

Structural Appraisal
of
Boundary Wall
at
The Orchard, Huyton

for

Alderley Partnerships

Ref: B05

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Structural Appraisal
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	Written By:	Checked By:	Date:
First Issue	-CB-O	-	-28/01/25

1. Introduction

This appraisal considers part of the boundary wall to the Grade II Listed Greenhill at The Orchard, Huyton.

2. Inspection

The wall was inspected on Monday 20th January 2025, by Charles Blackett-Ord CEng FICE CARE (Conservation Accredited) which was a damp showery day.

A length of about 50 metres was accessible for inspection from the adjacent access road.

Further south the wall was obscured by site cabins and material storage. The Greenhill side was accessible through dense undergrowth.

The owner of Greenhill (Colin Daniels) allowed access to inspect his side of the wall.

3. General Description

The boundary wall of Greenhill probably dates from the middle of the nineteenth century. It flanks the gated entrance to Greenhill and extends around the east side of the garden. The wall is about 1.4 metres high, with a raised section 2.5 metres high starting about 40m from the entrance gates. Beyond this an 8m long length of the wall has collapsed completely. It is not clear why or over what length the wall has been raised to 2.5 metres. It may be the wall of a building or it may be to form a wall for growing fruit trees up.

The 1.4m high wall is partly a retaining wall holding up the garden where there are a number of trees growing very close to the top of the wall. The wall is covered in ivy which limits the inspection.

The length of wall under consideration is propped by five brick buttresses, one of which has been knocked over.

There are two sections between the buttresses which are leaning outward to an unacceptable degree and additional buttresses are recommended.

There are two areas where some local re-building is required, and some of the copings are loose or missing.

4. Conclusions

The wall is suffering from excessive lean in two places, where additional buttresses should be constructed. An alternative would be to take down these sections and rebuild, but this would be disruptive and would require more excavation on the Greenhill side, with the possible removal of trees.

Isolated areas of dislodged stonework should be repaired, and two sections of rebuilding are required. Some copings are missing and these should be replaced like for like. Rebuilding facework should use the same stone as is taken down, using lime mortar.

General repointing is not required, and local repointing should be selective because where the wall is retaining it should allow ground water from behind the wall to escape through it.

The dislodged stonework and areas of rebuilding are identified on the accompanying drawings; however it should be noted that once the ivy is removed (which is also recommended) some more more repair requirements may be exposed.

The attached specification clauses should be used for the repairs.

5. List of Photos

- Photo 1: West End of Wall
- Photo 2: East Side of Gateway
- Photo 3: North Side of Wall
- Photo 4: North Side of Wall - Broken Buttress
- Photo 5: North Side of Wall
- Photo 6: North Side of Wall
- Photo 7: Buttresses
- Photo 8: South Side of High Wall in Gardens
- Photo 9: South Side of High Wall in Gardens



Photo 1: West End of Wall



Photo 2: East Side of Gateway



Photo 3: North Side of Wall



Photo 4: North Side of Wall - Broken Buttress



Photo 5: North Side of Wall



Photo 6: North Side of Wall



Photo 7: Buttresses



Photo 8: South Side of High Wall in Garden



Photo 9: South Side of High Wall in Garden

6. List of Drawings

- 01 Site Plan
- 02 Elevation
- 03 Details

7. Schedule of Work and Specification

1. Remove ivy and plant growth from wall face and top.
2. Remove fallen buttress. Construct new buttress on concrete pad footing using the same bricks or new matching bricks and lime mortar.
3. Construct 2No new brick buttresses on concrete pad footings using matching bricks and lime mortar.
4. Take down two sections of wall, one at the west end abutting a building and one on the east corner of the gateway splay as shown on the drawing. Re-use stone with similar make-up if required. Use lime mortar.
5. Allow 5 linear metres of new coping stones bedded in lime mortar. Stones to be hand finished without any sawmarks visible.
6. Allow 3 square metres of patch repairs and making good.
7. Rebuild 8 linear metres of wall where fallen down, suggested to a height of 1.4metres rather than full height of 2.5 metres. Provide make-up matching stone. Use lime mortar.

