ElliottWood

11 Cannon Lane

Structural Statement to support the repairs to the existing masonry wall

This statement is to support the Listed Building Consent application for the Grade II listed structure at 11 Cannon Lane. The works broadly include the structural repair to the existing wall on the North-East side of the site, adjacent to the historic entrance to the Old Parish Lock Up.

Photos of the existing structure, taken in December 2024, are shown in Appendix A.

Existing Structure

The existing wall is composed of traditional masonry which supports an existing timber roof as well as a masonry vaulted floor at first floor level. Typically, the wall appears to be 1 ½ bricks thick (330mm) and is approximately 6m tall.

There are signs of a number of historic alterations to the wall. Pattress plates and tie bars have historically been installed at the springing point of the vaults, most likely in an attempt to resolve the forces from the vaults. Pattress plates have also been installed along the Northern edge of the wall which are assumed to tie the external wall back to the abutting wall.

The existing roof over the 'art studio' is a modern roof formed from timber joists at approximately 600mm centres spanning from the Cannon Lane historic wall to the existing masonry wall within the property. The roof is boarded using plywood sheeting. At the bearing on the side closest to Cannon Lane, the joists bear on to a timber plate which is supported on steel brackets which are embedded in the masonry. Refer to Figure 1 for a summary of the existing structure at this bearing.

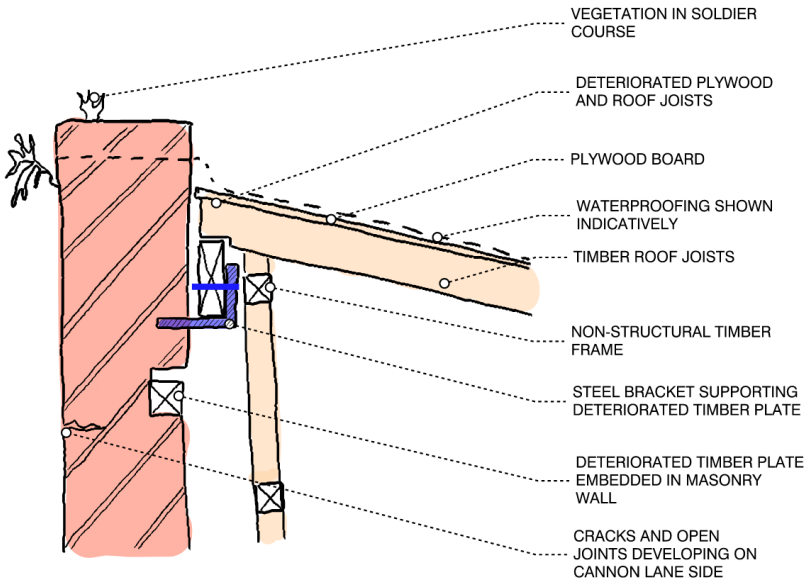


Figure 1 – Existing Structure Sketch

Existing Condition

Along the historic wall bearing and around the roof drainage points, there are signs of significant water ingress, and the timber joists and boarding has deteriorated. In a number of cases the joists appear to be partially propped on the timber partition that has been constructed in front of the masonry wall. During site visits, the historic brickwork wall has been noted as damp, and a number of existing embedded timber plates have also deteriorated. Externally, there is vegetation growing at parapet level and there are signs of distress in the brickwork, such as the opening of the joint approximately 1m from the top of the wall.

The source of water ingress appears to be through the top of the parapet wall itself, where the existing joints between bricks have deteriorated as well as through the possible failure of the waterproofing layer between the wall and the roof. This has led to the deterioration of the existing timber structure, both in the roof and wall. Due to the location of the embedded timbers in the existing wall, it appears that their deterioration may have led to the top of the parapet pivoting about this point and leaning inwards, opening the joint in the brickwork wall on the external face.

A verticality survey was undertaken in February 2025 to confirm the extent of lean of the wall. The results of this are attached in Appendix B. This survey highlights that the wall leans most at its northern side and gradually reduces toward the south. The overall outward lean of the wall is assumed to be historic and the wall is now tied back with the use of pattress plates. The inward pivot, assumed to be from the wall hinging around the missing/deteriorated embedded timbers noted earlier, is slightly prominent in point 2 of the survey.

