

WHITELEY HALL, MILLGATE BUILDING, CHETHAM'S SCHOOL OF MUSIC, LONG MILLGATE, MANCHESTER



Archaeological Watching Brief

Matrix Archaeology

May 2024

WHITELEY HALL,
MILLGATE BUILDING,
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LONG MILLGATE,
MANCHESTER

Archaeological Watching Brief

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Client: Chetham's School of Music

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SUMMARY

Following a fire which occurred inside the late 19th century Millgate Building, a programme of soft stripping was commissioned to facilitate repairs to the walls and ceiling of the Whiteley Hall. An archaeological watching brief was undertaken during this work, to create a record of the structures and features revealed.

1. INTRODUCTION

- 1.1 An archaeological watching brief and recording during a soft strip at the Millgate Building, was undertaken by Matrix Archaeology Ltd during May 2024. This work was commissioned by Steve Kendall of Buttress Architects, on behalf of the client, Chetham's School of Music.
- 1.2 The Millgate Building was a range of 19th century buildings, which form the eastern part of the quadrangle occupied by Chetham's School of Music and Chetham's Library. It is Listed Grade II, and was built in 1869-70 by architects Barker & Ellis. It is also located within the Manchester Cathedral Conservation Area. The Whiteley Hall occupies the ground floor of this building, and comprises a large concert hall with an elevated timber stage. Previous historic architectural assessments of the Millgate Building were undertaken by Hartwell and Barter (2006); and Barter (2020).
- 1.3 In 2022, the Hall was significantly damaged by an accidental fire. Listed building consent for restoration works has been granted by Manchester City Council, following an application by Buttress Architects, which included a Heritage Assessment, dated 2022 (Needham and Johnston, 2022).
- 1.4 A condition of the Consent relates to an archaeological watching brief: *"Final details of an archaeological watching brief before and during strip out works. All of the above shall be implemented in accordance with the approved details before the first use of the building commences."*
- 1.5 Therefore, a pre-intervention photographic record of the Hall was undertaken on 29 November 2023, to meet the requirement before stripping out commenced. A Written Scheme of Investigation (WSI) was produced by Matrix Archaeology Ltd, to define the remaining proposed watching brief works, archiving and reporting.
- 1.6 **Acknowledgements**
The watching brief and reporting was undertaken by Steven Price and Mark Fletcher. The staff of Chetham's School of Music and MJM Contract Services kindly provided access to the site.
- 1.7 **Disclaimer and limitations**
Please note that the contents of this report are intended exclusively to promote the historical and archaeological understanding of the site. They must not be used for any other purpose without the written consent of Matrix Archaeology. Matrix Archaeology accepts no responsibility for any use, whole or partial, of this report without such written authority.

2. SITE LOCATION

2.1 Location

The site was located between Manchester Cathedral and Victoria Station, within the northernmost part of Manchester city centre (NGR SJ 839989) (**Figure 1**). Late post-medieval development had obscured the original topographic setting of the site. The late medieval college buildings were originally located upon a distinct promontory, at *circa* 33m O.D., with the river Irwell to the west and the river Irk to the north. The Irwell is now confined between high embankment walls, and the Irk has been culverted. Furthermore, physical infilling adjacent to the river courses, and construction of large buildings around the area, has ensured that the College site was no longer recognisable for its original defensive potential.

The Millgate Building had been erected immediately outside the eastern boundary wall of the late medieval enclosure, and fronted onto Long Millgate.

2.2 Geology

At depth, the site is underlain by the Bunter Sandstone of the of the Permo-Triassic period. This forms the promontory between the Irwell and the Irk, and outcrops of this sandstone have been noted wherever excavations and demolition has occurred across the site. This is intermittently overlain by late glacial flood gravels of the Devensian period, which have been encountered during utility service trench excavation, across the site ([Geology of Britain viewer | British Geological Survey \(BGS\)](#)).

3. HISTORICAL DEVELOPMENT

3.1 Late medieval and post-medieval periods

The standing buildings of the Library and School of Music are dated to a grant of land in 1421, for the establishment of a College of Priests. It seems highly likely that this site was previously that of the castle and manor house, although the evidence for either of these medieval buildings only exists in documentary form. The original late medieval enclosure extended between the river Irk and Fennel Street. Late post-medieval expansion of the Library and School site has occurred to the west, north and east.

3.2 Millgate Building

The Millgate Building was constructed as part of Manchester Grammar School in 1869-70, being designed by architects Barker & Ellis (not Alfred Waterhouse, as has been previously claimed). Between 1931 and 1978, the building functioned as the Manchester Training College. In the latter year, it was acquired by the School of Music, and in the following year was refurbished by Thomas Worthington & Sons, with additional alterations occurring in 1996 and 2006.

Marion Barter (2020) has determined that the Whiteley Hall has high architectural significance, as it retains its internal special character, defined by the large open space and tall windows. Specific features she highlighted were the moulded plaster ceiling, and the original timber stage. It was recognised, however, that the Hall has undergone several phases of later works, and much original fabric has now been lost.

4. WATCHING BRIEF

4.1 Preliminary Assessment

Prior to any stripping out commencing, a photographic ‘as is’ record of the Hall was undertaken (Figure 2, Plates 1 – 42). At this point, the fire damaged organ was still in situ. Following this assessment, the WSI was produced to define the extent of the proposed recording during the ‘soft strip’.

4.2 Watching Brief

This was undertaken during the ‘soft strip’ of the fire damaged ceiling and walls, by MJM Contract Services. Scaffold towers were erected, and the ceiling plasterwork was removed manually using electric saws. This revealed the constructional detail of the internal walls and ceiling beams, and these were then recorded by measurement and by photography. A set of digital plans and elevations were supplied in AutoCAD by Buttress Architects, and these were amended and added to with relevant archaeological details (Figures 2 – 4). The working conditions were difficult, given the amount of dust produced by the works, and the lack of natural light beneath the ceiling (Plates 43 – 46).

