



Atelier MB
Urban Architects

Design and Access Statement

Science and Industry Museum
1830s Warehouse

Client: The Board of Trustees of the Science Museum
Date: April 2023
Revision: B





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Introduction



1.0 INTRODUCTION

This Design and Access Statement accompanies a formal application for Listed Building consent for a range of urgent fire protection remediation works throughout the Grade I listed 1830s Warehouse. This building forms part of the Science and Industry Museum estate in central Manchester. The building is currently partly used for both private and museum related event.

This document has been prepared by Atelier MB Ltd for our Client, The Trustees of the Science Museum, and must be read in conjunction with the full supporting information package, including the Heritage Report prepared by Atelier Heritage.



Archive image of the warehouse from 1978



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Context and Site Analysis



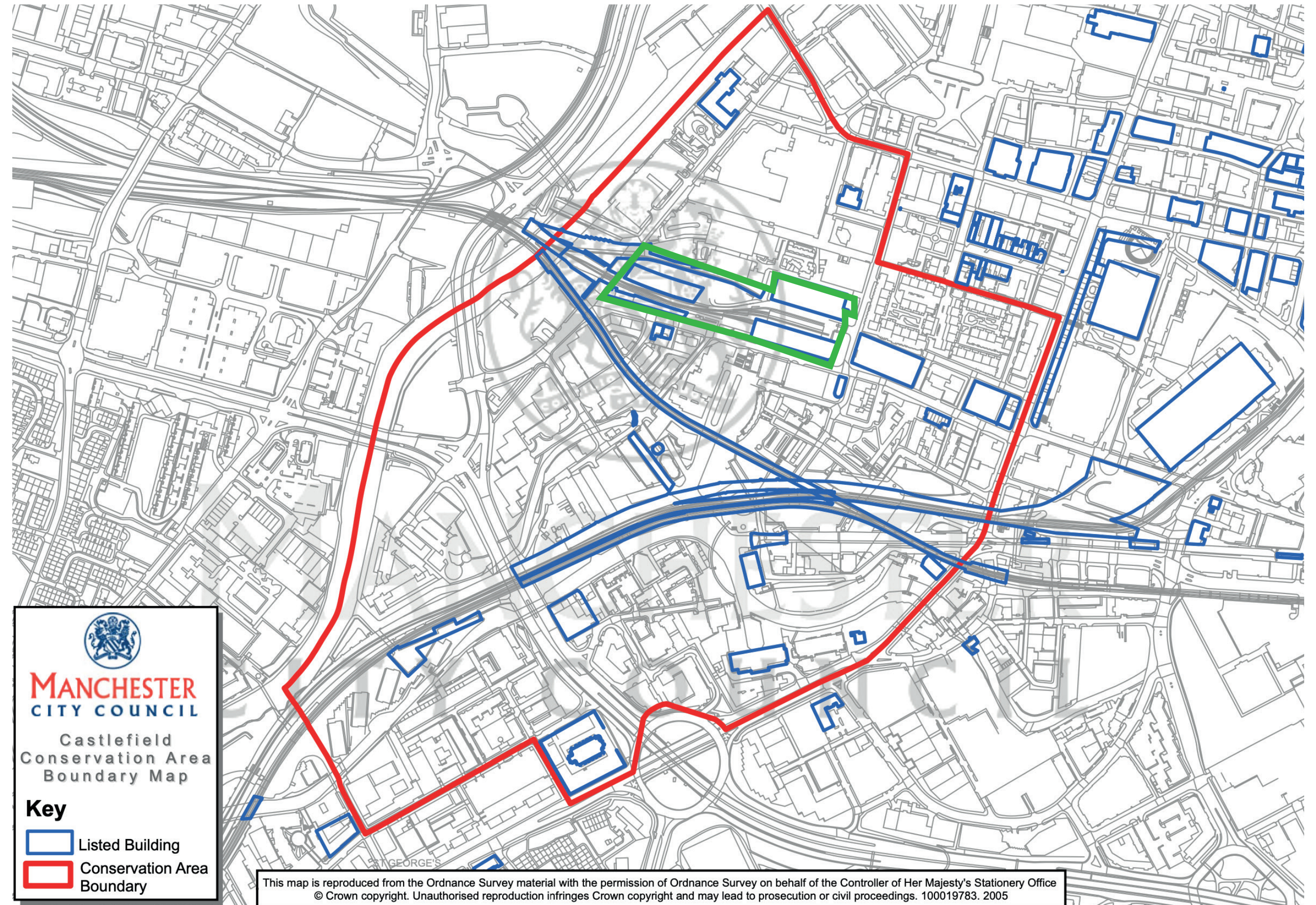
2.1 LOCATION

The Science Museum site is in the Castlefield Conservation Area of Manchester City Centre. This is one of the largest Conservation Areas in Manchester and was designated in 1979 and holds great importance in terms of international industrial heritage. The area is also designated for its Roman history. The listed buildings in the estate take up a sizeable area, and therefore are of considerable importance to the character.

The complex of buildings is bounded by Liverpool Road to the South, Lower Byrom St to the East, and the River Irwell to the West.

Within the complex there are several Listed Buildings. This Listed Building Consent application relates only to the following buildings:

New Warehouse (sometimes referred to as the Great Western Warehouse of the former Lower Byrom Street Warehouse (Grade II)
 1830s Warehouse (Grade I)
 The Station Buildings (Grade I)



Castlefield Conservation Area Boundary - with the SIM site bounded in green.

2.2 THE BUILDING

This report is to accompany the application for works to the 1830s Warehouse only. Please refer to accompanying applications for reports covering works to the other buildings.

1830s Warehouse

This building is grade I listed, and sits behind the Station Building. The two buildings share the rear wall to the station, and are connected at several points across the levels. It was built as the first railway warehouse in the world, to house goods transported by rail and road.

2.3 HISTORICAL CONTEXT

This report is to be read in conjunction with the separate Heritage Statement prepared by the Atelier Heritage. An extract is included below:

Significance.

