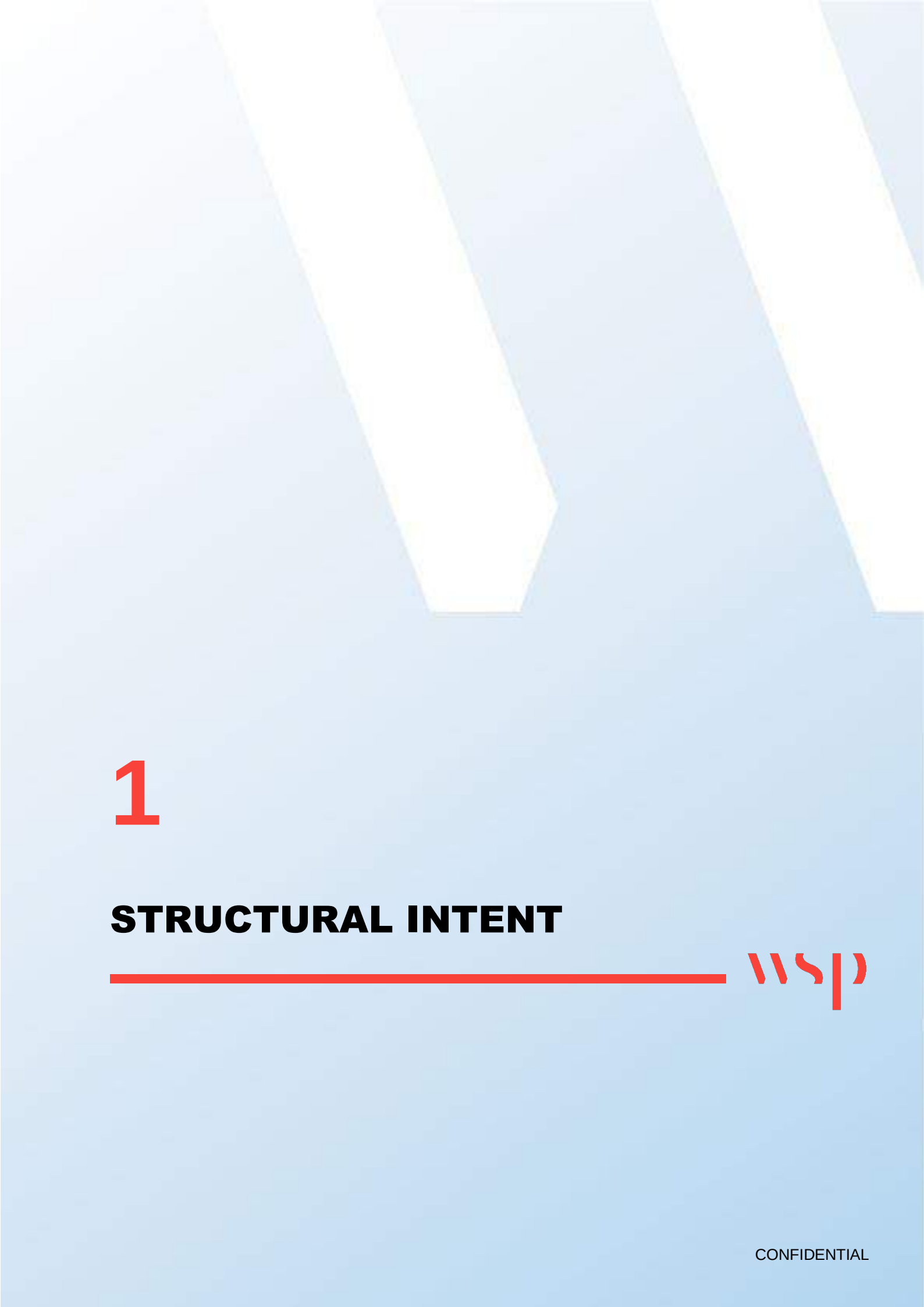
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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	First Issue	First Issue		
Date	29.08.2024	February 2025		
Prepared by	Tomos Evans	Tomos Evans		
Signature				
Checked by	Andrew Barugh	Andrew Barugh		
Signature				
Authorised by	Andy Hallum	Andy Hallum		
Signature				
Project number	62300140	62300140		
Report number				
File reference				