Proposed Repairs

The following repairs are proposed to be undertaken to give the existing wall a helping hand. These are also highlighted in Appendix C:

- The deteriorated embedded timbers are to be sequentially removed and infilled with brickwork, to match existing, with lime mortar
- Loose or cracked brickwork in the top of the wall is to be re-consolidated. Loose or open joints are to be repointed with a suitable lime mortar
- The roof structure is to be replaced. The roof is to be suitably tied into the existing walls to transfer loads and effectively restrain the tops of the walls

The effectiveness of the structural repair strategy is highly dependant on the detailing of the waterproofing and the ability of the wall to shed water. This is being detailed separately by others.

Appendix A
Existing Structure Photographs

Photo 01 – External wall

Photo 02 – External wall, North side

Photo 03 – External wall opening of joints and missing mortar

Photo 04 – Soldier Course over Art Studio

Photo 05 – Internal Wall showing missing embedded timbers

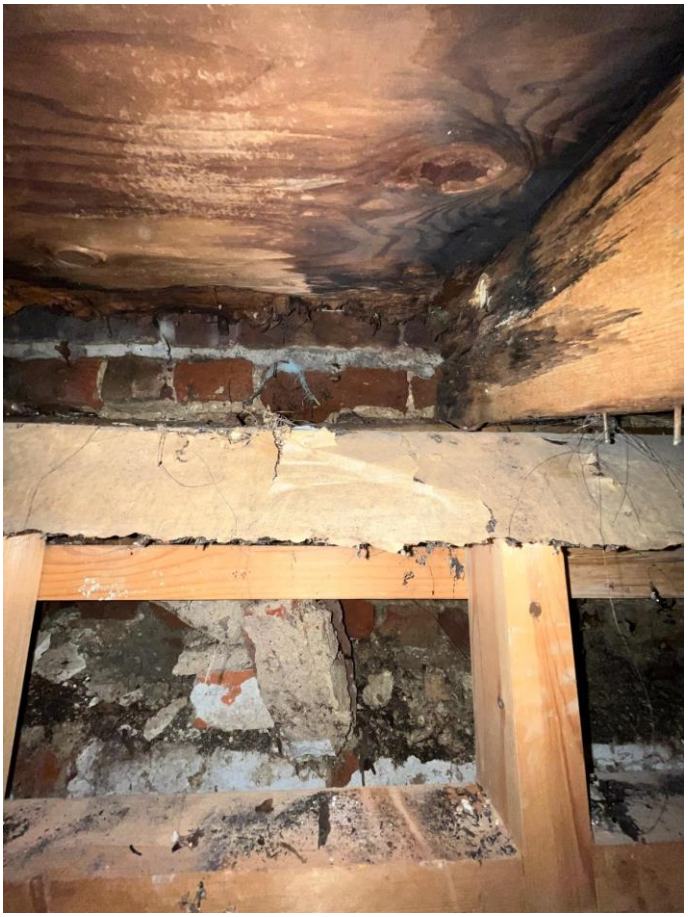
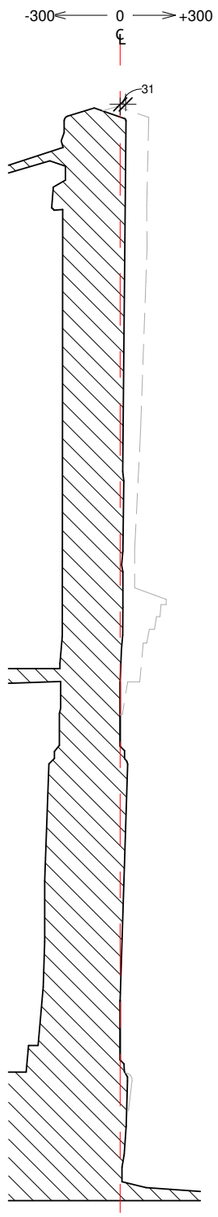


Photo 06 – Roof joist bearings and poor condition masonry

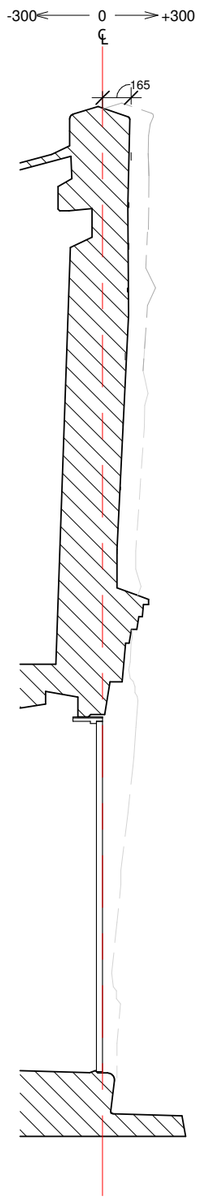
Photo 07 – Roof joist bearing and steel brackets

