

Appendix 19.2

BUILDING SURVEY AND EVALUATION REPORT



Bramley-Moore Dock, Regent Road, Liverpool

Building Survey and Evaluation Report

September 2020

Client: Laing O'Rourke

Issue No: 2020-21/2088

OA Reference No: L11312

NGR: SJ 33452 92491



Client Name: Laing O'Rourke
Document Title: Bramley-Moore Dock, Regent Road, Liverpool
Document Type: Building Survey and Evaluation Report
Report No.: 2020-21/2088
Grid Reference: SJ 33452 92491
Site Code: BMD20
Invoice Code: L11312
Receiving Body: National Museums Liverpool

OA Document File Location: X:\Paul\Projects\L11312_Bramley_Moore_Dock\Report
OA Graphics File Location: X:\Paul\Projects\L11312_Bramley_Moore_Dock\OAN_CAD

Issue No: Final
Date: September 2020
Prepared by: Andy Phelps and Helen Stocks-Morgan (Project Officers)
Checked by: Paul Dunn (Senior Project Manager)
Edited by: Paul Dunn (Senior Project Manager)
Approved for Issue by: Alan Lupton (Operations Manager)
Signature: 

Disclaimer:

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Oxford Archaeology being obtained. Oxford Archaeology accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person/party using or relying on the document for such other purposes agrees and will by such use or reliance be taken to confirm their agreement to indemnify Oxford Archaeology for all loss or damage resulting therefrom. Oxford Archaeology accepts no responsibility or liability for this document to any party other than the person/party by whom it was commissioned.

OA South

Janus House
Osney Mead
Oxford
OX2 0ES

t. +44 (0)1865 263 800

OA East

15 Trafalgar Way
Bar Hill
Cambridge
CB23 8SQ

t. +44 (0)1223 850 500

OA North

Mill 3
Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD

t. +44 (0)1524 880 250

e. info@oxfordarch.co.uk
w. oxfordarchaeology.com

Oxford Archaeology is a registered Charity: No. 285627



Director and Chief Executive
Gill Hey, BA PhD FSA MCIIA
Private Limited Company, No: 1618597
Registered Charity, No: 285627
Registered Office: Oxford Archaeology Ltd
Janus House, Osney Mead, Oxford OX2 0ES

Bramley-Moore Dock, Regent Road, Liverpool

Building Survey and Evaluation Report

Written by Andy Phelps and Helen Stocks-Morgan

With illustrations by Mark Tidmarsh and Debbie Lewis

Contents

| | |
|--|-----------|
| Summary..... | viii |
| Acknowledgements..... | x |
| 1 INTRODUCTION..... | 1 |
| 1.1 Scope of work..... | 1 |
| 1.2 Location, topography and geology..... | 1 |
| 1.3 Archaeological and historical background..... | 1 |
| 2 AIMS AND METHODOLOGY..... | 3 |
| 2.1 Aims..... | 3 |
| 2.2 Methodology..... | 3 |
| 3 HISTORIC BUILDING RECORDING..... | 5 |
| 3.1 Transit Shed (South Quay)..... | 5 |
| 3.2 Transit Shed Office Building..... | 25 |
| 3.3 Maintenance Shed (North Quay)..... | 32 |
| 4 EVALUATION TRENCHING..... | 52 |
| 4.1 Introduction..... | 52 |
| 4.2 Site 8 Bramley-Moore Dock west quay shed..... | 52 |
| 4.3 Site 12 Nelson Dock north quay shed..... | 58 |
| 4.4 Site 23 Bramley-Moore Dock north quay crane bases..... | 59 |
| 4.5 Site 25 Bramley-Moore Dock east quay crane bases..... | 61 |
| 4.6 Site 28 Bramley-Moore Dock red brick structure..... | 63 |
| 5 DISCUSSION..... | 65 |
| 5.1 Historic Building Record..... | 65 |
| 5.2 Evaluation Trenching..... | 66 |
| APPENDIX A WRITTEN SCHEME OF INVESTIGATION..... | 68 |
| APPENDIX B TRENCH DESCRIPTIONS AND CONTEXT INVENTORY..... | 69 |
| APPENDIX C BIBLIOGRAPHY..... | 74 |
| APPENDIX D SITE SUMMARY DETAILS..... | 75 |

List of Figures

| | |
|---------|--|
| Fig. 1 | Site location |
| Fig. 2 | Evaluation trenches superimposed on the Ordnance Survey 25":1 mile map, revised 1905 (pub. 1908) |
| Fig. 3 | Photogrammetric Survey |
| Fig. 4 | Plan of Bramley-Moore Dock showing buildings investigated |
| Fig. 5 | Plan of three bay shed on south quay of the dock |
| Fig. 6 | Plan of North Quay Building Bramley-Moore Dock |
| Fig. 7 | North/south cross-section of three bay shed on south quay of the dock |
| Fig. 8 | East/west cross-section of three bay shed on south quay of the dock |
| Fig. 9 | Plan of Bramley-Moore Dock evaluation trenches |
| Fig. 10 | Detailed trench plans |
| Fig. 11 | Detailed trench plans |

List of Plates

| | |
|----------|---|
| Plate 1 | Northern elevation of the South Quay Shed |
| Plate 2 | Sliding steel doors, with pedestrian hatch in the left door. 1m scale |
| Plate 3 | Doorway in bay 3, facing north, with 1m scale |
| Plate 4 | Pedestrian doorway in bay 18, flanked by two blocked windows, with 1m scale |
| Plate 5 | Blocked doorway in bay 9, with 1m scale |
| Plate 6 | Blocked doorway in bay 20, with 1m scale |
| Plate 7 | Blocked aperture in bay 15 |
| Plate 8 | Ground and first floor windows in Bay 1, facing north |
| Plate 9 | Two bays, facing north. Note the change in the character of the brickwork |
| Plate 10 | Looking west along the southern elevation, with the awning above |
| Plate 11 | Northern elevation, facing west, with double pedestrian doors to the left of frame |
| Plate 12 | Western elevation, facing east |
| Plate 13 | Abutting rectangular structure, facing north-east |
| Plate 14 | Eastern gable, facing west, with office at the base of the elevation |
| Plate 15 | Grooved rails, passing the southern side of the Transit Shed, facing west with 1m scale |
| Plate 16 | Switch points, manufactured by Hadfields Ltd, Sheffield |
| Plate 17 | Western Shed, facing east |
| Plate 18 | Cross-wall entrance between Western and Central Sheds. Note footing of a demolished single-storey structure to the right of frame |
| Plate 19 | Recessed panels on interior of western gable, facing west |
| Plate 20 | Steel triangular roof trusses |
| Plate 21 | Former structure in south-western corner of central shed, with 1m scale |
| Plate 22 | Former single-storey structure in bays 17 and 18, facing south |

- Plate 23 Evidence of structures in the southern-eastern corner of the central shed, facing south
- Plate 24 Remains of a probable structure in south-western corner of the eastern shed
- Plate 25 Remnants of small single-storey structure in bay 3 of eastern shed, facing south
- Plate 26 Extant two-storey office in south-eastern corner of eastern shed
- Plate 27 First floor of the two-storey office structure, facing north-west, with 1m scale
- Plate 28 Blocked opening in cross-wall between Eastern and Central Sheds, with 1m scale
- Plate 29 Squat pedestrian door, looking east, with 1m scale
- Plate 30 Steel box housing door retaining hook, with 0.4m scale
- Plate 31 Cross-wall between Central and Western Shed, facing west. Note the number 4 painted above the door
- Plate 32 Faded number 3 painted on the eastern internal gable wall of the eastern shed
- Plate 33 Bay division signage in Eastern Shed
- Plate 34 Surviving Fire Hose Station in Western Shed, with 1m scale
- Plate 35 Northern wall of eastern shed, showing partially blocked loading door in bay 7
- Plate 36 Northern half of eastern elevation, showing infilled doorway behind the left-hand window, with 1m scale
- Plate 37 Southern half of the eastern elevation, facing west
- Plate 38 Northern elevation of the Office Building
- Plate 39 Southern elevation, facing north, with 1m scale
- Plate 40 Entrance vestibule, facing east
- Plate 41 Northern office space 1, facing north
- Plate 42 Office space 2, facing east
- Plate 43 Office space 3, facing east
- Plate 44 Office space 4, facing east
- Plate 45 Storage room, facing south-east
- Plate 46 Kitchen and toilet facilities at the southern end of the corridor
- Plate 47 Maintenance Shed facing south-west
- Plate 48 Maintenance shed looked west along the dockside
- Plate 49 Western elevation of the Maintenance Shed
- Plate 50 Western elevation facing north-east
- Plate 51 Typical Crittal-style window, on western elevation, with 1m scale
- Plate 52 Maintenance Shed, facing south-east
- Plate 53 Western end of the northern elevation facing south-west
- Plate 54 Loading door on northern elevation, with 1m scale
- Plate 55 Eastern end of the northern elevation
- Plate 56 Barred window at the centre of the northern elevation, with 1m scale
- Plate 57 Loading door towards the eastern end of the northern elevation, with 1m scale
- Plate 58 Upstanding linear brick wall to the east of the Maintenance Shed, facing south-west
- Plate 59 Western elevation of the detached brick wall, facing north-east

- Plate 60 Blocked opening at the centre of the detached brick wall, facing east, with 1m scale
- Plate 61 Workshop A, facing north
- Plate 62 Workshop A, facing north-west
- Plate 63 Office space to the north of Workshop A, facing north-west
- Plate 64 Office space to the north of Workshop, facing east
- Plate 65 Drawing Office to north of Workshop A, facing north
- Plate 66 Tool Store, facing south
- Plate 67 Workshop B, facing west
- Plate 68 Workshop B, facing east
- Plate 69 Workshop C, facing north
- Plate 70 Workshop C, facing south
- Plate 71 Doorway on the eastern wall of Workshop C, facing east, with 1m scale
- Plate 72 Split height door leading from Workshop C to B, with 1m scale
- Plate 73 Office Space at the northern end of Workshop C, facing north
- Plate 74 Workshop D, facing south-east
- Plate 75 Remains of flue on southern wall of Workshop D
- Plate 76 Workshop D, facing north-west
- Plate 77 Workshop E, facing east
- Plate 78 Workshop E, facing west
- Plate 79 Workshop F, facing east
- Plate 80 Workshop F, facing west
- Plate 81 Facilities Room, facing east
- Plate 82 Facilities Room, facing west
- Plate 83 Light fitting in the Facilities Room, facing north
- Plate 84 Toilet, facing south
- Plate 85 Toilet, facing east
- Plate 86 Trench 81 looking south-west, scale 2m
- Plate 87 Column base **8104** looking north-west, scale 2m
- Plate 88 Wall **8103** looking east, scale 2m
- Plate 89 Trench 82 looking west, scale 2m
- Plate 90 Wall **8212** overlying foundation **8213**, facing north-east, with 2m scale
- Plate 91 Large sandstone wall **8206** and base **8207** to left of frame, looking south, scale 1m
- Plate 92 Trench 83 looking east, scale 2m
- Plate 93 Sandstone column base **8305** looking west, scale 1m
- Plate 94 Trench 121 looking south, scale 2m
- Plate 95 Trench 231 looking west with structures **23102**, **23104** and **23112** in the foreground, scale 2m
- Plate 96 Trench 232 looking north, scale 2m
- Plate 97 Trench 25 looking south-east, scale 2m
- Plate 98 Brick-built base **2506** with semi-circular groove, looking south-east, scale 1m
- Plate 99 Concrete slab **2509**, looking south-west, scale 1m
- Plate 100 Trench 28 looking south-west, scale 2m

Summary

Oxford Archaeology (OA) North was commissioned by Laing O'Rourke (on behalf of Everton Stadium Development Limited) to undertake an archaeological investigation of Bramley-Moore Dock (BMD) and the north quay of Nelson Dock, Regent Road, Liverpool (NGR: SJ 33452 92491)..

Following the production of a desk-based assessment (DBA) by OA North (2019), which was produced to inform a full planning application (submitted December 2019 - planning ref: 20F/0001), OA North were commissioned to agree an adequate mitigation strategy with Merseyside Environmental Advisory Service (MEAS) based upon recommendations made in the DBA and following receipt of a consultation response from MEAS.

OA North were subsequently commissioned by Laing O'Rourke to produce a Written Scheme of Investigation (WSI) and undertake the archaeological fieldwork, which included: a photogrammetric survey of the current state of the dock; building survey of two of the upstanding structures on the site; and excavation of twelve evaluation trenches; although only ten were possible to excavate at the time, situated around BMD and the north quay of Nelson Dock. The fieldwork was undertaken in May and June 2020.

A Level 2 Building Survey was undertaken of the Transit Shed on the south quay of BMD. The present building dating from between 1956-57 and 1968, during which period the earlier shed located on the south quay was demolished, and the current shed being built in the same location. Although the two sheds were very similar in form, the present building was built upon a larger footprint, presumably fulfilling the requirement for greater capacity and to accommodate the increased size of modern transport. Its constructional details are indicative of this period and the office block at the eastern end also appears to date from this period. Most recently the office block at the eastern end of the building and quay has been used by Svitzer as an operations hub for its fleet of tugs, with the remainder used for storage, as a music venue, and for filming.

A Level 1 Building Survey was undertaken of the Maintenance Building located at the western end of the north quay of BMD. The building was primarily of a single-storey but incorporated a second-storey at the western end. The building was disused but in reasonable structural condition, although there was no access to the first floor and to several rooms on the eastern side of the building.

Initially, twelve evaluation trenches were proposed to be excavated, three on Site 8 BMD west quay shed, three on Site 12 Nelson Dock north quay shed, one on Site 18 Nelson Dock Customs Depot, two on Site 23 BMD north quay crane bases, one on Site 25 BMD east quay crane bases, one on Site 28 BMD red brick structure, and one on Site 29 BMD chimney. However, upon arrival

to site, it was identified that two of the trenches could not be excavated, the trenches at Sites 18 and 29.

The trenches located on Site 8 identified the targeted structures, in the form of sandstone column bases, evenly spaced along the three trenches. The trenches in the other locations did not appear to identify the structures they had been intended to target. The trenches targeting crane bases, Sites 23 and 25, identified structures which likely related to the High Level Coal Railway on their respective quays. The trenches located on Site 12 only identified archaeological remains, in the form of a north/south aligned brick wall, in Trench 121. The trench on Site 28 identified some brick-built drains including a manhole.

The column bases and walls identified in the trenches on Site 8 appeared to correspond well with historic mapping, whilst the archaeological remains in the remaining trenches, specifically those on Sites 23 and 25, likely related to the High Level Coal Railway. The wall identified in Trench 121 potentially related to an internal wall of the shed located on the north quay of Nelson Dock.