The Hall was five bays in length, for recording purposes these were numbered in plan, from south to north (Figures 2 – 4). Bay 1 contained a balcony with first floor access from the south; the ceiling above appeared to have been replaced with plasterboard panels, probably as a fireproofing measure. Over bays 2, 3 and 4, the original plasterwork of 1869-70 remained intact. Bay 5 contained the timber stage.

4.3 Internal walls (Plates 47 – 51)

The internal walls were partly stripped of fire damaged plaster, towards the ceiling. The west and east walls were constructed of machine-made brickwork, laid in an English Garden Wall (EGW) bond of three stretcher courses to each header course. The bricks measured 230mm in length by 75mm in thickness. Natural illumination within each of the five bays was provided by large opposing windows, each of two-centred arches, of the pointed segmental type. The arches and architraves were decoratively enhanced by plasterwork mouldings. Removal of plasterwork revealed that each window reveal contained pairs of substantial gritstone blocks, each 330mm deep, within the upper and lower parts. It is suggested that these blocks provided structural ties linking through between the external gritstone window surrounds, and the internal brickwork elevations. It also seems likely that these gritstone blocks were utilised for affixing of the heavy timber frames of the windows.

The south wall of the balcony in bay 1 was also stripped of its dry lining, which comprised modern plasterboard panels, mounted upon timber battens, which were fixed into the brickwork. The bricks were identical to those of the east and west elevations. A modern timber partition had controlled access through the probable original central doorway; but just to the south of this was a larger, inserted doorway, beneath an inserted steel lintel. This doorway had provided access into the toilets here, and into the main staircase.

4.4 Wrought iron beams (Plates 54 – 56)

Although not fully exposed at any point, the structural ceiling beams between the bays were of wrought-iron, assembled as compound girders, using rivets. These beams had an I-section profile, comprising a vertical plate (the web), with two sets of angle irons attached (the flanges). The beams had a web depth of 400mm; a lower (tension) flange with a width of 235mm; and an upper (compression) flange width of 130mm. An additional plate was noted on the upper flange, at mid span. A similar addition may have existed on the lower flange, but visibility was restricted on the soffit.

At unknown lateral intervals, vertical wrought iron stiffening plates had been rivetted to the webs (Plate 54), to obviate any buckling, and one pair of such plates had been affixed in a cross arrangement (Plate 55), possibly indicating the beam midpoint. The far ends of these beams were not visible, although it is most likely that they were bearing upon large gritstone blocks seated into the east and west walls.

4.5 Ceiling construction (Plates 57 – 60)

The wrought iron beams were used as a support for the plasterwork ceiling, and for the timber floor over. Firstly, north-south timber floor joists were laid over the upper flanges, at 340mm centres. Battens were attached to the sides of these joists, and upon the battens, spanning between the joists, were affixed short sections of timber planks (see photo inset, Figure 3). A layer of plaster was applied over these plank sections, and this may have formed a soundproofing element beneath the overlying timber floor (Plate 59). At one location, these plank sections were removed, exposing the timber floor over, and the latter appeared to have been replaced or repaired, with modern foam extruding between the timber boards (Plate 60).

The wrought iron beams were ‘boxed in’ by hanging vertical timbers off the floor joists noted above, and these hangers were then linked beneath the beam soffits by horizontal timber bearers. Angled timber rakers (Plates 55 & 56) were then affixed from the vertical timbers, onto the floor joists over. This assemblage of timber was then used to form a covering of ‘lathe & plaster’, onto which the whole of the ornamental plasterwork was ‘keyed’ (Plates 52 & 53).

5. BUILDING INTERPRETATION

5.1 Suggested phasing

Phase 1: 1869-70, Barker & Ellis

The original wall fabric, in brickwork with gritstone architectural detailing, was of this phase, as were the wrought-iron ceiling beams and the timber formwork which supported the ornamental plasterwork ceiling panelling and cornices.

Phase 2: 1978 – 2006, Thomas Worthington and Sons

During this period, following the acquisition of the Millgate Building by the School of Music, there were three separate interventions in the fabric of the building. It is suggested that the removal of the original plasterwork ceiling within Bay 1 probably occurred then, as did the installation of the balcony, and the insertion of the two doorways for access to the balcony.

5.2 Materials provenance

Wrought iron beams

Wrought iron was commonly utilised as a constructional material during the second half of the 19th century. As cast iron could fail without warning in conditions of tension, wrought iron rapidly superseded the former, especially in civil engineering applications, such as railway bridges. Within building contexts, wrought iron elements had a tensional strength of six times that of cast iron, and in the event of failure, i.e. during a fire, beams of wrought iron would simply bend or buckle, rather than catastrophically failing, as cast iron did. Steel beams did not appear until about 1885, but by 1914 they had wholly replaced both cast iron and wrought iron for new construction. There were a significant number of large-scale foundries and forges in Manchester during the second half of the 19th century, and the beams over the Whiteley Hall may have originated at any of these.

Gritstone detailing

Gritstone was extensively employed within 19th century construction activity, due to its high compressive strength. In particular it was used for engine and machine beds, and was increasingly used for building facades, because of its resistance to weathering. The local red sandstones were relatively soft, and it may be relevant to mention the fact that much of the architectural detail within the late medieval buildings at Chetham's had to be replaced in the last decades of the 19th century, due to excessive weathering. During the 1860s, much of the external fabric of Manchester Cathedral had been refaced using Carboniferous gritstone from Fletcher Bank Quarry at Ramsbottom, and the Millgate Building's external façade detail may have utilised the same provenance.

Brickwork

Machine-made brick had overtaken hand-made sources by the middle of the 19th century, and there were plenty of 'brickcrofts' in the boulder clay areas

around Manchester where such bricks could be obtained. There was an obvious cost consideration in the use of such bricks, especially on internal walls which would be rendered over, rather than replicating the external window detail using gritstone.

