

Science & Industry Museum - Conference Centre

Design and Access Statement
March 2025

Version history

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Project number: 9657
Client: Science Museum Group

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1.0

Executive Summary

1.0 Executive Summary

The statement has been prepared by Buttress Architects Ltd on behalf of the Science & Industry Museum (SIM). It explains our response to the work that is required for the refurbishment of the Conference Centre at SIM, Manchester. It has been prepared in line with the guidance document 'Design and Access Statements: How to Write, Read and Use Them,' published by CABE.		1.2 Purpose	1.7 Drawings and Other Documents
1.1 Background		1.2.1 Buttress Architects have prepared this Design & Access statement to support a Planning and Listed Building application for the New Warehouse roof & fabric repairs, as well as the Upper Yard SEG water ingress.	1.7.1 The drawings contained within this report and used during the surveys are based on information provided by the client and/or sourced from archival resources.
1.1.1 Buttress Architects have been commissioned by the Science Museum Group (SMG) to deliver the SIM Conference Centre Refurbishment.		1.3 Authorship	1.7.2 Any diagrams and illustrations provided are for information only and may not be wholly accurate or to scale.
1.1.2 The brief includes:		1.3.1 The report has been prepared by Emily Green, Architect, BA (Hons) under the direction of Stephen Anderson, Director at Buttress Architects Ltd.	1.7.3 The drawings provided are for Planning and Listed Building consent purposes only.
<ul style="list-style-type: none">New carpeting and light-touch redecoration.Implementation of a soundproofing solution for the atrium, which will be reopened upon completion of the ongoing reroofing project.		1.4 Limitations	1.8 Acknowledgements
		1.4.1 Existing 2D and 3D survey information has been used to produce the drawings.	1.8.1 Buttress gratefully acknowledges the assistance provided by the SIM site staff.
1.1.3 The New Warehouse is under the ownership of SMG and serves as the main visitor entrance to the museum complex. The building provides several galleries across the lower ground, ground and first floor levels and also provides accommodation for commercial meetings / conferences, a learning loft for school groups and staff offices, which are housed at second floor level. The lower ground floor houses storage and archival materials, as well as providing a special exhibitions gallery (SEG).		1.5 Exclusions	1.9 Application and Project Team
		1.5.1 This report excludes any internal works across lower ground, ground and first floor levels unless indicated otherwise.	Science and Industry Museum - Applicant and Client
		1.6 Other Specialist Reports	Buttress - Lead Consultant, Architects, Heritage Consultants
		1.6.1 Buro Happold have been appointed to carry out Structural and Acoustic services, developing through RIBA Stages. Relevant drawings and information will be submitted alongside this report. OFR have been appointed as Fire Engineer to pass comment on the proposals.	Buro Happold - Structural, Acoustic and Electrical Engineers.
			Appleyard & Trew - Quantity Surveyors
			Keelagher Okey Klein - Principal Designer



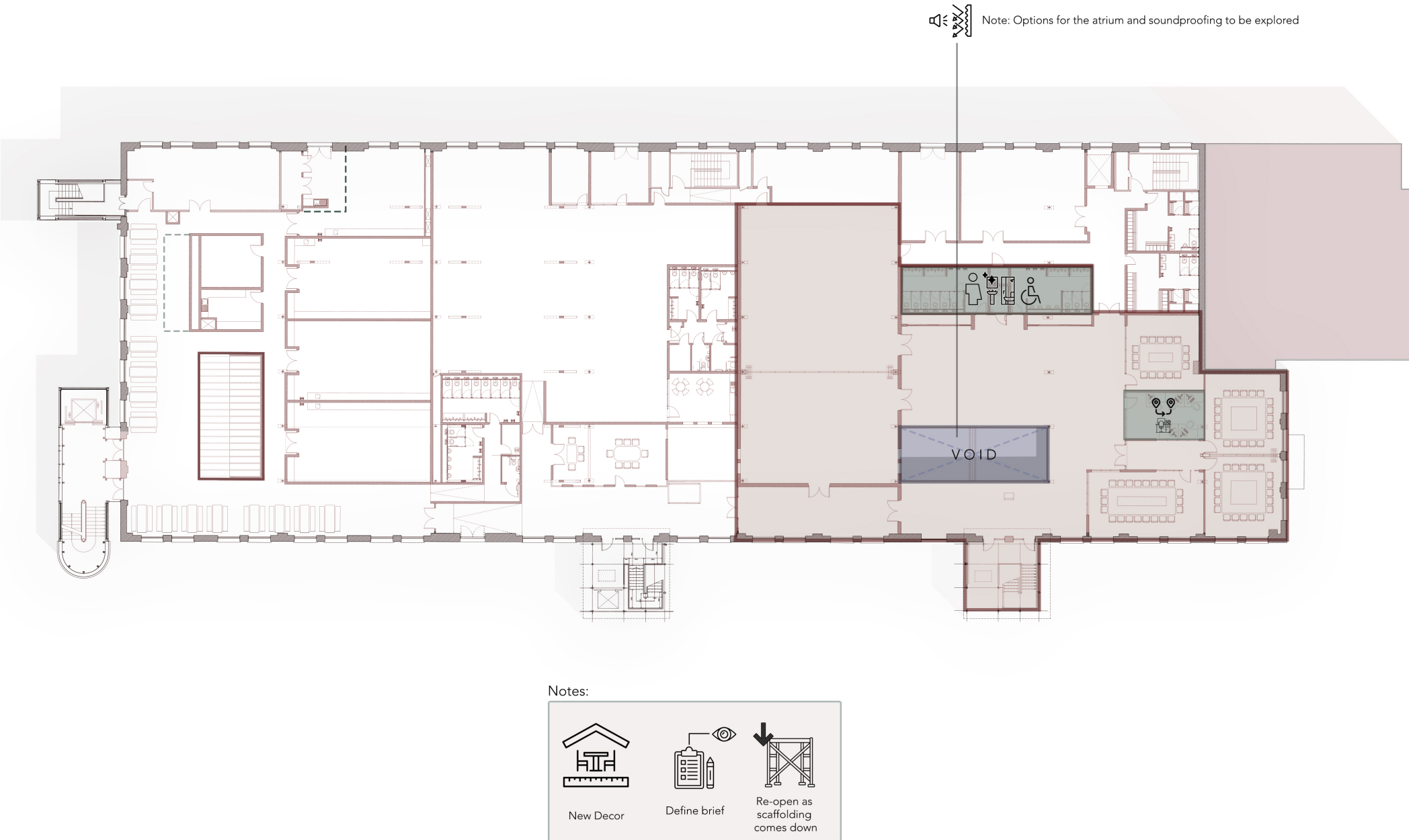
2.0

Introduction

2.0 Introduction

2.1 Brief

- 2.1.1 The design brief focuses on proposals to the second floor only, with a refurbishment to the existing conference centre.
- The refurbishment will include:
 - New carpeting and light-touch redecoration.
 - Implementation of a soundproofing solution for the atrium, (currently enclosed by a crash deck) which will be reopened upon completion of the ongoing reroofing project.
- 2.1.2 The client has expressed concerns about potential noise transfer that could disrupt events after the removal of the crash deck currently enclosing the atrium. This structure has been in place for an extended period due to roof issues and has effectively mitigated noise transfer from the public exhibition spaces below.
- 2.1.3 However, the project brief prioritises maintaining visual connectivity with the museum and ensuring the natural flow of light from the rooflights above to the lower floors.



