# ELIZABETH GARRETT ANDERSON HOSPITAL STRUCTURAL REPAIR AND STABILISATION OPERATIONS

# DESCRIPTION OF THE BUILDING WORKS PROPOSED Donald Insall Associates Ltd February 2007

### **PREFACE**

This report has been prepared to accompany an application for listed building consent to carry out urgent structural stabilisation works to the south (Euston Road) block of the former Elizabeth Garrett Anderson Hospital.

The former Elizabeth Garrett Anderson Hospital is a Grade II listed building. The listing description clearly identifies the "first generation buildings" only as the parts of the complex that are included as being protected by the listing. The (Euston Road) south block is part of these "first generation" buildings.

The works are required due to subsidence, which has occurred to this block over a period of time, but which, due to recent dry summers, has reached a critical stage where failure to act could lead to damage of a permanent and irretrievable nature. Therefore, this application is made to enable these works to proceed as soon as possible without being dependent on the future agreed permanent re-use of the listed buildings.

The work required to structurally stabilise the building involve installing concrete piles to underpin the perimeter walls of the block in question. The details of these operations are included within the application and are shown on the drawings and report prepared by A K S Ward.

### The attached documents:

- Schedule of General Building Works Associated With Structural Repair and Stabilisation Operations.
- Method Statement for Dismantling and Re-building of Southwest Bay and Recording Plasterwork, Joinery and Brickwork for Replication.

explain the builders work which will be required to be undertaken in association with the structural stabilisation and include:

- Dismantling parts of the perimeter fence and later re-erecting.
- Dismantling and re-building the southwest bay facing Church Way and later reerection.
- Other dismantling necessary as part of the operations.

The first document describes the works process and includes: drawings EGHA3/220 and 221, existing and proposed elevations; photographs of the existing condition of the bay.

# SCHEDULE OF GENERAL BUILDING WORK ASSOCIATED WITH STRUCTURAL REPAIR AND STABILISATION OPERATIONS

### 1.0 STRUCTURAL WORKS

The operations to underpin the external walls of the building and carry out structural repairs to the masonry are described in A K S Ward's report and on their drawings. This Schedule should be read in association with that report and those drawings.

### 2.0 DISMANTLING

## 2.1 Externally

### 2.1.1 West Elevation

Record and carefully dismantle perimeter railings. Store safely for re-erection.

Carefully record and dismantle perimeter dwarf wall and copings. Store copings safely for re-use. Save sound bricks and remove mortar. Do not use wire brushes. Store carefully for re-use. Allow for replacement of broken/damaged bricks with new to match existing.

## 2.1.2 Southwest Bay

Allow for scaffolding designed and constructed around existing raking shoring, capable of allowing adaptation and gradual dismantling of shoring.

Take profiles of all brick, stone, and timber mouldings, clearly labelled with location and datum heights. Measure and fully record projecting bay noting brick bond, setting out, coursing etc. Ensure every facet of each element is photographed, both in situ and as dismantling takes place. Allow for stabilisation and adequate support to individual elements externally and to interior fabric prior to and during dismantling.

Beginning with the rubbed brick cornice, carefully dismantle affected section of brickwork. Clean off mortar. Set aside bricks and store safely. Do not use wire brushes.

Record fixing methods of brick elements with measurements and photographs as dismantling proceeds.

Record, dismantle and safely store stone arch. Allow for joinery subcontractor to record and carefully dismantle timber windows and associated joinery. Store safely for later re use.

Carefully remove cast iron hopper, rainwater pipe and brackets on west elevation adjacent to South West bay and carefully store for overhaul and refitting.

Carefully remove cast iron hopper, rainwater pipe and brackets on south elevation

adjacent to southwest bay and store carefully for overhaul and refitting. Allow for temporary rainwater disposal system from existing sumps to alternative gulleys to be confirmed during structural stabilisation works.

### 2.1.3 South Elevation

Record and carefully dismantle perimeter railings. Store safely for re-erection.

Carefully record and dismantle perimeter dwarf wall and copings. Store copings safely for re-use. Save sound bricks and remove mortar. Do not use wire brushes. Store carefully for re-use. Allow for replacement of broken/damaged bricks with new to match existing.

### 2.1.4 Ground Floor

Allow for full boarding of windows G1/W6, G1/W5 and G1/W4 with battens fixed to joints in reveals and plywood sheets.

# 2.2 Internally

### 2.2.1 **Room G1**

Record moulding profile of arch to bay window. Record height of arch and springing point. Record moulding profile of cornice within bay window. Carefully dismantle arch ensuring adequate support for remainder of structure at all times.