Timberwork

The timber components used in the ceiling were not of substantial scantling, and were probably of North American pine. There were a number of importers of such material in Manchester, including the Bellhouse family, and timber was brought in to Liverpool Docks by steamship, before being transported to Manchester on the Bridgewater Canal.

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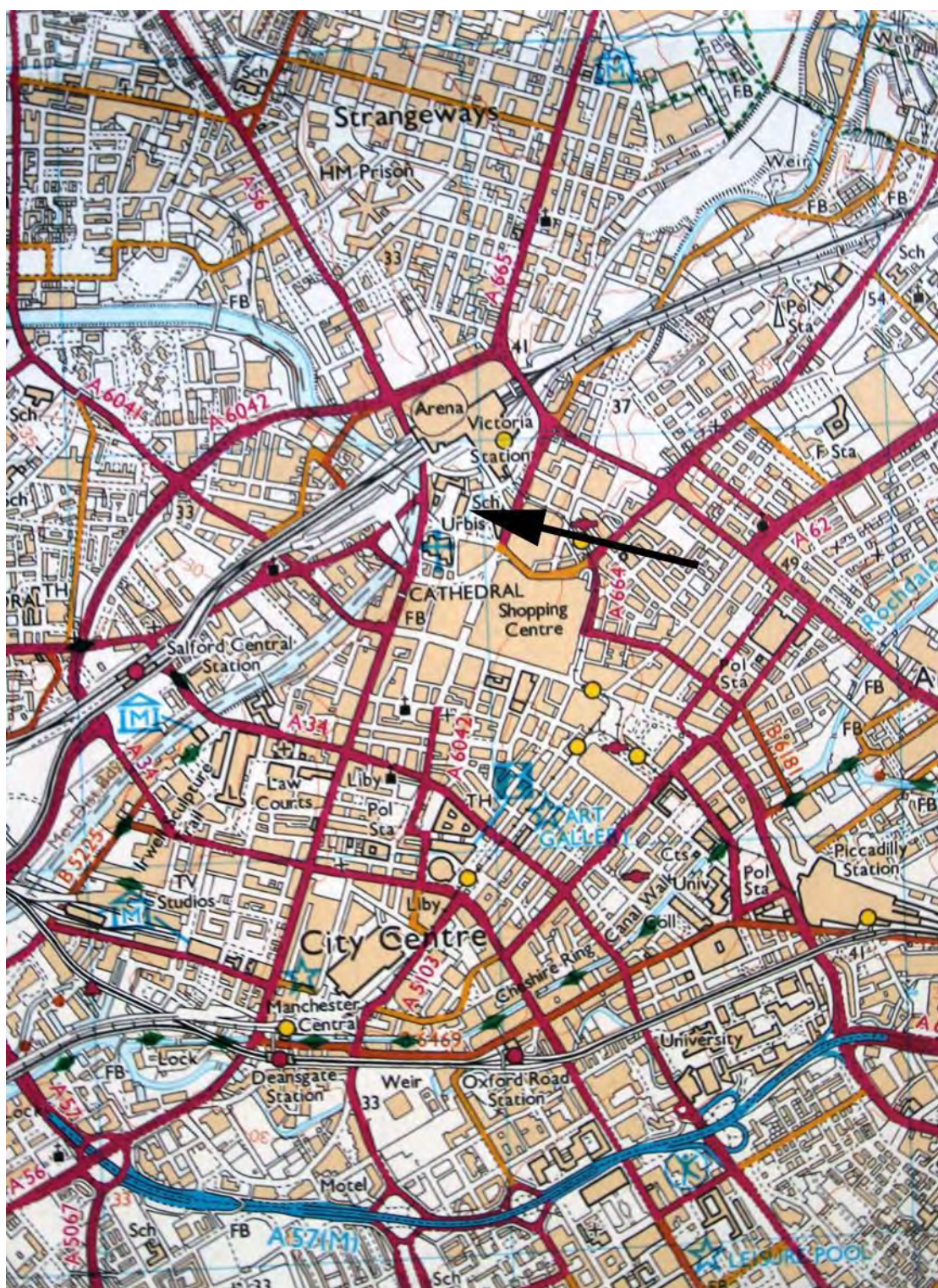
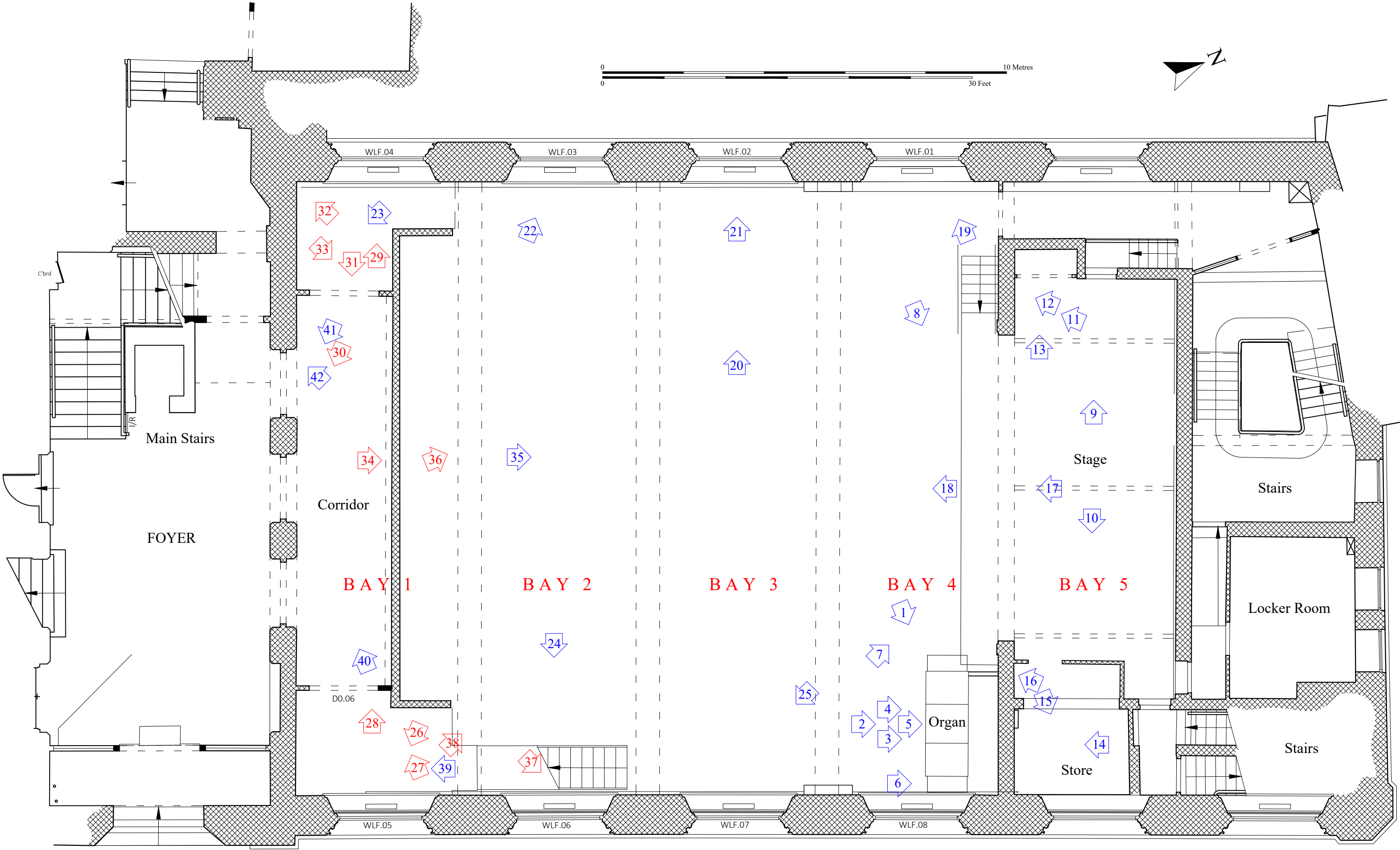
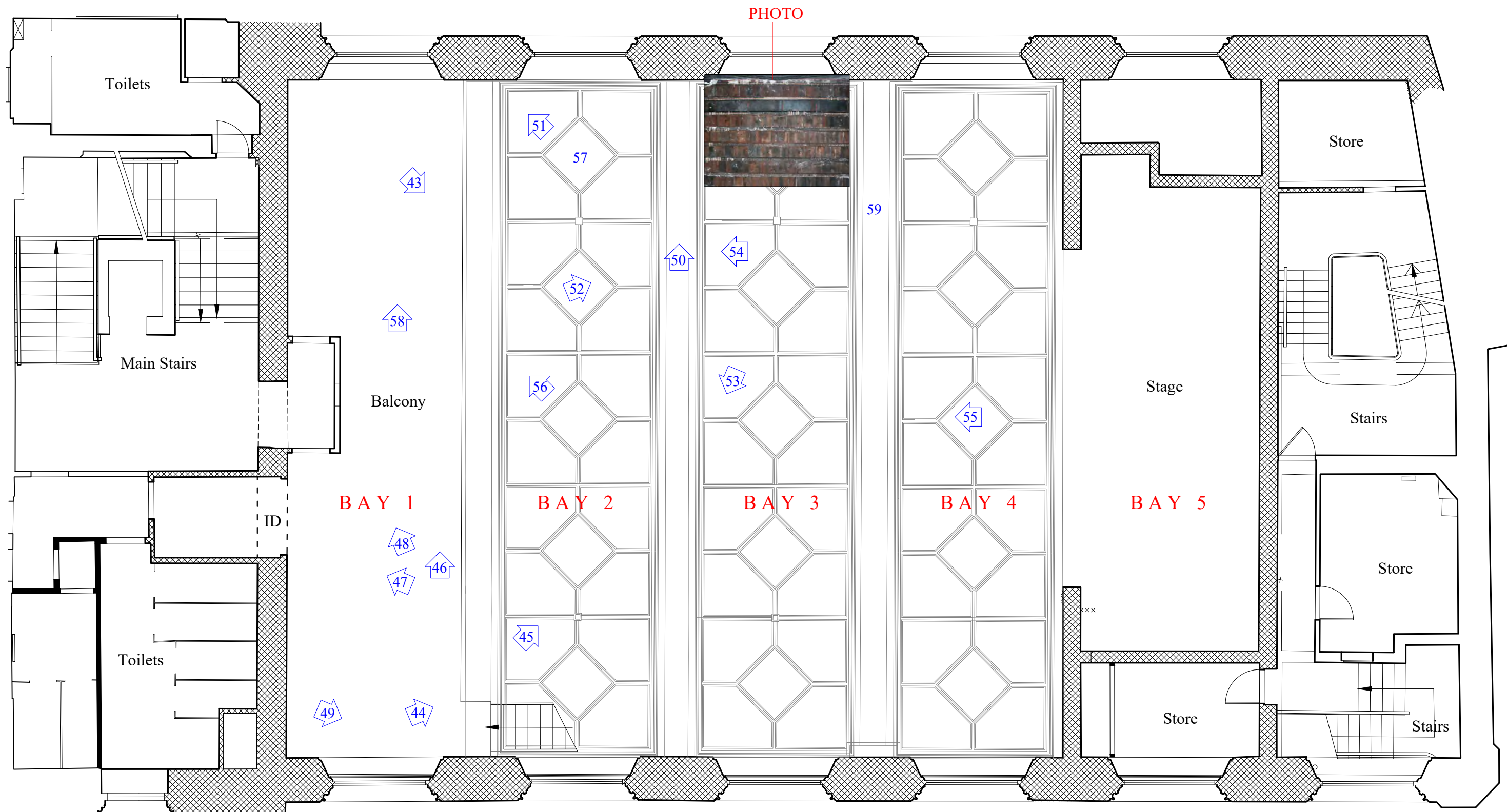
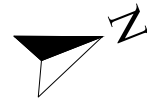


Figure 1. Site location map, derived from O. S. 1:25,000 series. Crown copyright, O.S. Licence No. AL100032621 (Matrix Archaeology Ltd).