Background & Context

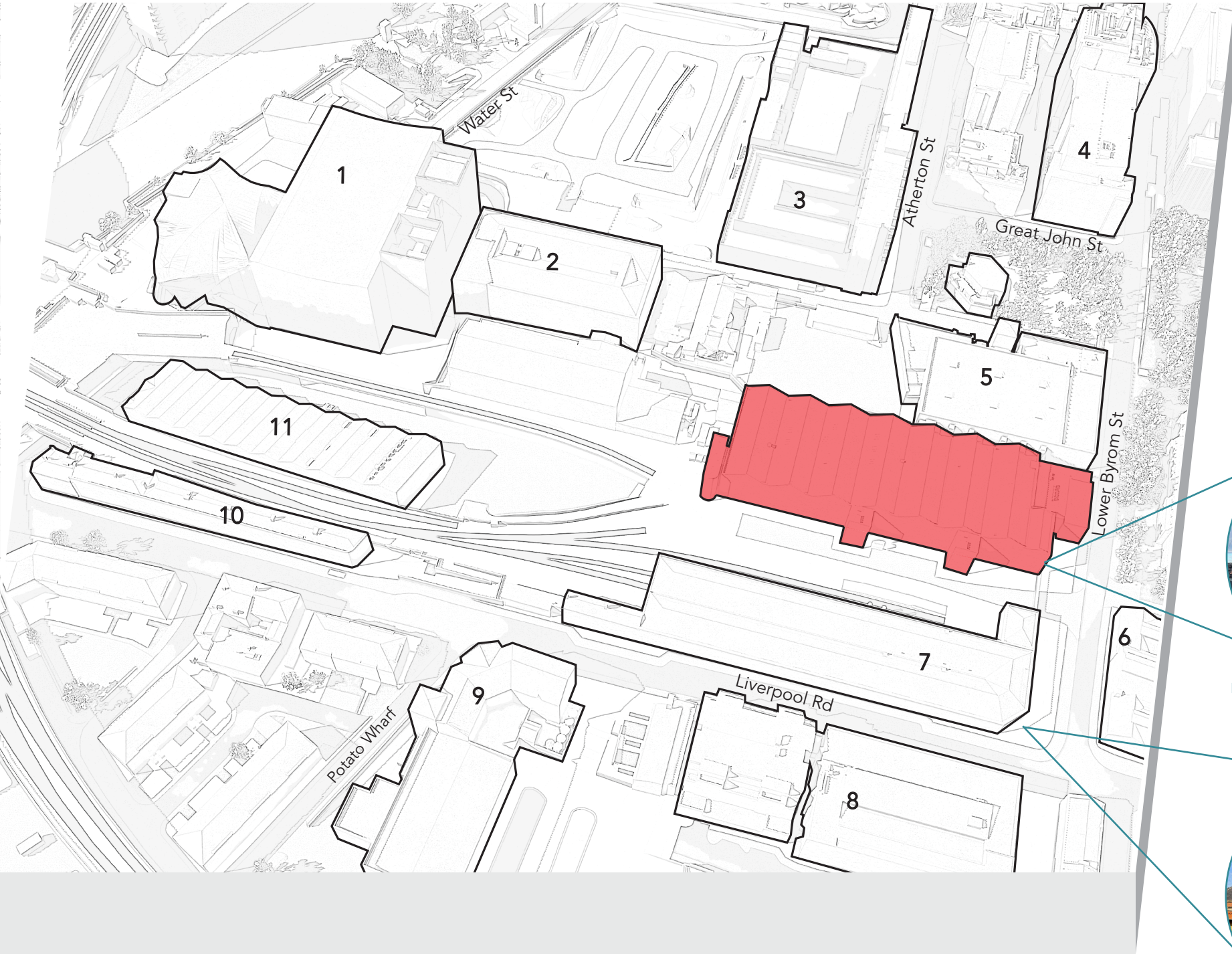
3.0 Background & Context

3.1 Location

- 3.1.1 The Science and Industry Museum is located in the western part of Manchester city centre, on the site of the former Liverpool Road railway station.
- 3.1.2 The wider museum site is bounded to the north by a number of large warehouses including the site of the new Factory International building, to the south by Liverpool Road, to the east by Lower Byrom Street, and to the west by the River Irwell as well as Stephenson's Viaduct.
- 3.1.3 Situated in the heart of Manchester, the Science & Industry Museum occupies a prime location within the city's historic Castlefield district. The former Liverpool Road railway station, the world's first inter-city passenger railway station, opposite the 1830 Warehouse. To the east is the New Warehouse and the Power Hall.
- 3.1.4 There are a number of projects being carried out across the site as part of Vision 2025 masterplan for the Museum, when the site is due to reopen fully to the public.

Key

- 1 The Factory
- 2 Rent-able office space
- 3 Apartment Building
- 4 Apartment Building
- 5 Crystal Maze Live Experience
- 6 Lower Campfield Market (temporarily closed)
- 7 Power Hall
- 8 High street food and shops
- 9 The Castlefield Hotel
- 10 1830 Station
- 11 1830 Warehouse
- New Warehouse (SITE)



