

Scope of Works

To: Tim Searle, F Parkinson
From: Ian Doughty
Date: 12th September 2024

**AMP/45878 - Barrass Street Campus, M11 1WP - Repair/ replace
retaining wall**



Proposed Works

Manchester City Council require repairs and replacement to be carried out along the boundary wall between the former Varna Street primary school grounds and a public footpath to the north of Gorton railway station.

The central portion of the wall (shown in Figure 1), which appears to be too slender for its height and loading, is in poor condition with extensive cracking and significant deformation to the section adjacent to the vegetation within the playground. The movement evident has been caused by lateral pressure from the retained soil behind and pressure from adjacent tree roots. The cracking is visible on both sides of the wall with gaps of up to 50mm in places, such that it is not possible to repair the brickwork and a rebuild is required (see sketches appended to structural report). Additionally, the stretches of wall to the east and west of the central portion require repairs to the brickwork and mortar.

The existing wall is over 3m high, and the brickwork is 225mm thick with 325mm thick piers at approximately 2m centres on the school side of the wall. There are header courses at every fourth course typically. There are stone coping stones along the head of the wall and a steel mesh fence fixed to the rear of the wall extending above the wall. The foundations for the wall are not known.

Initially, any vegetation obscuring the wall will need to be removed and trial pits dug to confirm the condition of the wall and existing foundation/ ground conditions respectively. These will be carried out on a PSPC10 contract.

Following the investigations, the detailed design can be validated or changed depending on the findings, including:

- Extents of the wall to be removed and replaced.
- Extents of the repairs to the rest of the wall.
- Foundation design for the replacement wall.

Note that the wall is listed, therefore Listed Building Consent will be required prior to the commencement of the construction works, and a temporary footpath diversion will be required for the duration of the works.

Site Location

The wall location can be seen in Figure 1, with Gorton Station also highlighted. The central section of the wall (which needs to be replaced) is shown in lighter orange, while the stretches that need to be repaired are in darker orange.

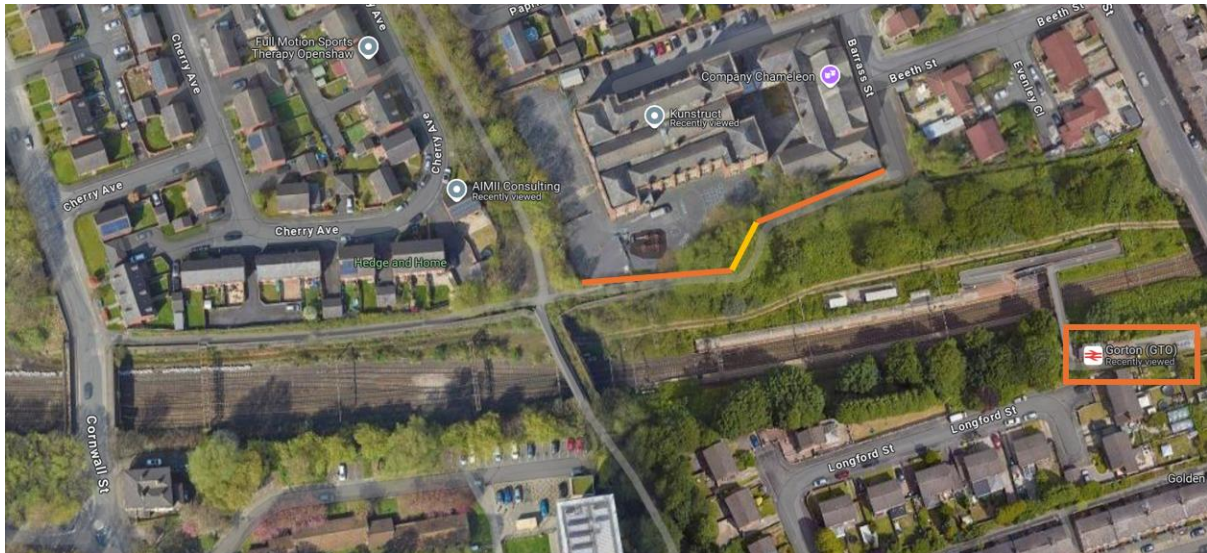


Figure 1 – Boundary wall location

The most straightforward access to the railway side of the boundary wall is from Barrass street, although it is also possible to access it from Cornwall Street, Longford Street, Keary Close and Ogden Lane, as shown in Figure 2.