Record and carefully dismantle timber panelling and skirtings to west end of room. Store carefully for re use.

Record and carefully lift marble floor to Entrance Hall, noting patterns of stones, datum heights, etc. Store carefully for re-laying.

Record and lift wood block floor noting pattern and datum height. Store carefully for re-laying.

Carefully remove skirting boards and store carefully for re use.

Carefully remove entrance doors and associated joinery to doorcase. Store carefully for re use.

Fit battens to inside of window reveals to all windows and fit plywood protection across whole reveal internally.

Record and carefully dismantle panelled reveals and architrave to doorway to G14. Store safely for re use.

Record and carefully dismantle panelling to doorway to corridor. Store safely for reuse. Fit battens and plywood sheeting as protection to window light and plasterwork above doorway.

Record moulding profiles of cornice and pulvinated frieze. Protect from groundworks with plywood sheeting and battens.

### 2.2.2 Room F1

Record height of arch and springing point. Protect window light above door to F4 during works. Protect panelled reveal and architrave during works.

#### 2.2.3 Room S1

Fully record and dismantle 3 light window (S1/W10, S1/W11 and S1/W12) and associated joinery to west wall. Store safely for re-construction.

Protect panelled reveal and architrave of doorway to S2 during works.

### 2.2.4 Room T1

Allow for replacement of broken stone corbels to exterior brick cornice. Allow for repairs to cracked brickwork to Structural Engineer's details.

# 3.0 RE-BUILDING

# 3.1 Re-building of Bay – External

From the top of new foundation, re-build bay using sound bricks salvaged from dismantling and new bricks to match existing in lime mortar. Allow for the manufacture and supply of new brick specials to replace broken/damaged/decayed specials removed during dismantling.

Fit new dpc at height given by Project Architect.

Ensure that coursing and bond of bay match existing bond and new work is neatly stitched to existing brickwork. Allow for fitting of stainless steel helibar to Structural Engineer's details.

Allow for scaffolding capable of supporting hoist to all levels and safe storage of bricks/materials for immediate use.

Using templates taken during dismantlement, rub new bricks to match replaced broken/damaged/decayed rubbed brickwork. Re-build gauged brickwork with lime putty and washed silver sand. Refer to records of dismantled joinery to ensure joinery items fit in structural opening sizes.

Review cracked stone voussoir with Structural Engineer. Allow for:

- a. Pinning stone with stainless steel threaded bar.
- b. Supply and fit new stone to match existing stone type, profile etc.

Replace broken/decayed/damaged (?) York stone corbels with new to match existing.

Allow for re-building brick cornice with stainless steel ties. Allow for new Code 7 lead sump and outlets to top of parapet. Allow for new Code 5 flashings to brick cornice.

Re-build west dwarf wall to existing datum heights using retrieved bricks and new to match existing in lime mortar. Replace stone copings in original positions. Replace broken/damaged copings with new to match existing. Bed and re-point using lime mortar and stainless steel fixings.

Remove existing paint system and corrosion products from railings. Replace broken/damaged elements with new to match existing. Apply new paint system and re-erect railings to original details.

Re-build south dwarf wall to existing datum heights using retrieved bricks and new to match existing in lime mortar. Replace stone copings in original positions. Replace broken/damaged copings with new to match existing. Bed and re-point using lime mortar and stainless steel fixings.

Remove existing paint system and corrosion products from railings. Replace broken/damaged elements with new to match existing. Apply new paint system and re-erect railings to original details.

## 3.2 Brick Arches/Relieving Arches

Ensure arches and adjacent structure adequately supported prior to commencement of work. Stabilise structure according to Structural Engineer's details.

Carefully cut out broken damaged brickwork and mortar. Replace with new bricks to match existing, bedded and pointed in lime mortar, replicating original bond and coursing. Fit new steel supports to Structural Engineer's details.

Refer to survey to ensure springing point, radius etc match existing.

### 3.3 Rainwater Goods

Remove and overhaul existing lead sumps. Remove solder wiped joints and replace with double welded lead joints. Re-fit sumps to gutters and dress lead gutter flashings. Re-fit connectors to overhauled cast iron rainwater goods. Re-direct rainwater disposal to existing overhauled gulleys. Ensure all lead welding is undertaken within parameters of Hot Works Permit issued by Project Manager/Contract Administrator.