The 1830s warehouse is the first purpose-built railway warehouse in the world. It is of national and global significance as the first of its kind and the model for others that followed. Its Grade I listed status reflects its importance.

The rapid construction and design of a large building formed in a parallelogram shape is a testament to the engineering and building skills of the early 19th century and, as an example of both, the 1830s

warehouse has an extremely high heritage value.

Historically, the whole site, including the 1830s Warehouse is of the highest value, for its broader associations with railway pioneers and for its wider global influence on the development of railway transport.

Architecturally and aesthetically, whilst the 1830s warehouse appeared to be in a similar form to canal warehousing, it was the first of its kind and featured the use of internal waggon tracks in a similar way to the use of canal legs in waterside warehousing. The engineering and form displayed at Liverpool Road went on to influence railway development around the globe.

3.1 BUILDING CONDITION AND USE

The building is in a habitable condition. The lower ground floor is currently unoccupied following a long period of time as an active part of the museum exhibition space. The upper floors are currently used in conjunction with the Station Building upper floors for hosting private and museum based events.



Plan showing the 1830s Warehouse bounded by a red line.
The rest of the building is the Station Building

A collage of eight diamond-shaped images arranged in a grid-like pattern. The images show various urban and interior scenes: a modern building with a glass facade, a red brick building, a staircase, a lounge area with a red sofa, a long hallway with a wooden floor, and a street view. The collage is set against a dark blue background.

4.0 THE BRIEF

Atelier MB Ltd have been appointed by The Trustees of the Science Museum to prepare applications for Listed Building Consent in relation to a series of fire related remediation works. These urgent works have been identified by a Fire Door and Compartmentation Surveys carried out by Neo.



Museum of Science & Industry
Fire Compartmentation Survey Report

Building Name	Station Building
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Neo Property Solutions
Neo Court, Knowsthorpe Lane, Cross Green Ind Estate, Leeds, LS9 0PF
T: 0843 455 4455
E: info@neo-ps.com
E: recruitment@neo-ps.com



0015:38 - History 2 of 2 (ates
Zone(s) - Ground Floor

Date Added: 15/02/2022 - 11:23

Location: Science Museum Group 355 / Museum of Science and Industry Manchester
/ Station Building / Station Building

Status: Action required

	LL977
	Groundfloor
	1830 warehouse
	WCO2
	Communal

ap where the metal conduit penetrates the blockwork. Use RWA-45 to pack out the gap and mastic.