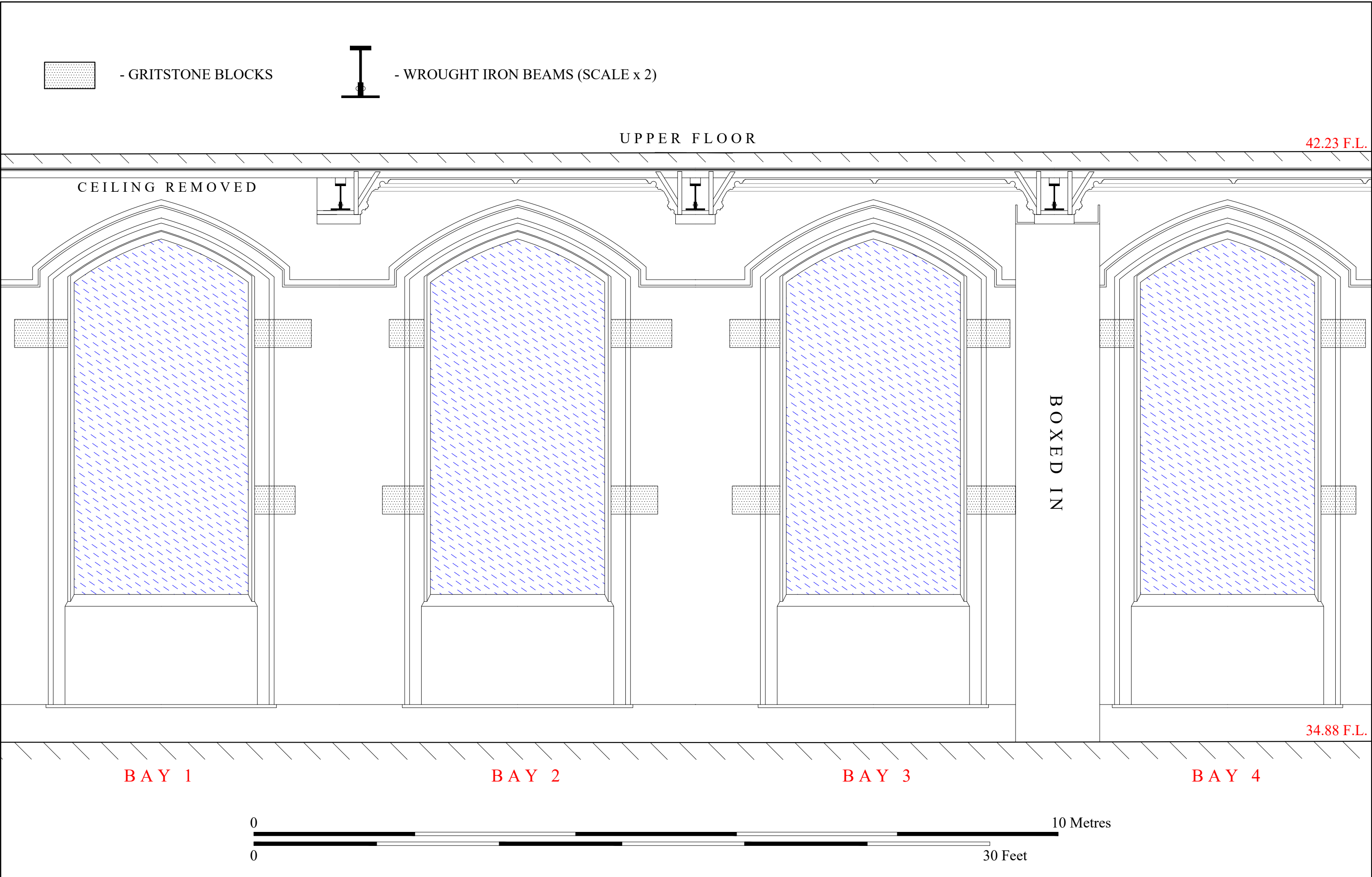
 - PHOTO DIRECTION & NUMBER  - PHOTOS FROM BALCONY

Matrix Archaeology Ltd 36 Highfield Road Stretford Manchester M32 8NQ matrixarch@btconnect.com	Site: WHITELEY HALL, MILLGATE BUILDING, CHETHAM'S SCHOOL OF MUSIC, LONG MILLGATE, MANCHESTER	Title: PRE-INTERVENTION PHOTOGRAPHIC RECORD	Date: Jan. 2024	Field Recorder: M.F. & S.P.	Sheet 1 of 3 Sheets
			Scale: As for scale bar	CAD Illustrator: M.F. & S.P.	Figure 2



 - PHOTO DIRECTION & NUMBER

Matrix Archaeology Ltd 36 Highfield Road Stretford Manchester M32 8NQ matrixarch@btconnect.com	Site: WHITELEY HALL, MILLGATE BUILDING, CHETHAM'S SCHOOL OF MUSIC, LONG MILLGATE, MANCHESTER	Title: UPPER FLOOR AND REFLECTED CEILING PLAN, WITH INSERTED RECTIFIED PHOTO OF SECTION FOLLOWING REMOVAL OF PLASTER CEILING	Date: May 2024	Field Recorder: M.F. & S.P.	Sheet 2 of 3 Sheets
			Scale: As for scale bar	CAD Illustrator: M.F. & S.P.	Figure 3



Matrix Archaeology Ltd 36 Highfield Road Stretford Manchester M32 8NQ matrixarch@btconnect.com	Site: WHITELEY HALL, MILLGATE BUILDING, CHETHAM'S SCHOOL OF MUSIC, LONG MILLGATE, MANCHESTER	Title: ELEVATION ON WEST WALL, SHOWING SECTION THROUGH FLOORS, PLASTERWORK, AND WROUGHT IRON BEAMS	Date: May 2024	Field Recorder: S.P. & M.F.	Sheet 3 of 3 Sheets
			Scale: As for scale bar	CAD Illustrator: S.P. & M.F.	Figure 4



Plate 1. Fire damaged organ, viewed from west.