### 3.4 Internally

# 3.4.1 Ground Floor

When blanks for window frames G1/W7, G1/W8 and G1/W9 have been fitted, replaster bay in lime plaster. Using templates created during dismantling, run new plaster cornice and fluting to reveals in bay.

Re-fit wood block flooring to existing layout, to datum height determined by Project Architect. Allow for 2 m<sup>2</sup> of new wood blocks to match existing.

Re-lay marble floor to existing layout, to datum height determined by Project Architect. Do not replace any broken/damaged stones without permission from the Architect and match replacement stone to existing. Pin fragments of stone using stainless steel threaded dowel and epoxy resin. Colour resin to match stone colour and finish to fill fissures and holes. Fix fibreglass sheet with epoxy resin to underside of damaged stones.

Allow for 6 m<sup>2</sup> of new stone to match existing.

Remove existing paint system from timber panelling and dado. Replace damaged/decayed timber with new to match existing. Fill cracks and voids. Sand down to smooth finish and apply new paint system.

Using templates taken during dismantling, run new plaster architrave around arch to bay, ensuring springing point and head heights match existing.

Overhaul windows G1/W7, G1/W8, G1/W9 to ensure smooth operation. Allow for new sash cords, full re-glazing and putty. Remove decayed material and replace with new to match existing. Remove existing paint, fill holes and voids, sand down and apply new paint system. Fit Ventrolla system seals to windows. Strip cills and panels beneath each window with chemical stripper. Fill cracks and voids and sand to smooth finish. Apply new paint system.

# 3.4.2 First Floor

Allow for repair of pulvinated plaster frieze to match existing. Fit new timber skirting to match existing.

### 3.4.3 Second Floor

Overhaul windows \$1/W10 and \$1/W12 to ensure smooth operation. Allow for new putty and sash cords. Remove decayed material and replace with new to match existing. Remove existing paint, fill holes and voids, sand down and apply new paint system. Fit Ventrolla system seals to windows. Overhaul existing ironmongery with new to match existing. Allow for replacement of 2no espagnolette bolts to casements to match existing broken units.

Allow for supply and fitting of new central window to details. Apply new paint system. Fit new ironmongery to match existing adjacent windows.

Replace missing/damaged/decayed elements of associated joinery surround internally and externally with new to match existing. Remove existing paint, fill holes and voids and sand to smooth finish. Apply new paint system.

Allow for repairs to pulvinated plaster frieze to match existing. Fit new skirting to match skirting in G1.

# 3.4.4 Third Floor

Remove paint from architraves, cills and reveals to windows T1/W13, T1/W14 and T1/W15. Fill gaps, holes and voids. Sand smooth. Re-fit joinery on fitting of new replacement windows and apply new paint system.



Southwest Bay - First/Second Floor.



Southwest Bay - Ground /First Floor.



Southwest Bay - Ground Floor Detail.



Southwest Bay - Second Floor/Cornice Detail.





Southwest Bay - Ground Floor Cornice to Bay.







Southwest Bay - Ground Floor Panelling and Architrave to Arch.



Southwest Bay - Ground Floor Cornice Architrave to Arch.



Southwest Bay - First Floor Segmental Brick Arch.



Southwest Bay - Second Floor Venetian Window.