1

STRUCTURAL INTENT



STRUCTURAL INTENT

1.1 INTRODUCTION

This report outlines the Structural Intent for a proposed bat tower in Merthyr Vale, currently at RIBA Stage 3. The proposed works are located off Crescent Street in Merthyr Vale adjacent to the former apartment building known as Rechibite Hall. The project comprises the construction of a new, circa 10m high bat tower to compensate for the loss of the bat roost within the roof void at Rechibite Hall and allow its demolition.

Report to be read in conjunction with “Sketch showing Bat Tower Structural Intent” drawing number BAT-WSP-XX-XX-SK-S-00001.

1.2 EXISTING GROUND CONDITIONS

A geotechnical investigation has not yet been undertaken to help inform substructure design for the actual site development. As such, no interpretive site investigation report is available, to advise on the likely ground conditions within the immediate location of the proposed development. At this stage substructure design will be based on an assumed bearing pressure. It is expected that ground investigations will be undertaken at future stages of this project, to verify our assumptions.

1.3 PROPOSED SUB-STRUCTURE

Due to the flood risk at the site, the ground around and below the bat tower is to be raised so that the ground floor level of the tower is above the flood level. Below ground floor level, a bat hibernaculum¹ will be formed, this will essentially comprise a small basement structure.

The basement structure will be formed from 735mm thick RC concrete walls supported off a reinforced concrete raft foundation. The raft foundation is to be founded below any made ground, and within suitable bearing strata depending on the advised bearing capacities of the ground. If suitable ground formation cannot practicably / reasonably be proven, then an alternative, likely piled, solution may need to be implemented.

The maintenance entrance to the below ground hibernaculum will be via an external door, the route to which will be formed using 2.75m high reinforced concrete walls.

The ground floor slab will be constructed of a beam and block type floor, spanning between the below ground reinforced concrete walls, via a ledge cast into the top of wall.

¹ A ‘hibernaculum’ (plural ‘hibernacula’) is intended to create a zone (or zones) less susceptible to freezing temperatures and provide a relatively safe place for the bats and/or other creatures to hibernate.

1.4 PROPOSED SUPER-STRUCTURE

The proposed bat tower is proposed to be a 4m x 4m square structure and is to be circa 10m high above finished ground level. The lower 6m will be classed as a cool tower, with a warm loft area formed at the top of the structure.

The external walls above ground will be formed of block cavity construction formed from a 215mm thick internal leaf, tied to a stone masonry outer leaf. The stone outer leaf is proposed to be tapered to provide a sloping outside face to the tower. Due to the sloping outside face, the wall will be circa 700mm wide at the bottom. To avoid having a very wide cavity, an additional layer of blockwork will be introduced to the lower portion of the tower.

An insulated first floor will be introduced circa 6m above ground floor level to create the warm loft above. This will be formed from timber joists at 600mm c/c supported from wall plates bolted to the inside face of the external walls. The timber joists will support a plywood floor above.

The roof structure will comprise a duo-pitch roof hidden below the top of the external wall which continue up to form a parapet. The roof construction will be of timber rafters supported off the external walls. In order to form a hidden gutter detail behind the external walls as proposed by the architect, deep timber 'battens' will then span between the rafters. These 'battens' will then support the tiled roof construction.

1.5 CODES OF PRACTICE

British Standard Eurocodes and Associated National Annexes	
Basis of Structural Design	BS EN 1990
Loading	BS EN 1991-1-1 (General Actions)
	BS EN 1991-1-3 (Snow Loads)
	BS EN 1991-1-4 (Wind Actions)
Concrete	BS EN 1992-1 EC2
Steelwork	BS EN 1993-1 EC3
Composite Steel and Concrete Structures	BS EN 1994-1 EC4
Timber	BS EN 1995-1 EC5
Masonry	BS EN 1996-1 EC6
Building Regulation Approved Documents, where these have implications upon the structure, as well as any and all other relevant or appropriate codes and standards referred to there in.	



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