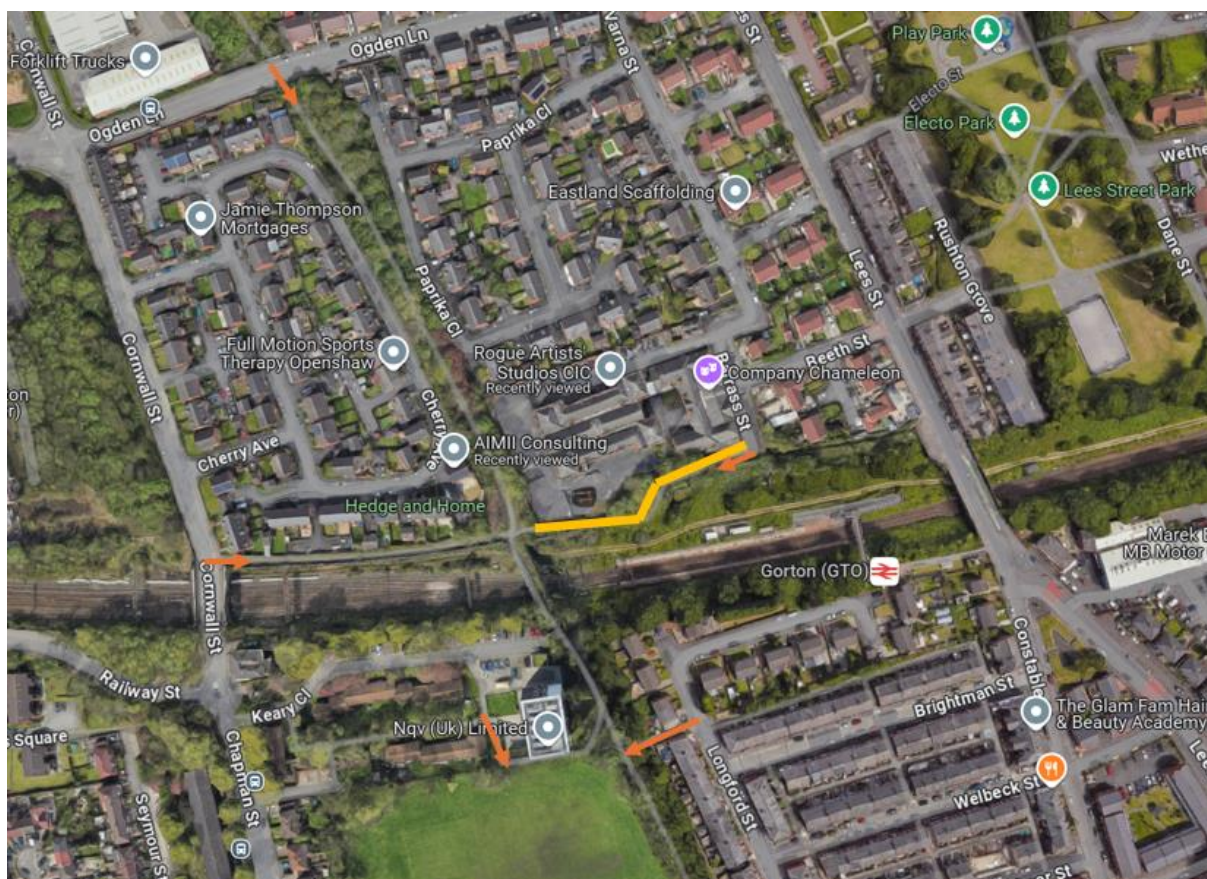


Figure 2 – Boundary wall access



Figure 3 – Boundary wall 3d view

Scope of Works

It is proposed that the works are split into 2no stages – investigations and construction.

Investigations

As mentioned above, the first investigations will involve the removal of the vegetation on the railway side of the wall, to allow a structural survey of this stretch of the central span.

Additionally, ground investigations will be required either side of the wall to confirm the ground conditions and bearing capacity assumptions for the new foundation design:

- 1no trial pit to a max depth of 1.2m on the school side of the central span of the wall, to expose the wall and pier foundation geometry, as well as ground conditions.
- 1no trial pit to a max depth of 1.2m on the railway side of the wall in an equivalent position to the school side pit, to confirm foundation geometries and ground conditions on this side too.
- 1no. Window sample boreholes behind the wall (school side) to confirm the retained soil properties, water levels and formation soil properties.
- Geotechnical in-situ/lab testing – SPTs, penetrometers, plasticity testing, to confirm bearing capacity and parameters for retained soil.
- Contamination testing
- Provide an interpretive report on the results to inform the wall design.

The wall and foundation design can then be validated or changed if required, prior to Listed Building Consent application and commencement of the wall repairs and replacement.

Construction

It is proposed that the central span of the wall is removed and rebuilt, while the spans to the east and west are to be repaired.

As the wall is over 3 metres high and is also retaining soil and vegetation it would not be suitable to rebuild the wall using the same detail as the existing 225mm thick wall with

325mm thick piers, as this is not adequate to resist the lateral loads applied. Subject to the trial pit findings, it is therefore proposed to rebuild the wall as a 325mm thick grouted cavity wall with a reinforced cavity wall, supported on a new reinforced concrete strip foundation. The existing brickwork should be retained and reused where possible, with matching brickwork used where new brickwork is required. New coping stones will be required over the rebuilt wall and should be laid on bedding mortar and weepholes and a filter drain will be installed behind the wall to prevent groundwater build-up in the ground behind the wall.

Movement/ expansion joints should be installed at either end of the new stretch of wall, with wall ties across the junction between the new section of wall and the existing pier each side (subject to planning approval as the wall/ school are listed). There is also the possibility that the mortar is lime mortar and so mortar sampling is required to confirm this.

It is also proposed to remove the trees and vegetation behind the wall, subject to confirmation that there are no tree preservation orders relevant, and agreement with planning. If the trees are required to be retained, then a root protection membrane will be required behind the wall and a tree management plan put in place to mitigate the impact of the trees on the wall in the long term.

Sketches of the existing and proposed structural layout of the wall are appended to the Structural Report from February 2023 and should be used to inform the target costs now; CAD drawings will be produced from these sketches once the investigations and final design have been completed.

Client Contact

Access to the property can be arranged through Ian Doughty
[REDACTED]

Additional Information

The following has previously been issued and is also attached:

- DXH45506_Barras St Structural report_R001, originally issued 01/02/2023 and including sketches of proposed structural layout of replacement wall.
- Email after follow-up visit, sent 13/06/2024.
- Utilities Information drawings from ENWL and CadentGas.

Quotation Returns

Quotes should be returned electronically to Tony Jones and Ian Doughty
[REDACTED] at Manchester City Council by Friday 11th October.

Any supporting documents will be accepted.

If you have any technical queries with regards the report, please contact the author Ian Doughty [REDACTED].

Ian Doughty CEng MICE
On behalf of Capital Programmes & Procurement