	Work about 1m
	Joint
	30 minutes (not suitable if basement or > 5m to top floor above ground)
	Concrete / Brick / Block
	RWSD-AIS-0001

istic seal is needed to close the gap. Push up rwa45 as high as can so mastic seal is not on show as much.

	1
	2500
	30
	Red
	No
	Yes





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The Works



5.0 THE WORKS

Please find below a summary of the works proposed:

5.1 FIRE COMPARTMENTATION REMEDIATION

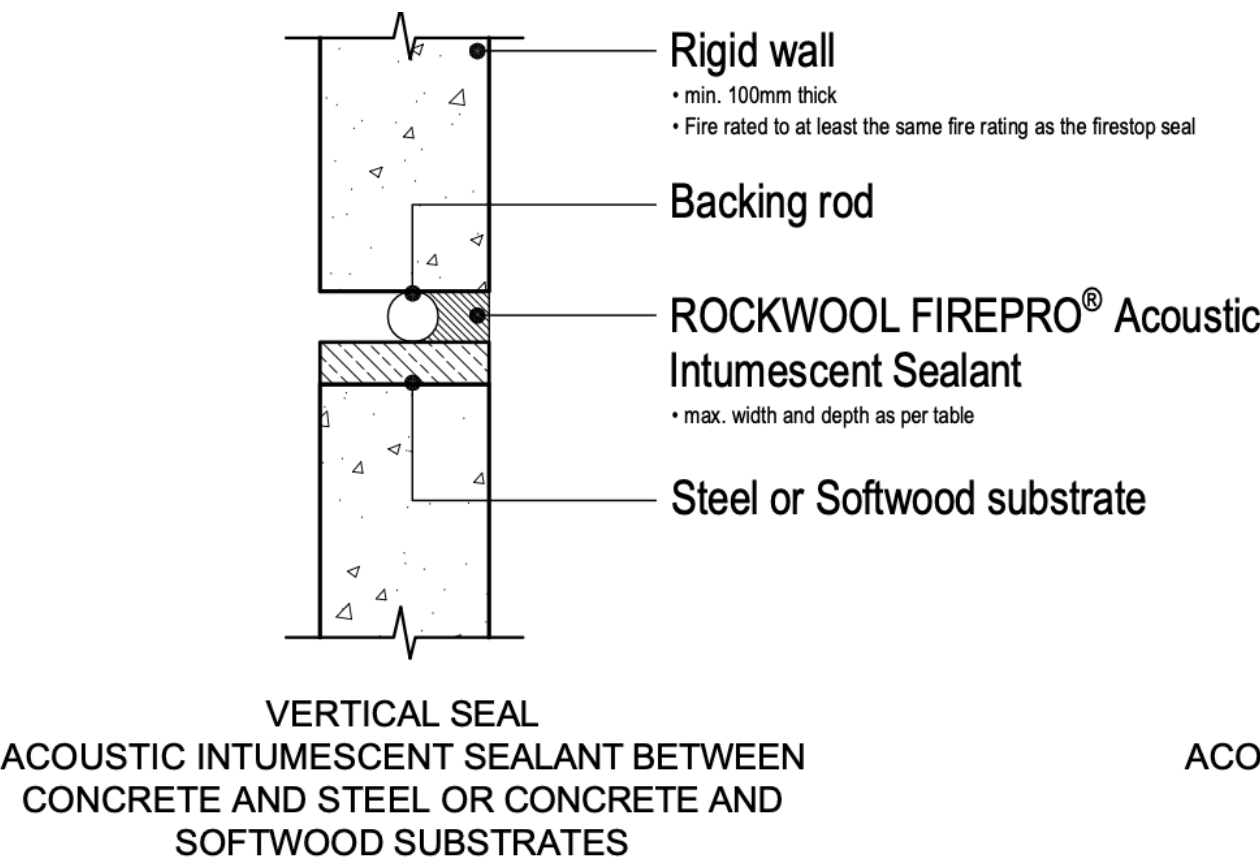
Works not affecting historic fabric:
Standard fire stopping details to heads of non-historic walls, and around existing cable trays, trunking, cables and ducts.
These comprise either fire rated batts or just sealant.

