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CHARTERED ARCHITECTS
HISTORIC BUILDING CONSULTANTS

BRUCE CASTLE MUSEUM

Investigation Works Specification

June 2023

Version v3 14.08.23

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Job No. 7440

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This document should be read in conjunction with the following drawings:

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DOCUMENT VERSION

V1 June 2023	Outline Document
V2 June 2023	Information updated following site inspection
V3 August 2023	Information updated to include additional opening up

1.0 INTRODUCTION

1.1 Purpose of Investigation Works

- 1.1.1 The purpose of the initial investigation works is to inform the design proposals for the MEND Fund repairs project at Bruce Castle Museum, for the London Borough of Haringey.
- 1.1.2 This document describes building structure and fabric investigations. Surveys of the existing building services installations have been set out separately by Qoda Consulting.
- 1.1.3 This Specification document is to be read in conjunction with the associated drawings.

2.0 PRELIMINARIES

2.1 Scope

- 2.1.1 Bruce Castle is Grade I listed and is of high significance. All works and means of access should reflect the sensitive nature and significance of the building.
- 2.1.2 Any necessary decant of the rooms / building to enable the work will be undertaken by others. Should it be necessary to move items of the collection during the works, then this will also be attended to by the Museum team.
- 2.1.3 The programme for undertaking the works is to be 'as soon as practically possible' and is to be coordinated with the Architect and the Museum Director. Re-fixing of boards etc will be undertaken directly in public areas to avoid impact on access by staff and public visitors. Elsewhere in rooms G6, F7, F8, S8, S9 and S10; boards will remain lifted for a pre-agreed duration yet to be confirmed.
- 2.1.4 The Museum is closed to public visitors each Monday and Tuesday. Investigation works will generally be undertaken on these days, to ensure that floors to public areas are closed-in when the Museum is open.
- 2.1.5 The sequencing of the scope is to be determined to best suit site constraints.

2.2 Site Arrangements

- 2.2.1 Details of site arrangements, access, and procedures are to be determined with the Architect and Museum Director. Should any specific queries arise, the Contractor should liaise with the Architect for further guidance.

2.3 Risk and Method Statements

- 2.3.1 Risk assessments and method statements for the opening up and investigation works are to be submitted to the Architect and Haringey's Project Manager prior to undertaking works on site. Such documents are to consider both standard procedures for site access, safe working, welfare and protection of the historic building fabric.

2.4 Asbestos

- 2.4.1 An asbestos survey has previously been undertaken by the Employer and this information will be made available to the Contractor. Should the Contractor become aware of any suspected asbestos containing materials or the risk of exposing such materials during the course of the works, he will advise the Architect and Project Manager immediately.

2.5 Hot Works

- 2.5.1 The need for hot works is not anticipated and this includes any works producing heat, sparks or which might result in an increased risk of fire, on and about the historic building. For the avoidance of doubt, hot works are not permitted.

2.6 Specifications

- 2.6.1 Refer to the following specifications, enclosed in the appendix, in respect of the following scope of works:

- i) Opening Up & Protection
- ii) Lifting Floorboards

3.0 SUMMARY SCOPE OF WORKS

3.1 Investigation of Floors

- 3.1.1 Carefully open up areas of existing floor boarding to the spaces noted below and as indicated on the drawings, to enable inspection of the existing construction and to determine the structural arrangements, service voids and condition of plaster ceilings beneath. As far as can be determined, the floors are single boarded, nail fixed, butt jointed and without edge tongues or dowels. The presence or otherwise of pugging and pugging boards to the voids has not been determined. If such arrangements are found to be present then await instruction from the Architect before removing.
- 3.1.2 The designated locations for lifting of boards are to rooms without floor coverings. In the second floor spaces however, vinyl is present. Pull back vinyl in full and any underlay finish to expose floorboards beneath. Allow for removal of any plywood sheathing (as required) and allow for extracting any fixing pins which have been used to secure sheathing to the boards.
- 3.1.3 Reference and lift the existing boards in accordance with the specification. Where applicable, any existing screw fixed traps or access boards should be prioritised for lifting. In the event of there being none available, consult the Architect to determine a suitable alternative arrangement.
- 3.1.4 Lifting of any fixed boards is to be undertaken strictly in accordance with the specification.
- 3.1.5 Relay and refix boards on completion of any inspections or remedial works, to match the existing arrangements and re-use existing fixing positions. Fixing types will be determined following opening up but assume that these are to match existing.