Main entrance from Lower Byrom St



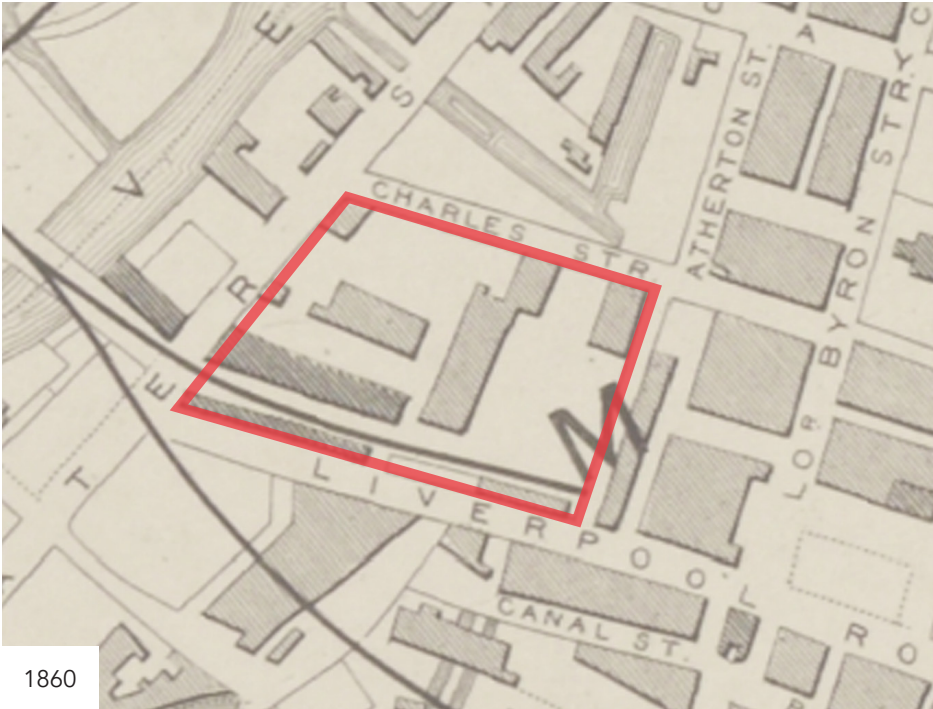
Entrance View from Liverpool Rd

3.2 Historic Context

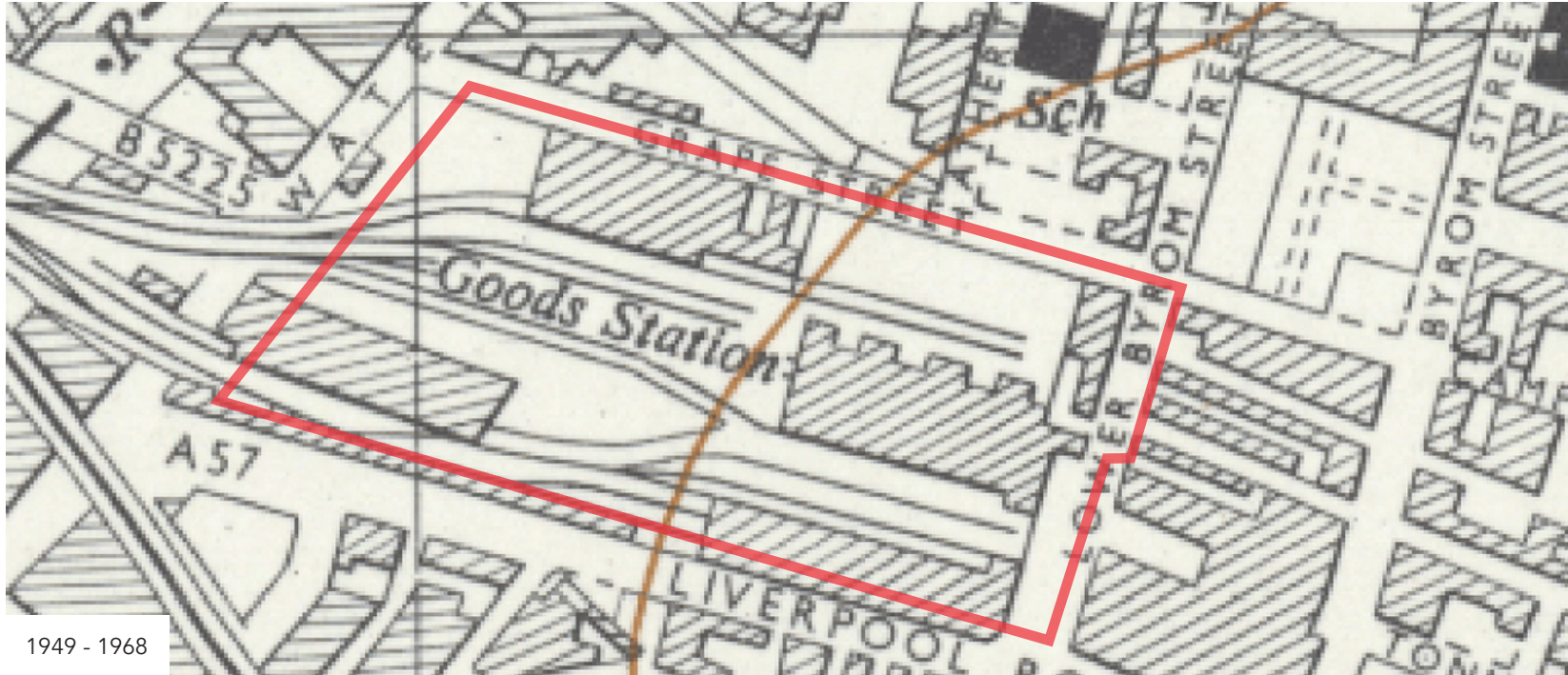
3.2.1 The New Warehouse, also known as Lower Byrom Street Warehouse or Great Western Railway Warehouse, was constructed between 1878 and 1880. A fireproof building, it had cast-iron columns and wrought iron girders, with hydraulic hoists on the top floor. As goods traffic declined through the twentieth century, it became the main warehouse. The warehouse was sold to the museum in 1981 and converted for museum purposes in several phases between 1984 and 2000. In 2010 major redevelopment saw the introduction of the two southern stair and lift cores, including extensive internal rearrangement. The New Warehouse currently provides a collections and archive centre in the basement, space for permanent and visiting exhibitions, science shows, shop, café on the ground floor, with space for permanent exhibitions, meeting rooms and offices on the second floor.



1824



1860



1949 - 1968

3.3 Historic Maps

3.3.1 In 1824, much of the site between Liverpool Street and Charles Street lay empty up until the development of Liverpool Road Station in 1830. The 1808 Station Master's House is the only building that can be seen to the left of the highlighted image.

3.3.2 By 1860, the site of the Science & Industry Museum was occupied by Liverpool Road Station and the 1830 goods warehouse. In the right image, the New Warehouse has a different position to it's current, and the Shipping Shed was a new addition.