Photo 08 – Modern timber wall plate and historic embedded timber plate below

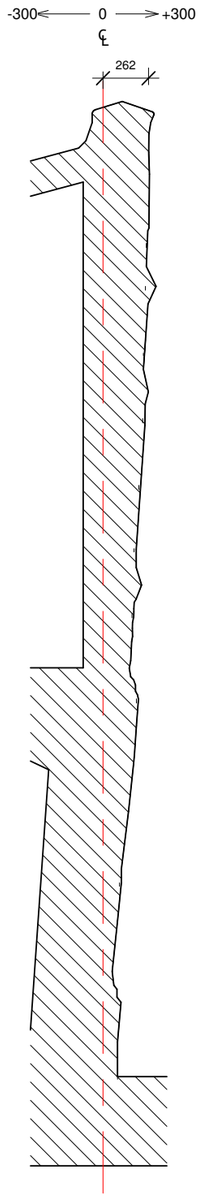
Appendix B
Verticality Survey



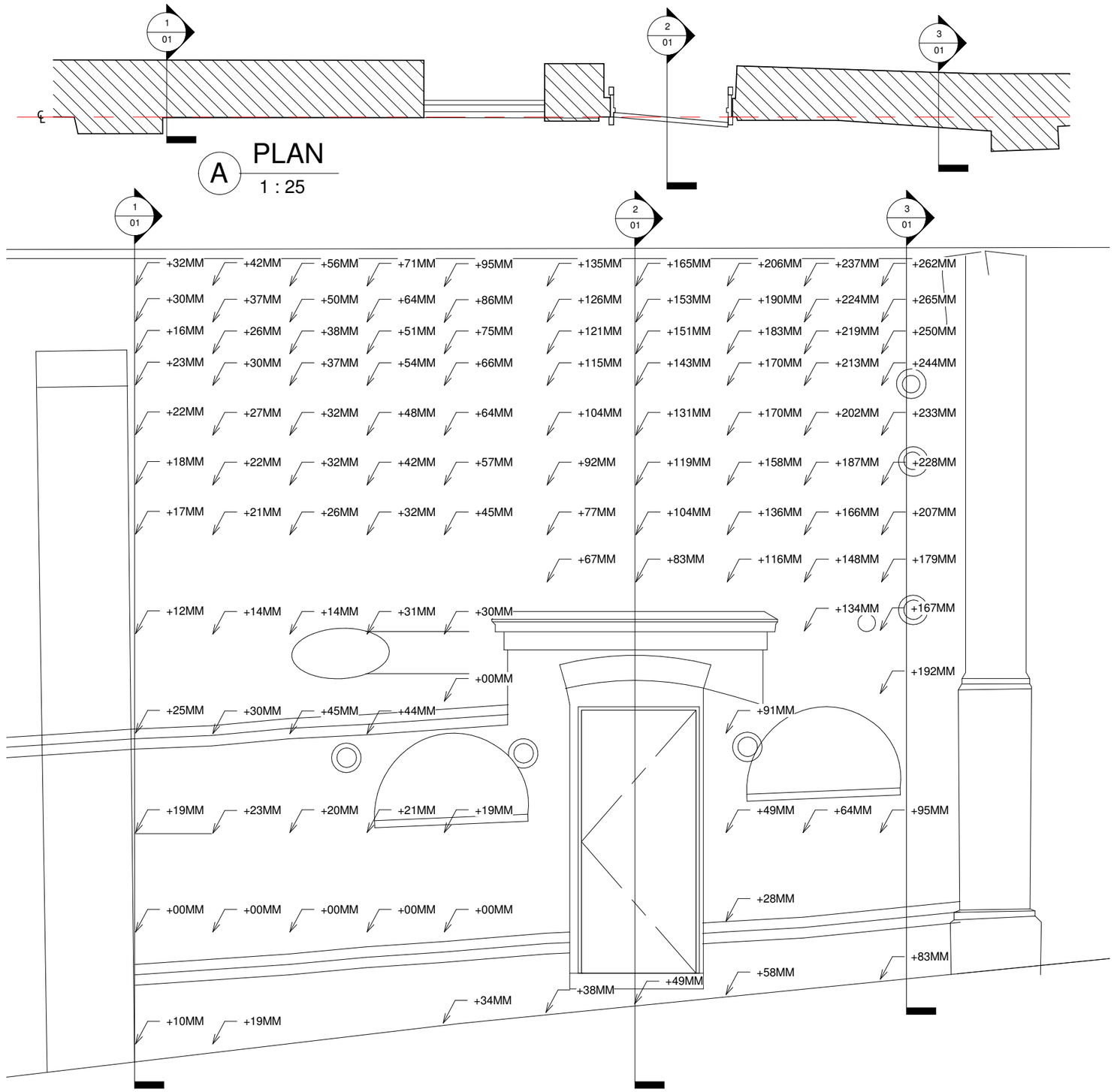
1 POINT 1
1 : 25



2 POINT 2
1 : 25



3 POINT 3
1 : 25



A PLAN
1 : 25

B ELEVATION
1 : 25

0m 2m 4m 6m 8m 10m

No.	Description	Date

ENBUILD CONSTRUCTION

CODE	STATUS	SUITABILITY DESCRIPTION	PURPOSE OF ISSUE

PROJECT
11 Cannon Lane,London

SHEET
WALL

CLIENT

Date	Project number	Scale (@ A2)
Issue Date		1 : 25

Drawn by	DRAWING NUMBER	REV
Author	01	

Checked by
Checker

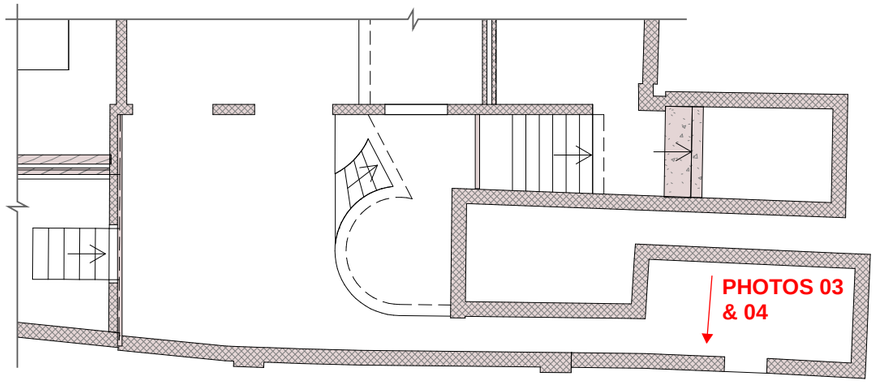
GENERAL NOTES:

1.All dimensions in mm unless noted otherwise

2.This drawing is to be read together with all other relevant drawings

3.This drawing is prepared co-ordination purposes. It is not intended or suitable for either Building Regulations or for manufacturing purposes (ie windows, kitchens wardrobes etc) It is always advisable the supplier/installer to visit site and carry out their own survey suitable for the intended purposes.

Appendix C
Proposed Structural Drawings



Vegetation removed from top of wall. Broken bricks to be replaced and brickwork repointed with lime mortar

Brickwork repointed with lime mortar

PHOTO 01

Vegetation removed from wall. Broken bricks to be replaced. Loose mortar joints to be raked out and repointed with lime mortar

Brickwork repointed with lime mortar

PHOTO 02

Existing chases and holes in wall to be fully infilled with brickwork and lime mortar

PHOTO 03

Existing chases and holes in wall to be fully infilled with brickwork and lime mortar

PHOTO 04

This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists Drawings and Specifications.

Do not scale from this drawing.