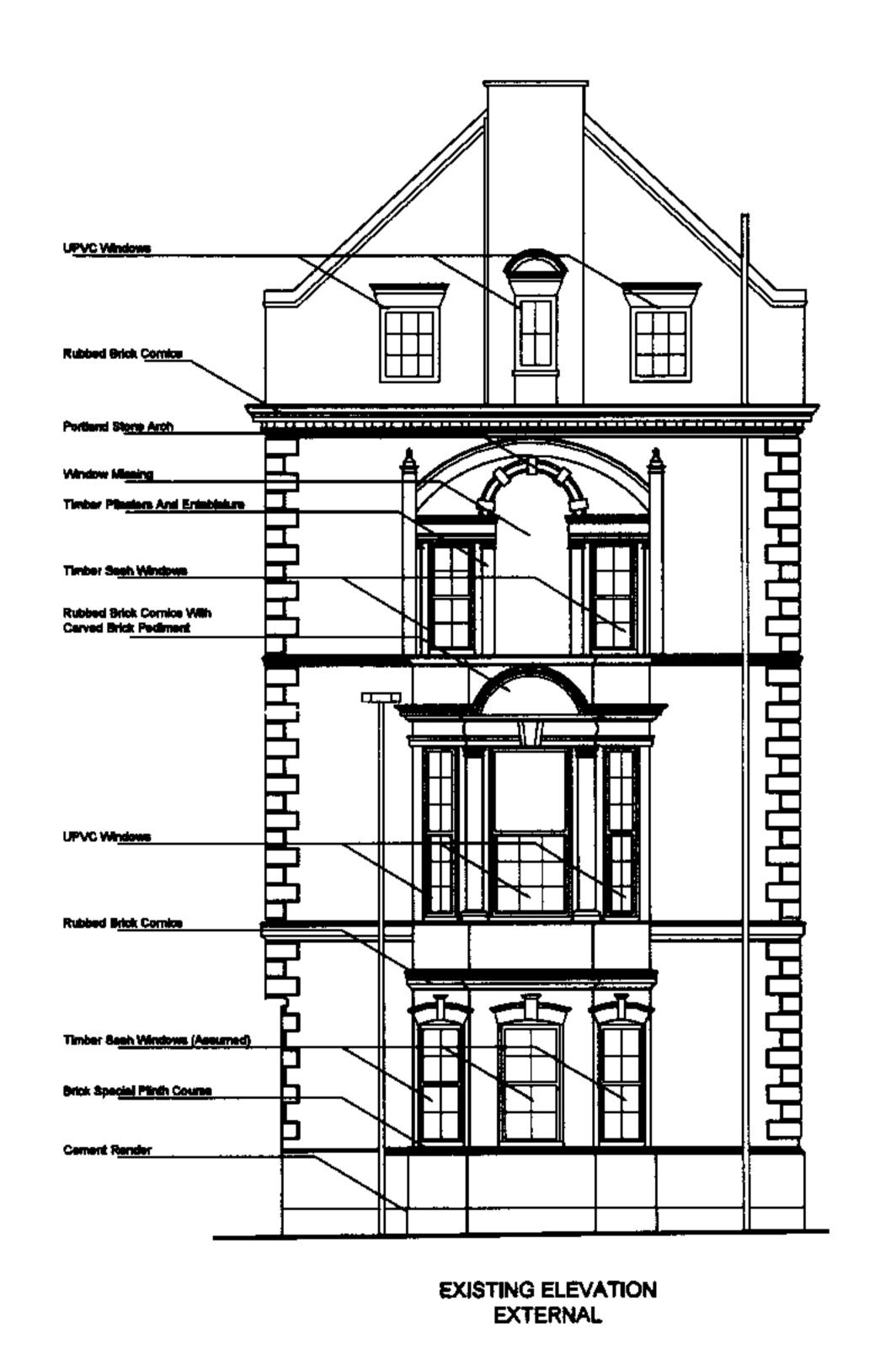
Southwest Bay - Second Floor Venetian Window Detail

