

Everton Stadium – The Peoples Project

Bramley-Moore Dock

Methodology Statement

- Heritage Asset: Regent Road Wall
- Specific Element: Creation of Regent Road Wall Pedestrian Openings
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1. Introduction

A total of three pedestrian openings are proposed to be formed through the Grade II listed Regent Road wall. These openings will facilitate the access and egress to the Bramley-Moore Dock area during the operation of the stadium.

The primary aim of this document is to outline the methodology of creating the gate openings through Regent Road Wall and the associated temporary work requirements. The methodology for creating the openings will ensure the works are carried out with the necessary consideration for the historical importance and preservation of Regent Road Wall.

It must be noted that this document only covers the creation of the wall openings. Methodology Statement BMD01-LOR-XX-XX-MS-W-100002 details the construction of the pedestrian openings and repairs.

2. <u>Overview of proposed works</u>

2.1. Scope of works

There are three locations along Regent Road Wall that require openings to be formed, with each having identical dimensions. The works required for the opening are to be carried out in a phased approach. Which will include the following:

Phase 1: Creation of the central opening for site access

- Break up and remove existing concrete structure.
- Injection grout natural hydraulic lime (NHL) into the central core, local to the proposed cutline (the use of NHL will be subject to trials).
- Erect scaffold system to provide the necessary access and restraint to the wall.
- Excavate a trial hole at the base of each cut line to accommodate the full depth of the saw.
- Fix the saw to the wall using clamping system with 12mmØ tie rod.
- Saw cut to the full length of the wall.
- Remove the stone by hand using small hand tools only. Stone is to be placed into storage.
- The exposed end of the wall is to be shuttered and weatherproofed.

Phase 2: Sequential deconstruction and construction to North and South access points.

 The central opening will be reconstructed into its final arrangement many months after the deconstruction and in accordance with document BMD01-LOR-XX-XX-MS-W-100002. The deconstructed opening will form a temporary access to the site during the construction phase.



- Deconstruct by hand, the existing brick structure found behind northern opening, as shown on drawing BMD01-PAT-ZZ-EX-DR-A-904100. Any loose brick found within the top three courses of the remaining section of the wall are to be removed for future reinstallation
- In sequence, the two remaining openings are to be deconstructed and reconstructed following the same process as per Phase 1 and the construction methodology detailed in document BMD01-LOR-XX-XX-MS-W-100002, respectively.

2.2. Proposed pedestrian opening design information

The proposed opening details can be seen in Figures 1 to 5. Refer to Drawing BMD01-BHE-ZZ-ZZ-SK-S-284057 for the full detailed drawing containing Figures 1 to 3.











Figure 4. Plan view of the interface with the existing wall



3. Method statement

The following section of the report will provide further details around the activities highlighted in the Scope of Works (Section 2.1.) and all other relevant elements associated with creating the wall openings.

3.1. Methodology

3.1.1. Removal of vegetation.

The existing vegetation that can be seen growing from, or in close proximity of, Regent Wall and all associated Listed structures will be removed. An example of the vegetation is shown in Figure 5. The remaining void in the stonework will be repaired as detailed in document BMD01-LOR-XX-XX-MS-W-100002



Figure 5. An example of vegetation growth from Regent Road wall

3.1.2. Removal of existing concrete structure

There is an existing concrete structure towards the north of the site that may require removal. Attention will be paid to the close proximity of the listed structures as well as measures implemented to minimise disruption during removal. These measures would include saw cutting the concrete adjacent to the Listed structures to de-bond the two elements and then removal using hand-breakers. If it is agreed that the concrete structure is to be retained, any existing damage to the concrete will be made good as detailed in document BMD01-LOR-XX-XX-MS-W-100002.



Figure 6: Image of the existing concrete structure



3.1.3. Removal of the brick Structure.

The existing brick structure, thought to be the remains of the overhead railway system, as shown on BMD01-PAT-ZZ-EX-DR-A-904100, requires two elements of works:

- The brick that clashes with the proposed northern opening is to be removed. The extents of removal will be circa 300mm wider than the cut line for the opening as shown in Figure 4.
- Any loose brick found within the top three courses of the remaining wall will be removed for future reinstallation.
- Any brick of the remaining structure that is significantly damaged is to be removed and replaced with salvaged brick.