The recommendations made in the DBA for a Level 1 Building Survey of Site 24, Level 2 Building Recording of Site 11, and excavation of Sites 8 and 12 were completed as part of this phase of works, although no column bases were identified in the trenches excavated on Site 12. The recommendations for the excavation of Sites 23, 25 and 28 were undertaken as part of this phase of works but did not appear to encounter their targeted structures, as such, they will need to be monitored by an archaeological watching brief during pre-commencement works. The excavations of Sites 18 and 29 could not be undertaken at this time due to access issues, as such, they will be required to be excavated once the area becomes available. Watching brief will also be required during pre-construction works in the areas of Sites 14, 15, 16, 17, 19 and 30.

Acknowledgements

Oxford Archaeology (OA) North would like to thank Laing O'Rourke for commissioning this project. Thanks are also extended to Ben Croxford of Merseyside Environmental Advisory Service (MEAS), who monitored the work on behalf of Liverpool City Council.

The project was managed for OA North by Paul Dunn. The photogrammetric survey fieldwork was undertaken by Debbie Lewis and Jamie Quartermaine, the building survey fieldwork was undertaken by Andy Phelps, Debbie Lewis and Hannah Leighton, whilst the evaluation fieldwork was undertaken by Anne Templeton, Lauren Basnett and Selina Dean. The building survey report was written by Andy Phelps, whilst the evaluation report was written by Helen Stocks-Morgan. Survey and digitization was carried out by Debbie Lewis and Mark Tidmarsh.

1 INTRODUCTION

1.1 Scope of work

- 1.1.1 Oxford Archaeology (OA) North was commissioned by Laing O'Rourke (on behalf of Everton Stadium Development Limited) to undertake an archaeological investigation of Bramley-Moore Dock (BMD) and the north quay of Nelson Dock, Regent Road, Liverpool (NGR: SJ 33452 92491; Fig 1).
- 1.1.2 Following the production of a desk-based assessment (DBA) by OA North (2019), which was produced to inform a full planning application (submitted December 2019 - planning ref: 20F/0001), OA North were subsequently commissioned to agree an adequate mitigate strategy with Merseyside Environmental Advisory Service (MEAS) based upon recommendations made in the DBA and following receipt of a consultation response from MEAS. Liaison with the client and the archaeologist for MEAS, as advisors to Liverpool City Council, further refined the scope of works to be undertaken. OA North were subsequently commissioned by Laing O'Rourke, following their appointment as Principal Contractor for the project, to produce the Written Scheme of Investigation (*Appendix A*) and undertake the archaeological fieldwork, which included: a photogrammetric survey of the current state of the dock; building survey of two of the upstanding structures on the site; and excavation of twelve evaluation trenches, although only ten were possible to excavate at the time, situated around BMD and the north quay of Nelson Dock. The fieldwork was undertaken in May and June 2020.

1.2 Location, topography and geology

- 1.2.1 Bramley-Moore Dock (centred on NGR SJ 33452 92491; Fig 1) is constructed on land reclaimed from the River Mersey, within the Liverpool Maritime Mercantile City World Heritage Site (WHS) and within the Stanley Dock conservation area. The site is bordered by Regent Road to the east, with Nelson Dock to the south, Wellington Dock to the north and the River Mersey to the west.
- 1.2.2 The solid geology of the area is mapped as Pebbly (gravelly) Sandstone of the Chester Formation formed in the Triassic Period (BGS 2020). The drift geology of the area is mapped as Clay, Silt and Sand Tidal Flat Deposits formed in the Quaternary Period (*ibid*).

1.3 Archaeological and historical background

- 1.3.1 The archaeological and historical background has been described in detail in the Archaeological Desk-Based Assessment (DBA) produced by OA North (2019) submitted with the original planning application (planning ref: 20F/0001), and will not be reproduced here, although a brief summary is provided below.
- 1.3.2 BMD provided bunker coal for steamships transported from the Lancashire coalfields. In the 1850s, the High Level Coal Railway on the east quay was constructed by the Lancashire and Yorkshire Railway Company, which allowed coal wagons to access Bramley-Moore and Wellington Docks and dump coal directly into the holds of waiting ships. An extension was added in 1884, on BMD's north quay; elements of this

structure survive, connected to the Hydraulic Accumulator Tower at the north-eastern corner of the dock.

- 1.3.3 In 1893, The Liverpool Overhead railway was constructed; this was an electric railway which ran along the whole length of the Liverpool docks. The electricity generating station for the railway was at BMD and comprised engines powered by coal, which was dropped into them from the High Level Coal Railway which passed directly above.
- 1.3.4 The significance of the site rests largely on the period and group value of Jesse Hartley's 1848 central docks developments; and the important part played by the subsequent development of railway infrastructure in the later nineteenth century. The remains of the High Level Coal Railway and its connections to the Liverpool Overhead Railway are significant in terms of their rarity, survival, vulnerability and potential to provide significant archaeological evidence pertaining to the importance of BMD to the railway infrastructure of the Liverpool Docks.

2 AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The project aims and objectives were as follows:

- i. to adhere to and fulfil the agreed programme of works associated with the archaeological potential of the site, and, consequently, negate or limit any archaeological conditions being imposed on the development, dependent on results;
- ii. to inform a decision as to whether further archaeological works will be required in advance of the development ground works;
- iii. to determine or confirm the general nature of any remains present;
- iv. to determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence;
- v. to record the upstanding structural features of the dock, including the south quay shed, a building at the north-eastern end of the north quay and the dock structure itself, prior to their demolition;
- vi. to evaluate the level of survival of early structural remains;
- vii. to ascertain the form and function of early structural remains, which are no longer upstanding;
- viii. to compile a profession archival record of any archaeological remains within the evaluation works.

2.2 Methodology

2.2.1 **Introduction:** the project methodology, set out in the WSI (*Appendix A*), was adhered to in full, although for health and safety reasons it was necessary to modify the exact location of one trench to avoid services identified through CAT scanning. In addition, the location of two of the twelve trenches was not suitable for excavation due to issues with access. The works were fully compliant with current guidelines and industry best practice (ClfA 2019a; 2019b; 2020a; 2020b; Historic England 2015 and 2016).

2.2.2 **Photogrammetric and Building Surveys:** the photographic survey was carried out to Historic England Level 1 and 2 survey guidelines (Historic England 2016) and based upon architects' plans that have been provided by the client.

2.2.3 The survey included photographs of the external appearance and setting of the buildings, including a mixture of general shots and detailed views taken from perpendicular and oblique angles. It recorded the general appearance of the principal rooms and circulation areas and provided shots of any external or internal detail, structural or architectural, which was determined to be relevant to the design, development and use of the buildings. Internally, detailed views were captured of any areas of special architectural interest, including fixtures and fittings and fabric detail relevant to phasing the building.

2.2.4 A Canon EOS 2000D digital SLR (24 megapixels) camera with a selection of lenses, was used for the general photographic record. Images in Canon RAW format files (.cr2 format) were captured and saved as 8-bit TIFFs for archive purposes. The data are

stored on two separate servers, each on different sites and with appropriate back-up and disaster plans in place.

- 2.2.5 Architects' plans as supplied by the client were annotated on site to produce a photographic location map showing the position and direction of all photographs.
- 2.2.6 **Evaluation Trenching:** the position of the trenches to be excavated was set out by use of dGPS (accurate to 0.02-0.03m) and service checks were undertaken by OA North. Following pre-excavation scanning with a CAT trench 231 was shifted 10m to the east but the location of all other trenches was as per the approved WSI V.4 (*Appendix A*) Overburden was removed by 13-ton mechanical excavator and stored immediately adjacent to the trenches.
- 2.2.7 All information identified during the site works was recorded stratigraphically, using a system adapted from that used by the former English Heritage Centre for Archaeology with an accompanying pictorial record (plans, sections and digital photographs). Primary records were available for inspection at all times.
- 2.2.8 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes a photographic record, and accurate large-scale plans and section at appropriate scale (1:50, 1:20 and 1:10).
- 2.2.9 **Archiving:** a full professional archive was compiled in accordance with the WSI, and with current professional guidelines (ClfA 2020b; Historic England 2015) and local specific guidelines (NML 2020). The archive will be deposited with National Museums Liverpool

3 HISTORIC BUILDING RECORDING

3.1 Transit Shed (South Quay)

External

- 3.1.1 The Transit Shed occupied a position on the southern quay of BMD (Fig 4) and was an elongated linear structure of 31 bays lying beneath a continuous shallow pitched gable roof of corrugated metal (Plate 1). It was constructed of hard-fired red brick laid in three courses of stretchers to each course of headers using a cementitious mortar and, typically, each bay was visually and structurally divided from the next by a vertical concrete pier topped by a horizontal concrete beam that extended the full length of the building at lintel height. The building was sub-divided into three sections by two cross-walls, creating two ten-bay structures either side of a central eleven-bay section and for the purposes of description its interior is examined using this division.



Plate 1: Northern Elevation of the South Quay Shed

- 3.1.2 On the southern elevation all three sheds had a loading entrance within every third bay, except where the buildings adjoined, where two blind bays were left either side of the cross-wall. The entrances were fitted with a pair of green steel doors, mounted on a sliding top rail and within bays 5, 8, 13, 19, 24 and 30 one of these doors incorporated a raised hatch to provide pedestrian access without the need to open the larger doors (Plate 2). Further pedestrian access was granted via single-width doors in bays 3 (Plate 3) and 18 (Plate 4), both of which had been latterly fitted with modern doors and in bays 9 and 20 two further doors of this type had been blocked in brick (Plates 5 and 6). In addition, there were two blocked rectangular windows in bays 17 and 18 (Plate 4) and a smaller blocked opening in bay 15 (Plate 7). Only within the easternmost bay was there evidence of a first-floor, with a rectangular first-floor

window flanked to the west by a tiny square window fitted into what had evidently once been a larger opening (Plate 8). These two windows were matched by two of identical character beneath, but all had been replaced with modern double-glazed units.



Plate 2: Sliding steel doors, with pedestrian hatch in the left door. 1m scale

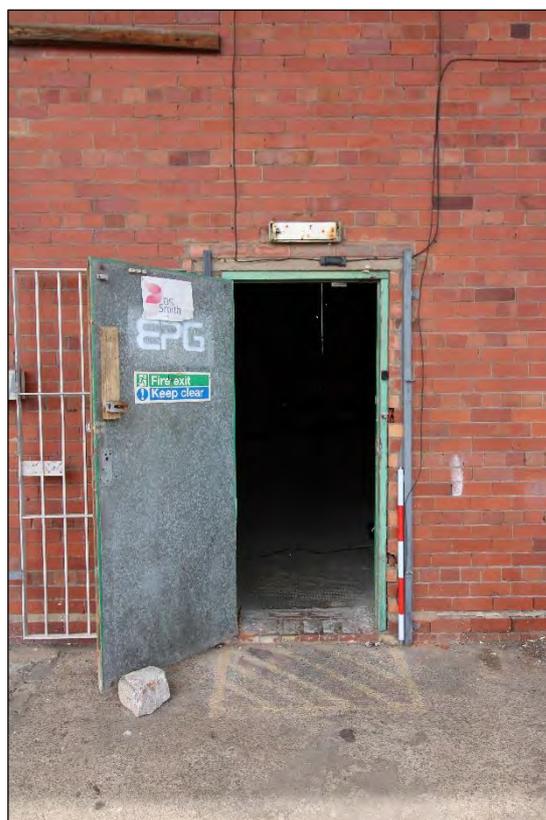


Plate 3: Doorway in bay 3, facing north, with 1m scale

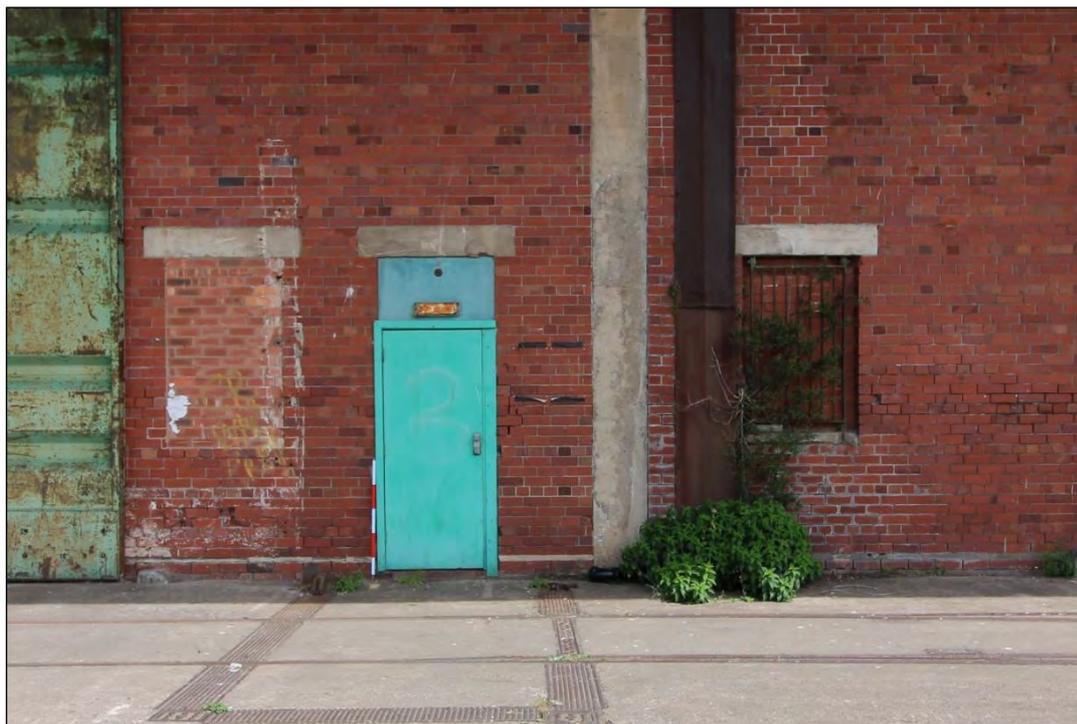


Plate 4: Pedestrian doorway in bay 18, flanked by two blocked windows, with 1m scale



Plate 5: Blocked doorway in bay 9, with 1m scale



Plate 6: Blocked doorway in bay 20, with 1m scale



Plate 7: Blocked aperture in bay 15



Plate 8: Ground and first floor windows in Bay 1, facing north

- 3.1.3 Within the eastern nine bays there was a slight change in the character of the brick work above mid-height, suggesting a possible rebuilding or perhaps more likely a contemporary construction break (Plate 9). A corrugated steel awning resting upon half trusses projected south along the full width of all three sheds, extending the pitch of the roof to cover the loading bays on this side of the structure (Plate 10).