Rev	Date	By	Chk	Description
P1	26/02/25	ET		Preliminary

Drawing title
Art Studio
External Wall Repair

Scale	EWP Project	Date	Drawn
NTS	2230325	February 2024	ET

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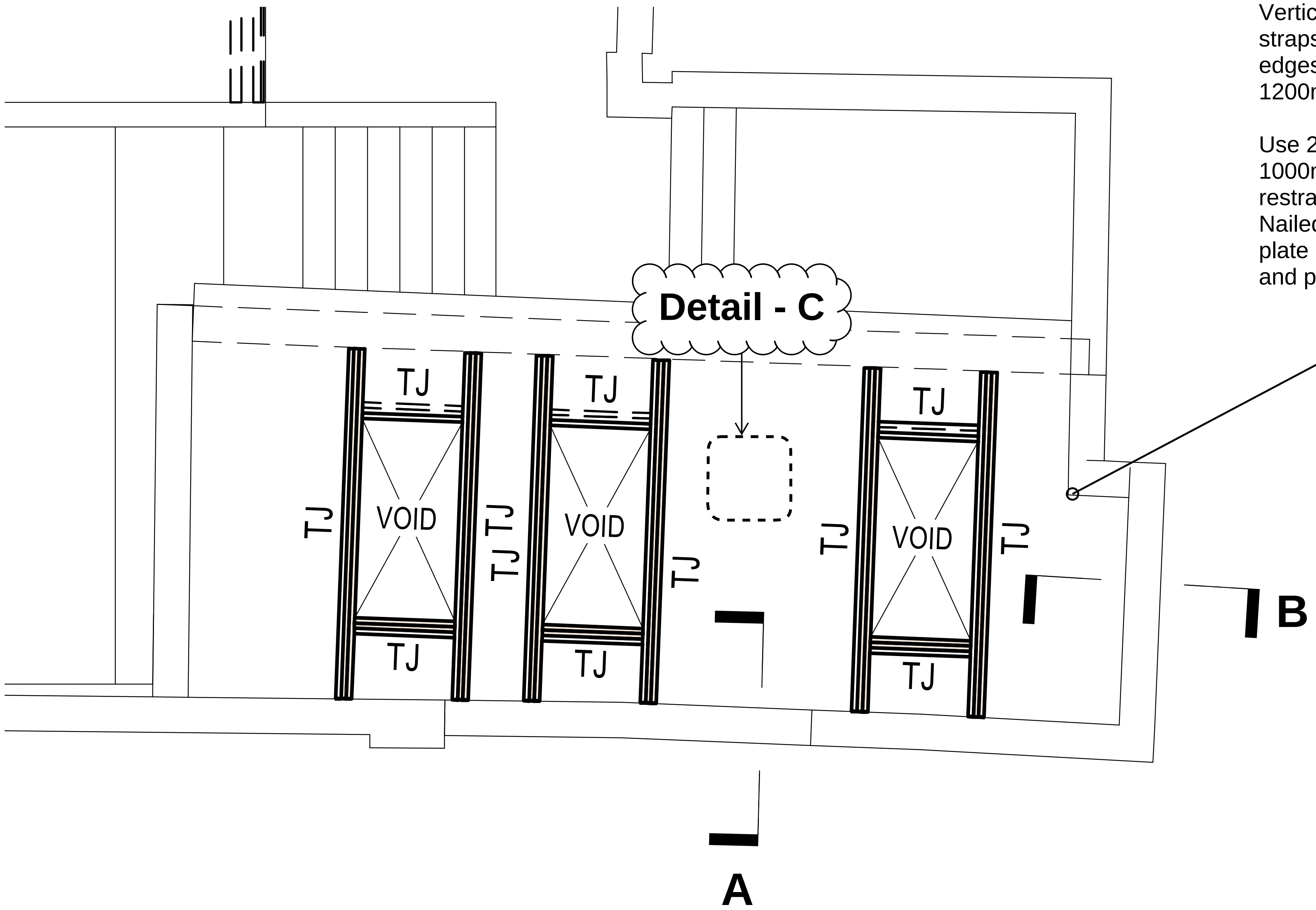
Project
11 Cannon Lane

Design Phase	Status	Revision
Preliminary	S2	P1

[Project]-[Origin]-[Function]-[Spatial]-[Form]-[Discipline]-[No.]
2230325 - EWP - ZZ - RF - SK - S - 0001



Vertical restraint straps required to all edges of roof, at max 1200mm c/c.

Use 28mm x 2mm x 1000mm light gauge restraint straps. Nailed to joists/wall plate and screwed and plugged to wall

This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists Drawings and Specifications.

Do not scale from this drawing.

