

Project: 11a High Street, Prescot

Client: Ranaul Land (North West 4) Ltd

Date: June 2025

Project Reference: 4044

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*The Institution
of Structural
Engineers*

Structural Report

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Project: 11a High Street, Prescott

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Schedule of Revision

Revision	Date	Details
1.0	June 2025	First Issue



Project: 11a High Street, Prescott
Reference: 4044
Date: June 2025

Contents

CONTENTS	2
INTRODUCTION	3
SURVEY NOTES	5
STABILITY	11
RECOMMENDATIONS	12



Project: 11a High Street, Prescot

Reference: 4044

Date: June 2025

Introduction

S-Mech Ltd were appointed to undertake a structural condition survey of the boundary wall to the North and North East at 11a High Street, Prescot, L34 3LD. As such our investigations were limited to this structure only; adjacent structures and/or neighboring buildings were not inspected except where specifically referenced.

The purpose of the report is to report on any major structural issues present in the wall.

Liability in relation to the content of this report is limited to the party named on the cover sheet. S-Mech Ltd will not be liable for pure financial losses to any third party unless explicitly agreed in writing prior to the supply of our services.

The survey was undertaken on the morning of Monday 23rd June 2025, the weather was fine and dry throughout the duration of the survey.

No concealed elements of the structure were broken out during the survey unless noted otherwise, and no foundations were exposed or inspected. No elements were checked for compliance with the current requirements of the Building Regulations. S-Mech Ltd did not have the opportunity to monitor the structure over a period of time, and as such this report represents the structure at the time of inspection.

A general overall inspection of the wall was followed by a detailed survey. Defects and notable issues are highlighted in the following table.

Left/Right are used when facing the element under inspection from the clients side of the boundary. The term '5/900' or similar refers to a lean/fall of 5mm measured over a 900mm spirit level. A lean 'in' refers to a lean into the clients boundary.



Project: 11a High Street, Prescott
Reference: 4044
Date: June 2025

For reporting, six distinction sections of wall are considered as noted in the key below.

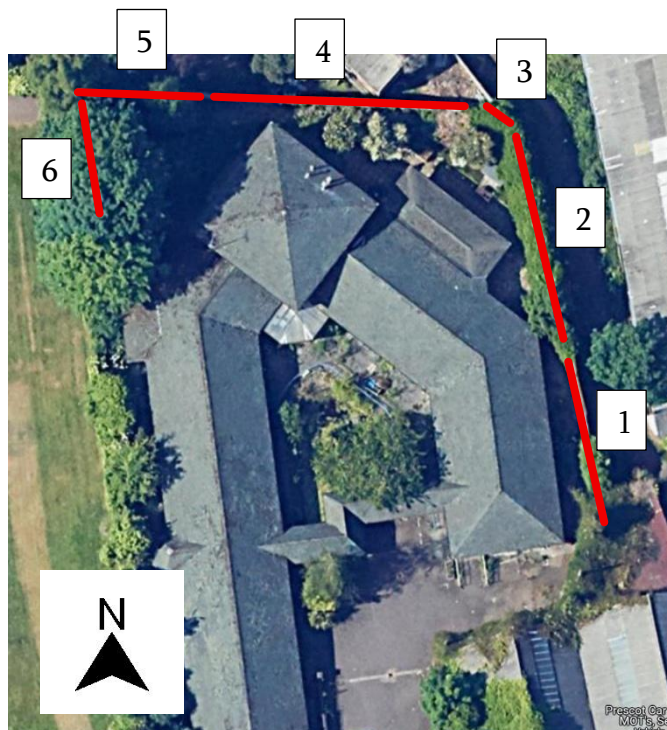


Figure 1 Surveyed Wall



Project: 11a High Street, Prescot

Reference: 4044

Date: June 2025

Survey Notes

Section 1

Thickness & Construction	350mm approximate. Solid brickwork.
Height (Client side)	2200mm.
Height (Opposite side)	2900mm.
Retained Height	700mm. Client side high.
Bed Joints	Generally level.
Vertical Alignment	Leans out 50/900 toward South end, out 25/900 towards North end.
Comments	Vegetation growth on top and rear. Embedded glass in mortar coping.