Plate 9: Two bays, facing north. Note the change in the character of the brickwork



Plate 10: Looking west along the southern elevation, with the awning above

3.1.4 The northern elevation of the eastern shed had a double width door located within every second bay. Each opening comprised a sliding, top-mounted double door of the type described on the southern elevation, except within Bay 1, where a smaller double doorway better suited to pedestrian access had been fitted (Plate 11). The northern elevation of the Western shed was similarly arranged in reverse but lacked the pedestrian entrance and the two northernmost bays were left blind (Plate 1). The same pattern was used on the Central shed too, although where the buildings adjoined there were a pair of blind bays.

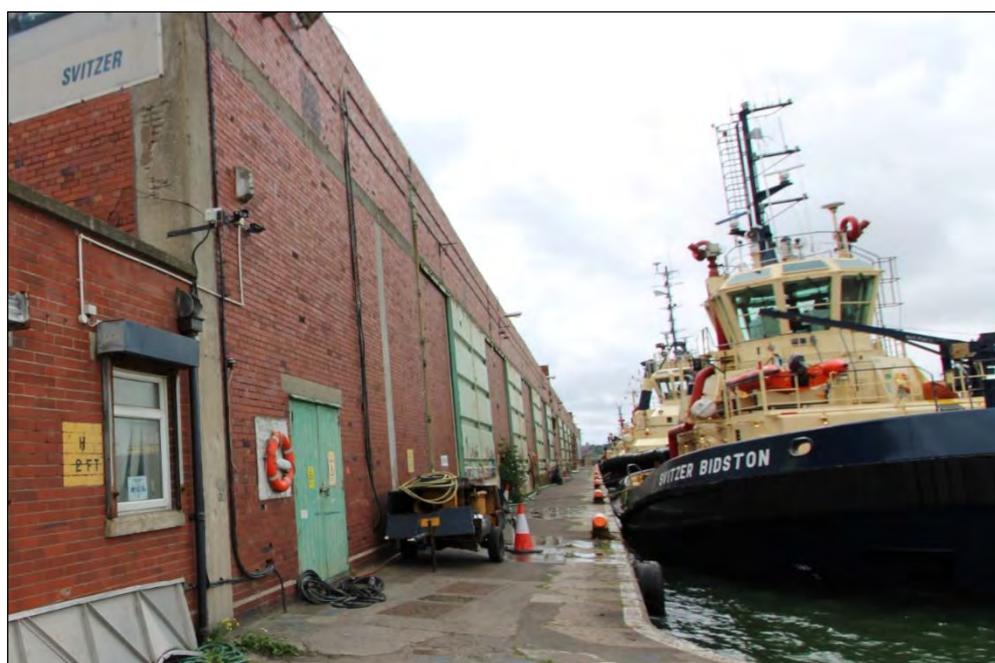


Plate 11: Northern elevation, facing west, with double pedestrian doors to the left of frame

3.1.5 The western gable elevation employed the same construction techniques as the remainder of the building, being divided into three bays by a pair of concrete piers topped by a lintel of the same, but it revealed no openings or evidence that there had been any (Plate 12). The only feature of note was a small rectangular brick structure with a flat concrete roof that abutted the wall to the south of centre and must formerly have been fitted with a door on its western side (Plate 18).



Plate 12: Western elevation, facing east



Plate 13: Abutting rectangular structure, facing north-east

3.1.6 The eastern gable appeared similar to the western one, but its lower portions were masked by the presence of the single-storey office building (Plate 14). Although much obscured by modern signage in the upper gable, there were traces of white painted lettering on a light blue background that spelt out the docks name. At the south end, a single, small first-floor window represented the elevation’s only aperture.



Plate 14: Eastern gable, facing west, with office at the base of the elevation

3.1.7 A grooved railway line passed in close proximity to the southern side of the shed, approaching from the east and immediately dividing into two before crossing each other at the centre of the shed and reforming into one line at the western end (Plate 15). The tracks were of standard gauge, flush with the ground surface and preserved the remnants of a series of switching points along its length (Plate 16). The points were hand operated by an iron lever to one side of the track and carried the manufacturers name “Hadfields Ltd Sheffield”, a name in use between 1913 and 1951. To the south, the rails were flanked by a surface of durable stone setts, that extended the full length of the shed but had only a width of approximately 5m.



Plate 15: Grooved rails, passing the southern side of the Transit Shed, facing west with 1m scale

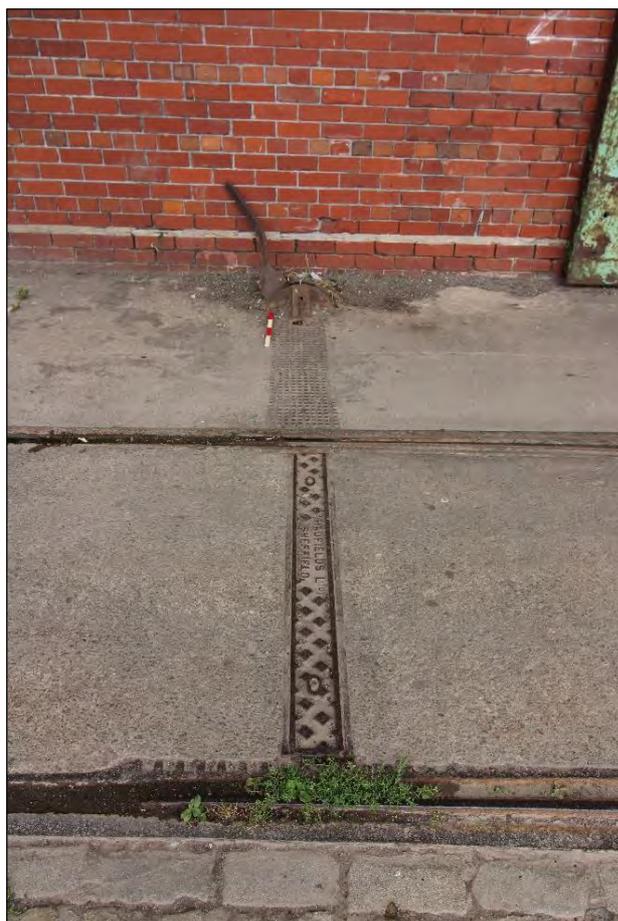


Plate 16: Switch points, manufactured by Hadfields Ltd, Sheffield

Interior

- 3.1.8 The interior of each shed provided a largely uninterrupted open space from floor to ceiling (Plate 17) and each of the three sheds was connected via a pair of sliding steel doors at the centre of the shared cross-wall (Plate 18). On their internal elevations the blind bays incorporated pairs of rectangular panels at mid-height, chamfered along their bottom edges and stepped along the top. At the gable ends, additional panels were incorporated into the upper gables (Plate 19).



Plate 17: Western Shed, facing east

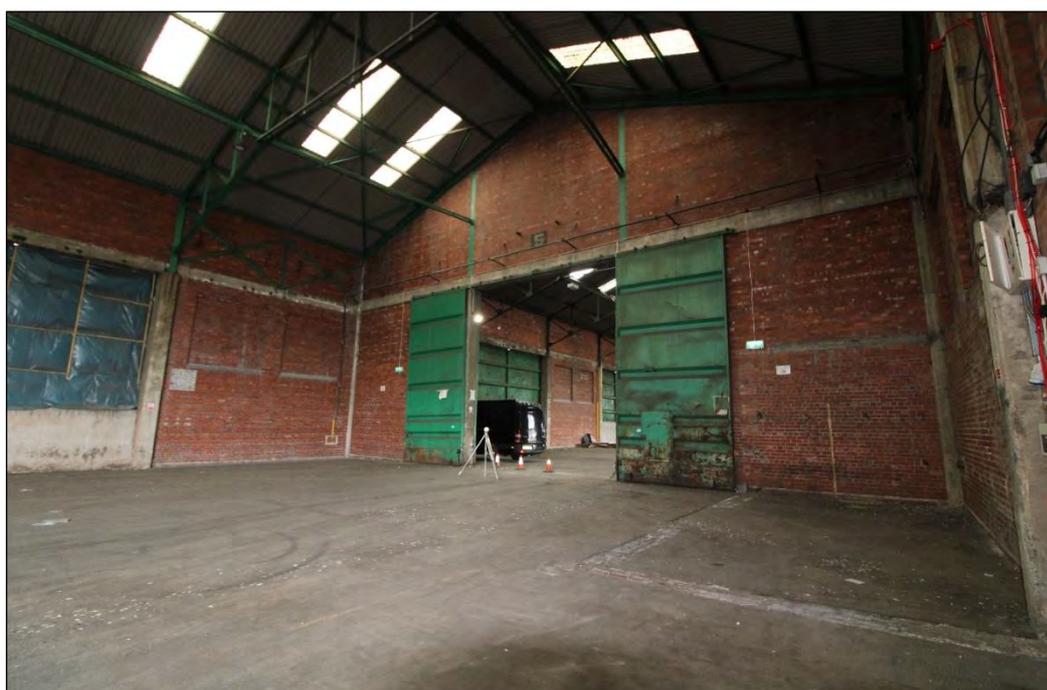


Plate 18: Cross-wall entrance between Western and Central Sheds. Note footing of a demolished single-storey structure to the right of the frame

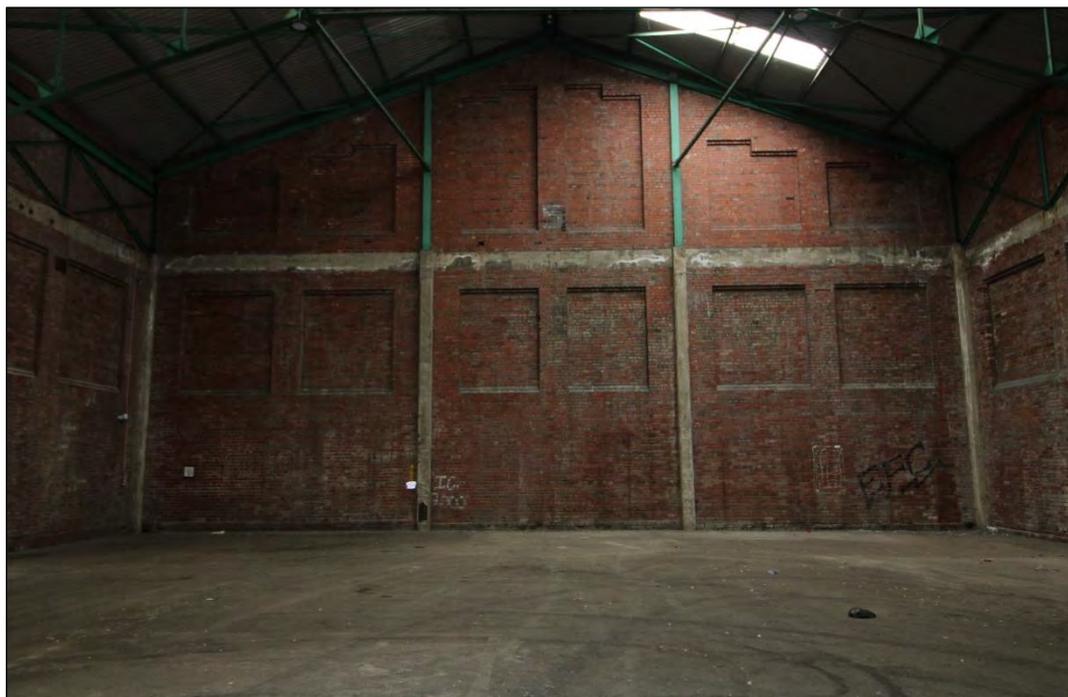


Plate 19: Recessed panels on interior of western gable, facing west

3.1.9 The roof had been re-covered, at some point, with modern corrugated sheet and featured a series of roof lights to provide additional internal illumination. It was supported upon a framework of triangular steel roof trusses, that incorporated a raised bottom chord to provide additional working height within the building (Plate 20). The ends of each truss rested upon the tops of the concrete piers that defined each bay and were tied together by a central ridge purlin, four purlins on each pitch and another two that connected the bottom chords.



Plate 20: Steel triangular roof trusses

- 3.1.10 The spartan nature of the building meant that there were relatively few features of historic interest surviving, although it was evident that there had formerly been a series of smaller single-storey cells erected against the southern wall.
- 3.1.11 The first of these was identified in the south-eastern corner of the western shed, where the footing of a demolished rectangular structure was identified, along with the scar of what must have been its single-storey flat roof (Plate 18). The building must have been accessible only from the interior of the shed, with no evidence of a door connecting it directly to the exterior.
- 3.1.12 The remnants of a second structure was recorded in the adjacent bay, in the south-western corner of the central shed, where a vertical wall scar on the cross-wall and the use of glazed brickwork to its south suggested the former location of a toilet or some other sanitary provision (Plate 21). It was apparent from the differing character of the brick that the adjacent southern wall of the shed had been rebuilt at this point, below a mid-height concrete lintel and in the adjoining bay to the east lay the infilled pedestrian doorway identified externally. In addition, traces of a cream paint had been applied to the surface of the brickwork above the glazed tiles and around the blocked doorway, suggesting a subdivision from the remainder of the shed.



Plate 21: Former structure in south-western corner of the central shed, with 1m scale

- 3.1.13 A third structure was observed on the south wall of the central shed, spanning bays 17 and 18 and coinciding with one of the surviving pedestrian entrances and the location of its two flanking blocked windows (Plate 22). The former extents of this structure were again defined by the application of paint to the wall, the vertical scars of two end walls and at least one cross-wall that suggested a structure of at least two cells.

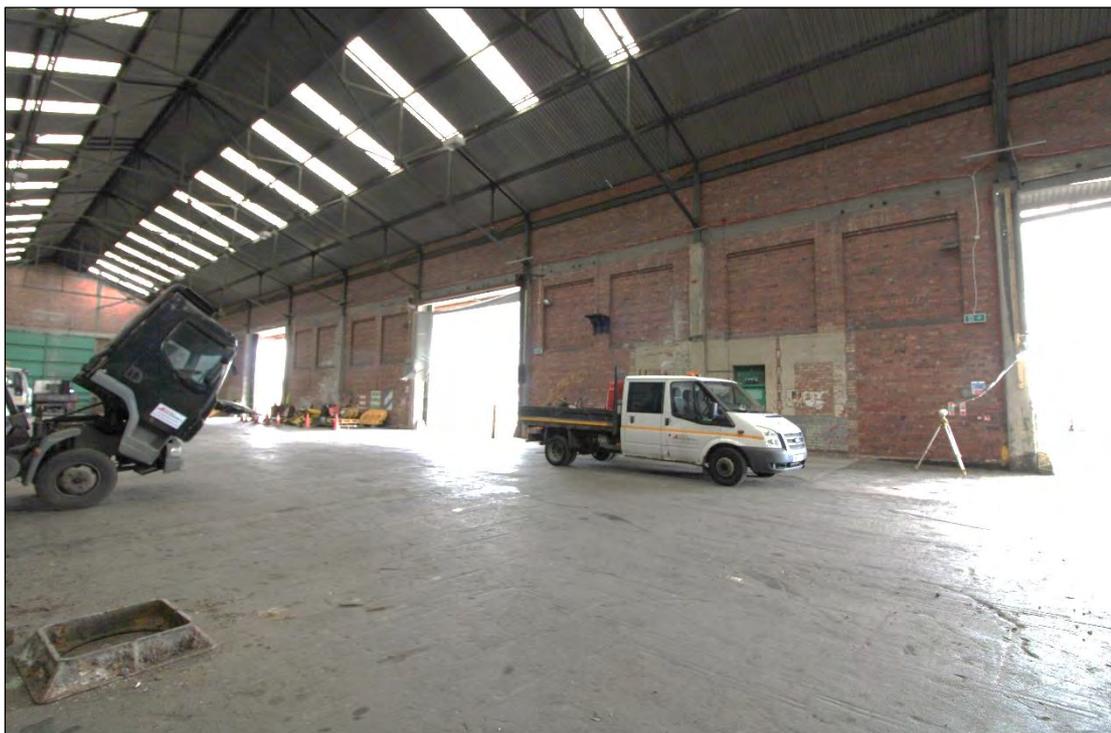


Plate 22: Former single-storey structure in bays 17 and 18, facing south

3.1.14 Within bay 12, towards the eastern end of the central shed, the outline of another single-storey structure was recorded against the building's southern wall (Plate 23). Here, two vertical wall scars and a horizontal roof scar defined an area of wall to which a cream paint had been applied above a dark green base at the foot of the wall. At approximately 3.5m in length this structure was the smallest of those identified and could only have been accessed from the interior of the shed.