Ground Floor

Room G5

- i) Room currently used as an exhibition space off the Main Gallery. Exposed timber boards with no existing floor finishes. No suitable locations for opening up noted at the time of inspection.

Room G6

- i) Previous exhibition space, this room is currently used as a temporary store. Contents can be moved around the space to improve access, but this is restricted. Exposed timber boards with no existing floor finishes. One location is noted with a short replacement board, having timber biscuit (?) fixings to neighbouring boards, which is scheduled for lifting.
- ii) Open up short screw fixed floorboards as noted on the drawing.

- iii) Allow for opening up a further nail fixed boards in various locations and in the highlighted zones indicated on the floor plan. Works to be undertaken in accordance with the specification.

Room G7

- i) Room currently used as exhibition space and potential fire escape. Exposed timber boards with no existing floor finishes.
- ii) Open up short screw fixed floorboards as noted on the drawing.

Room G8

- i) Room currently designated 'Family Room' for public visitors. Display cases can be moved to enable access. Exposed timber boards with no existing fixed floor finishes.
- ii) Open up short screw fixed floorboards as noted on the drawing.
- iii) Allow for opening up a further total of 5no. nail fixed boards in various locations, including 3no. adjacent to the north wall, as indicated on the drawing. Works to be undertaken in accordance with the specification.

Room G9

- i) Room currently exhibition space for public visitors. Display cases are fixed. Exposed timber boards with no existing fixed floor finishes.
- ii) Allow for lifting 2no. nail fixed boards following review with the Architect.

Room G12

- i) Exhibition gallery outside the area of proposed MEND works area, but a potential services route. Exposed timber boards with no existing fixed floor finishes.
- ii) Lift the screw fixed boards adjacent to the east entrance doors and WC room G11, as noted on the plan.
- iii) Open the existing floor hatch within this room as noted on the plan, to enable inspection of the void below.

First Floor

Rooms F1 & F2

- i) Office spaces in current use. Not suitable for intrusive enabling works at this time.

Rooms F3 & F4

- i) Function Room and associated store. Vinyl floor finish throughout. Not suitable for intrusive enabling works at this time.

Room F5

- i) Artist Studio space in current use. Floor possibly double boarded and not suitable for intrusive investigation works at this time.

Room F6 – F8

- i) Rooms previously used as offices and currently as storage. Contents can be moved around the space to improve access, but this is restricted. Exposed timber boards with no existing floor finishes.
- ii) Open up screw fixed floorboards to doorway between F6 and F7, as noted on the drawing.
- iii) Allow for opening up the floor areas in full to F7 and F8. All works to be undertaken in accordance with the specification.
- iv) Allow for boards to be cut along the line of the north south partition where required to release the boards at this junction.
- v) The floorboards in F6 are to remain in situ due to the location of the existing IT cabinet, and for maintenance of access through to F5 beyond.

Room F9

- i) Circulation space and access route to the adjacent Education Room F11. Exposed timber boards with no existing fixed floor finishes.
- ii) Lift 3no. screw fixed boards as indicated on the plan.

Room F10

- i) Room not accessed.

Room F11

- i) Education Room, reported to be in full use until August 2023. Carpet finish throughout, with no visible boarding. No opening up works proposed at this time.

Room F12

- i) Store to the Education Room. No opening up works proposed at this time.