Replacement of non fire rated glazing within existing non historic partitions with fire rated glazing. Visually the detail will match the existing.

Works affecting or abutting historic fabric:
Standard fire stopping details to heads of non-historic walls, and around existing cable trays, trunking, cables and ducts.
These comprise either fire rated batts or just sealant.

Depending on the location, these standard works are preceded by one or more of the following:

Localised repointing where the pointing is missing or has eroded to more than twice the width of the joint.



Example standard Rockwool detail.



Example photo of non fire rated glazing within non historic partition

Localised cleaning of brickwork to remove either mastic sealant and/or cement based mortar. This is to be done by hand tools or where applicable poultices only, and if this is unsuccessful then the CA will review on site and consider leaving the deposits rather than risk damaging the underlying brickwork.

Localised brickwork reinstatement where openings exist at the location of pipes/ducts/cables which are larger than they need to be and can therefore be filled with matching brickwork to an extent.

Localised brickwork repair or replacement where damaged bricks surrounding the cable/duct/pipe need to be repaired to prevent further deterioration and to ensure the fire separation of the masonry wall is not compromised.



Example photo of localised cleaning of brickwork to remove mastic



Example of isolated brick requiring a mortar repair



Example photos of localised areas of missing or damaged brickwork to be repaired prior to standard fire stopping details being carried out.

Replacement Stud Walls

In isolated locations, existing stud walls have been found that are not fire rated to the correct standards. In these situations, the walls will be carefully removed and reinstated using an appropriate fire rated build-up.

New Stud Walls

In one location, an existing opening between two areas in the basement needs to be fire rated due to the nature of the plant equipment on each side of the wall. Therefore we will install a fire rated metal stud partition with the necessary fire stopped penetrations to suit the existing pipework which transverses the wall. (See drawing P(120))

Similarly to above, in one location a new fire rated partition is required between two areas of plant. This is to complete the 60minute fire wall which is proposed in the Fire Strategy for the building. (See drawing P(121))

These proposals will have minimal impact on the historic fabric, as the fixings will be made into the existing mortar. This is as per our methodology documentation. The use of modern materials will also ensure that these reversible changes are legible.



Example of a partition and door which are not fire rated. These will be carefully taken down and a fire rated equivalent reinstated. All fixings will be into the mortar joints of the surrounding brickwork only.



Opening between two spaces to be filled with fire rated partition

Fire Rating Existing Infilled Openings

In 5 no. locations there are existing arched openings within brick walls which have been infilled with non fire rated boarding.

For example, where LG07 in the Station Building meets the 1830s building, a former opening has been infilled with a metal stud partition. However, this has not been completed and is therefore not fire rated. In this location, we propose to complete the fire rating of the partition. This will not cause any further intervention to the historic fabric as the partition is already in place.

Replacement of the partition with a glass and metal doors was considered fully by the design team and the SIM Technical Committee.

However, this option has been discounted, for the following reasons:

The future use of the building is in abeyance, and these fire remediation works are required urgently as part of a site wide improvement strategy.

Funding for these works is limited, and therefore needs to be carefully allocated. The Science Museum Group have an obligation to make the best use of these limited funds, many coming from public purse. Therefore, the significant additional cost to insert a door in these locations, when it is not required operationally and may never be, is not considered

the best use of these funds; particularly given the extent of fire protection works required sitewide.

Should the future use of the space benefit from doors in these locations, the Science Museum Group will seek consent to install glass and steel doors as already installed within the building