Plate 23: Evidence of structures in the south-eastern corner of the central shed, facing south

3.1.15 In the adjacent bay, to the east, further vertical wall scars against the cross-wall and the southern wall of the central shed preserved evidence for a fifth structure (Plate 23). A wall footing extending north from the southern wall defined the western end of this building and its roof line was again visible as a horizontal scar. From the brick work of the cross-wall at the eastern end of this building, there had evidently been a substantial rebuild and perhaps the blocking of a rectangular aperture at first-floor level. This reconstruction was also visible within the adjacent bay in the south-western corner of the eastern shed, where in a manner similar to bay 21, the southern wall of the shed had been rebuilt to the level of a mid-height concrete lintel (Plate 24). As with bay 21, there was also a blocked pedestrian doorway in the adjoining bay to the east, surrounded by a coat of white paint.

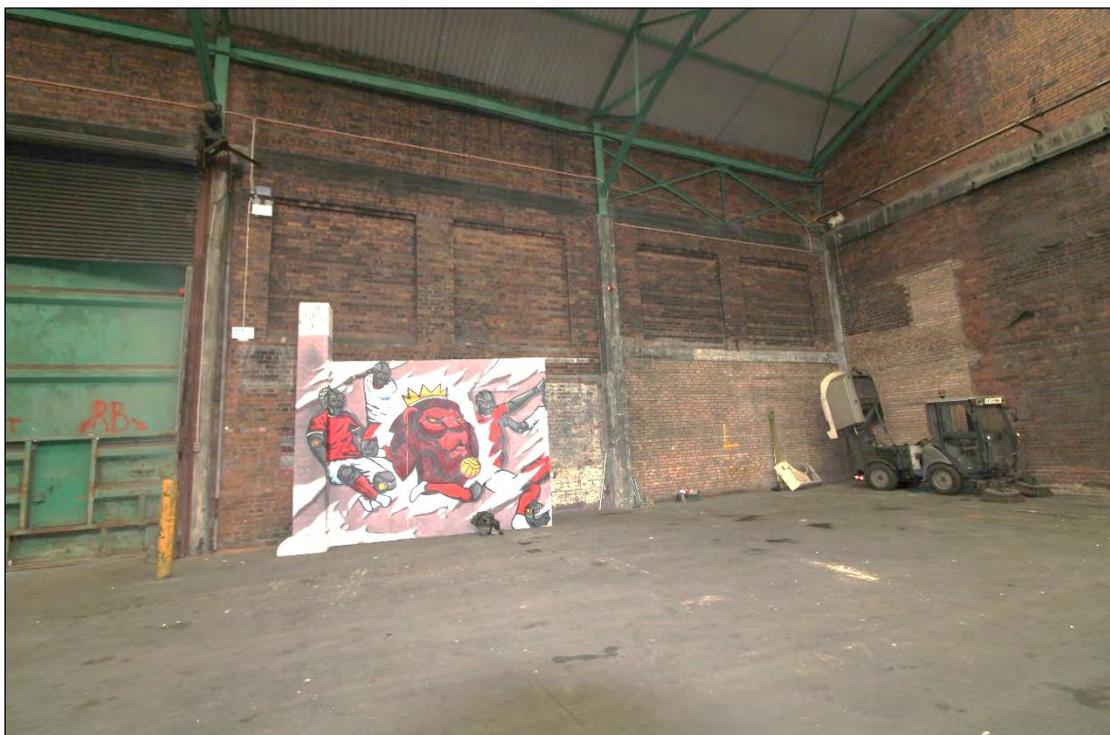


Plate 24: Remains of a probable structure in south-western corner of the eastern shed

3.1.16 In bay 3 of the eastern shed another small single-storey structure was identified by its remaining cream coloured paint and its ceiling and roof scars (Plate 25). The structure occupied a position to the east of a pedestrian doorway within this bay and despite the loss of its walls its north-western corner could be identified by the survival of a concrete bollard that must have protected it from traffic.

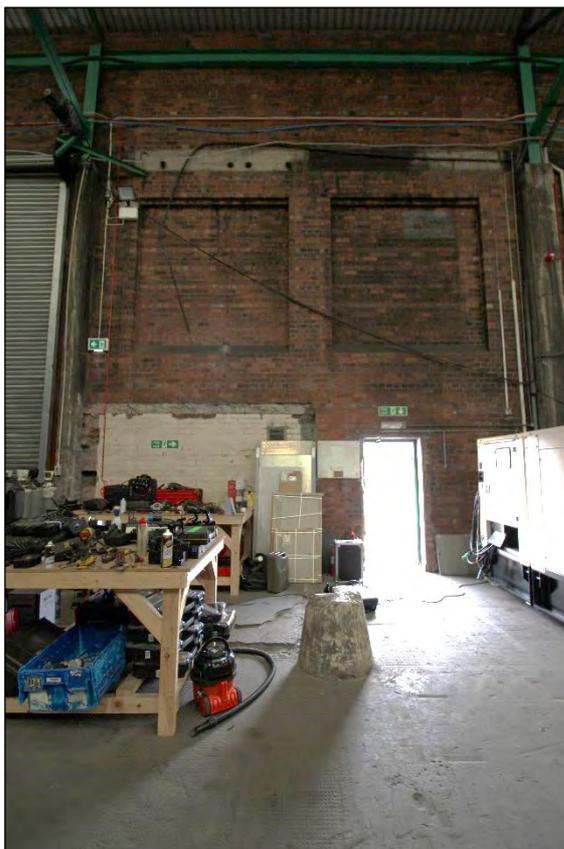


Plate 25: Remnants of small single-storey structure in bay 3 of the eastern shed, facing south

3.1.17 The easternmost bay of the eastern shed preserved two upstanding internal structures, with a two-storey building in the south-eastern corner accessed via a set of steps at its western end (Plate 26), and a single-storey structure abutting the north-eastern corner, which was only accessible from the shed's northern external elevation. The latter was obscured by modern racking and equipment, while the upper floor of the former was sub-divided into two modern office spaces, lit by windows on all four walls (Plate 27), while the lower floor, which had a doorway on its western wall, was not accessible.

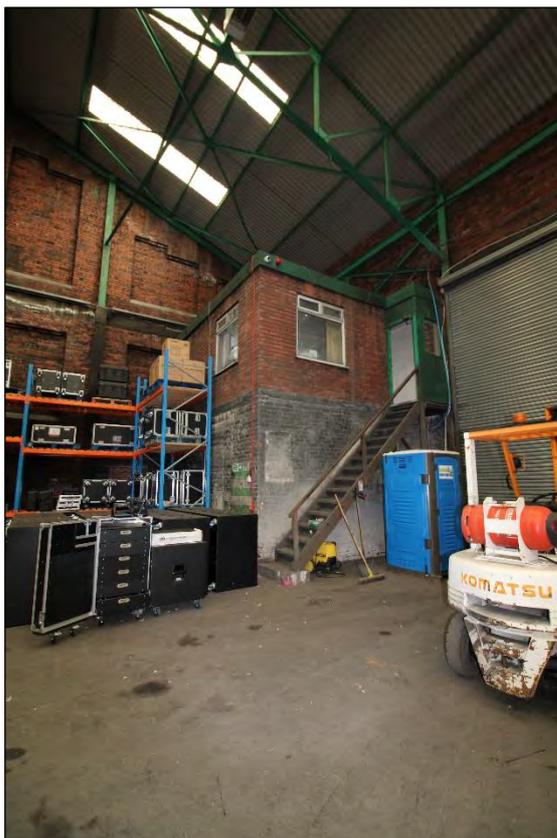


Plate 26: Extant two-storey office in the south-eastern corner of the eastern shed

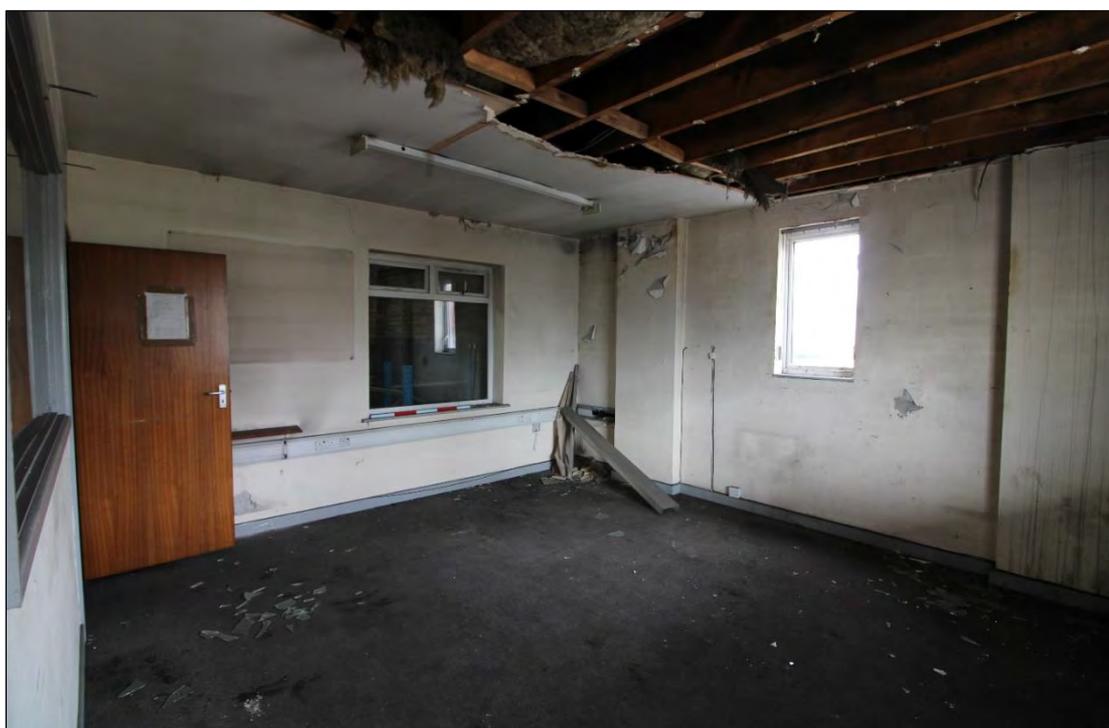


Plate 27: First floor of the two-storey office structure, facing north-west, with 1m scale

3.1.18 On the cross-wall between the eastern and central sheds there were several other features of note. The largest was a very tall and narrow aperture at the northern end that had been subsequently infilled with brick (Plate 28). Immediately to its south a

sign pointed in the direction of a control room and towards Shed 4, both of which were accessible via a squat pedestrian doorway, which was hidden to the east by one of the sliding steel doors but visible from the west (Plate 29). Also, on the western elevation of this cross-wall, a steel box set within a vertical recess to the south of the main sliding steel doors housed a metal hook that presumably secured the doors when required (Plate 30).



Plate 28: Blocked opening in cross-wall between Eastern and Central Sheds, with 1m scale

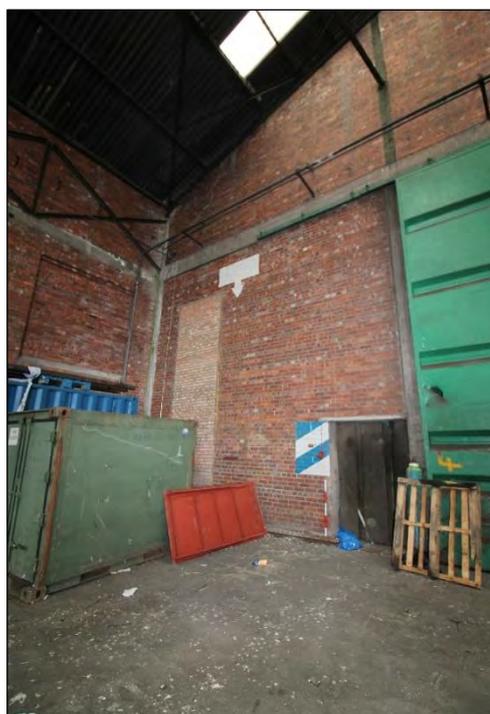


Plate 29: Squat pedestrian door, looing east, with 1m scale



Plate 30: Steel box housing door retaining hook, with 0.4m scale

3.1.19 Evidence for the organisation of the sheds was preserved in the upper gables of the cross-walls, where a number was recorded in white letter on a black background. In this manner the western shed was evidently known as number 5 (Plate 18), the central shed 4 (Plate 31) and the eastern shed 3 (Plate 32). Furthermore, in the eastern shed several of the bays had been attributed a number, painted in red onto a white background (Plate 33). It was also noted that the walls of this shed were dirtier than the other two, with a coating of black soot or grime.