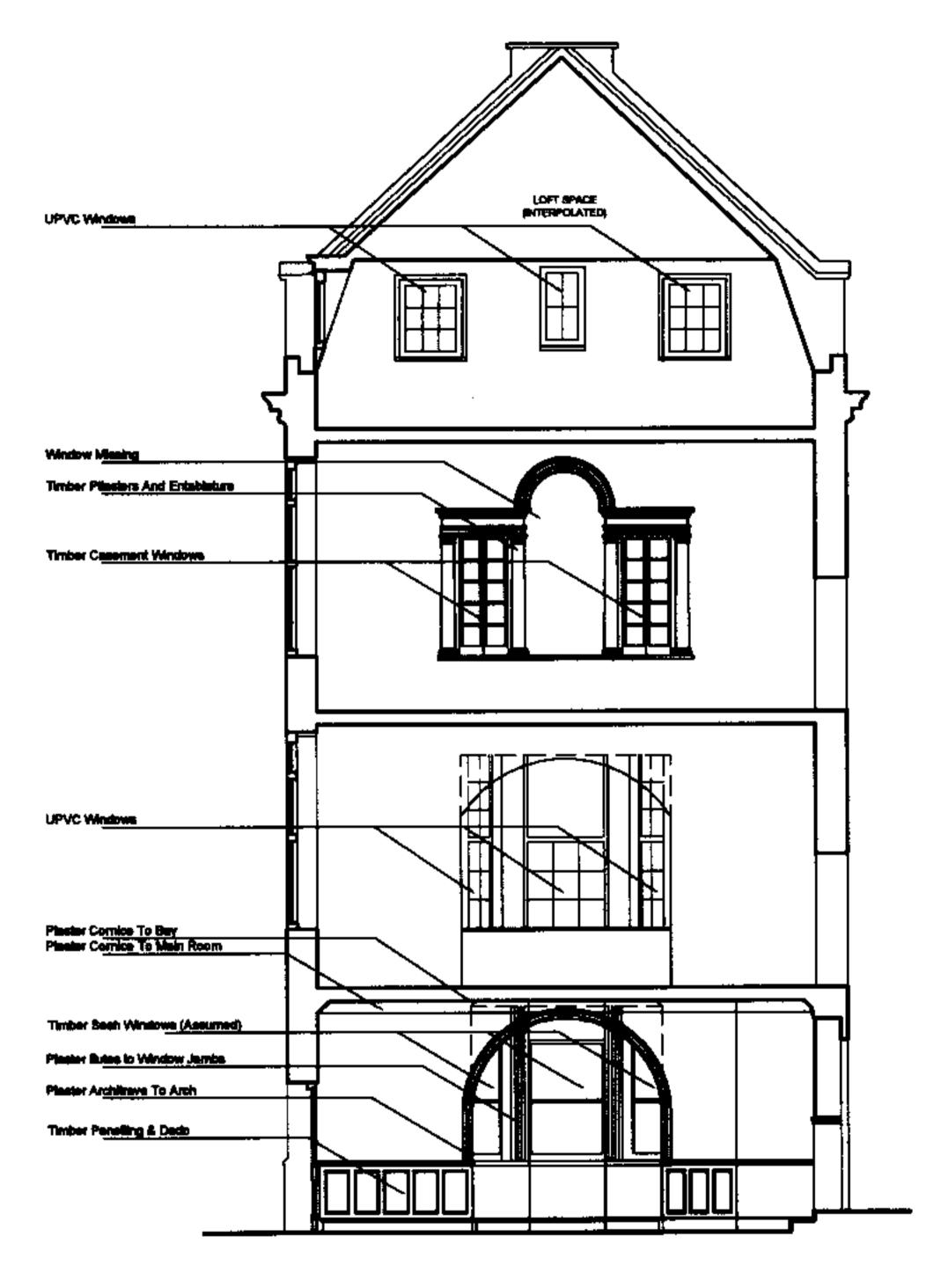






Southwest Bay - Third Floor Window, North.





EXISTING ELEVATION INTERNAL

No NOTES (STATUS): P. FEASIBILITY S. SKETCH DESIGN P. PLANNING B. BUILDING CONTROL D. DESIGN DEV / PRELIM M. MEASUREMENT T. TENDÉR C.CONSTRUCTION R. RÉCORD )