New Warehouse 1983



New Warehouse Second Floor 1987



New Warehouse Second Floor 1987



New Warehouse Second Floor 1987

3.4 Planning Context

		3.4.9	122773/LO/2019 LISTED BUILDING CONSENT for alterations to the Science and Industry Museum New Warehouse building and Colonnaded Viaduct including internal and external alterations to create a new Special Exhibitions Gallery and associated access, hard landscaping, lighting and other associated works.	Statutory Address 1: MANCHESTER MUSEUM OF SCIENCE AND INDUSTRY, FORMER LOWER BYROM STREET WAREHOUSE, LOWER BYROM STREET
				Location
				Statutory Address:
3.4.1	019724 GMC DEVELOPMENT Change of use to museum of science and industry of Lower Byrom Street warehouse and the provision of a car park and picnic area at upper level The Greater Manchester Museum of Science and Industry Liverpool Road Station, Liverpool Road, City CENTRAL.	3.4.10	122772/FO/2019 External alterations to the New Warehouse at basement level and two existing ground floor louvres, landscaping, feature lighting and associated works to facilitate adaptation to the special exhibition gallery.	MANCHESTER MUSEUM OF SCIENCE AND INDUSTRY, FORMER LOWER BYROM STREET WAREHOUSE, LOWER BYROM STREET
		3.4.11	137802/LO/2023 Listed Building Consent for fire protection remediating works in the New Warehouse including works to stud walls and fire doors.	The building or site itself may lie within the boundary of more than one authority.
3.4.2	029573 Elevational alterations to the Museum Building Lower Byrom Street warehouse, Lower Byrom Street, City CENTRAL			District: Manchester (Metropolitan Authority)
		3.4.12	138260/FO/2023 Phased refurbishment works, with Phase 1 including full replacement of the roof with new insulation, downpipes and gutters, access gantries and ladders and revised rooflight arrangement, fabric repairs and decoration works to the facades, waterproofing works to the Special Exhibitions Gallery at basement level including some excavation of the Upper Yard to allow for access, the installation of a new entrance porch on the west elevation, installation of scaffolding and hoarding during construction works, other associated works, and Phase 2 comprising the reinstatement of the Upper Yard hard landscaping following completion of the waterproofing works to the Special Exhibitions Gallery.	Parish: Non Civil Parish
3.4.3	031891 Conversion of part of warehouse into a museum with a shop, reception area, store and toilet facilities, with elevational alterations Lower Byrom Street Warehouse, Lower Byrom Street, City CENTRAL			National Grid Reference: SJ 83172 97868
				Details
3.4.4	032265 Individual letter name sign on front elevation of museum illuminated by floodlights Lower Byrom Street Warehouse Lower Byrom Street, City CENTRAL			MANCHESTER
				SJ8397NW LOWER BYROM STREET 698-1/30/230 (West side) Manchester Museum of Science and Industry, former Lower Byrom Street warehouse
3.4.5	089530/FO/2009/C1 Reconfiguration of existing Lower Byrom Street Warehouse to include removal of existing modern ramps, staircases and partitions, provision of new partition walls to form altered layout, internally, and addition of new external vertical circulation cores and new roof lights Museum Of Science And Industry Liverpool Road Castlefield Manchester M3 4FP.			GV II
		3.4.13	138261/LO/2023 Listed building consent for Phased refurbishment works, with Phase 1 including full replacement of the roof with new insulation, downpipes and gutters, access gantries and ladders and revised rooflight arrangement, fabric repairs and decoration works to the facades, waterproofing works to the Special Exhibitions Gallery at basement level including some excavation of the Upper Yard to allow for access, the installation of a new entrance porch on the west elevation, installation of scaffolding and hoarding during construction works, other associated works, and Phase 2 comprising the reinstatement of the Upper Yard hard landscaping following completion of the waterproofing works to the Special Exhibitions Gallery.	Formerly known as: Lower Byrom Street Warehouse of Liverpool Road Station LOWER BYROM STREET. Railway goods warehouse, now part of museum complex. 1880, altered. Red brick with dressings of red brick and some sandstone, slate and glass roof. Large rectangular plan on east-west axis with entrances for railway lines through west end. Three storeys and basement, with south facade of 7 gabled bays, each bay having 2 pairs of windows; blue brick plinth and bands between floors with vertical strips extended to the windows; segmental-headed windows diminishing in the height, with stone imposts and blue brick keystones and arch-bands, iron-framed small-pane glazing; large segmental-headed wagon archways to the 2nd, 3rd and 5th bays, 2-stage loading slot to the upper floors of the 3rd bay. Eight-window west end, with 2 large square train entrances at ground floor; staggered east end with 4-window main facade, altered entrance at ground floor.
3.4.6	107646/LO/2014/C1 LISTED BUILDING CONSENT for structural investigation works, involving trial pits/opening up works and material samples. Railway Viaduct Over River Irwell Leading To Lower Byrom Street Warehouse Manchester M3 4AN			
3.4.7	115687/LO/2017 LISTED BUILDING CONSENT Replacing modern plastic downpipes with cast iron of same dimensions Museum Of Science And Industry Lower Byrom Street Manchester M3 4FP			
3.4.8	19810/LO/2018 LISTED BUILDING CONSENT for rooflight replacement and roof safety improvement works including Installation access hatch / ladder from existing plant room, freestanding PVC walkways to gutters and up and over freestanding stepped walkways with handrails to both sides over pitched roof slopes. Manchester Museum Of Science & Industry Great Western Warehouse Lower Byrom Street Manchester M3 4FP			