Plate 31: Cross-wall between Central and Western Shed, facing west. Note the number 4 painted above the door



Plate 32: Faded number 3 painted on the eastern internal gable wall of the eastern shed

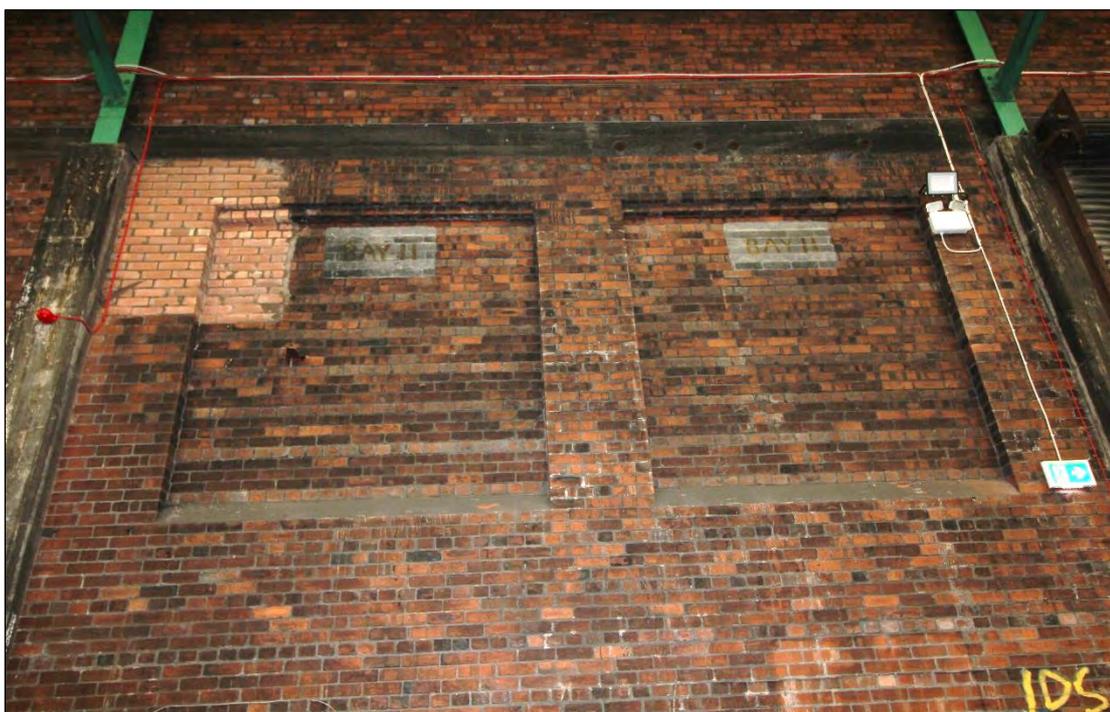


Plate 33: Bay division signage in Eastern Shed

3.1.20 At regular intervals along the northern wall of all three sheds provision had been made for a series of fire hose stations, which where it survived, took the form of a shallow projecting brick surround housing a red drum for winding the hose (Plate 34). All but

one of these stations had been removed, but the scar remained and in many cases a sign with an arrow had been painted on the wall above each point.

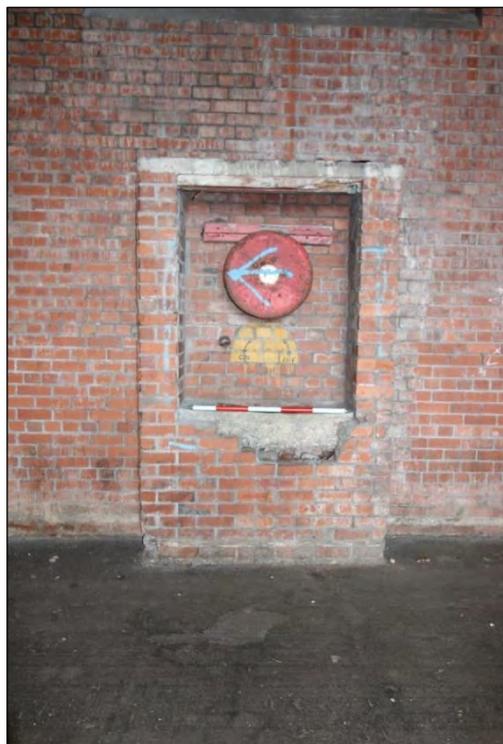


Plate 34: Surviving Fire Hose Station in Western Shed, with 1m scale

3.1.21 In the western and central sheds the lower thirds of each of the large loading doors had been fitted with a reinforced concrete barrier, but in the easternmost shed only one of the entrances had been modified in this way, blocking the loading door in bay 7 to two-thirds height (Plate 35).

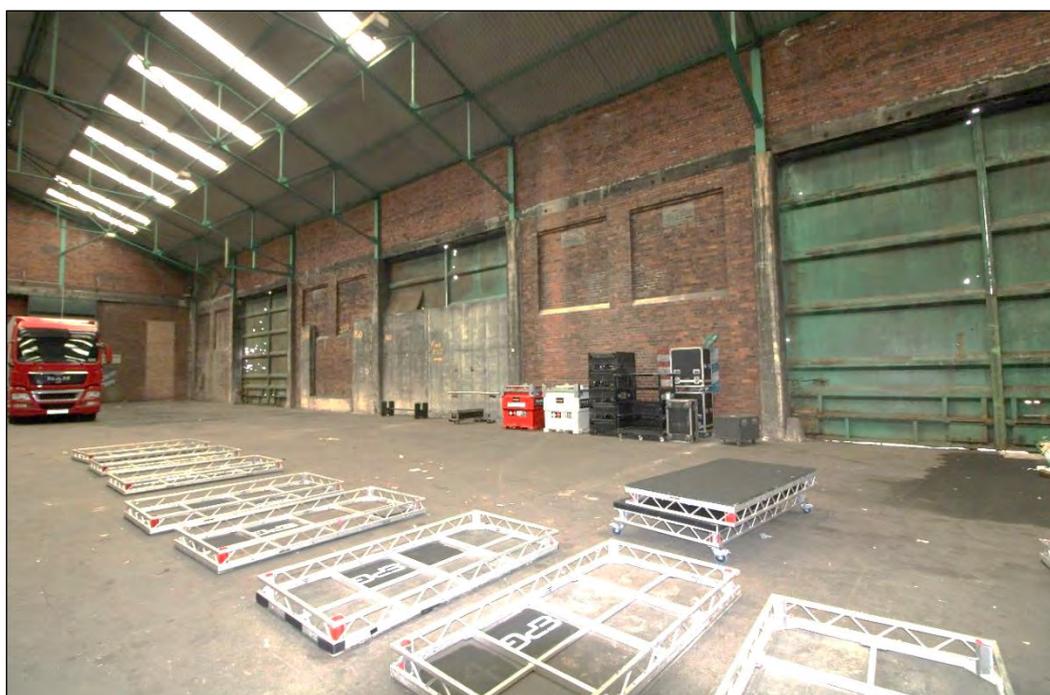


Plate 35: Northern wall of eastern shed, showing partially blocked loading door in bay 7

3.2 Transit Shed Office Building

Exterior

3.2.1 Attached to the eastern end of the transit shed was a small L-shaped red brick structure with a two-stage flat roof surrounded by a concrete coping (Plate 14). The building was of two parts, with the northern end of the eastern elevation set back from the remainder. The entrance lay at the southern end of the northern half, with a pair of large rectangular windows to its north, both fitted with modern double-glazed units and steel roller shutters. The brickwork surrounding the southern of these windows was of a lighter colour than the surrounding bricks and appeared to indicate the former presence of a wide doorway into which the present window had been inserted (Plate 36). The southern half of the elevation incorporated three regularly-spaced rectangular windows, each modified in the same manner as the previous two, but in each case an original sandstone lintel was just visible behind the roller shutter housing (Plate 37). A second and slightly larger doorway was recorded at the southern end of the elevation, which, from the position of the original lintel, had once been an opening of slightly narrower proportions.

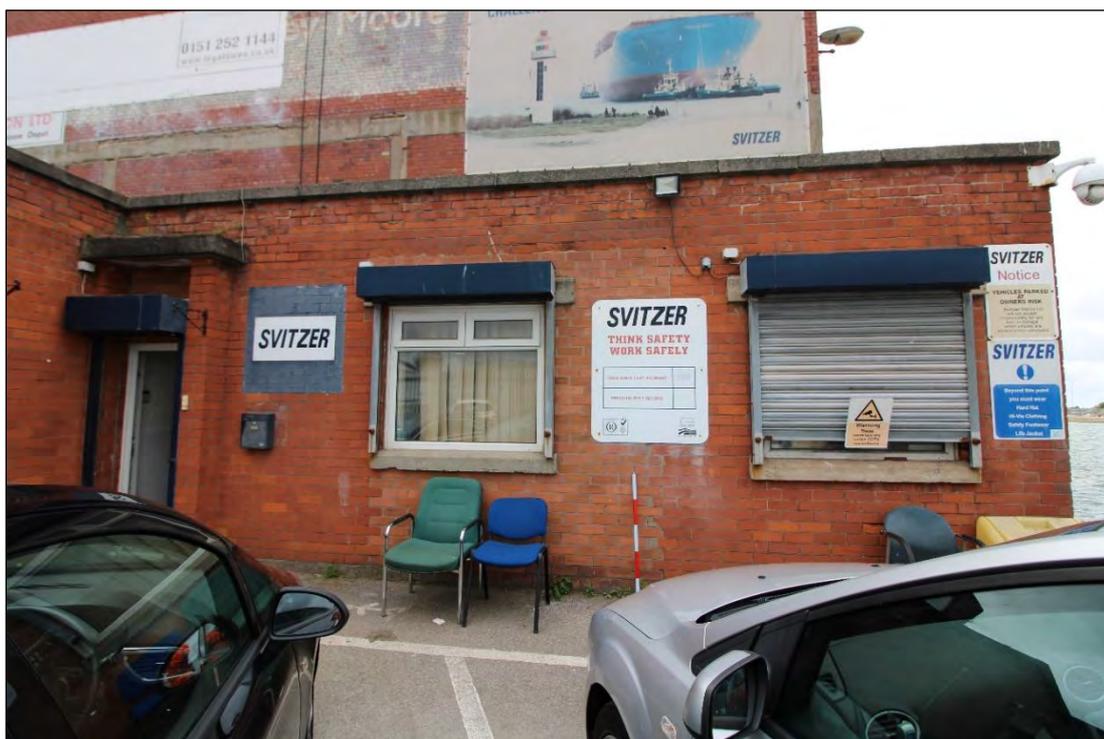


Plate 36: Northern half of the eastern elevation, showing infilled doorway behind the left-hand window, with 1m scale

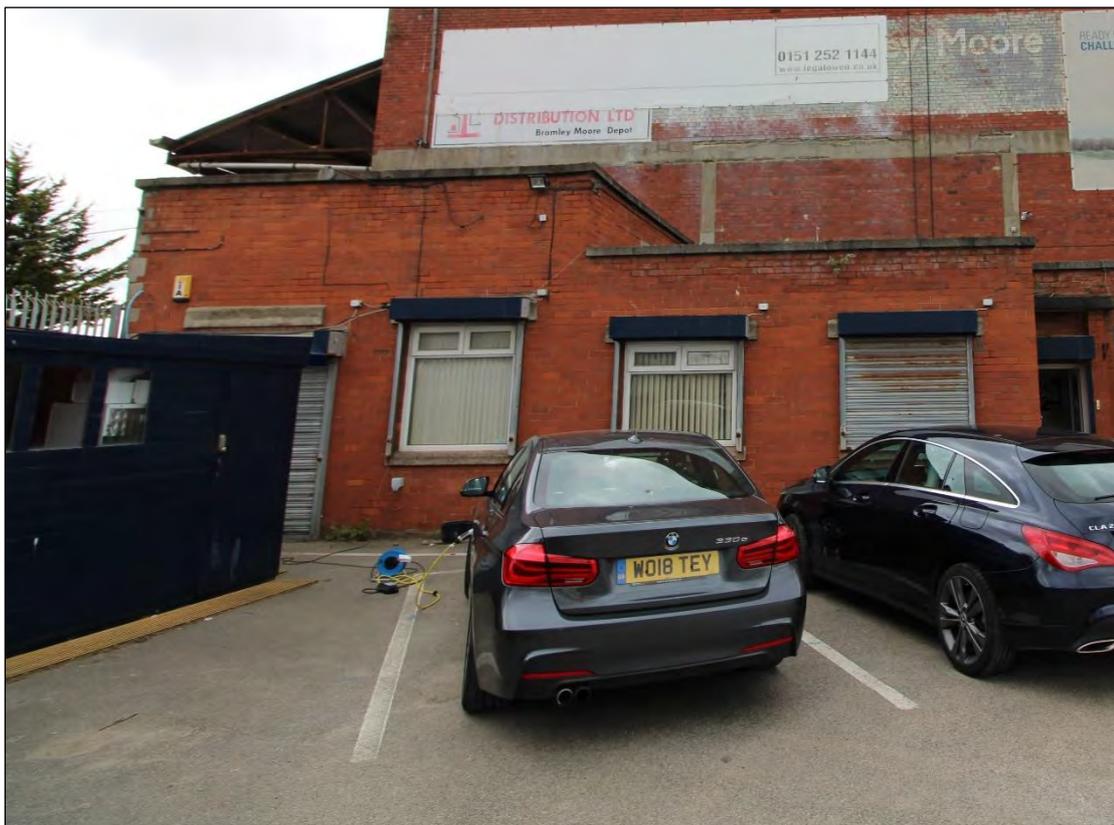


Plate 37: Southern half of the eastern elevation, facing west

- 3.2.2 The building's northern elevation abutted that of the Transit Shed at its north-eastern corner and displayed two further modified rectangular windows but nothing else of note (Plate 38). The southern elevation abutted the south-eastern corner of the Transit Shed and was canted slightly to the north-east to allow for the former line of the railway tracks that curved around the building at this point before continuing west along the southern side of the Shed (Plate 39). Where the angle of the wall changed, alternating concrete blocks had been employed at the transition and either side of these blocks lay a small square window with concrete sill and lintel. Both had been fitted with steel security bars to prevent access. At the eastern end of the elevation a concrete lintel and a change in the character of the brick work denoted the former presence of a large rectangular opening, which appeared to have been reduced in size and then finally blocked completely. At the western end a low brick chimney stack projected from the roof line, interrupting the concrete coping.