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2 All dimensions to be checked on site by contractor
3 Do not scale from this drawing
4 Unless otherwise indicated all dimensions are in millimeters
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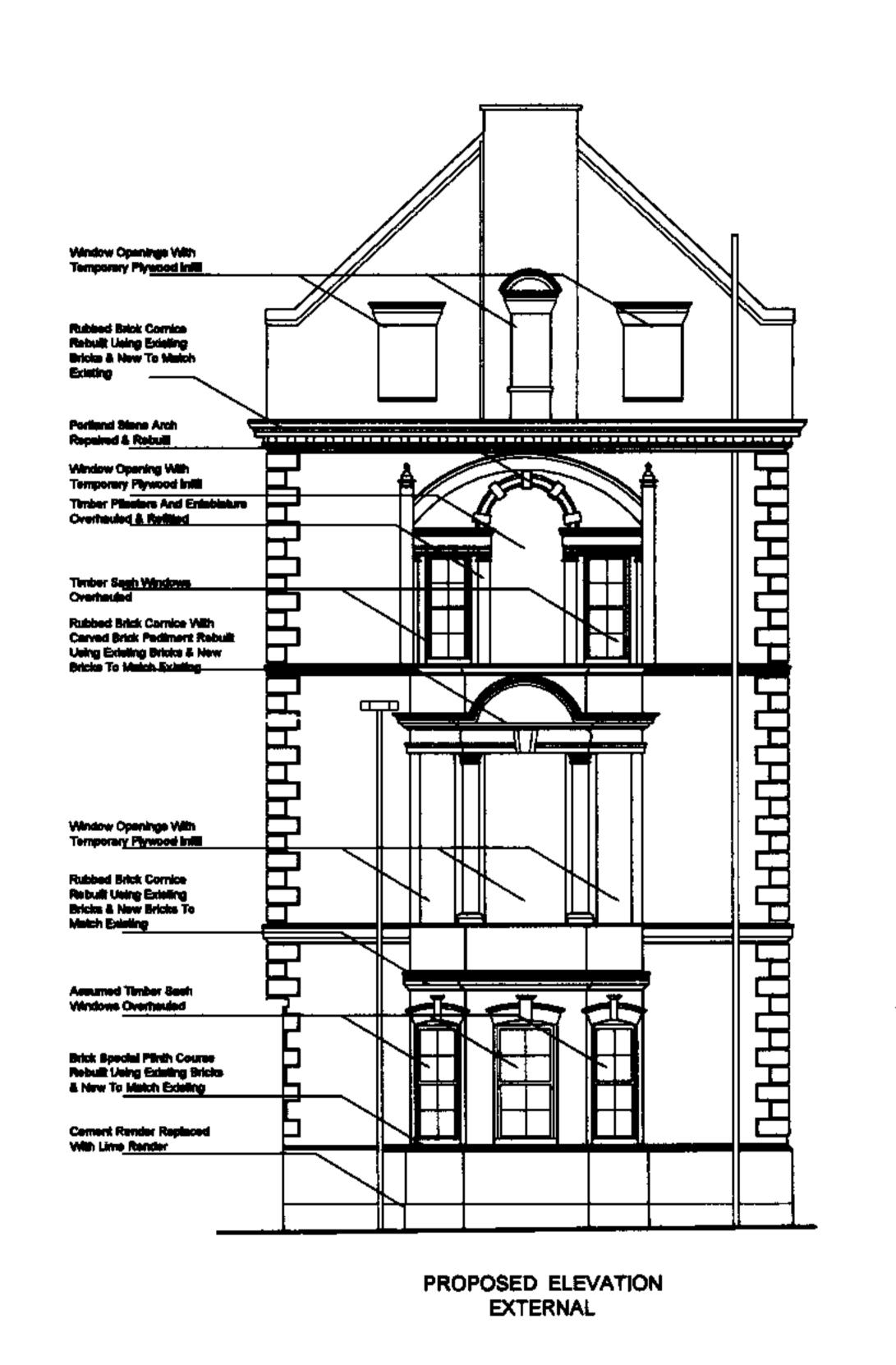
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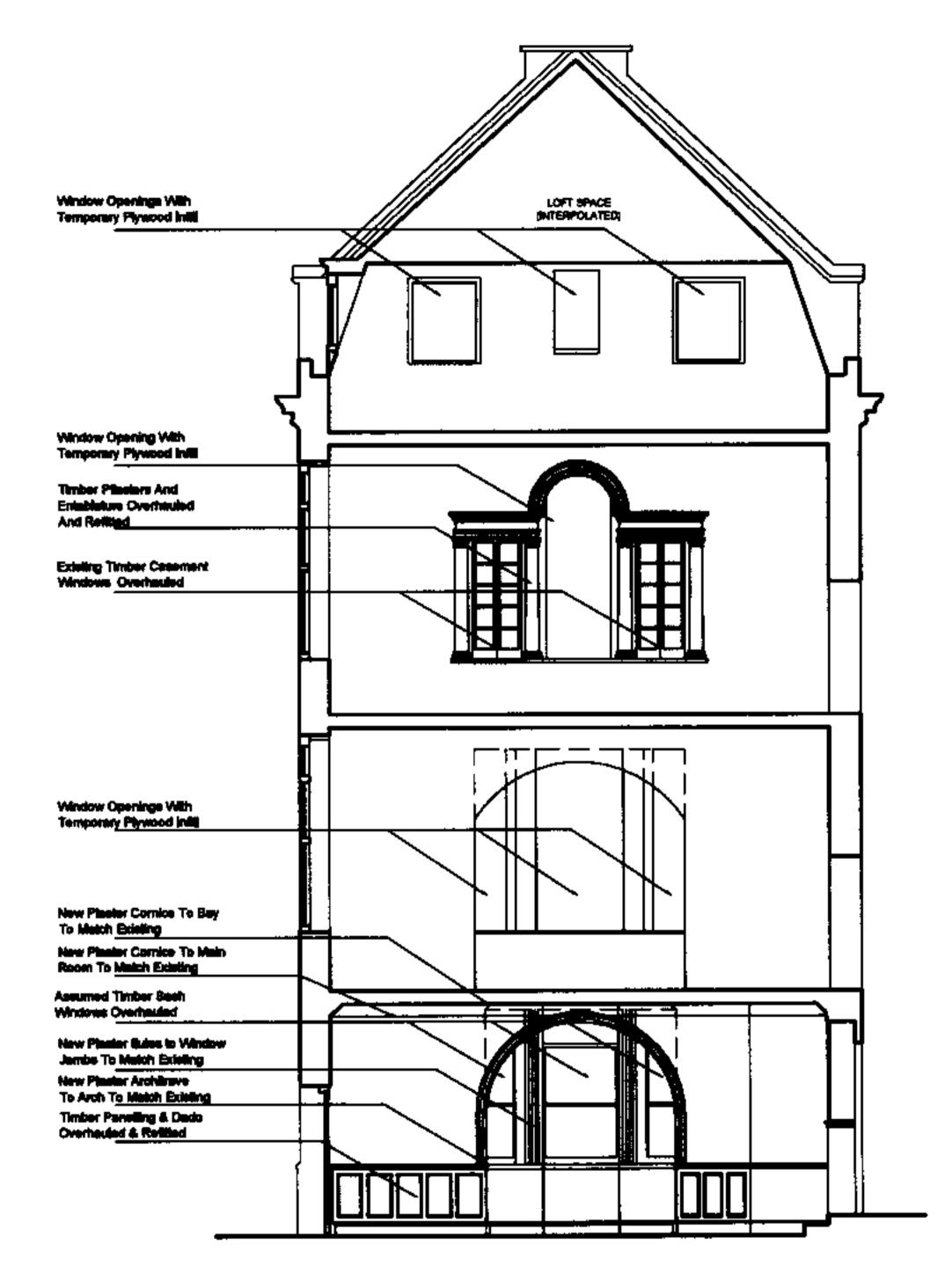
■ ELIZABETH GARRETT ANDERSON HOSPITAL
 ■ SOUTH WEST BAY ELEVATIONS - EXISTING