Project: 11a High Street, Prescott

Reference: 4044

Date: June 2025

Section 2

Thickness & Construction	420mm approximate. Brickwork with stone to non client side face.
Height (Client side)	2000mm.
Height (Opposite side)	2900mm.
Retained Height	900mm. Client side high.
Bed Joints	Generally level.
Vertical Alignment	Generally plumb at recently refaced/rebuilt section, becoming in 10/900 at joint with original. Original leans in 25/900 to a maximum of 45/900
Comments	Vegetation growth on top and rear, now died off. Coping stones disturbed by growth into mortar gap.



Rebuilt section adjacent Section 1. Junction of original and rebuilt.





Project: 11a High Street, Prescott

Reference: 4044

Date: June 2025

Section 3

Thickness & Construction	420mm approximate. Brickwork with stone to non client side face.
Height (Client side)	2000mm.
Height (Opposite side)	Unknown.
Retained Height	Unknown
Bed Joints	Generally level.
Vertical Alignment	Leans in 90/100
Comments	Short section at change in direction. Heavy vegetation growth on top and beneath coping stones. Partial collapse at top of wall appears to be held in place by vegetation.





Project: 11a High Street, Prescott

Reference: 4044

Date: June 2025

Section 4

Thickness & Construction	440mm approximate. Brickwork with stone to non client side face.
Height (Client side)	Varies – estimated at 1800mm at East end to 2200mm at West end to remaining top masonry (rubble on ground making measurement from original ground level impossible).
Height (Opposite side)	Unknown.
Retained Height	Estimated at approximately 2.0m. Client side high.
Bed Joints	Generally level.
Vertical Alignment	Short length adjacent Section 3 leans out 25/900, becoming plumb towards the centre of the length. Inward lean from centre to Section 5 is generally 75/900 with areas of 90/900. A lateral bow into the client side is visible along this length.
Comments	All copings along this length are lost along with some masonry from the top of the wall. Some copings are visible on the clients side on the ground, buried in the vegetation.