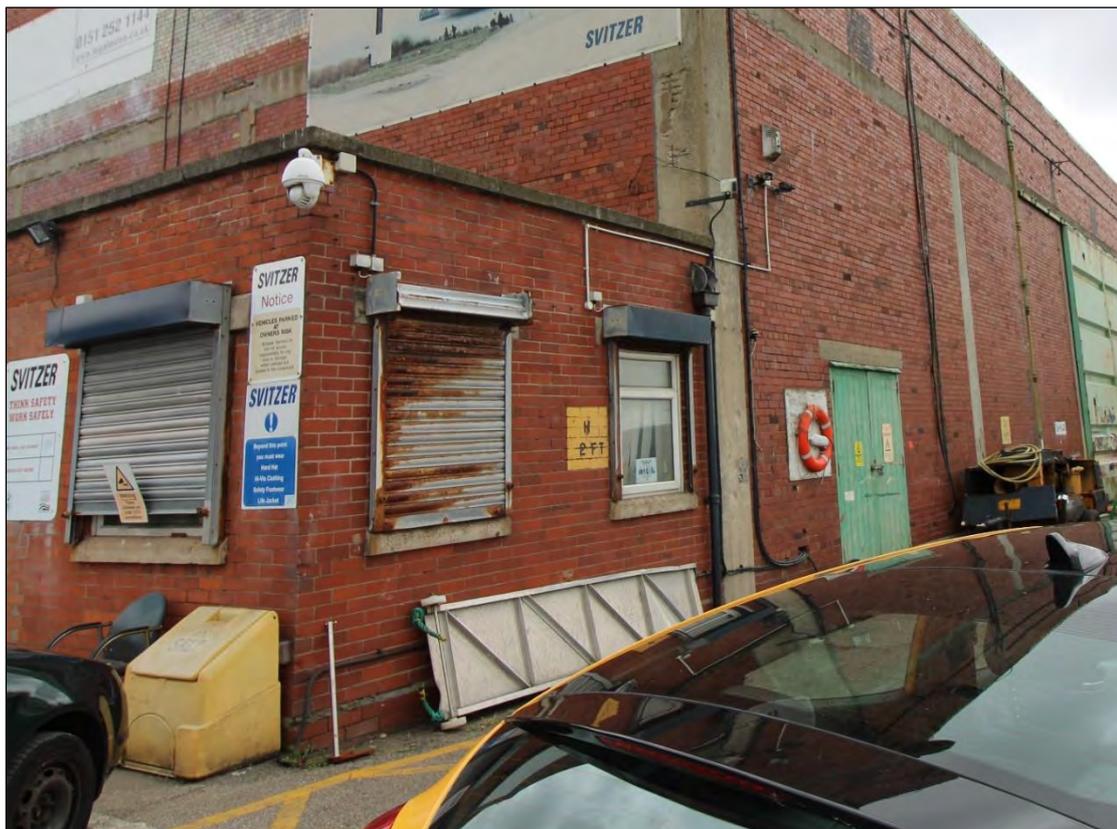


Plate 38: Northern elevation of the Office Building



Plate 39: Southern elevation, facing north, with 1m scale

Interior

3.2.3 The entrance to the building opened into a small vestibule room with a door in the opposing wall leading on to a north/south aligned corridor at the rear of the building (Plate 40). Turning right led into a large multi-desk office at the northern end of the corridor (Plate 41), while to the left a series of three smaller office rooms opened off of the eastern side of the corridor (Plates 42-44). At its southern end, the corridor turned to the east, where it terminated in a room used for storage (Plate 45), while to its south lay three smaller cells, with a kitchen in the western room and toilet facilities in the remaining two (Plate 46). The building's internal decoration was of entirely modern character and it appeared that many of the internal divisions were of modern stud construction. Only in the vestibule area, where a portion of the southern wall had not been plastered, was it possible to identify what was probably an original brick wall (Plate 40).

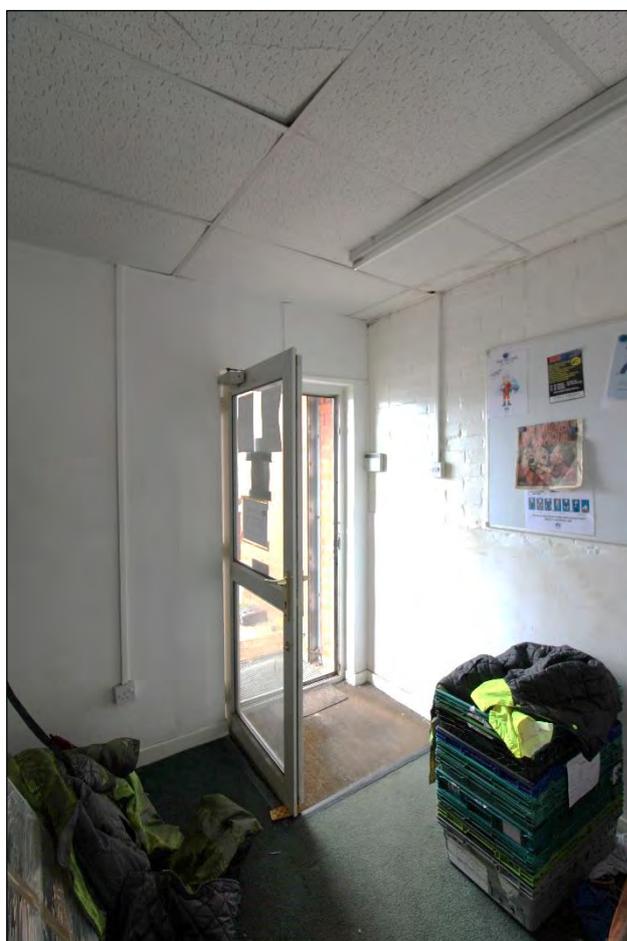


Plate 40: Entrance vestibule, facing east

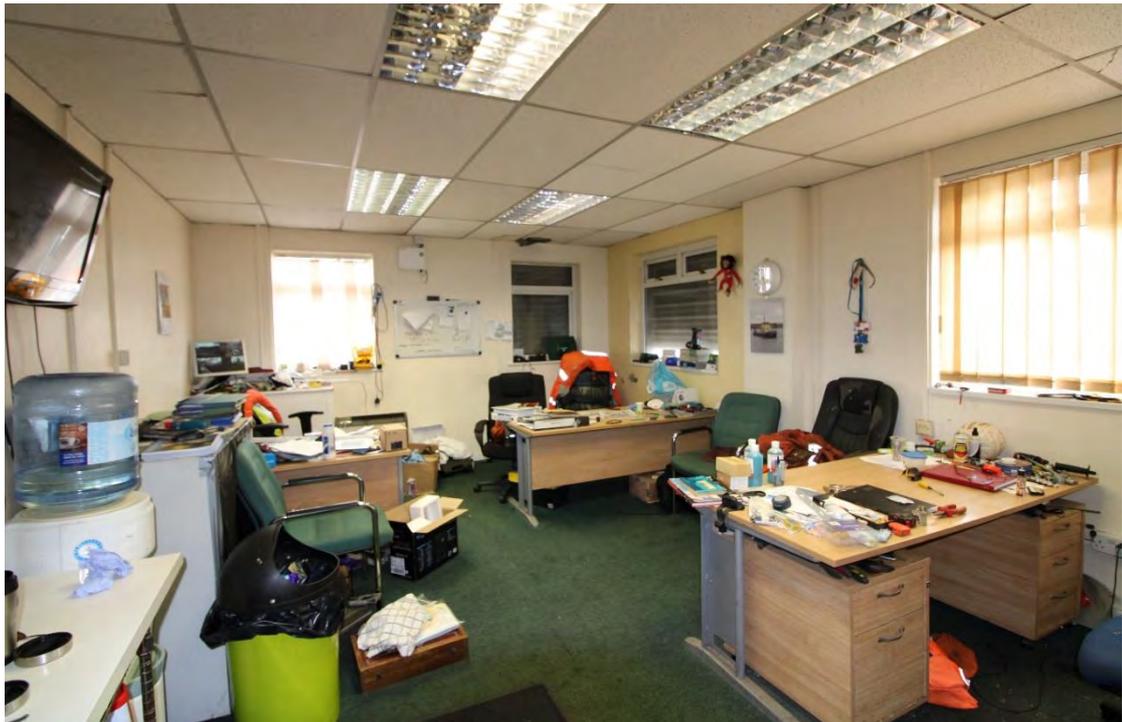


Plate 41: Northern office space 1, facing north



Plate 42: Office space 2, facing east



Plate 43: Office space 3, facing east



Plate 44: Office space 4, facing east

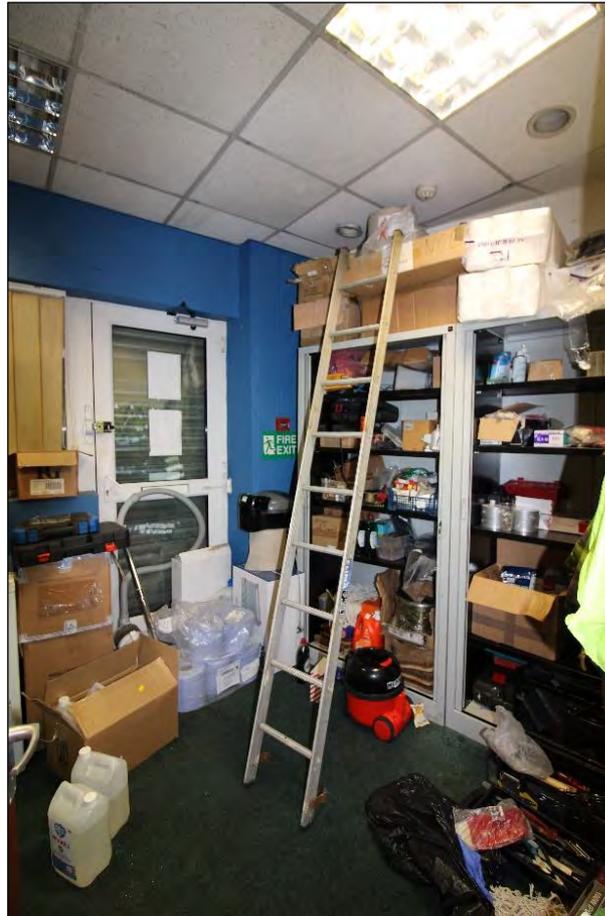


Plate 45: Storage room, facing south-east



Plate 46: Kitchen and Toilet facilities at the southern end of the corridor

3.3 Maintenance Shed (North Quay)

- 3.3.1 The Maintenance Building was a rectangular red brick structure with a flat roof located at the western end of the North Quay. It was primarily of a single-storey but incorporated a second-storey at the western end. It was constructed of hard-fired impermeable red brick laid in a cementitious mortar and employed concrete sills and lintels to its openings fitted with Crittal-style windows and timber doors. The building was disused but in reasonable structural condition, although there was no access to the first floor and several rooms on the eastern side of the building.
- 3.3.2 To the east of the building there was a detached linear section of brick wall with a wide blocked opening at its centre beneath a shallow cambered brick arch. The brickwork was in poor condition with the loss of fire skins across much of its face and was clearly of nineteenth century character, but a stone-topped pier at the southern end had been built of Staffordshire blue engineering brick and had survived in much better condition.

Exterior



Plate 47: Maintenance Shed facing south-west



Plate 48: Maintenance Shed looking west along the dockside



Plate 49: Western elevation of the Maintenance Shed



Plate 50: Western elevation facing north-east



Plate 51: Typical Crittall-style window, on western elevation, with 1m scale



Plate 52: Maintenance Shed, facing south-east



Plate 53: Western end of northern elevation facing south-west

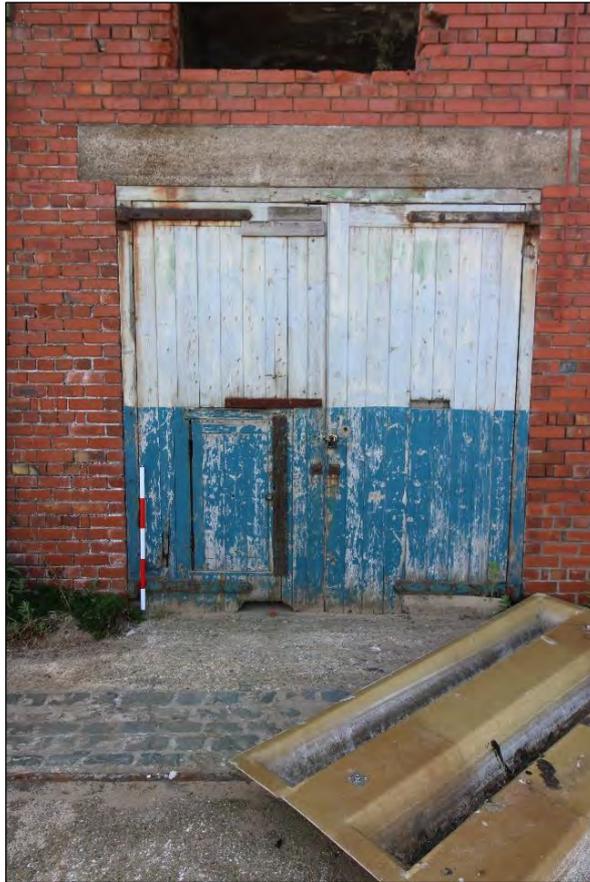


Plate 54: Loading door on northern elevation, with 1m scale



Plate 55: Eastern end of northern elevation

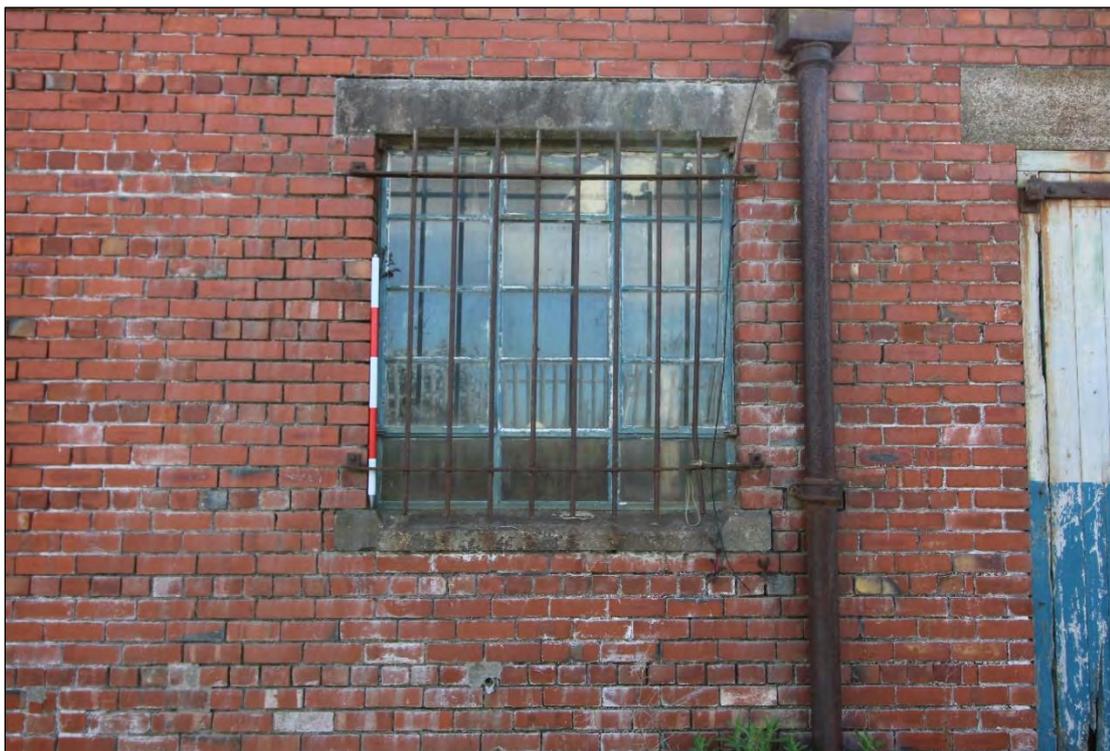


Plate 56: Barred window at the centre of the northern elevation, with 1m scale



Plate 57: Loading door towards the eastern end of the northern elevation, with 1m scale