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PROPOSED ELEVATION INTERNAL

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ELIZABETH GARRETT ANDERSON HOSPITAL SOUTH WEST BAY ELEVATIONS - PROPOSED CHARTEST ARCHITECTS
FLAGGED CONTRICTANTS
THE THIRD CONTRICTANTS

# METHOD STATEMENT FOR DISMANTLING AND RE-BUILDING OF SOUTHWEST BAY AND RECORDING PLASTERWORK, JOINERY AND BRICKWORK FOR REPLICATION

### 1.0 INTRODUCTION

# 1.1 The Purpose of the Method Statement

This Method Statement describes the approach and methodology to be employed to:

- Dismantle structural and joinery items in a manner that will allow the elements to be re-used in the rebuilding of the bay on completion of the structural stabilisation works.
- Record plasterwork which cannot be removed so that it may be properly replicated.
- Record decayed joinery elements for replication during reconstruction.

The purpose is to allow the bay to be re-built/replicated.

# 1.2 Background

The bay to be dismantled is part of the Grade II former Elizabeth Garrett Anderson Hospital. It was built in the 1889-90 by architect John McKean Brydon in a Neo Queen Anne style.

Externally the bay is constructed from red bricks, with offsets, plinths, window heads, cornices etc formed from red rubbed bricks and brick specials. Stone cills and copings are used on the first floor and the second floor contains a Venetian window with stone voussoirs and timber pilasters and entablature. The cornice above the third floor is constructed from rubbed bricks and corbelled from (?) York stone slabs set into the wall.

Internally, at ground floor level, the bay is panelled to dado level, accessed through a semi-circular arch formed in yellow stock bricks, plastered, with a run moulded plaster architrave. The ceiling of the bay has a run moulded plaster cornice.

The first floor bay is accessed through a segmental arch formed in yellow stock bricks.

The second floor of the bay has a parapet with stone copings. The parapet wall has been repaired using mortar repair to simulate brickwork. Internally, there is a yellow stock brick relieving arch containing the Venetian window. The central window is missing, but the associated timber semi-circular architrave survives. The flanking windows still retain the original primary and secondary glazing units: sashes externally and double casements internally. These are framed by timber pilasters and capped with a timber entablature.

# 1.3 The Approach to Dismantling

The dismantling of the bay is to be carried out in a way that will allow those installing the material into the re-created bay to clearly understand the way that the elements were disposed in their original context and to cause no unnecessary damage. To this end, those dismantling the materials shall have appropriate skills: joinery elements shall be dismantled by joiners/shop fitters and the polished stone floor on the ground floor dismantled by masons. The brickwork of the bay should be recorded and dismantled by masons experienced in gauged brickwork.

It is not intended to dismantle the joinery wholesale, but rather to take it apart to its largest manageable constituents, given the exigencies of manoeuvrability, manageability and storage. Stone and brick elements are to be dismantled piece by piece. It is not expected that original fixings or carcassing timbers will be salvaged, it is assumed that these will have to be cut to allow elements to be released.