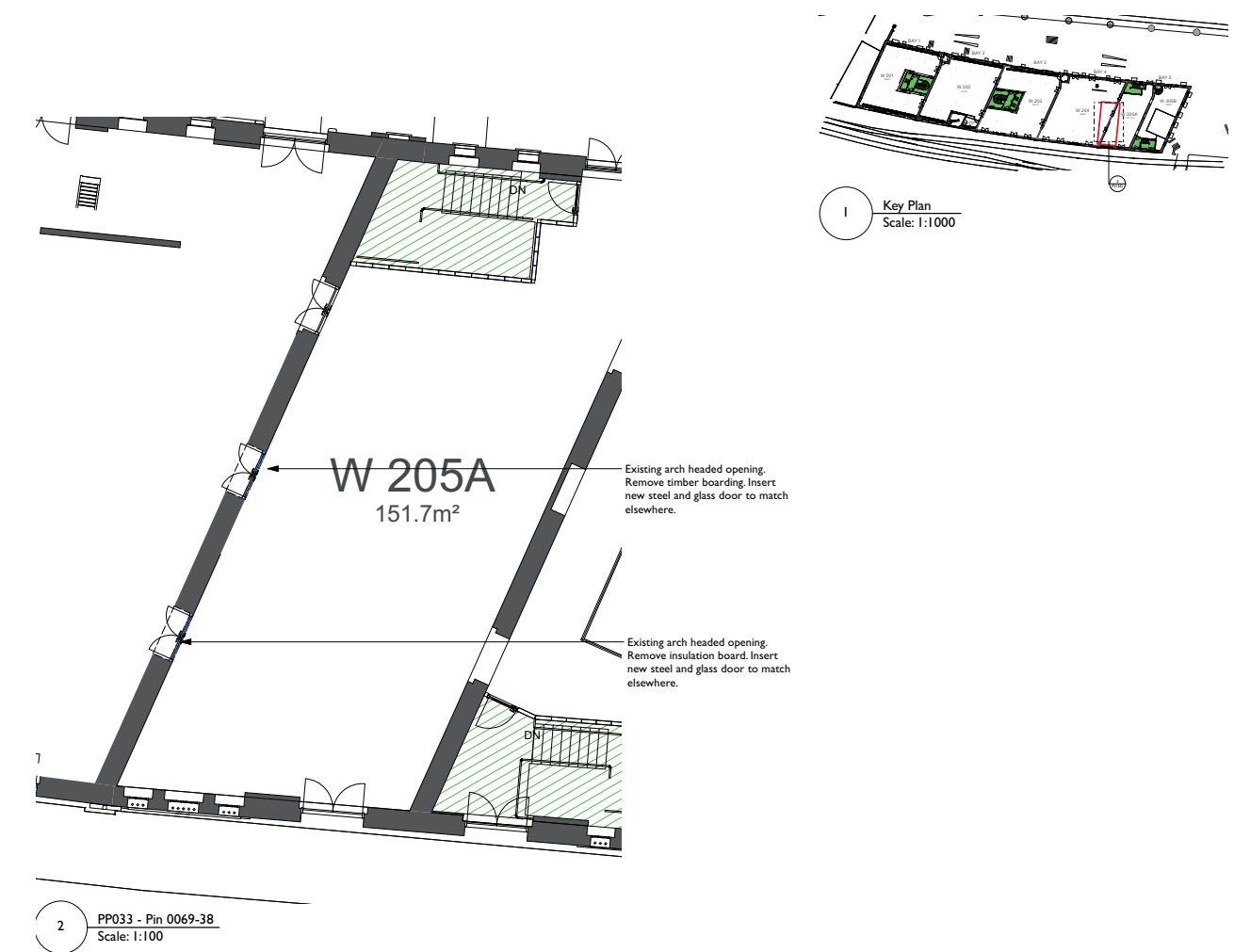
Example of an existing opening within masonry wall. This partition is not sufficiently fire rated and therefore we will upgrade this. Refer to drawings P(110), P(122) and P(123) for locations.