3.5 Listing Description

Heritage Category: Listed Building

Grade: II

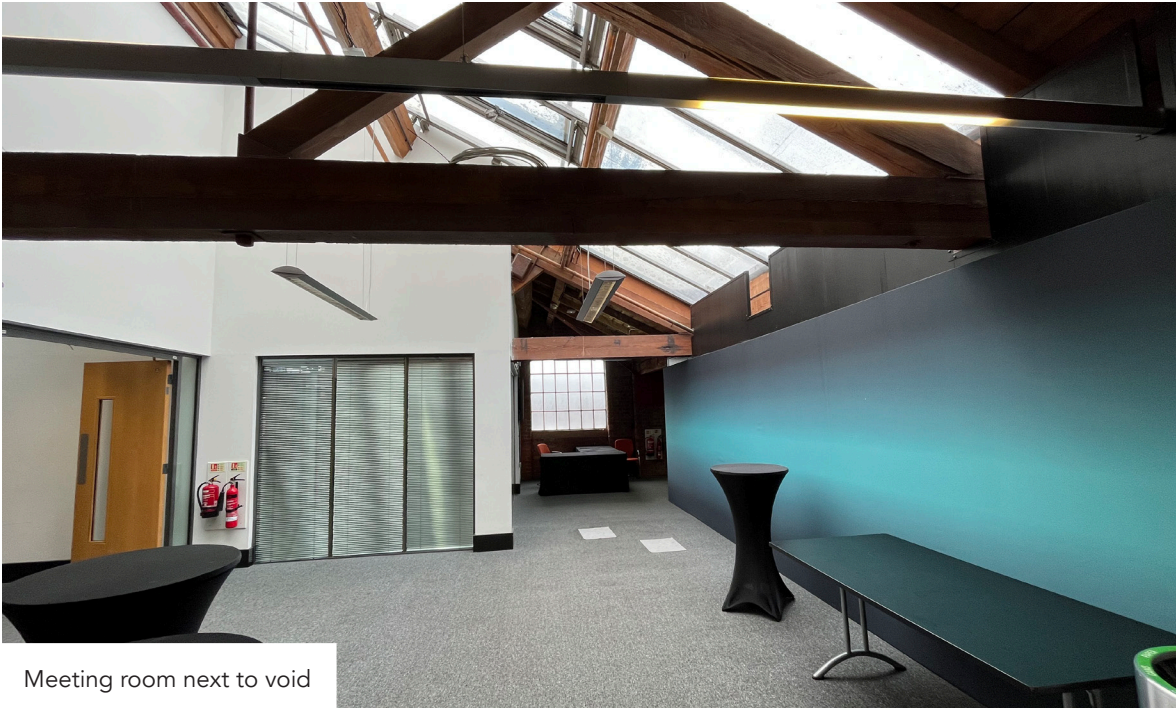
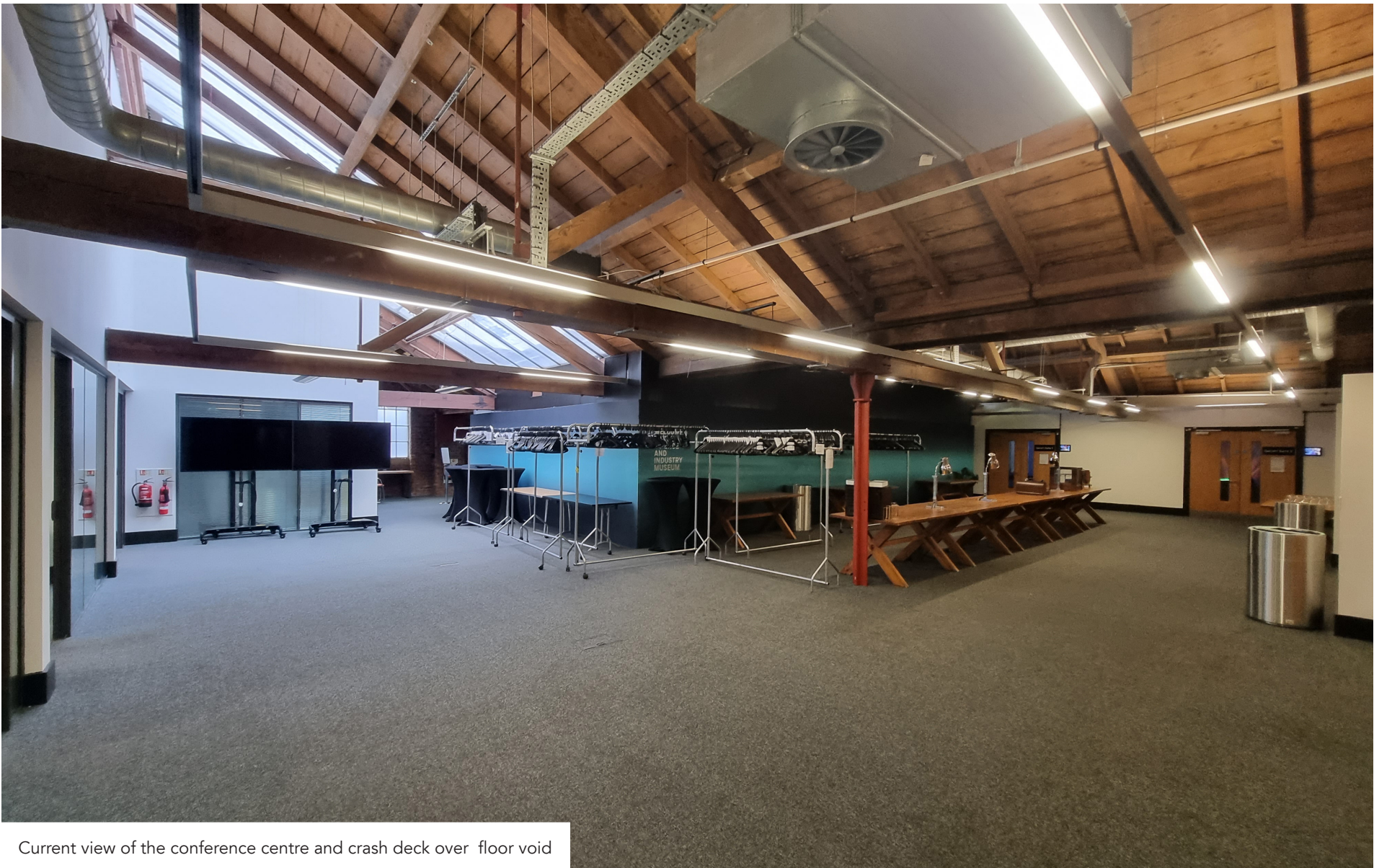
List Entry Number: 1283016

Date first listed: 06-Jun-1994

3.6 Heritage Assessment

3.6.1 Please refer to: Heritage Impact Assessment - SIM Conferencing

- 1. View of new warehouse from Lower Byrom Street
- 2. View of South facade
- 3. Glazed stair core



3.8 The original Conferencing Centre & Learning Loft fit-out - during construction c 2010

- 4. Learning Loft
- 5. Circulation space outside of the conferencing suites
- 6. View up one of the floor voids during construction



3.9 Photos post original fit out c 2011-2012

- 7. Conference Room
- 8. Conference Centre breakout space
- 9. Conference Room



4.0

Design
Proposals

4.0 Design Proposals

4.1 Background

4.1.1 Buttriss has successfully completed a comprehensive Stage 2 feasibility study, during which various options were thoroughly explored in collaboration with the client and design team. The selected proposal was chosen for its exceptional acoustic performance and visually appealing design, which maintains a strong connection to the museum below.

Key

- Project Boundary
- Not in Scope
- Offices
- Meeting Rooms
- WCs
- Circulation
- Floor Void