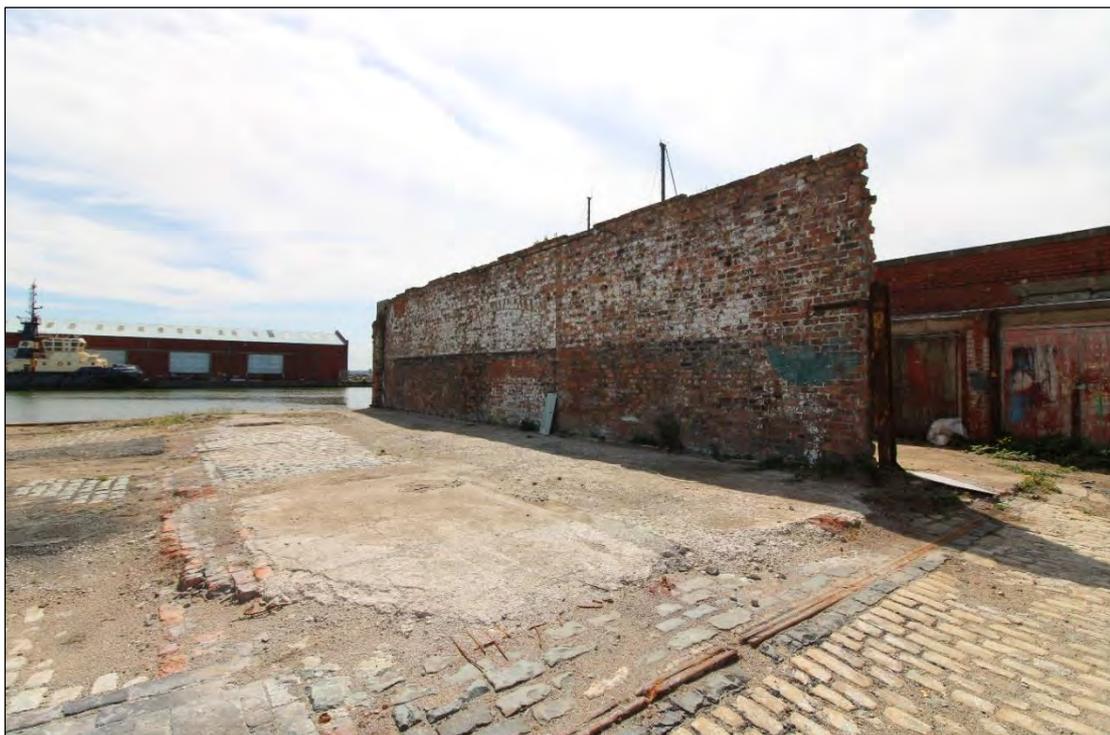


Plate 58: Upstanding linear brick wall to the east of the Maintenance Shed, facing south-west

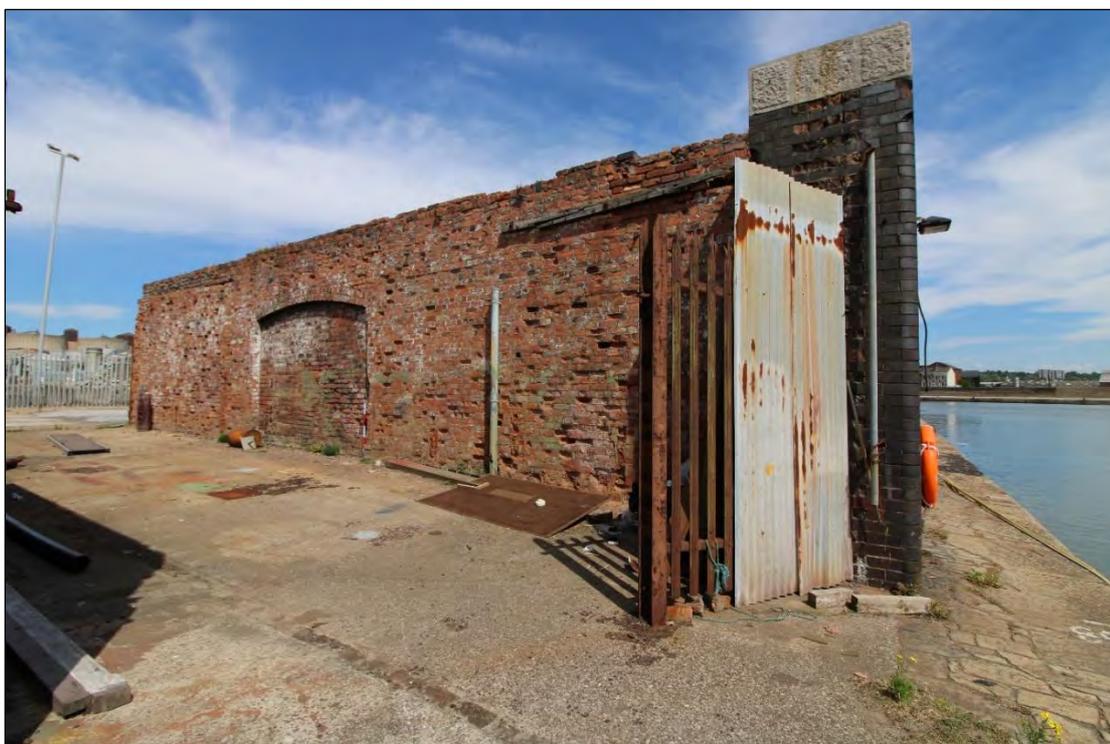


Plate 59: Western elevation of the detached brick wall, facing north-east



Plate 60: Blocked opening at the centre of the detached brick wall, facing east, with 1m scale