5.2 FIRE DOOR REMEDIATION

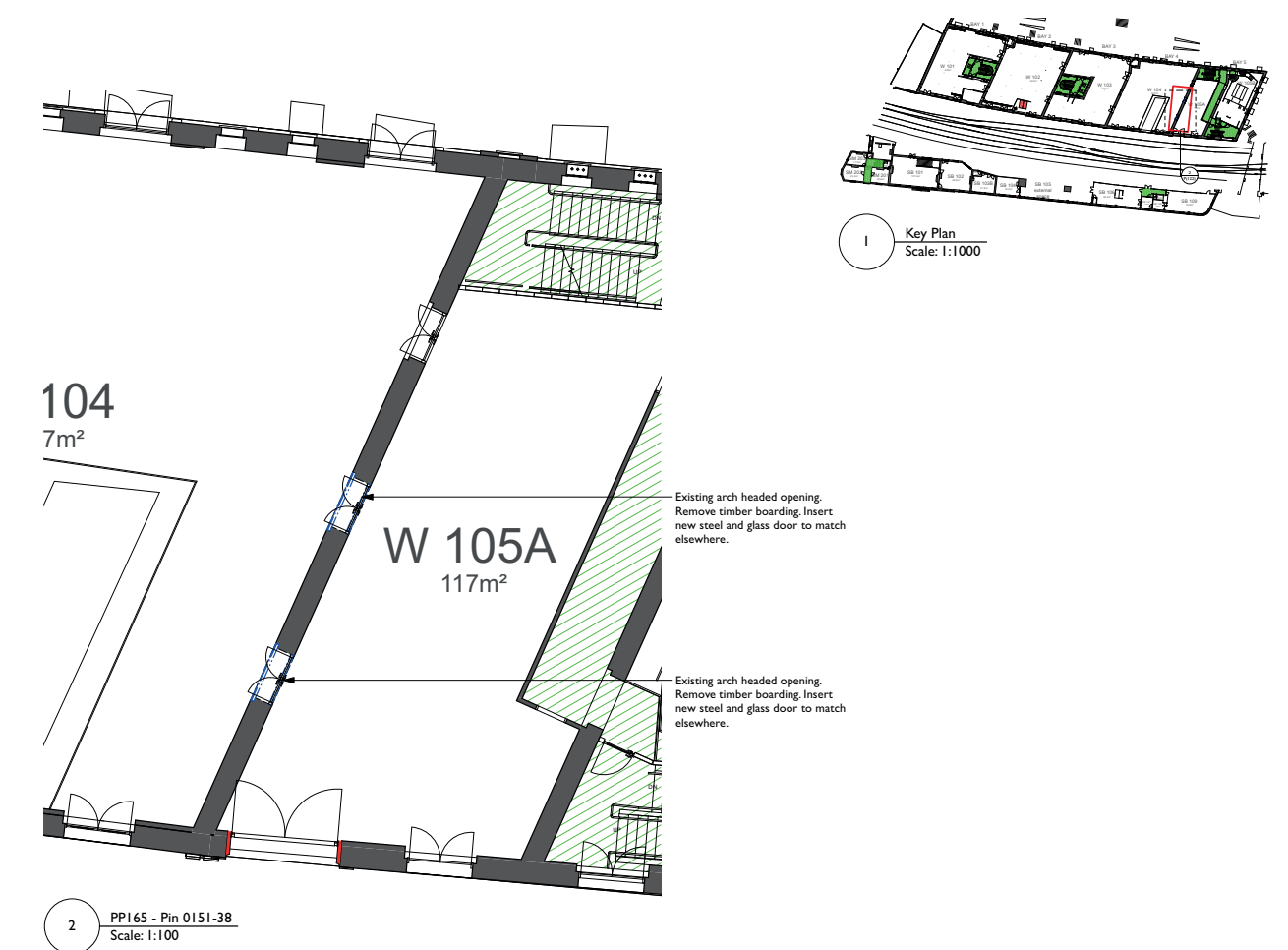
Note that none of the existing doors affected by these works are historic.

Door works range from replacement hinges, signage, and lipping of door leaves; to replacement of wholly non-compliant doors and the insertion of new doors where they are missing
Any new doors will be designed to match existing or where none existed, similar doors elsewhere within the vicinity.