Room F13

- i) Staircase outside the area of proposed MEND works, but a potential services route. Exposed timber boards with no existing fixed floor finishes.
- ii) Lift the screw fixed boards to the landing area as noted on the plan.

Room F15

- i) Exhibition gallery. Exposed timber boards (highly lacquered) with no existing fixed floor finishes.
- ii) Lift the screw fixed boards adjacent to the east entrance doors and the north wall, as noted on the plan. Take care to protect the existing lacquered finish on these boards.

Second Floor**Room S8 – S10**

- i) Room currently used for archive storage. Contents to be moved from this space to provide access. Vinyl finishes throughout with no exposed timber boards.
- ii) Allow for removal of existing vinyl finishes in full and any plywood sheathing to access floorboards beneath.
- vi) iii) Allow for opening up the floor areas in full to S8, S9 and S10. All works to be undertaken in accordance with the specification. Floor finishes are not to be reinstated on completion.

3.2 Investigation of Wall Voids

- 3.2.1 The scope and location of opening up of wall panelling and plaster finishes is to be agreed with the Conservation Officer. The following draft proposals are set out for discussion and agreement.
- 3.2.2 Note that the specification for opening up of any wall panelling is to be reviewed and agreed on site, when existing fixing arrangements have been determined.

Room G6

- i) Wall finish suspected to be lath and plaster on timber grounds over masonry.

Room G8

- i) Wall finish is painted timber panelling above dado level to all walls

Room F6-F8

- i) Wall finish suspected to be lath and plaster on timber grounds over masonry to principal walls and over timber stud to internal partitions.
- ii) Allow for opening up 2 no. areas approx. 600x600 mm of plaster finish and laths, in locations indicated on the drawings, to enable inspection of the wall construction. And 1 no. area 200x600mm to correspond with the cracking of the dividing partition between F7 and F8.
- iii) Open up 2no. screw fixed panels to the southern external wall of room F7, to each window recess as noted on the drawing.

Rooms S8-S10

- i) Wall finish suspected to be lime plaster direct onto masonry to the principal walls and lime plaster on lath to the early timber stud partitions. Note that the partition between S9 and S10 appears to be a modern construction.
- ii) Allow for opening up an area approx. 200x200 mm of plaster finish and laths, in locations indicated on the drawings, to enable inspection of the wall construction.

3.3 Investigation of Ceiling & Roof Voids

- 3.3.1 Provide ladder or similar access and open up hatches or ceiling finishes for inspection as described below.

Room S7

- i) Open the existing ceiling hatch and provide access for inspection above.

Rooms S8-S10

- i) Modern ceiling finish possibly underlining an extant plaster finish above. Inspection to be undertaken from the roof void in the first instance.

Room S11

- i) Open the existing ceiling hatch and provide access for inspection above.

3.4 Investigation of Services Ducts & Access Panels

- 3.4.1 Carefully open up existing screw fixed or otherwise secured access panels, covers or boxings to enable inspection of the existing, service voids and building services within.
- 3.4.2 Coordinate works with the building services contractor to enable their inspection and testing of services etc.
- 3.4.3 Refix all access panels, covers and boxings on completion of the inspection, reusing existing fixing positions.
- 3.4.4 Locations of service panels and boxings to be opened up are currently undetermined and are to be agreed on site, should this requirement be necessary.

SPECIFICATIONS

This specification does not include for the opening up or protection of asbestos materials.

1.0 WORKMANSHIP GENERALLY

1.1 Generally undertake the work as follows:

- a) Work which exposes the building fabric to the weather (where protection is not specified) undertake during favourable weather; once such work is commenced, complete it as quickly as possible. The Contractor is responsible for preservation of the building fabric in accordance with the contract documents.
- b) Cutting away and alteration work generally: undertake with the minimum amount of disturbance to those parts of the building intended to be left undisturbed. The use of power tools should be carefully considered and only used with the Architect's approval. The Contractor is to assume that all opening up will be undertaken by hand.
- c) Opening up of joinery should be undertaken at existing access points, or by removal of complete panels, facias etc. to joint lines. Retain, reference and set aside for future refixing any removed panels.