8. Mortar Specification.

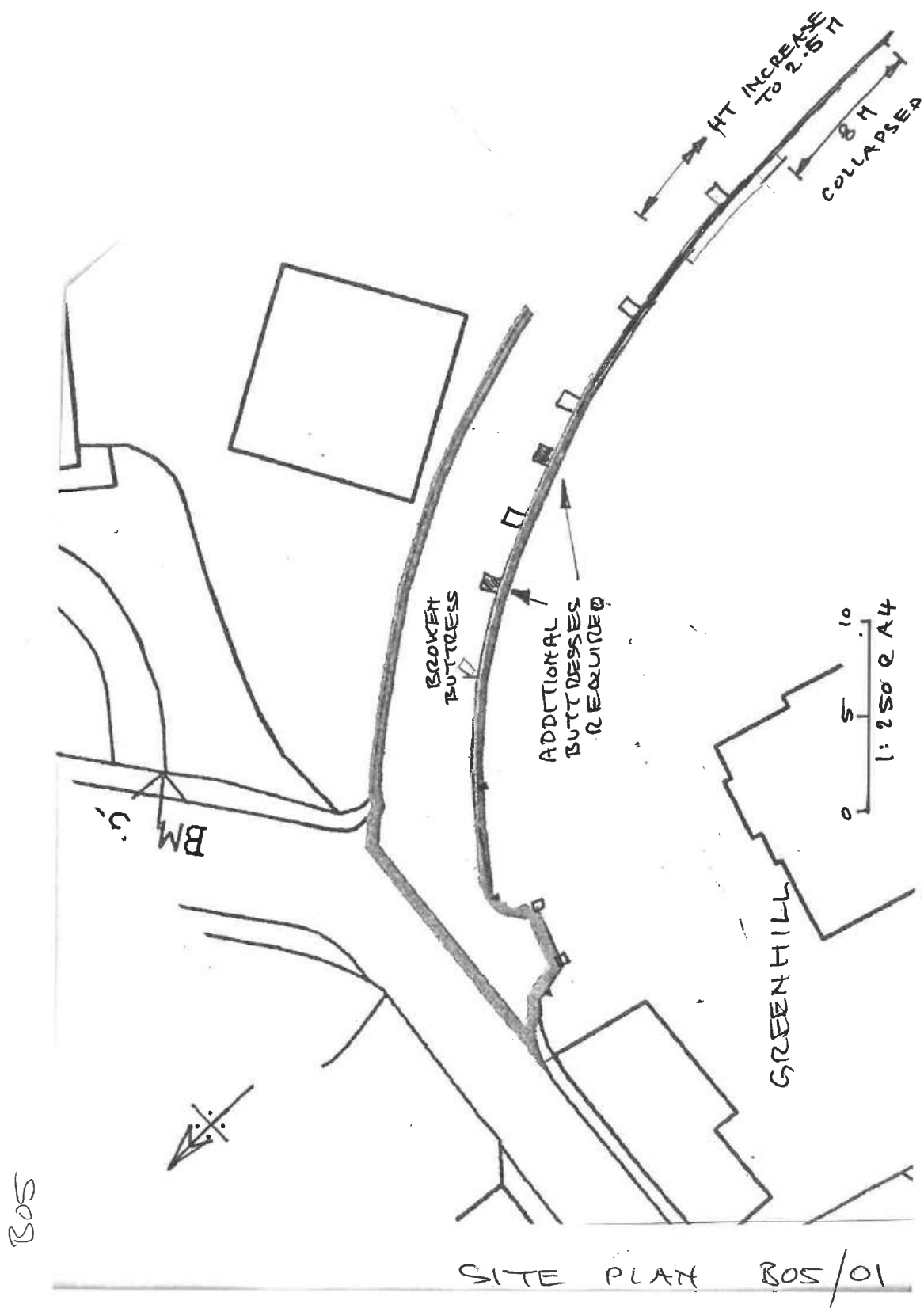
For bedding and general re-building, the mortar shall be 1 part Lime to 2½ parts sand.