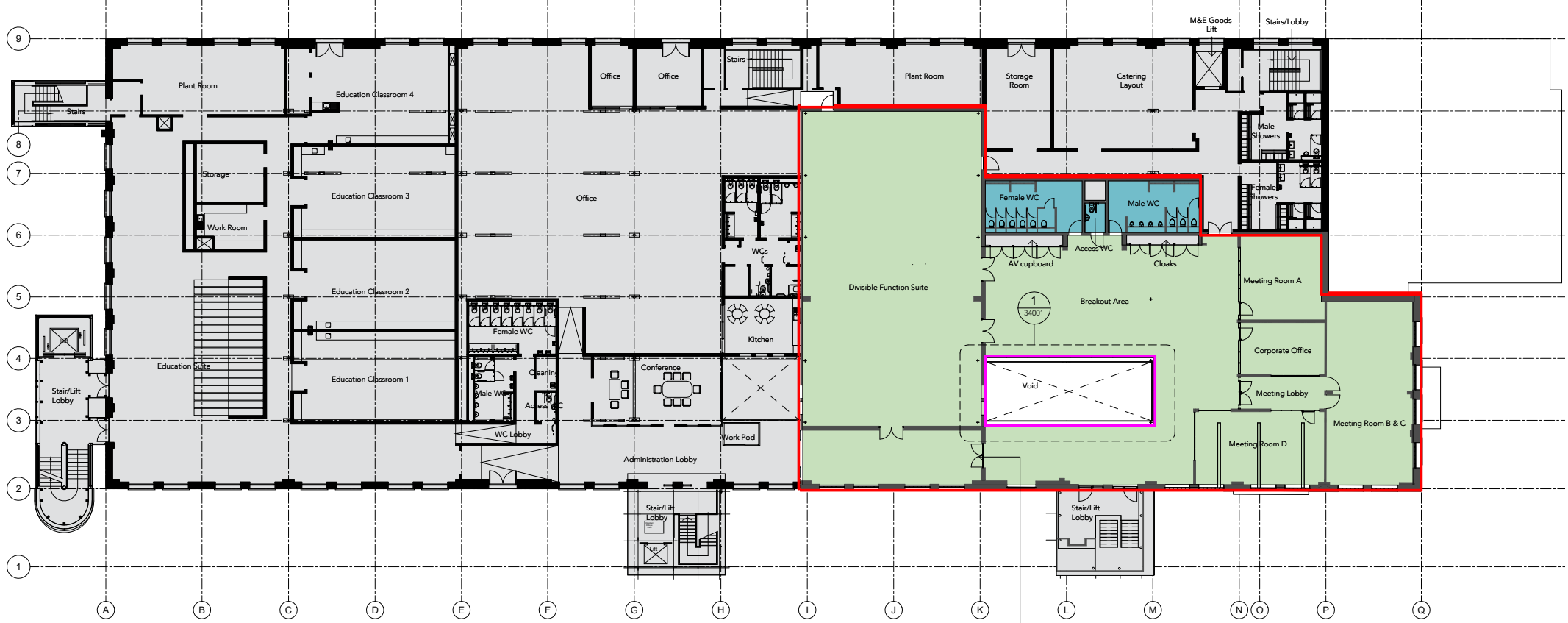


4.2 Second Floor Design Proposal

- 4.2.1 The second floor proposal includes the following design strategies explained in further detail in this section of the document;
- New proposed glazed screen and partition system around the existing floor void.
 - Proposed light touch refurbishment and redecoration including resealing and painting in the WC's.
 - Proposed wholesale decorations on painted walls, ceilings, skirting and new floor finishes in the breakout areas and function/meeting rooms.

Key

- Project Boundary
- Not in Scope
- Wholesale decoration
- Light touch refurbishment and redecoration
- Proposed glazed screen and partition system around floor void
- Floor Void



New 60 minute fire rated glass screen with 180 degree magnetic hold open device linked to fire alarm system to create new fire compartmentation. (NOTE: this is part of a separate project being executed by the museum.)

Proposed Second Floor Plan Note: Plan not to scale

4.3 Atrium Design Proposal

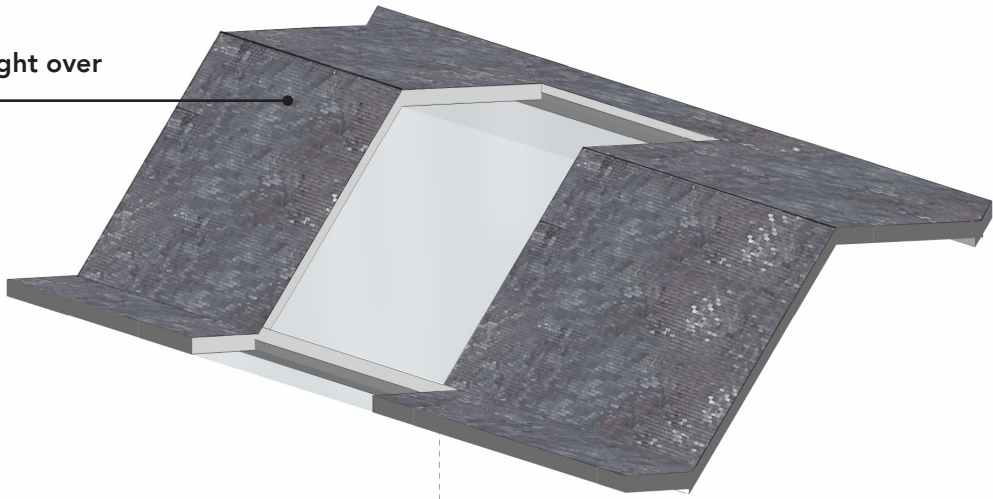
- 4.3.1 The final proposal includes removing the existing balustrade and replacing it with a glazed enclosure around the perimeter of the void, allowing users to overlook the space below. This new enclosure features glazing along with a partition extending to the soffit, ensuring an acoustically sound environment while enhancing visibility and connection between levels. The advantages of this solution include maintaining visual connections across levels, preserving circulation safety, and providing an acoustically treated space.
- 4.3.2 Acoustic Improvements
- 4.3.3 During Stage 2 of the feasibility study, Buro Happold conducted a series of on-site noise level assessments and evaluated several options for acoustically treating the atrium space. The chosen proposal is summarised in 4.3.4 to 4.3.6, highlighting the anticipated improvements. Further detailed analysis and refinement will be undertaken as the project advances into the detailed design phase.

- 4.3.4 'Glazed screens would need to be built to the underside of the beams around the void, and would be recommended to achieve a minimum laboratory sound insulation of Rw 42 dB, which would be expected to be achievable by a double glazed system with at least one pane of acoustic laminate. Manufacturer's test data for the selected product would need to be provided for review.
- 4.3.5 It is understood that the glazed screens will abut plasterboard bulkheads to the underside of the roof. The plasterboard must be compatible with achieving performance of Rw 47 dB. This can be achieved using two layers of 12.5 mm WallBoard either side of 70 mm studs, with 25 mm mineral wool in the cavity (total thickness 122 mm).
- 4.3.6 Based on the above, noise levels within the break-out area resultant from occupants below would be expected to be meet the internal ambient noise level criteria and the speech interference criteria. As such, noise disturbance to occupants on level 2 would not be expected' ref: 0059671-BHE-XX-RP-YA-X-0005- Stage 2 Design Report.