Rev	Date	By	Chk	Description
P2	26/02/25	ET		Title amended
P1	11/02/25	ET		Preliminary

Drawing title
Art Studio - Roof Plan

Scale	EWP Project	Date	Drawn
1:50@ A3	2230325	February 2024	ET

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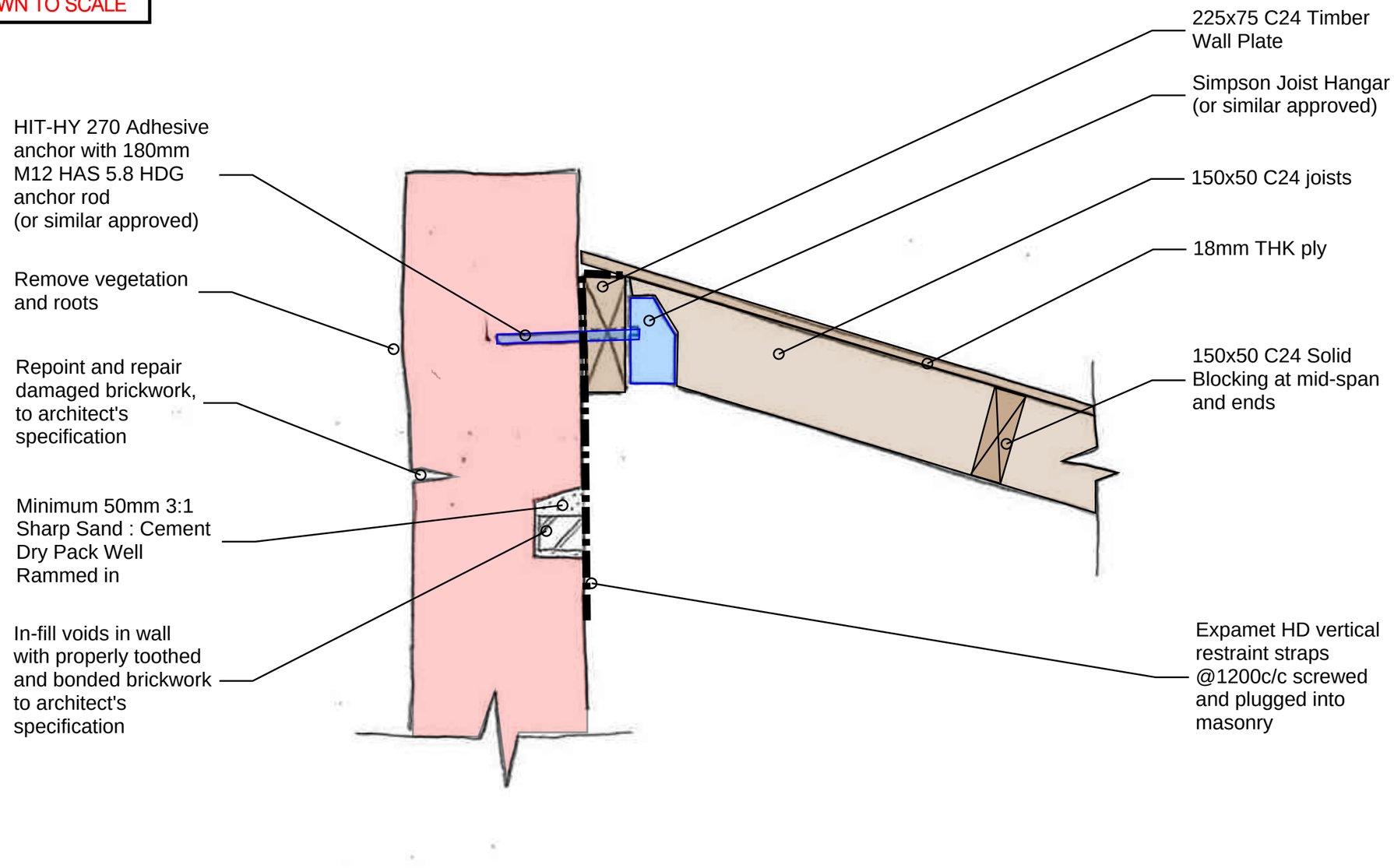
Project
11 Cannon Lane

Design Phase	Status	Revision
Preliminary	S2	P2

[Project]-[Origin]-[Function]-[Spatial]-[Form]-[Discipline]-[No.]
2230325 - EWP - ZZ - RF - SK - S - 0002

NOT DRAWN TO SCALE



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Do not scale from this drawing.