Interior



Plate 61: Workshop A, facing north



Plate 62: Workshop A, facing north-west



Plate 63: Office space to the north of Workshop A, facing north-west

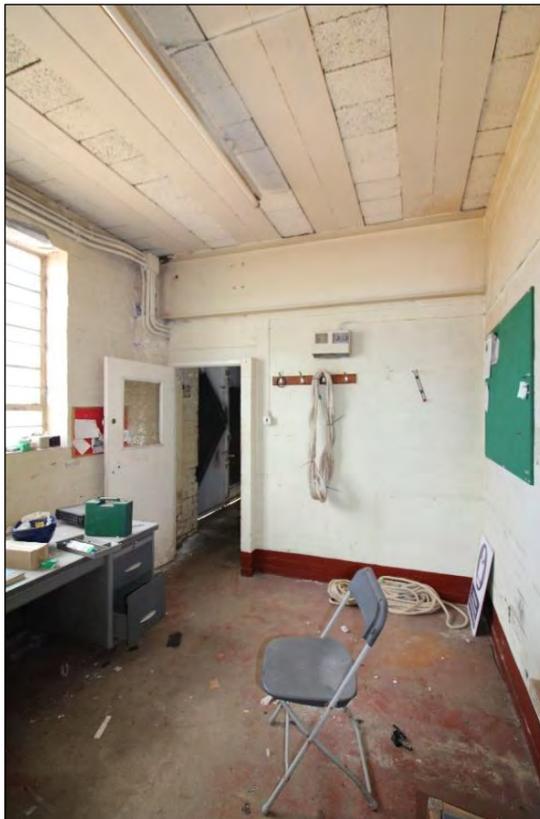


Plate 64: Office space to the north of Workshop A, facing east



Plate 65: Drawing Office to the north of Workshop A, facing north



Plate 66: Tool Store, facing south

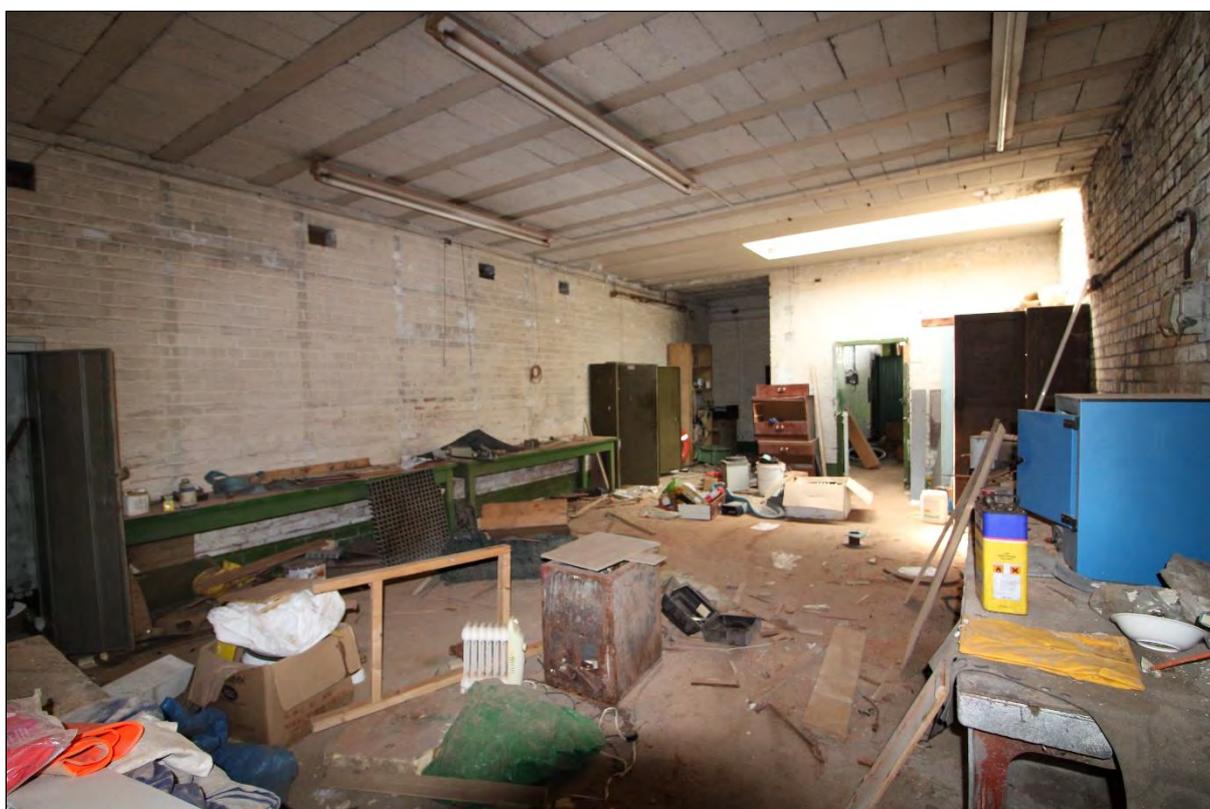


Plate 67: Workshop B, facing west



Plate 68: Workshop B, facing east

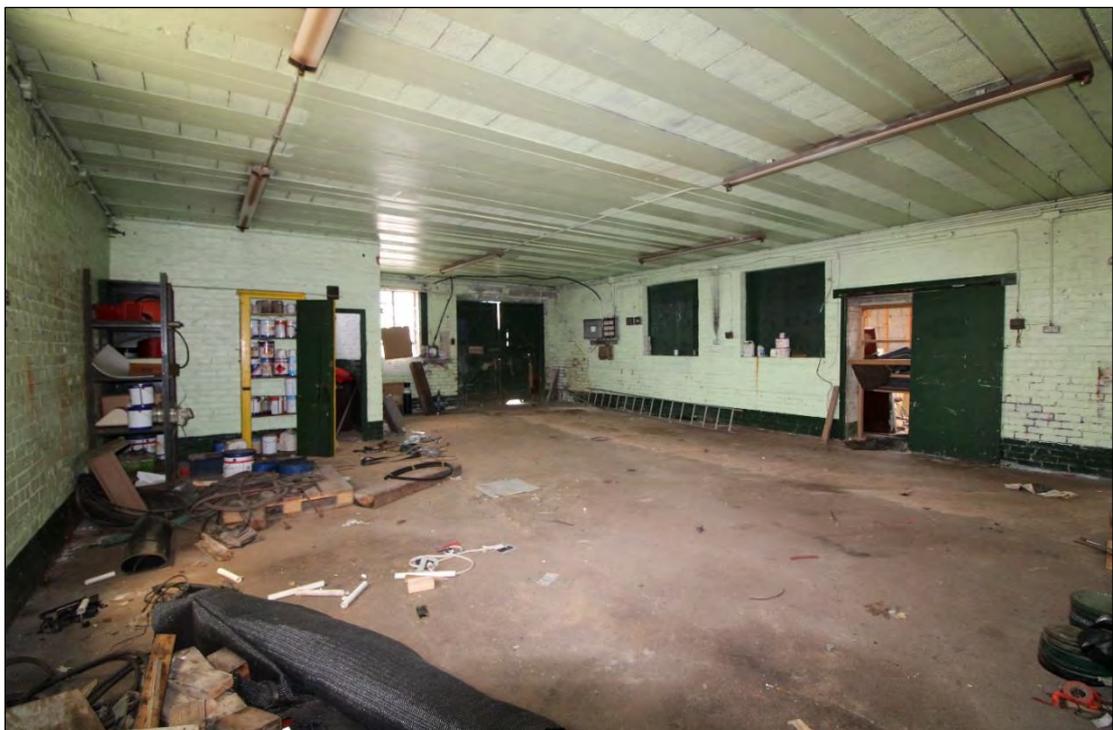


Plate 69: Workshop C, facing north



Plate 70: Workshop C, facing south



Plate 71: Doorway on eastern wall of Workshop C, facing east, with 1m scale



Plate 72: Split height door leading from Workshop C to B, with 1m scale



Plate 73: Office Space at the northern end of Workshop C, facing north

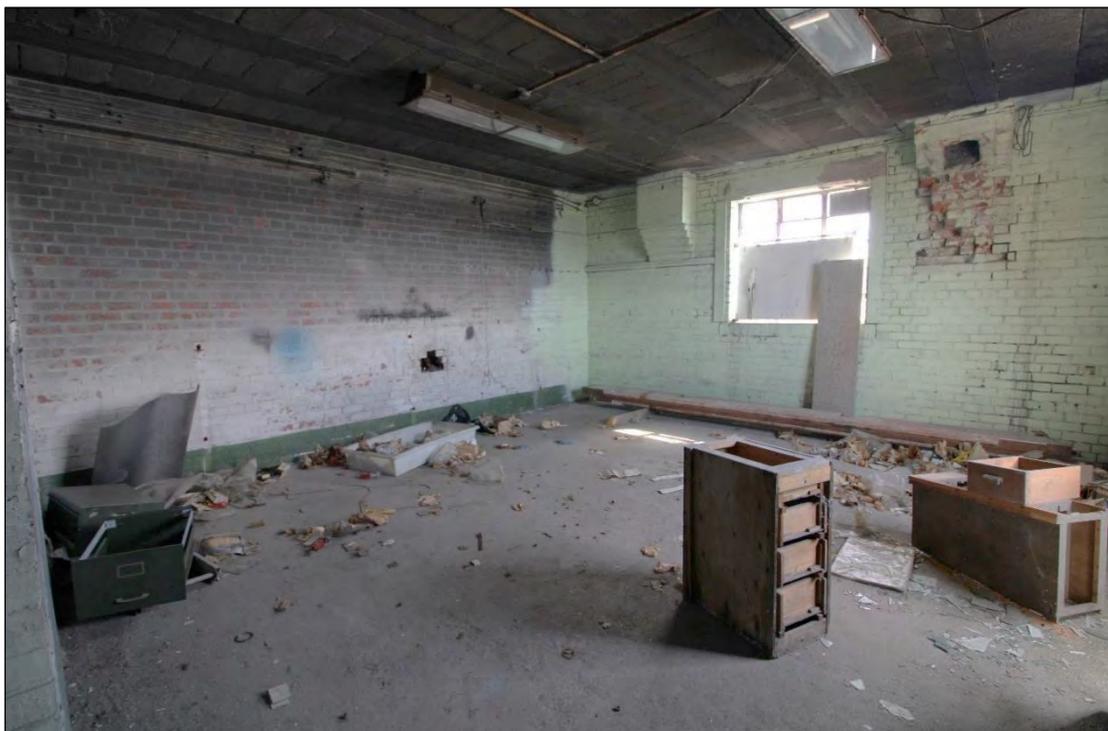


Plate 74: Workshop D, facing south-east



Plate 75: Remains of flue on southern wall of Workshop D



Plate 76: Workshop D, facing north-west

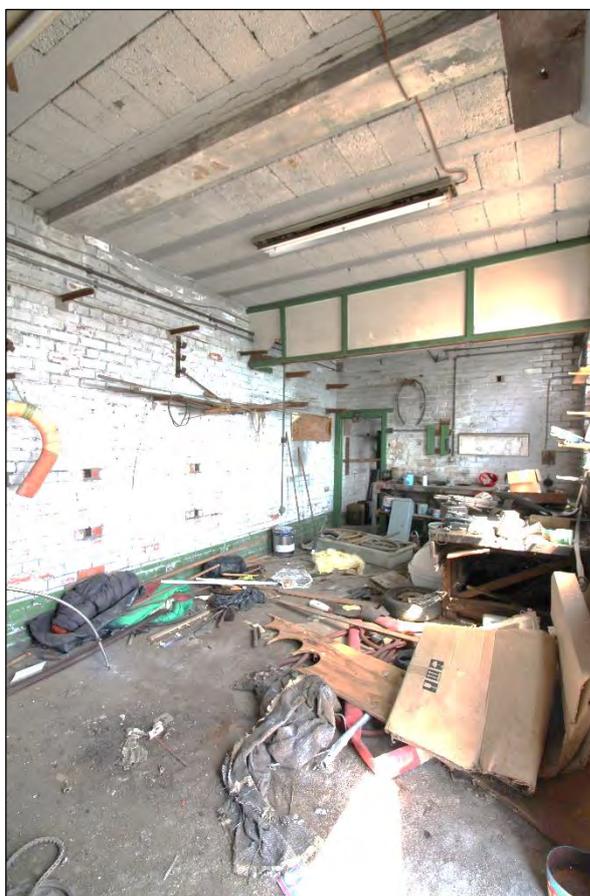


Plate 77: Workshop E, facing east



Plate 78: Workshop E, facing west



Plate 79: Workshop F, facing east



Plate 80: Workshop F, facing west



Plate 81: Facilities Room, facing east

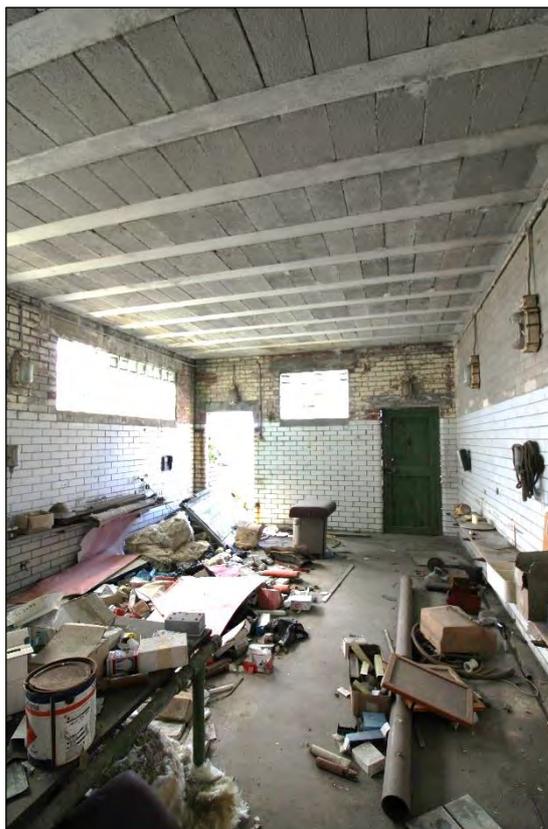


Plate 82: Facilities Room, facing west

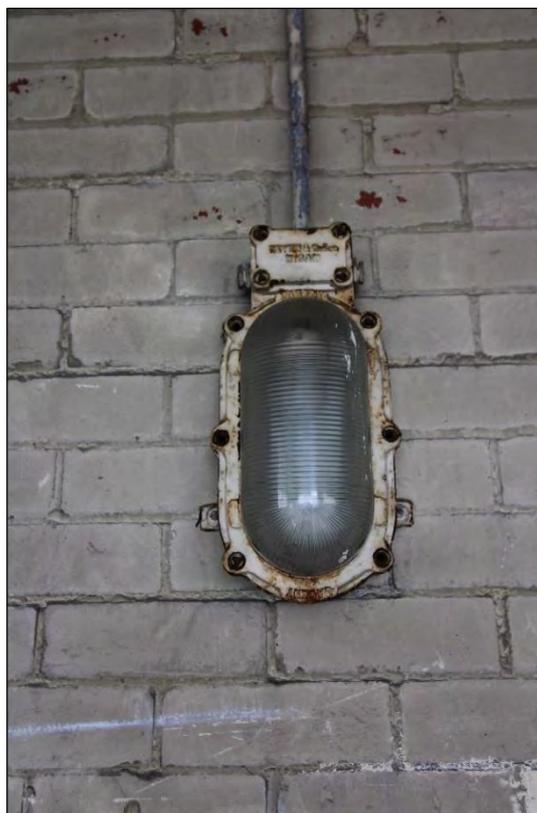


Plate 83: Light fitting in Facilities Room, facing north



Plate 84: Toilet, facing south



Plate 85: Toilet, facing east

4 EVALUATION TRENCHING

4.1 Introduction

- 4.1.1 The DBA (OA North 2019) recommended the excavation of several trenches to target the location of specific structures, which have since been demolished, identified from historic mapping. There were initially twelve evaluation trenches proposed to be excavated, three on Site 8 BMD west quay shed, three on Site 12 Nelson Dock north quay shed, one on Site 18 Nelson Dock Customs Depot, two on Site 23 BMD north quay crane bases, one on Site 25 BMD east quay crane bases, one on Site 28 BMD red brick structure, and one on Site 29 BMD chimney (Fig 2). Upon arrival on site, it was identified that two of the trenches could not be excavated, the trench at Site 18 and the trench at Site 29. The trench at Site 18 could not be excavated due to its location being across the access of a timber merchant still in operation and the trench at Site 29 could not be excavated due to its proposed location being within the Bramley-Moore Dock southern quay shed office.
- 4.1.2 The evaluation trenching fieldwork was undertaken between 26th May and 5th June 2020. The results of the fieldwork are presented below and include a stratigraphic description of the trenches. The full details of all trenches with dimensions and depths of all deposits can be found in *Appendix B*. The trenches are numbered by their site reference followed by an additional number to denote the particular trench number on that Site, i.e. Trench 81 is Trench 1 on Site 8.

4.2 Site 8 Bramley-Moore Dock west quay shed

- 4.2.1 Three trenches were excavated across Site 8 (Trenches 81, 82 and 83), targeting the BMD west quay former shed's column bases (Fig 9). The upper 0.3m of deposits were consistent throughout the three trenches, comprising a 0.10m thick layer of crushed concrete (**8102**, **8202** and **8302**) forming a bedding layer for overlying concrete surface 0.15m thick (**8101**, **8201** and **8301**), which was subsequently overlain by a 0.05m thick layer of tarmac (**8100**, **8200** and **8300**).
- 4.2.2 **Trench 81**: located at the northern end of BMD's west quay, was aligned north-east/south-west and measured 26m long and 2.8m wide (Fig 11; Plate). The structures identified within the trench appear to cut a mid-reddish-brown silty sand **8107**, the earliest deposit identified within the trench.



Plate 86: Trench 81 looking south-west, scale 2m

- 4.2.3 Working from the north-eastern end of the trench, a brick culvert (**8108**; Plate 86) was identified comprising two drains forming a Y-shaped structure, both constructed from machine-made bricks, laid as stretchers and bonded with portland cement. The main part of the feature was aligned north-west/south-east, parallel with the north-eastern end of the trench, whilst the arm of the feature was aligned east/west and extended beyond the limits of the trench to the west.
- 4.2.4 To the south-west of brick culvert **8108**, were three sandstone column bases (**8104**, **8105**, and **8106**), regularly spaced along the western edge of the trench and on a north-west/south-east alignment, reflecting the angled northern end of the shed, as depicted on the historic mapping (Fig 12). All three column bases were only partially exposed, approximately 2m long by 1.5m wide was exposed (Plate 87). There was no visible coursing, however, the central part of each column base had a slight depression, most likely for seating the column.



*Plate 87: Column base **8104** looking north-west, scale 2m*

- 4.2.5 Abutting the south-westernmost column base **8104**, was north/south aligned wall **8103**, measuring 3.42m long, 0.75m wide and 0.88m in high (Plate 88). Wall **8103** was constructed from red brick and bonded with a firm grey mortar, likely relating to the western wall of the mid-nineteenth century shed.



*Plate 88: Wall **8103** looking east, scale 2m*

- 4.2.6 **Trench 82**: the middle of the three trenches on the western quay, was aligned east/west and measured 18m long by 2.8m wide (Fig 10; Plate 89). The structures identified within the trench appeared to cut a mid-orange brown silty sand with frequent sandstone cobble inclusions, layer **8205**, which was, in turn, overlain by two make-up layers **8204** and **8203**.



Plate 89: Trench 82 looking west, scale 2m

- 4.2.7 Working from the eastern end of the trench, a north-west/south-east-aligned foundation **8213** was identified at the very eastern end of the trench, two courses high, constructed from machine-made bricks, bonded with Portland cement and laid as stretchers (Plate 90). Constructed immediately on wall foundation **8212**, was wall **8213**, which survived to a height of six courses and was constructed from machine-made bricks, bonded with Portland cement. The wall was exposed within the trench for 1.6m, was 0.55m wide and survived to a height of 0.77m.
- 4.2.8 Along the southern extent of the trench were four sandstone column bases (**8208**, **8209**, **8210** and **8211**), the same construction as those identified in Trench 81. The column bases measured 1.1m by 1m and survived to a height of 0.82m, within the trench. There was evidence of iron staining encased within a slight square depression on the top of the bases, measuring up to 0.7m by 0.7m. An additional column base, **8207**, was identified at the western end of the trench on a slightly different alignment, and also, with no evidence of a square depression in the top (Plate 91). The column bases were all approximately 2.5m apart.



Plate 90: Wall **8212** overlying foundation **8213**, facing north-east, with 2m scale



Plate 91: Large sandstone wall **8206** and base **8207** to left of frame, looking south, scale 1m

4.2.9 North/south aligned wall **8206**, was identified at the western end of the trench, measuring 2.4m long by 0.8m wide. The wall was only exposed to its uppermost course, however, it was constructed from machine made red brick and appeared to have been topped by a layer of concrete (Plate 91).

4.2.10 **Trench 83**: the southernmost of the three trenches on the western quay of BMD, was aligned east/west and measured 18m long by 2.8m wide (Fig 10; Plate 92). The structures identified within the trench appeared to cut a mid-brownish-red silty sand layer **8304**, approximately 0.55m thick, which was, in turn, overlain by a layer of brick rubble, **8303**, approximately 0.12m thick.



Plate 92: Trench 83 looking east, scale 2m

- 4.2.11 The earliest feature identified within this trench appeared to be brick-built drain **8311**, aligned east/west, prior to splitting into a Y-shape at the feature's western end; it was constructed from machine-made bricks and bonded with a cream sandy mortar. The feature appeared to be cut by two of the sandstone column bases (**8306** and **8307**).
- 4.2.12 Trench 83 contained five sandstone column bases (**8305**, **8306**, **8307**, **8308** and **8309**; Plate 93), of the same construction as seen in Trench 81 and 82, constructed from red sandstone blocks with evidence of iron staining within a slight depression in the top of the column base. The column bases all measured approximately 1.1m by 1m and survived to a height of 0.82m.



Plate 93: Sandstone column base **8305** looking west, scale 1m

4.3 Site 12 Nelson Dock north quay shed

- 4.3.1 Three trenches were excavated across Site 12 (Trenches 121, 122 and 123), targeting Nelson Dock north quay former shed's column bases (Fig 9). All three trenches measured approximately 18m long by 2.4m wide.
- 4.3.2 All three trenches contained similar deposits, the earliest being a thick made-ground layer comprising mid-brownish-red sandstone rubble, up to 0.78m thick (**12106**, **12204** and **12305**). An east/west aligned concrete slab (**12107**, **12206** and **12305**), was identified approximately 5m from the northern end of all three trenches, likely a wall footing, potentially for an internal wall of the shed. In Trenches 121 and 122 this concrete slab was overlain by a 0.07m thick layer of light-yellow grey sand (**12105** and **12204**).
- 4.3.3 All three trenches then contained a 0.19m thick layer of concrete (**12103**, **12203** and **12303**), overlain by a levelling layer of yellowish-orange sand and gravel (**12102**, **12202** and **12202**), which, in turn, was overlain by a stone sett surface (**12101**, **12201** and **12301**), sealed by a 0.06m thick layer of tarmac (**12100**, **12200** and **12300**).
- 4.3.4 **Trench 121**: the only other archaeological feature identified in the three trenches on Nelson Dock north quay was wall **12104** (Plate 94), which was aligned north/south, extending from the northern limit of excavation of Trench 121 and running up to concrete slab **12107**, a distance of 6.1m. The wall was constructed from machine-made bricks, bonded by Portland cement and survived to a height of four courses.