Plate 2. Organ viewed from south.

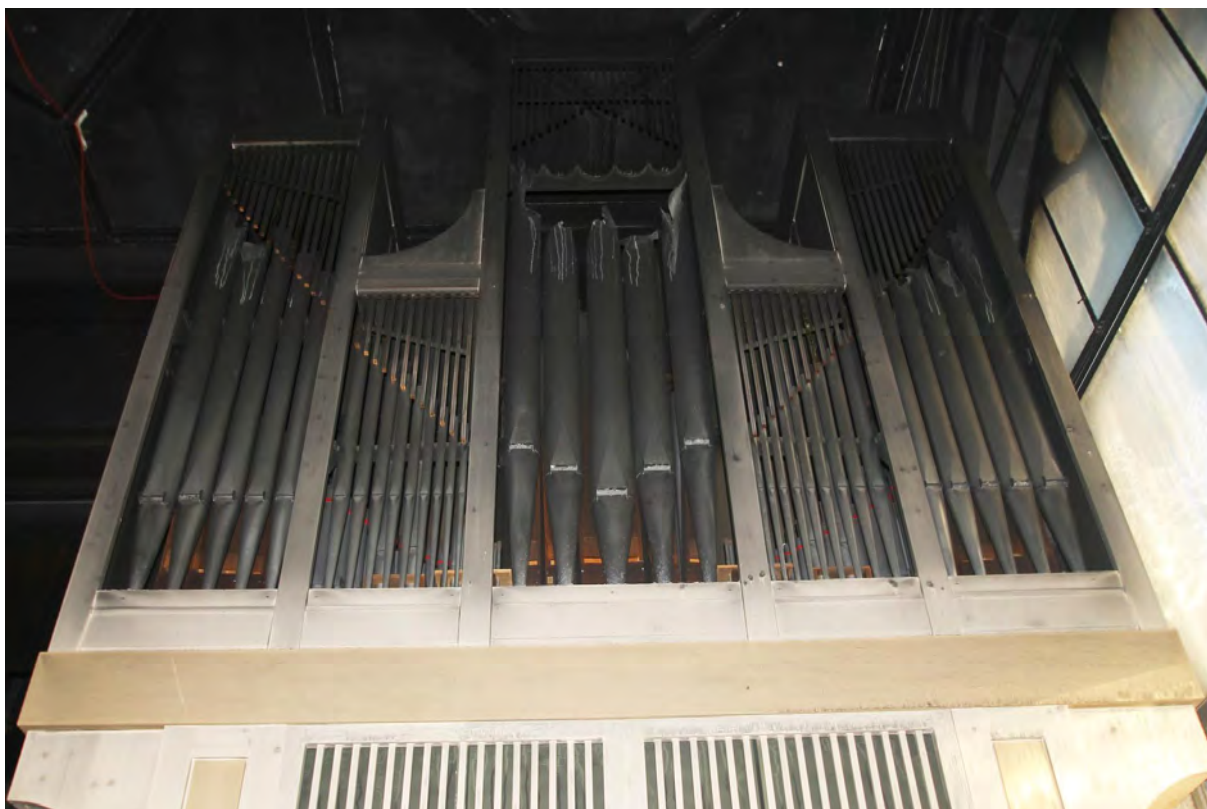


Plate 3. Organ pipes, viewed from south.



Plate 4. Organ keyboard, viewed from south.



Plate 5. Organ provenance plate, viewed from south.



Plate 6. East side of organ, viewed from south.



Plate 7. Stage, viewed from south-east.



Plate 8. Stage, viewed from south-west.



Plate 9. Stage, west side, viewed from east.



Plate 10. Stage, east side, viewed from west.



Plate 11. Stage, west side, viewed from north.