The deconstruction works are to be done using small hand tools and a handheld breaker, if necessary. No significant temporary works are expected other than a low-level working platform. The removed brick will be palletised, shrink wrapped and placed into secure storage on site.

The reconstruction of the removed brick and any repair works will be carried out as part of the reconstruction works detailed in BMD01-LOR-XX-XX-MS-W-100002.An image of the existing brick wall can be seen in the following image.



Figure 7. Image of the brickwork thought to the remains of the overhead railway system

3.1.4. Injection grout of Natural Hydraulic Lime (NHL)

Prior to saw cutting the wall, it is proposed to injection grout Natural Hydraulic Lime (NHL) into the central core. The methodology and benefits of this proposal are as follows:

- The grout will be injected in a grid pattern circa 730mm back from the cut line into the retained section of the wall to enhance its stability.
- The grout will bind the material that has been used to infill the cavity of Regent Road. This will ensure that during the removal of granite stone, the cavity infill material will remain in situ. This removes the possibility of creating voids within the central core of the remaining wall.
- Within the central core, the grout will bind with the outer courses of granite stone, creating an insitu structure local to the cut line. This will reduce the risk of dislodging any granite stone as the saw cut progresses. The NHL grout will ensure the granite stone immediately adjacent to the cut line is preserved in its current position, as far as practicable.



- On completion, the grout nozzles will be removed and holes infilled using a compatible mortar specification matched to the existing wall.

A typical example of injection nozzles and the proposed setting out of the injection holes can be seen in Figure 8.



Figure 8. Grout injection proposal

3.1.5. Scaffolding arrangement

A scaffold arrangement to facilitate access will be erected by competent operatives working to an approved design. An example of the proposed scaffold arrangement can be seen in Figure 9.



Figure 9. Extract of the proposed temporary works arrangement. Note this is only a preliminary design.



Trial hole to Regent Road footpath

A trail hole to allow the saw to cut the full height of the wall is to be carried out. The trial hole is to be 1.5m (I) x 1.5m (b) x 1.2m (d). A sketch illustrating the trail hole arrangement can be seen in Figure 10.

3.1.6. Fixing the saw to the wall

It is proposed to use a Petruder 8-20iQ Hf Wall Saw (or similar) to cut the wall its full depth. The saw is tracked to ensure the cut line is as uniform as possible.

In order to securely fix the saw to the wall a clamping system is proposed. The wall is to be drilled to allow a 12mmØ tie rod to be inserted through the wall. The saw track will be clamped to the wall using the tie rod and nut and washer arrangement on the rear of the wall. A sketch of this proposal can be seen in Figure 10.

Note: the drill hole for the 12mmØ tie rod is to be positioned on the section of the wall that is to be deconstructed.



Figure 10. Sketch of the saw fixed to Regent Road wall arrangement

3.1.7. Saw cutting the wall.

It is expected that the Petruder saw will cut the majority of the wall, however a small section will not be reached due to the curvature of the blade. It is proposed to use a handheld saw to cut the remaining section of the wall. This area is highlighted blue in Figure 11.





Figure 11. Illustration of remaining wall to be cut using a handheld saw

3.1.8. Wall deconstruction

The granite stone is to be removed from the wall using small hand tools only, including a hand-held electric breaker were necessary. A working platform via a scaffold arrangement is to provide access to the higher levels of the wall. The granite is to be removed in a raked method progressing from one cut line to the other.

On removal, the individual granite pieces will be placed within bulk bags and then moved into storage on site. The core rubble fill from where the opening has been formed will be removed and disposed.

3.1.9. Installation of shutter to free end.

On completion of the wall deconstruction, a shutter will be installed to the exposed ends of the wall. This is to weatherproof the central core as well as ensure none of the infill material migrates out of the cavity.

3.2. Temporary works

The proposed temporary works for creating the wall will include:

- Scaffold platform for access
- Shutter to the face of the cut through wall.

3.3. Plant and equipment

A list of the expected plant and equipment is as follows: Injection grout of Natural Hydraulic Lime (NHL)

- Corded Drill
- Injection grout equipment, including pump.