Rev	Date	By	Chk	Description
P2	26/02/25	ET		Title amended
P1	11/02/25	ET		Preliminary

Drawing title
Section A-A

Scale	EWP Project	Date	Drawn
1:10@ A3	2230325	February 2024	ET

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Project
11 Cannon Lane

Design Phase	Status	Revision
Preliminary	S2	P2

[Project]-[Origin]-[Function]-[Spatial]-[Form]-[Discipline]-[No.]
2230325 - EWP - ZZ - RF - SK - S - 0003

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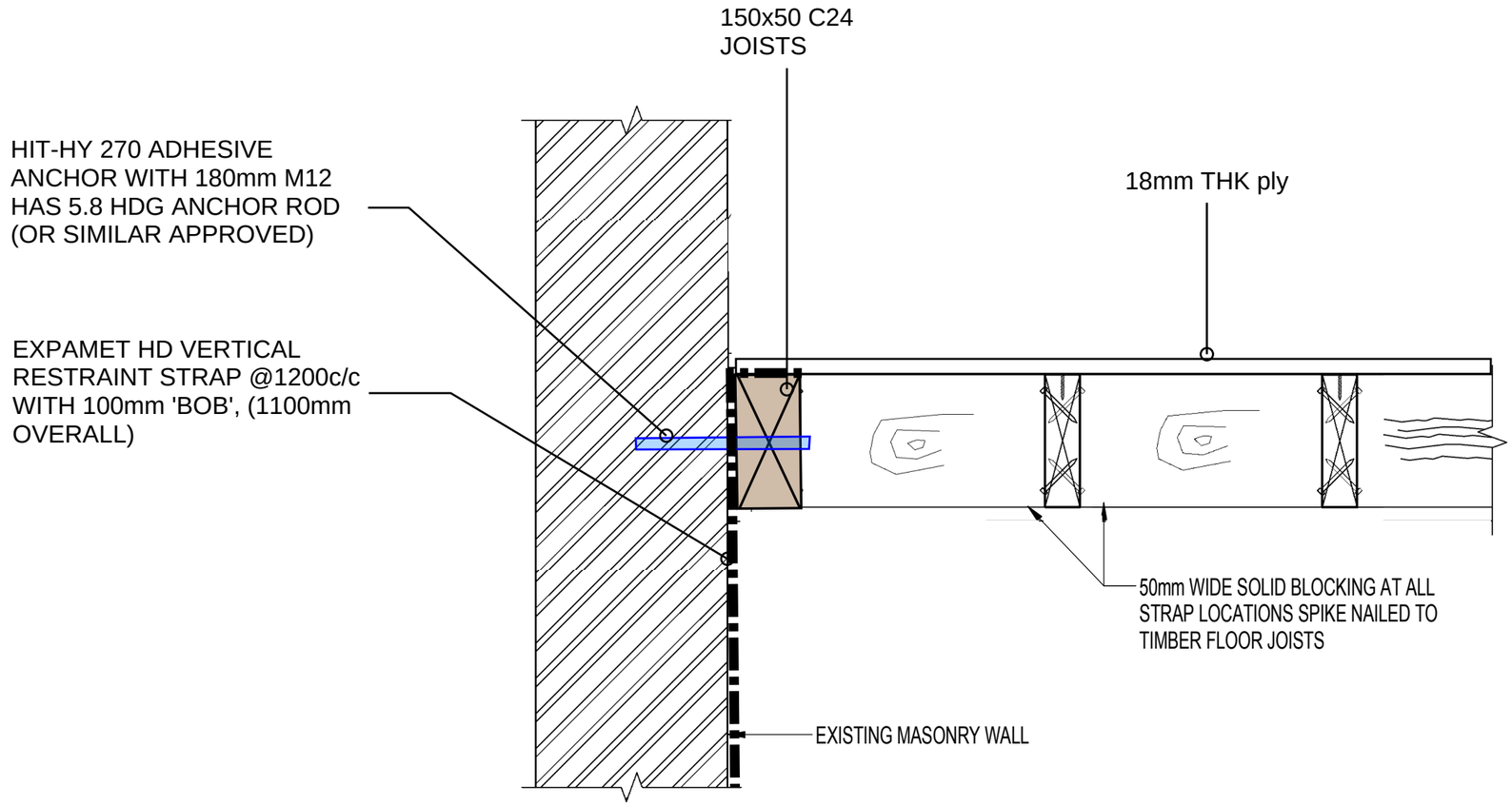

WALL RESTRAINT STRAP INTO EXTG WALL (PERPENDICULAR TO JOISTS)

This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists Drawings and Specifications.

Do not scale from this drawing.