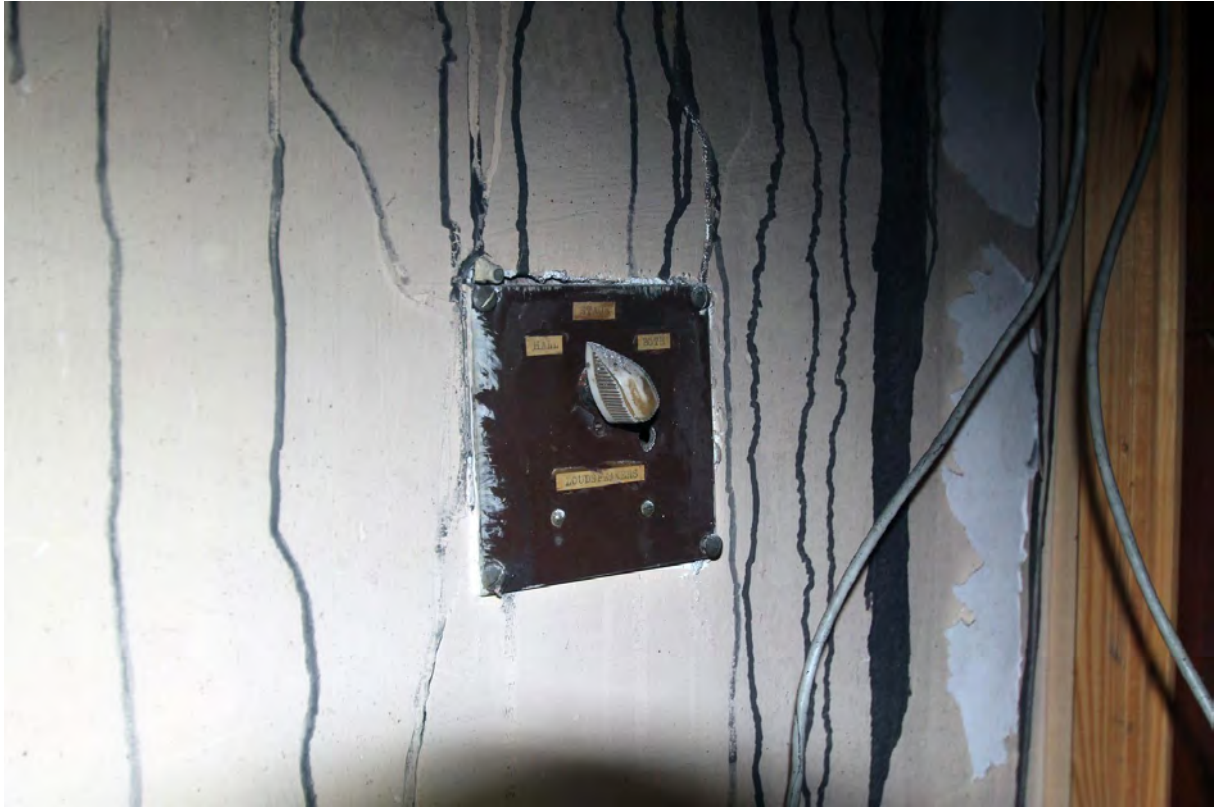


Plate 12. Stage, west side, loudspeaker control switch, viewed from north.



Plate 13. Stage, west side, electrical sockets in floor, viewed from east.



Plate 14. Stage, east side, electrical controls, viewed from north.



Plate 15. Stage, east side, store, viewed from west.



Plate 16. Stage, east side, store, fire alarm, viewed from north.

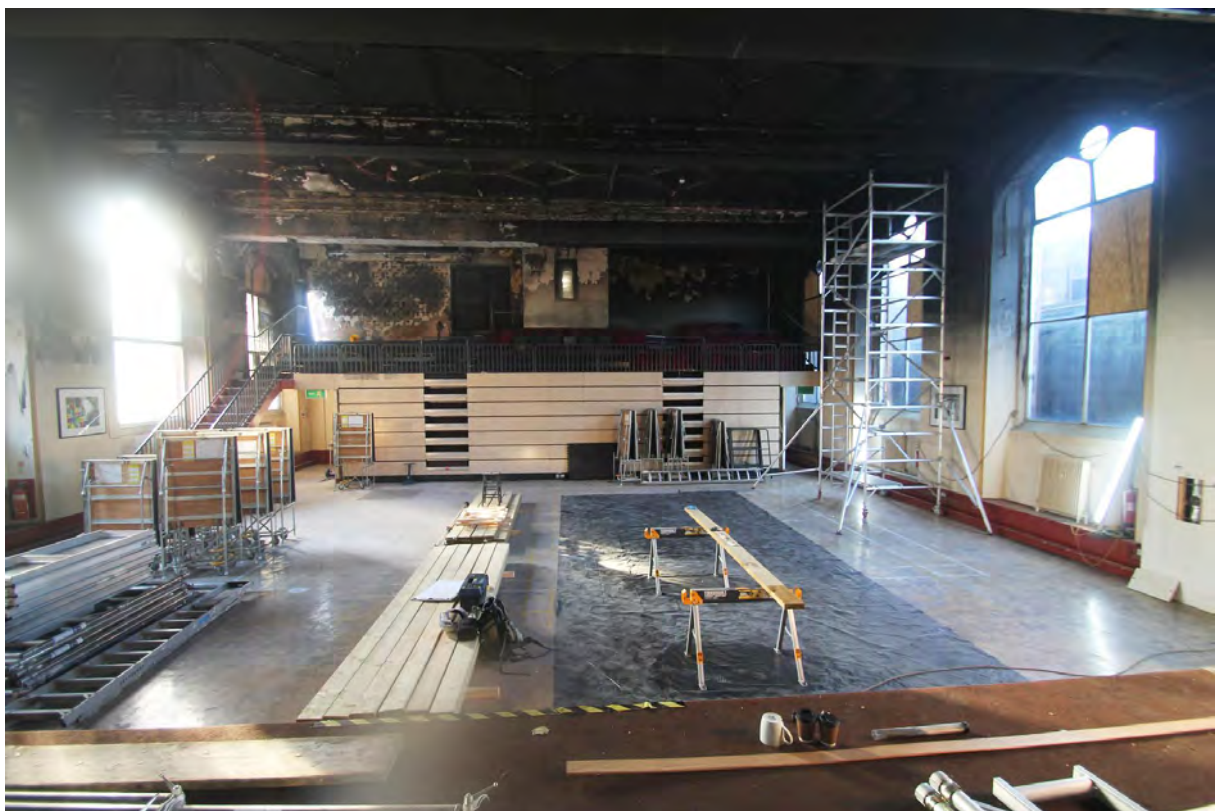


Plate 17. Hall, looking towards balcony, viewed from viewed from north (stage).



Plate 18. Hall, showing balcony with raked seating under, viewed from north.



Plate 19. Window on west side of Hall, bay 4, viewed from east.



Plate 20. Window on west side of Hall, bay 3, viewed from east.



Plate 21. Radiator before removal, bay 3, viewed from east.



Plate 22. Window, west side of Hall, bay 2, viewed from east.



Plate 23. Corridor in bay 1, viewed from north-west.



Plate 24. Staircase to balcony in bay 2, viewed from west.



Plate 25. Window in east elevation, bay 3, viewed from north-west.