1.2 Provide all necessary forms of protection, temporary support and safe access as necessary to allow for inspection of and access to the exposed structure or fabric.

1.3 The Contractor should be aware that works of opening up which are not carried out in accordance with the specification may contravene legislation requiring Listed Building Consent.

2.0 HEALTH AND SAFETY

2.1 Provide props, struts, scaffolding and shores, etc as necessary to ensure the stability of the existing structures. Make preliminary investigations and calculations where necessary. The Contractor is responsible for the overall safety of the Works and existing structures unless expressly made the responsibility of others in the Contract Documents. All such methods of temporary support and access are to be clean and isolated from the building fabric by suitable forms of protection.

2.2 All works are to be carried out strictly in accordance with all relevant legislation and legal obligations currently in force. The Contractor is to have particular consideration of the programming, planning and safe carrying out of operations in respect of other works and site operatives on and about the building.

2.3 The Contractor is to prepare and submit to the Contract Administrator, for consideration, Risk Assessments and Method Statements to address the safe carrying out of the works with the minimum of disruption to the existing structure and fabric.

2.4 Where applicable, all opening up is to be carried out strictly in accordance with the health and safety measures and requirements set out in the specification for Excavation.

3.0 **NUISANCE**

- 3.1 Prevent all avoidable nuisance on and about the site with particular reference to fumes, dust and noise. Establish and maintain good relations with adjoining occupiers. Have particular consideration of requirements set out in the preliminaries with regard to non-smoking.
- 3.2 Bonfires will not be permitted. All waste materials shall be removed from site and disposed of in a suitable manner and in compliance with all relevant legislation.

4.0 **PROTECTION**

- 4.1 Generally provide all necessary and suitable protection to all areas of work and areas adjacent to the works in order to enable the least destructive, safe and efficient means of carrying out of the works.
- 4.2 The element of protection is to encompass the non-destructive shielding of the existing building fabric and finishes against wear and tear and destructive working methods; the enclosing of working areas and areas of opening up against environmental and climatic conditions; the security of the working area and the site as a whole and the safety of site operatives, visitors and general public.
- 4.3 No adhesive or mechanical fixings are to be used for in-situ protection, unless authorised by the Architect.
- 4.4 All protection is to be loose-laid or pressure-fixed by wedging, bracing, clamping or tying as appropriate in a manner that will not damage the existing fabric of the building.
- 4.5 The Contractor is to implement a programme of inspection and maintenance of all areas of protection of the works as required.
- 4.6 The Contractor is to make allowance for and carry out all necessary modifications and adaptations of all forms of protection, where so instructed or where so required, to enable the safe and efficient carrying out of the works.

5.0 **MATERIALS FOR PROTECTION DURING THE OPENING UP WORK**

- 5.1 **Dust Sheets:** To be linen or cotton-type close weave material to prevent the ingress of dust and paints.
- 5.2 **Polythene Sheet:** To be minimum 250 micron polythene, laid with all joints lapped and taped to prevent the passage of dust and moisture.
- 5.3 **Reinforced Polythene:** To be heavy duty Sisalite reinforced polythene sheet (860) by British Sisalcraft or similar.
- 5.4 **Fibreboard:** To be minimum 12mm Tentest board, loose laid and cut to suit irregular plan shape.
- 5.5 **Underlay:** To be carpet felt underlay, minimum 1.36 kilos per m², loose laid and cut to suit.

- 5.6 **Plywood:** To be water- and boil-proof (wbp) plywood to BS 6566. Generally, the following minimum thicknesses will be used:

Floor protection: 4mm, cut to suit with joints taped.

Framed protection: 12mm on softwood frame, formed independent of the protected element.

- 5.7 **Rubberized Foam:** To be flexible foam-type pipework insulation, i.e. Armourflex or similar, of a suitable diameter and thickness to provide suitable protection.