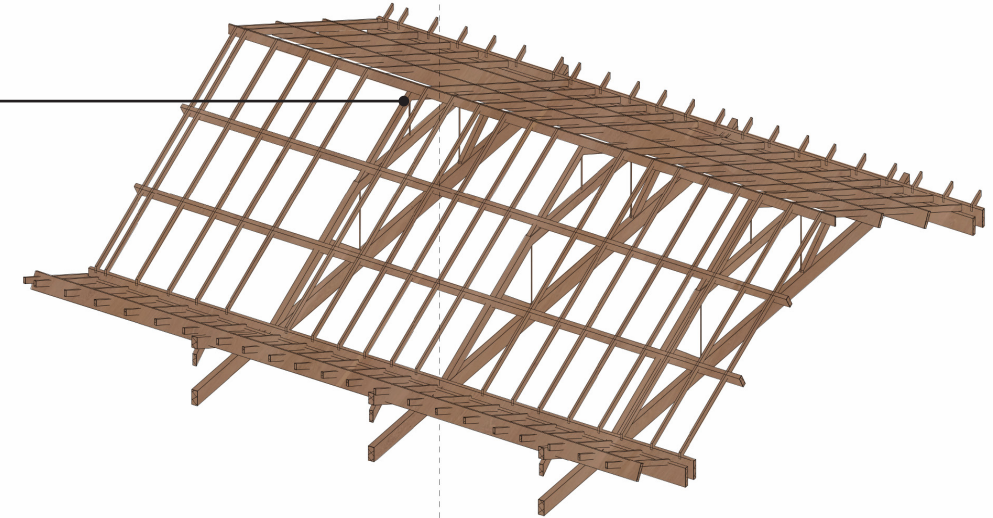
Precedent Studies



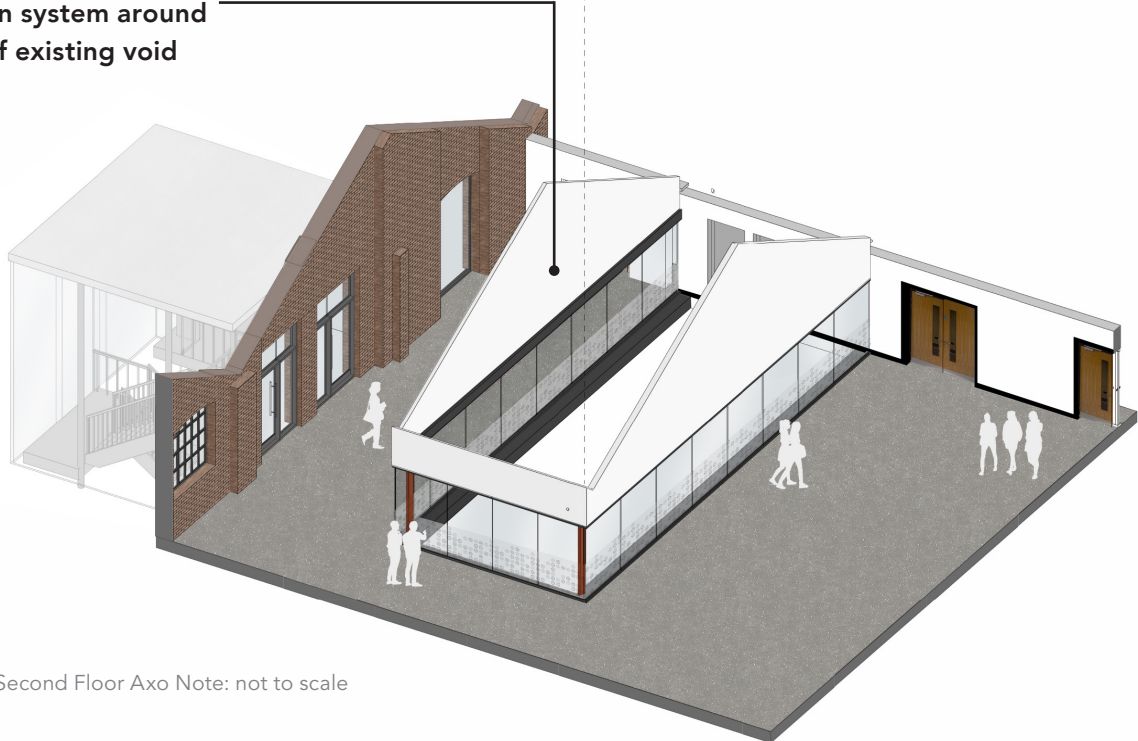
Existing roof and rooflight over atrium



Existing timber roof structure



Proposed new glazed screen and partition system around perimeter of existing void



Proposed Second Floor Axo Note: not to scale

4.4 Proposed sketch visuals

4.4.1 The visuals offer an insight into how the new glazing and plasterboard will enhance the breakout space within the conference centre. To aid exploration, we have included a range of colour options.

4.4.2 The design demonstrates how the new structure complements the existing architecture, blending sympathetically with the columns and surrounding elements.