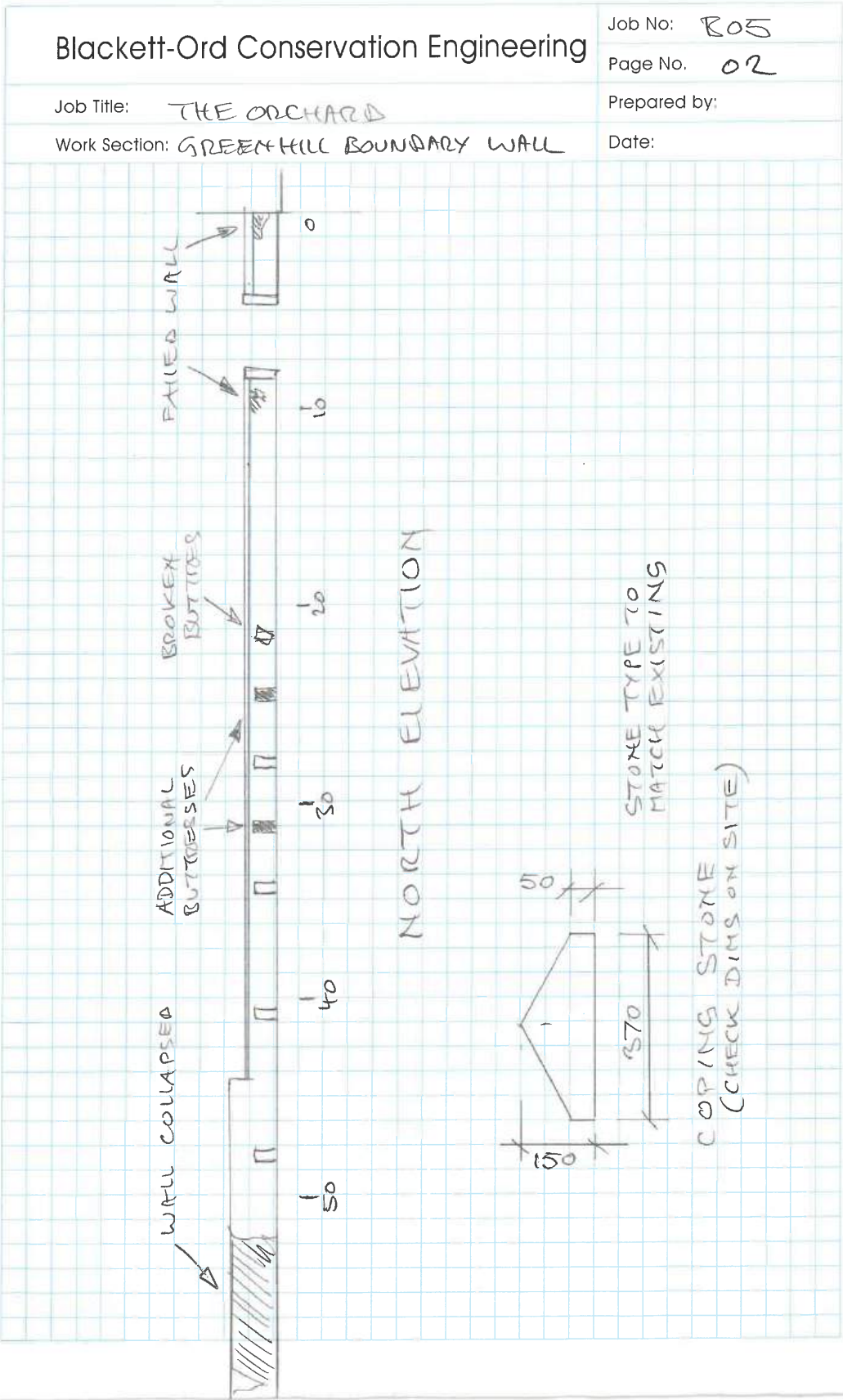
Lime shall be hydraulic lime, Otterbein NHL 2

Sand to be a well-graded, coarse washed concreting sand from Nosterfield, or an equivalent approved supplier.

Water used in the preparation of mortar, for dampening walls, or washing work is to be clean and fit for drinking.

All lime built masonry is to be covered and protected for three weeks after building.





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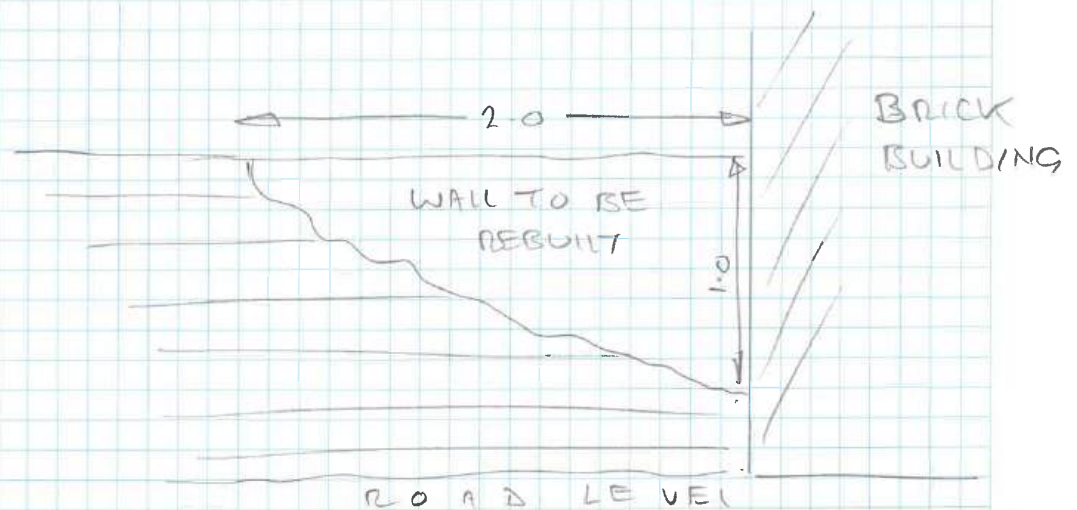
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Job Title: THE ORCHARD

Prepared by:

Work Section: BOUNDARY WALL DETAILS

Date:



SECTION A