- 5.8 General proprietary materials suitable for use include: Antinox from Swiftec; Correx 2mm black flame retardant, from Cordek Ltd; Flame retardant bubblewrap FRC120, available from Euronova Ltd; Megafilm, available from Megafilm.

- 5.9 Flame retardant 5mm Impact Cover-Guard TIG 5MM150, is available from Bainbridge International who also supply flame retardant bubblewrap.

6.0 OPENING UP

- 6.1 Works specified as opening up for inspection, shall be undertaken only in accordance with the agreed schedule of opening up, and Method Statements to be submitted by the Contractor. The Contractor should be aware that works to open up structure and finishes which are not carried out in accordance with the specification, may contravene legislation requiring Listed Building Consent.

- 6.2 Trial holes are to be dug in locations agreed with the Architect or Structural Engineer. In locations adjacent to existing buildings or site features, works are to be undertaken by hand.

- 6.3 All necessary protection and propping is to be incorporated to ensure the structural integrity of the existing building, the protection of the excavation and building fabric and the safety of the site operatives, visitors and members of the public.

- 6.4 Lifting of floorboards is to be undertaken using non-powered hand tools only, by skilled craftsmen and in such a way as to allow for the reinstatement of all fabric to its existing state.

- 6.5 Where there are screw-fixed floorboards these are to be taken up in preference to others. Raised floorboards should be placed carefully on one side such that they do not present a Health and Safety hazard from projecting nail fixings and that these do not damage any existing part of the fabric of the buildings or its contents. Any dust and debris created by lifting of the boards should be vacuumed up as the work proceeds (not only at the end of the working day) to limit the spread of dust, although particular vigilance is required for items of potential archaeological importance.

- 6.6 Any items of masonry that are dismantled are to be carefully referenced with their original location. Do not scratch references, mark only on unexposed faces. Any dismantled masonry is to be stored on soft, non-staining, material and is to be placed without stone to stone contact.

- 6.7 Service ductwork is generally to be opened up for inspection at locations of existing access panels, or other locations as agreed with the Architect. Ductwork and services are to be opened up in such a way as to allow for the reinstatement to their proper functioning state of all fabric and services on completion of the work.
- 6.8 Opening up and investigation of existing services are to be carried out strictly as described within the agreed Contractor's Method Statements.
- 6.9 Close circuit television (CCTV) investigations where so specified, shall be undertaken by an approved specialist, in accordance with the Architect's instructions.
- 6.10 The Contractor is to inform the Architect when areas of opening up are safely secured and available for inspection, allowing a minimum of two working days notice. Following inspection, unless otherwise instructed, backfill, relay, refix all disturbed materials and fabric to the area of the works, and make good surface finishes.
- 7.0 **MATERIALS FROM THE WORKS**
- 7.1 Remove all debris and rubbish and the like from the buildings and site and leave tidy. Clean all areas prior to the installation of specified protection and disinfect if necessary.
- 7.2 Make safe or divert all services as necessary to allow the execution of the works in accordance with the Services Specification. Liaise with the relevant service authorities as necessary.
- 7.3 For any materials specified to be of value, allow credit to the Employer as agreed with the Quantity Surveyor. The Employer reserves the right to retain any materials on payment to the Contractor of the credit amount allowed.
- 7.4 Materials to be salvaged for the benefit of the Employer shall be so specified and fall into two classifications as follows:-
- a) Materials described as 'set aside for re-use' (see hereafter under 'terms').
 - b) Materials described as 'hand to Employer' (see hereafter under 'terms').
- 7.5 Clean and stack on site any reclaimed bricks/slates etc. suitable for reuse, as described in the schedules.
- 7.6 Be aware that existing buildings may contain materials which are considered hazardous by current standards. All such materials should be carefully disposed of in accordance with all relevant legislation and safety standards, and relevant authorities informed wherever applicable.
- 8.0 **TERMS**
- 8.1 The following terms are used generally throughout all relevant documents:
- a) Remove: This term is used for work and materials to be taken down or broken up or otherwise unfixed by whatever means the Contractor considers appropriate but with due care of adjacent fabric which is to be retained, and removed from site.