Atrium Visual colour option 1

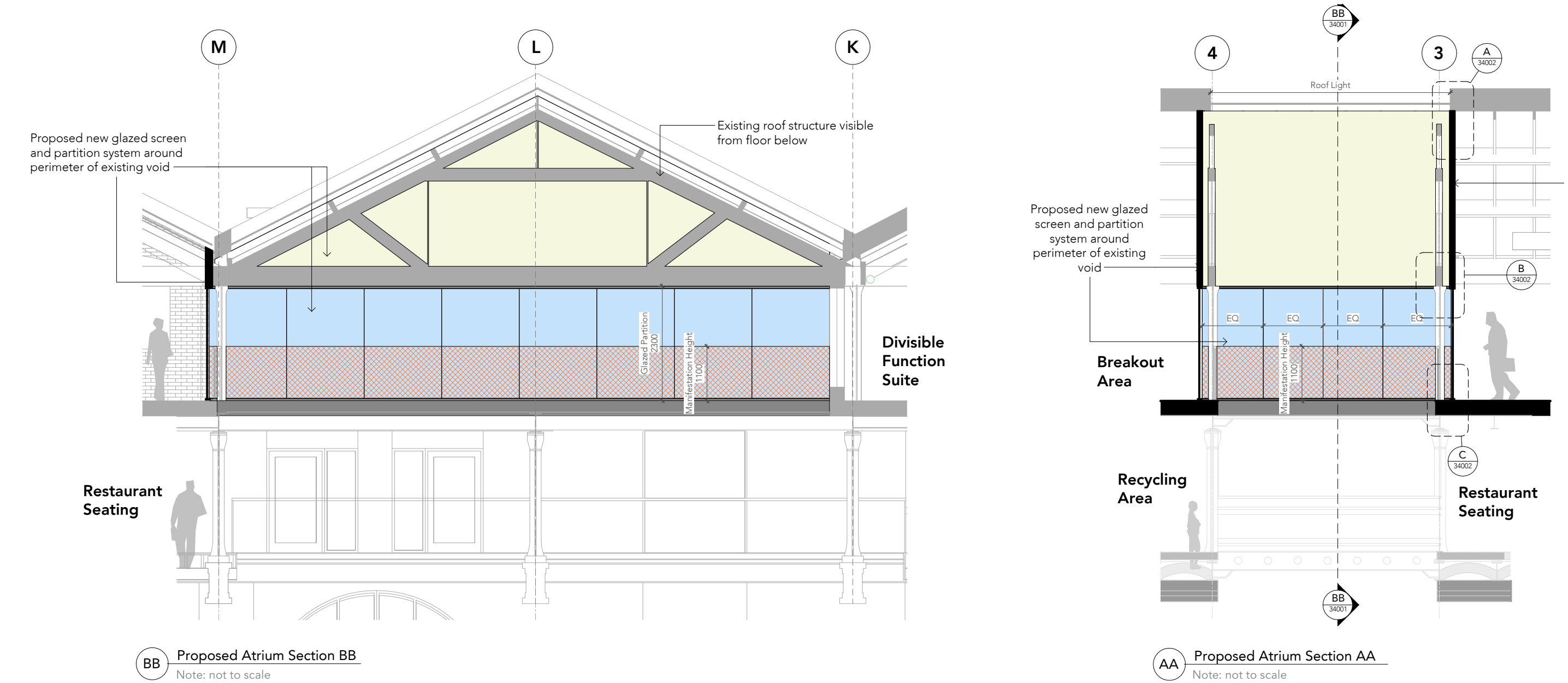


Atrium Visual colour option 2

4.5 View of Atrium from Ground Floor



4.6 Proposed Sections



Summary of proposals

5.0 Summary of proposals

5.1 Conference Centre Refurbishment

5.1.1 This proposal seeks to enhance the acoustic performance of the existing conference centre while incorporating a light-touch refurbishment. The design approach is carefully tailored to respect and preserve the character of the Grade II listed building, ensuring minimal visual impact. The scheme will deliver significant improvements to the functionality and usability of the space.

5.1.2 Key proposals are:

1. General Refurbishment
- New carpeting and light-touch redecoration.
 - Resealing and painting of WC areas.
 - Complete redecoration of painted walls, ceilings, skirting, and new floor finishes in breakout areas and function/meeting rooms.
2. Noise Mitigation Measures
- Installation of a glazed screen and partition system around the existing atrium, maintaining visibility to the floors below while mitigating sound transfer.
 - The system will achieve a minimum laboratory sound insulation of Rw 42 dB through double-glazed panes with acoustic laminate.
 - Noise levels from the lower levels will meet internal ambient noise and speech interference criteria through these acoustic interventions.

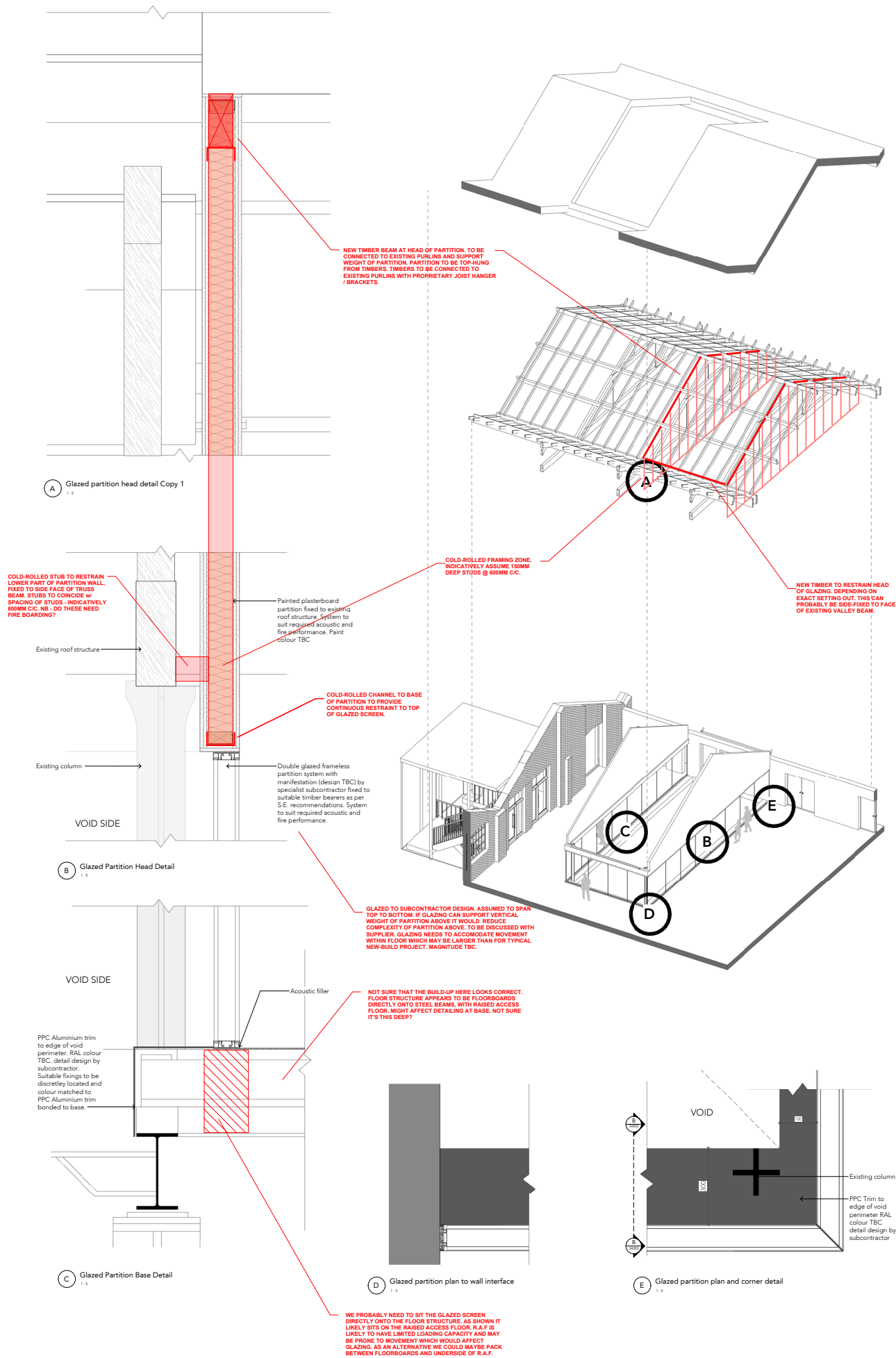
5.2 Pros of the Proposals

- Improved Acoustics: Solutions effectively mitigate noise transfer, ensuring an undisturbed environment for conferences and meetings.
- Enhanced Visual Connectivity: Design prioritises visibility and natural light flow, maintaining a connection to the museum below.
- Aesthetic Appeal: Updates modernize the space with high-quality materials and finishes, enhancing user experience.
- Alignment with Client Goals: Balances acoustic needs with the client's priority to maintain visual and light connectivity.

Appendices

6.0 Appendices

6.1 Structures



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Architects | Masterplanners | Heritage Consultants