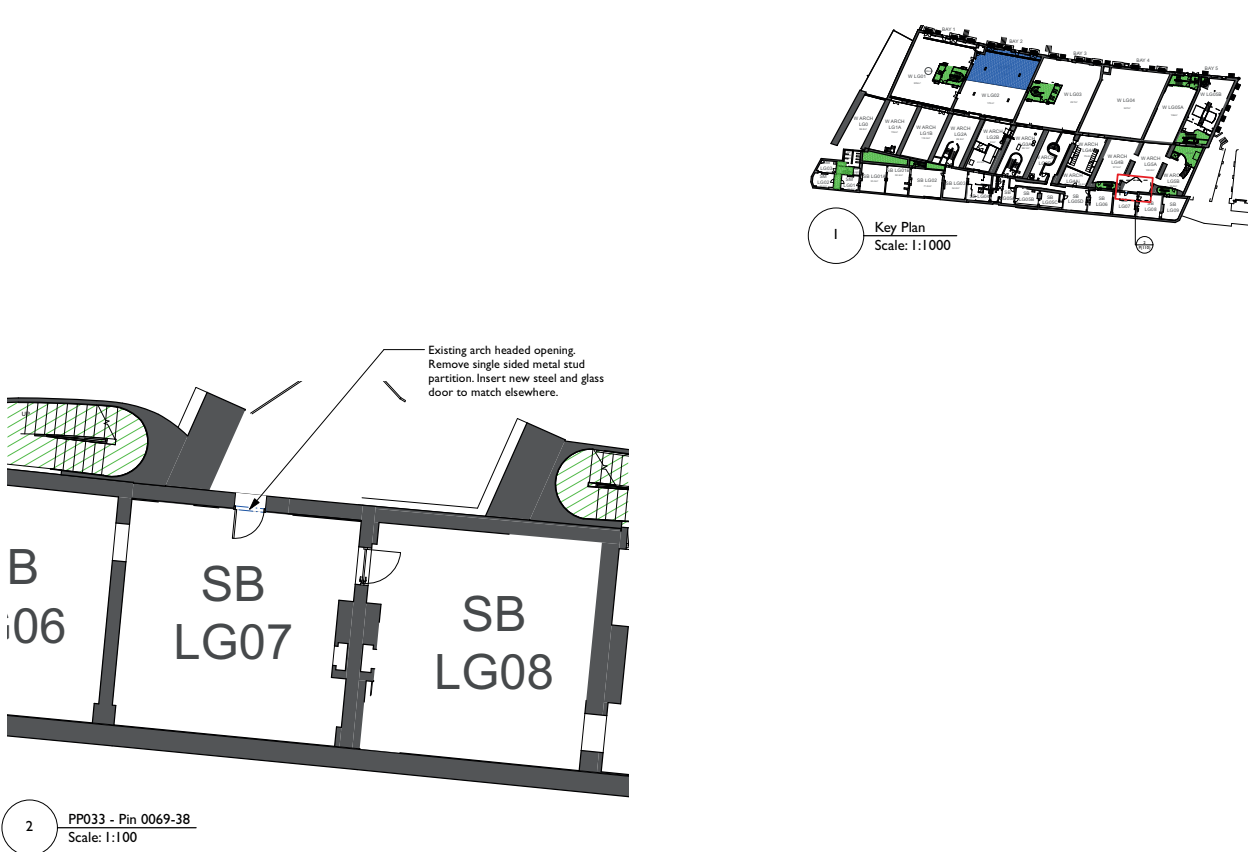
New doors are proposed as outlined above.



Extract from drawing P(123) indicating the locations of the new doors in existing boarded up openings.



Extract from drawing P(122) indicating the locations of the new doors in existing boarded up openings.



Extract from drawing P(110) indicating the locations of the new doors in existing boarded up openings. Lower ground floor - between SB_LG07 and the 1830s warehouse at this level.



6.0 RESPONSE TO HERITAGE SIGNIFICANCE

Where possible, existing historic fabric will be retained and cleaned and repaired only as necessary to reinstate fire separation requirements.

All the proposals are driven by the requirements set out in the Fire Strategy and subsequent Neo surveys.

6.01 - CONSULTATION

As part of the design process, we consulted with the Conservation Officer. We met with Paul Mason on site on the 8th March 2023.

We showed typical examples of the fire remediation required, and the impact on the historical fabric.

We were able to show and explain the difficulty of rectifying some of these fire issues within the constraints of a working public building with a plethora of plant equipment.



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Access Statement





7.0 ACCESS STATEMENT

None of the proposed works will affect access to and circulation of the building.

Note however, that where a door is to be replaced, the new itself door will be designed fully in compliance with AD:M guidelines.



-  [ateliemb](#)
-  0161 236 0051
-  [ateliembarchitects](#)
-  [atelier mb architects](#)
-  info@ateliemb.co.uk
-  Atelier MB Ltd. Suite 2A, Amazon House, Brazil Street, Manchester, M1 3PJ