- b) Carefully Remove: This term is used for components which are to be retained as stated. Handle such components with care and protect from damage, clearly reference for accurate reinstatement (with setting out references where necessary) and place in storage as specified. In pricing such work it will be assumed that the Contractor considers that he is able to unfix and handle without damage.
- c) Set Aside For Reuse: Clean, repair, restore to serviceable condition, piece in where ironmongery removed, take to store, mark with the old position and, if known, the new position.
- d) Hand to Employer: Take to the Employer's store:
- e) Cut (or Adapt) Opening: Form the new jambs, level-off at sill or threshold and fix only the new lintel, unless otherwise specified.
- f) Block or Infill Opening: Cut away finishings to expose sound structures, cut and bond or otherwise make secure connection between new and existing fabric and wedge up at top.
- g) Reduce Opening: As last including forming the new jambs.
- h) Remove Sanitary Fitting: Remove the type of sanitary fitting stated and associated pipework and fixings, in accordance with the services specification and drawings.
- i) Making Good: Making good structures and fabric after cutting away. Materials and workmanship are to comply with all relevant specifications.

1.0 WORKMANSHIP GENERALLY

- 1.1 The following are guidelines regarding the removal of floorboards without causing damage to boards. The precise method of working is the responsibility of the Contractor, but is to be agreed with the Architect.
- 1.2 The first board to be lifted is to be carefully selected. Ideally it should have previously been lifted and refixed with screws.
- 1.3 If this is not possible, select a board, which is relatively short, with at least one end in good condition, not against a wall and with a gap at one end.
- 1.4 Where boards are butt jointed and not pegged or tongued to the neighbouring board, works should be undertaken as follows. Using a block of wood or a hardened steel plate to protect the adjacent boards, work around the edge of the board to be lifted with a 6" bolster, levering to try to loosen the board, taking great care at all times not to damage the boards. Then using the same technique work along the sides at one end until the end is free. Place a batten below the free end and gradually move this toward the next set of nails to raise them up. Remove the batten and carefully pull out the nails. Continue to remove the first board completely.
- 1.5 Removal of boards after the first should be continued in the same fashion and with the same protective measures. Additional wooden blocks may be required for example when lifting floorboards with a crowbar.
- 1.6 Where boards are connected to their neighbours by means of steel or timber pegs, steel or timber tongues, or simply tongued and grooved, such fixings are to be preserved and re-used, wherever possible. Any such fixings, which are to be cut or removed, to enable lifting of the boards, are to be agreed with the Architect. In general, such cutting is to be limited to the first board to be lifted and then only if previously lifted boards are unavailable. Subsequent boards are then to be eased sideways, off the neighbour's pegs etc prior to lifting. A record of board fixing arrangements is to be kept on site and included in the Contractors Health & Safety File.
- 1.7 All boards are to be identified on their underside with a reference or number, also recorded on a drawing, to ensure that they are refixed in their existing locations.
- 1.8 Where boards are to be loose laid, the use of a fabric strap around the board towards one end will aid its re-lifting with the need to resort to tools and additional protection.
- 1.9 Where board ends are trapped beneath skirtings, built-in furniture, or fittings then clarification is to be sought from the employer regarding any necessary additional works to remove such items prior to lifting of the boards. Where such fixtures are of historic significance or are to be refixed, then a similar level of care, protection and workmanship should be applied to that described above.
- 1.10 Boards which are to be set aside for future re-fixing should be laid flat and stacked with uniform thickness battens across the stack to aid ventilation and to prevent any retained metal fixings from scratching the adjacent boards. Such stacks should be stored to the edge of the room, across the span of the floor joists in order to avoid overloading.