Plate 26. Window in east elevation, bay 1, viewed from west.



Plate 27. Balcony, bay 1, viewed from east.



Plate 28. Balcony, bay 1, viewed from east.



Plate 29. Window in bay 1, viewed from east, from balcony.



Plate 30. Inserted lobby on balcony, bay 1, viewed from west.



Plate 31. Balcony, bay 1, viewed from west



Plate 32. Plaster moulding around window, west elevation, bay 1, viewed from north-east.



Plate 33. Hall, viewed from balcony, viewed from south-west.



Plate 34. Hall, viewed from balcony, viewed from south.



Plate 35. Hall, viewed from balcony, viewed from south.

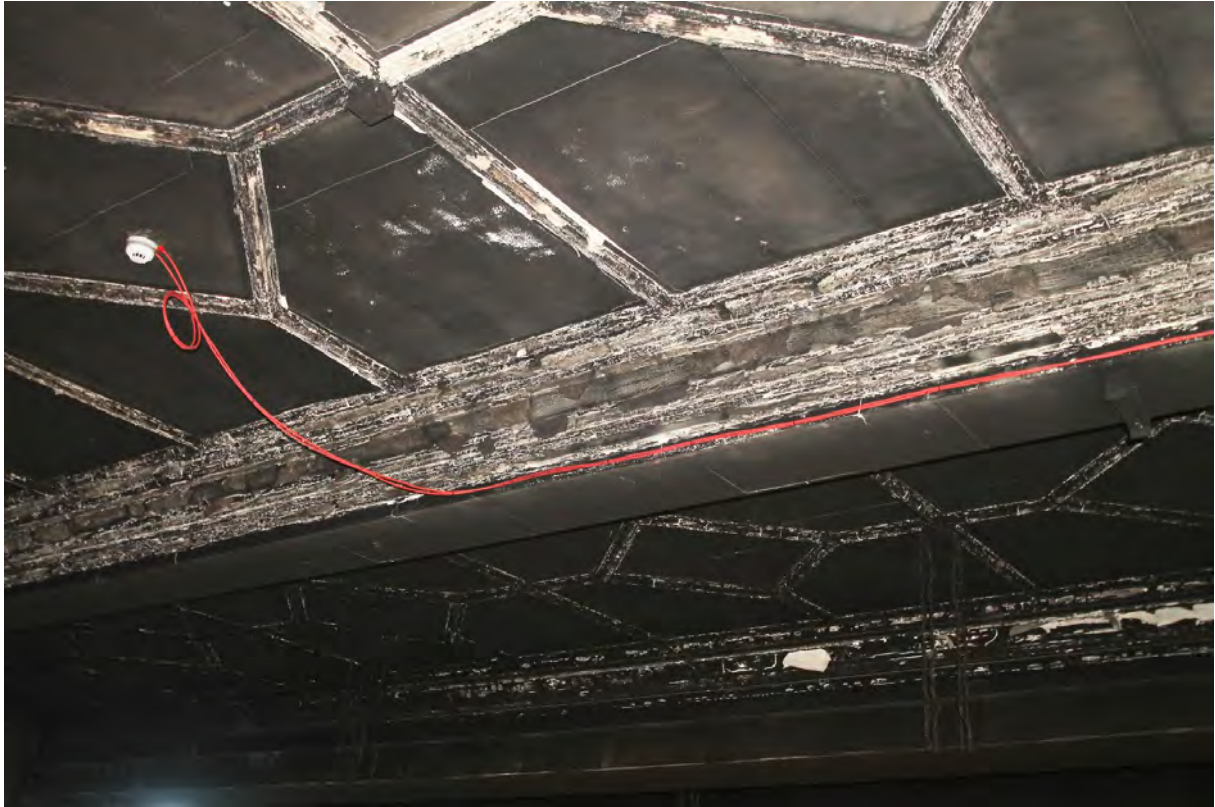


Plate 36. Fire and smoke damaged ceiling, bay 1, viewed from south.



Plate 37. Window, east elevation, bay 2, viewed from south-west.



Plate 38. Hall, viewed from south-west.



Plate 39. Corridor beneath balcony, bay 1, viewed from north.



Plate 40. Corridor beneath balcony, bay 1, viewed from east.



Plate 41. Corridor beneath balcony, bay 1, viewed from west.



Plate 42. Corridor beneath balcony, bay 1, column detail, viewed from north-east.



Plate 43. Ongoing ceiling removal within bay 2, viewed from north-east.



Plate 44. Ongoing ceiling removal within bay 2, viewed from south.



Plate 45. Ongoing ceiling removal within bay 2, viewed from south-east.



Plate 46. Ceiling removal within bay 2, viewed from east.



Plate 47. South wall of balcony, following removal of dry lining, viewed from north.



Plate 48. South wall of balcony, viewed from north-east, showing inserted doorway.



Plate 49. Window aperture, east elevation, bay 1, following plaster removal.



Plate 50. East elevation, between bays 2 and 3, following plaster removal.



Plate 51. Gritstone block in south window reveal, west elevation, bay 2.



Plate 52. Beam with lathe & plaster being removed, between bays 2 & 3, viewed from south.



Plate 53. Cut section of plasterwork ceiling, bay 3, south side, viewed from east.



Plate 54. Plasterwork cut away to reveal wrought-iron beam, bay 3, viewed from north.



Plate 55. Wrought iron beam, bay 4, with diagonal braces, viewed from north.



Plate 56. Wrought iron beam, bay 2, viewed from north-east, showing timber formwork.



Plate 57. Intact plasterwork ceiling panels, bay 2, west side. Viewed from below.



Plate 58. Bay 1, following removal of later plasterboard ceiling, viewed from east.



Plate 59. Ceiling of bays 2 and 3, following removal of plasterwork. Viewed from below.



Plate 60. Ceiling of bay 2, following removal of plasterwork. Floor over seen through gap.