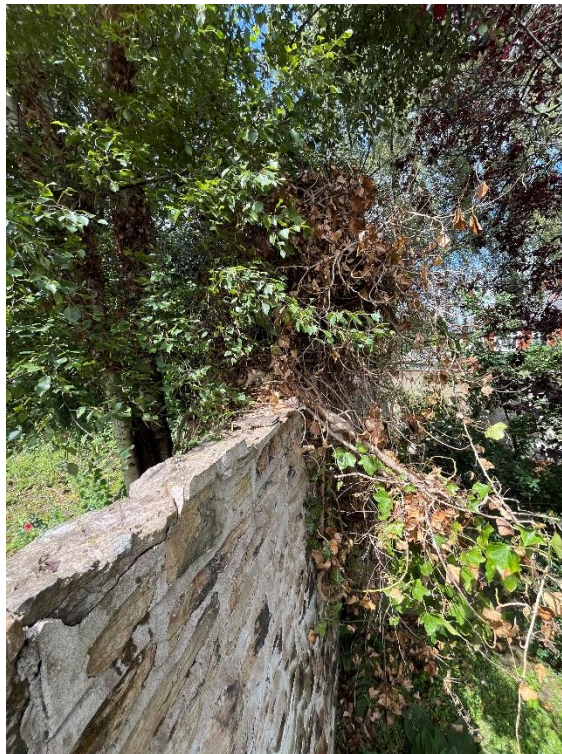
Project: 11a High Street, Prescott

Reference: 4044

Date: June 2025

Section 5

Thickness & Construction	440mm assumed (unable to measure due to vegetation on top). Brickwork with stone to non client side face.
Height (Client side)	Varies – 2700mm adjacent Section 4 reducing to 2300mm adjacent Section 6, as ground level raises.
Height (Opposite side)	Unknown.
Retained Height	Estimated at approximately 2.0m. Client side high.
Bed Joints	Generally level.
Vertical Alignment	Leans in 75/900 adjacent Section 4. In centre leans in 65/900 at top and 15/900 at base. At corner with Section 6 leans in 30/900 at top and is plumb at base.
Comments	Short section at change in direction. Heavy vegetation growth on top and beneath coping stones. Partial collapse at top of wall adjacent to Section 4 appears to be held in place by vegetation.





Project: 11a High Street, Prescot

Reference: 4044

Date: June 2025

Section 6

Thickness & Construction	440mm assumed (unable to measure due to vegetation on top). Brickwork client side, opposite side unknown – assumed brickwork.
Height (Client side)	Varies – 2000mm adjacent Section 5 in corner increasing to 2400mm at free end, as ground level increases.
Height (Opposite side)	Unknown. Ground levels appear to rise on land behind therefore wall is expected to retain the ground behind.
Retained Height	Estimated at approximately 1.0m – client side low.
Bed Joints	Generally level.
Vertical Alignment	Generally plumb.
Comments	N/A



Section 6 (Image AWA Building Consultancy) and land behind showing level increase.



Project: 11a High Street, Prescot

Reference: 4044

Date: June 2025

Stability

As the general trend is a lean into the site (and as such, into the retained side), it is not considered that a failure of the overall retaining structure has occurred. A stability analysis using the middle third rule is therefore carried out.

Wall	Thickness	Middle third – max eccentricity	Maximum lean for height	Maximum recorded lean (in, UNO)	Stable
1	327mm	55mm	23/900 at 2200mm	Out 50/900 at South, Out 25/900 at North	Partial
2	440mm	75mm	34/900 at 2000mm	25 to 45/900	Partial
3	440mm	75mm	34/900 at 2000mm	90/100	No
4	440mm	75mm	38/900 at 1800mm 34/900 at 2000mm 31/900 at 2200mm	Western end exceeds this. Centre and towards section 3 within limits.	Partial
5	440mm	75mm	25/900 at 2700mm 29/900 at 2300mm	Upper section of wall exceeds limits throughout.	No
6	440mm	75mm	28/900 at 2400mm	Acceptable throughout.	Yes



Project: 11a High Street, Prescott

Reference: 4044

Date: June 2025

Recommendations

The majority of the copings throughout the full length of the wall have been disturbed by vegetation (and are missing throughout Section 4) and will need removing, the mortar cleaning out and the coping resetting in place. In addition, the wall requires repointing in all Sections.

In addition to the above works, the survey showed the walls to be unstable in the majority of areas, and therefore substantial rebuilding works would be required to take down and rebuild the masonry to within appropriate tolerances. We would consider that works to the client side of the wall such as buttresses or counterforts (to stabilise the wall as existing) would encounter poor ground conditions due to the strata to the rear of the wall being backfill, and as such foundations would be difficult to achieve and may require a mini-pile solution.

The requirement for the boundary is to erect a fence to achieve greater privacy. It is recommended that unless noted below the walls are taken down to an appropriate height where stability is considered to be acceptable and the fence erected independently of the wall. Assuming a client-side height of 1.1m for the wall, allowable leans become 60/900 for the 440mm construction and 45/900 for the 327mm construction. Referring to the previous stability analysis, it can be seen that this would reduce the amount of rebuild work required considerably.

Section 3 should be taken down to client-side ground level and rebuilt.

Section 6 may be left as existing if required, with the corner at Section 5 left full height. The top of Section 5 should then be stepped down to 1.1m within 2.0m of the corner.

Repointing would still be required throughout, and resetting of the copings would be required after removal to reduce the height.