Rev	Date	By	Chk	Description
P2	26/02/25	ET		Title amended
P1	11/02/25	ET		Preliminary

Drawing title
Section B-B

Scale	EWP Project	Date	Drawn
1:10@ A3	2230325	February 2024	ET

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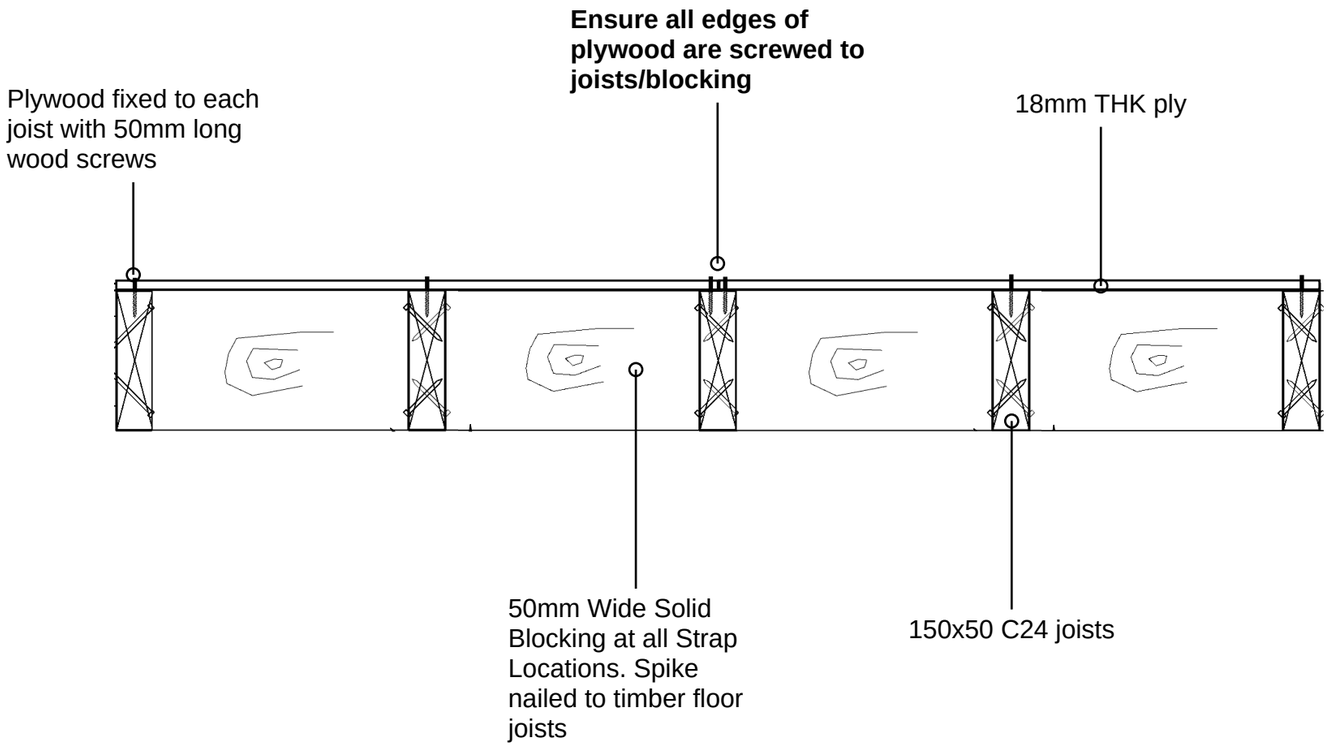
Project
11 Cannon Lane

Design Phase	Status	Revision
Preliminary	S2	P2

[Project]-[Origin]-[Function]-[Spatial]-[Form]-[Discipline]-[No.]
2230325 - EWP - ZZ - RF - SK - S - 0004

NOT DRAWN TO SCALE



This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists Drawings and Specifications.

Do not scale from this drawing.

Rev	Date	By	Chk	Description
P2	26/02/25	ET		Title amended
P1	11/02/25	ET		Preliminary

Drawing title
Detail C
Plywood Typical Detail

Scale	EWP Project	Date	Drawn
1:10@ A3	2230325	February 2024	ET

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Project
11 Cannon Lane

Design Phase	Status	Revision
Preliminary	S2	P2

[Project]-[Origin]-[Function]-[Spatial]-[Form]-[Discipline]-[No.]
2230325 - EWP - ZZ - RF - SK - S - 0005