Trail hole excavation:

- Small hand tools
- No mechanical excavation permitted

Saw cut to the wall:

- Corded Hammer Drill
- Petruder 8-20iQ Hf Wall Saw (or similar)

Wall Deconstruction and Brick Removal:

The plant and equipment is to be detailed by the appointed contractor to deconstruct the wall. Only small hand tools will be permitted, including handheld breakers to dislodge the bedding material where necessary.

3.4. Recording of information

The stone and brick that is removed from the wall will be photographically recorded to form part of the Historical Environmental Record. All photographs will be high resolution.

3.5. Protection arrangements

The protection arrangements that will be implemented during the works detailed in this document will be in accordance with the site wide Protection Strategy, which is included in the Conservation Strategy, Document Reference: BMD01-HPM-XX-XX-RP-W-100003.

- The open ends of the wall, when viewed in cross section, will be shuttered and weather proofed.
- The removed stone is to be stored in bulk bags and placed into storage on site.
- The removed brick will be palletised, shrink wrapped and placed into storage on site.

3.6. Competency of staff

All operatives working on the project will be required to attend a site induction provided by Laing O'Rourke before starting work. The induction will be used to emphasize the historical importance of the heritage items across the site and the precautionary measures implemented to ensure they are preserved and protected where necessary.

All operatives will be required to hold a valid CSCS and competency cards suitable to their trade and the equipment they are using.

Prior to any works being carried out that have a heritage interface, the site team will be briefed by the supervising engineer on the approved task methodology, any expected risks that have a heritage interface aspect as well as the mitigating measures required.

3.7. Health, safety and quality assurance

3.7.1. Site Supervision

Supervision on site will be provided by Laing O'Rourke.

Specialist contractors will provide supervision for each of their individual teams.



3.7.2. Risk Assessments and Method Statements (RAMS)

A Health and Safety method statement or task sheet for the creation of the wall openings will be developed in due course. Copies of the Method statement or task sheet will be issued to the client and planning authority for information and comment prior to the execution of works.

All activities carried out on site will be in accordance with the approved task sheet or method statement.

3.7.3. Inspection and Test Plan (ITP)

Prior to creating the wall openings, the appointed contractor will produce an Inspection and Test Plan (ITP) that details the step by step quality and safety process of creating the wall openings. The ITP will be reviewed and approved by Laing O'Rourke.

3.7.4. Daily Activity Briefing (DAB)

Whilst undertaking the works to create the wall openings, the Site Supervisor will give a Daily Activity Briefing (DAB) each morning or each change of work activity. The DAB allows a collaborative discussion amongst the site team about the risks presented by the current work activity and agree the relevant mitigating measures. In addition to the safety dimension of the DAB, attention will be paid to the heritage interface of the work activity.

3.8. Employee duties

Employees and sub-contractors must ensure that the works are carried out in line with the proposals noted in this document. It is a criminal offence under the Planning Acts if any person executes *"any work for the demolition of a listed building or for its alteration or extension in any manner which would affect its character as a building of special architectural or historic interest unless the works are authorised"*. The current penalty for conviction in a magistrates' court is a fine of up to £20,000 and/or a prison sentence of up to six months, and on conviction in the Crown Court, an unlimited fine and/or a prison sentence of up to two years. Consequently, it is essential to ensure that the proposed works are appropriately authorised and follow the agreed methodologies within this document.

3.9. Monitoring

Regent Road Wall will be subject to a monitoring programme for the full duration of the construction phase of the stadium, as detailed in the 'Site Wide Monitoring Scope of Works, BMD01-BHE-ZZ-XX-RP-C-110004, Section 9, Table 9-2'.

3.10. Technical compliance

- The preparation and application of NHL will comply with the Manufacturers Specifications.
- All scaffold design will be designed and constructed in accordance with the relevant BSI standards.



 The work detailed in this document will comply with all relevant Codes of Practice, Standards, Fire Regulations, Building Regulations and local Building Codes, Safety Regulations and any other regulations applicable to the deconstruction, together with all relevant Statutory Rules, Regulations, and other enforceable instruments applicable to both the design and execution of the works.



Key project staff

A list of the key project staff are as follows:

- Arran Scallion Senior Engineer, Laing O'Rourke <u>AMScallion@laingorourke.com</u> +44 (0)7818528727
- Gerald Knights Principal Engineer, Laing O'Rourke <u>GKnights@laingorourke.com</u> +44 7827 859438
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- Richard Baister heritage project management <u>richard.baister@heritageprojectmanagement.com</u> +44 (0)7815 076866

4. Management of heritage risks

A Heritage Risk Assessment has been carried out in relation to the deconstruction of the pedestrian wall openings. This can be seen on the following page.



Table 1 Heritage Interface Risk Assessment and mitigating measures

Ref.	SIGNIFICANT RISKS / HAZARDS	High Medium Low	CONTROL MEASURES	Residual Risk after Control Measures
1.	Failure of the wall due to creating the openings	Medium	 The temporary works designs have been produced by a competent structural engineer All temporary work designs comply with the relevant standards, regulations and codes of practice. All temporary works will be constructed in accordance with the approved design by competent staff. The injection grout of NHL will enhance the performance of the cavity fill material The open ends of the wall are to be weather proofed to ensure the remaining bedding material is not subject to deterioration. A project wide monitoring programme will be implemented as detailed in Section 3.9. 	Low
2.	Failure of the bedding material during cutting operations causing retained granite stones to dislodge along the cut line	Medium	 Prior to the wall being cut the cavity infill is to be grout injected using Natural Hydraulic Lime as detailed in section 3.1.4. The NHL will bind with the cavity infill and granite stones to reduce any dislodging/movement of the stone during cutting operations. 	Low
3.	Dislodging of the saw due to cutting operations causing damage to retained stone.	Medium	 The saw is to be fixed to the wall using a clamping detail. The clamping method is the most secure option of fixings the saw to the wall. The grout injection works will enhance the performance of saw clamping detail. 	Low
4.	Damage to existing granite stone that is to remain in place during deconstruction.	Medium	 Granite that becomes dislodged/loose during the cutting operations will be removed during the deconstruction works. This is expected to be minimal and only immediately adjacent to cut line. These granite pieces will be reinstalled into the same location during the rebuilding of the openings into the permanent arrangement. One of the first operations of the rebuild works will be to make good the cut line. 	Low
5.	Damage to stone/brick that is to be reinstalled	Medium	 On removal, granite of similar sizes are to be placed into bulk bags The coping stones (and larger stones) are to be palletised, shrink wrapped and placed into storage. The brick is to be palletised, shrink wrapped and placed in to storage. 	Low
6.	Damage to stone/brick during storage	Medium	 The storage of heritage items will be within a secure, manged area on site. Heritage items will be stored safely until they are required on site again. 	Low
7.	NHL Grout material causing efflorescence	Medium	 The NHL grout is to be trialled as per the intrusive investigation to the wall. Should efflorescence occur an alternative material is to be trialled. 	Low
8.	Damage to adjacent wall during works	Medium	 All works to be carried out in accordance with the site wide Protection Strategy Items that require protection arrangements will be detailed in the task specific method statement or task sheet. All protection arrangements to be implemented prior to works being carried out. 	Low

5. <u>Environmental</u>

5.1. Personnel Protective Equipment (PPE)

All operatives will be required to wear a minimum of the following Personnel Protective Equipment (PPE):

- Hard Hat
- High Visibility Workwear
- Gloves
- Safety boots
- Glasses.

Task specific PPE requirements will be detailed within the task sheet or method statement of the relevant work activity.

5.2. Dust suppression

During the cutting operations, dust is to be suppressed using water.

Due to the deconstruction method being carried out by hand, no dust suppression requirements are expected.

5.3. Noise

Where possible, sound blankets are to be erected during the cutting works. Any saw cutting operations will be carried out during standard working hours.

Due to the deconstruction method being carried out by hand, no noise mitigation measures are expected.

Suitable pedestrian diversions will be implemented to minimise the pedestrian interface during cutting operations.

5.4. Waste

All debris created from the works will be disposed of in the approved method, in accordance Laing O'Rourke standards. For example, depositing waste, site debris or recyclable materials into the appropriate segregated skips.

6. <u>Pedestrian interface</u>

6.1. Wall cutting and deconstruction interface

Sound barriers and debris netting are to be erected, where necessary, when working adjacent to the public on Regent Road.

6.2. Footpath diversions

Pedestrian (and cyclist if necessary) diversion routes will be implemented prior to carrying out any saw cutting or deconstruction works. Diversion routes to be installed to an approved layout.