Before the works are commenced, the contractor shall prepare 1:20 scale survey drawings of all of the elements and these shall include all necessary setting out information and full size details sufficient to allow the elements to be successfully recreeted at a later date.

# 1.4 The Approach to Recording the Plasterwork

The recording of plasterwork is to include all necessary information to allow the replication of all of the architraves, cornices and pulvinated frieze. Those undertaking the recording shall have appropriate skills as high quality plasterers.

It is not expected that the in situ plaster will be salvaged at all and, therefore, it is imperative that all setting out, profiles and details are recorded.

In general terms, the plasterwork shall be recorded on scaled drawings at 1:20 showing the setting out of all the plasterwork and the details. The drawings shall include full size profiles and full dimensional recording of the setting out and record the location of particular details.

To assist in replicating certain elements of the plasterwork, full-sized moulds shall be made by taking latex 'squeezes' from the in situ material. These shall be taken in ways which would allow the profiles to be replicated by re-casting in fibrous plaster.

Full-sized profiles of covings, cornices and other shaped elements of the plasterwork shall be made in 20mm plywood. These shall include all details necessary to replicate any of the shaped plasterwork of both 2- and 3-dimensional profiles.

### 2.0 METHOD STATEMENT

The contractor shall provide to the architect, in advance of commencement of the works, a Method Statement describing how he proposes to carry out the work, including descriptions of all works of a temporary nature, such as scaffolding, structural support, lifting apparatus and protection. The Method Statement will also

# clearly explain:

- which elements are to be dismantled for re-use
- which elements are to be recorded
- which elements are not to be subject to either of the above.

The contractor shall not commence any works until the architect has made comment on the Method Statement. Any comment, or lack of comment by the architect shall not alleviate the contractor of his responsibility for providing suitable plant or temporary supports to successfully carry out the works without jeopardising the safety of the materials or those working in the building.

## 3.0 RECORDING AND DISMANTLING

The recording of the work is of utmost importance. The contractor shall label every element before dismantling. The contractor shall apply self adhesive labels to each element, and shall give each element a discrete number which he shall record on the 1:20 drawings. The numbering sequence is to be agreed with the architect before dismantling commences. The contractor shall photograph the elements prior to and during the dismantling works, this is to record the disposition of the elements in the constructed finished work, and the method of assembly. The contractor shall provide the architect with: two 4" x 6" colour prints of the photographs and two copies of them on a CD-Rom in a format to be agreed; two copies of all drawn material recording both joinery and plasterwork elements.

# 4.0 ELEMENTS TO BE RECORDED AND DISMANTLED

### **Masonry: Brick and Stone**

- General setting out information, datum heights etc.
- Profiles of all moulded stone and rubbed brick elements, numbered by course and location.
- Face moulds of carved brick cartouche in segmental pediment and gauged brick arches.
- Layout pattern of stone floor internally.

All to be recorded on drawings.

### **Joinery**

- Third floor cills, architraves and window linings.
- Second floor Venetian window, pilasters, entablature and cill (internal and external).

- First floor cill and architraves.
- Ground floor skirtings, wall panelling, any surviving original window joinery.
   Main entrance double doors, architraves and entablature. Timber flooring.
   Pilasters to double doorway to building.

All to be recorded on drawings.

### **Plasterwork**

- General setting out and profiles of cornice in ground floor bay, main cornice.
- General setting out and profiles of semi-circular architrave.
- General setting out and profiles of plaster architrave to double doors of G1.

All to be recorded on drawings.

# 5.0 DISMANTLING PROCEDURE AND PRACTICE

Notwithstanding the agreed Method Statement, before commencing dismantling, the craftsmen undertaking the work shall agree with the architect: the location of joints in construction and where any cutting of original fabric may take place; the location of and nature of any temporary markers, bench marks etc, which may be necessary to allow the satisfactory re-use of the dismantled material.

# 5.1 The Sequence of Dismantling

It is expected that joinery will be dismantled in the following sequence:

Remove all elements fixed to other backings ie: windows/casements; architraves; cornices; pediments.

Remove linings ie: wall panelling; column casings; door lining/ frames.

Stone/timber flooring will be removed after the joinery is dismantled.

### 5.2 Particular Issues

Brick is to be dismantled on a course by course basis, with whole sound bricks cleaned with nylon or other non-metallic bristle brushes and stored as new. Broken gauged bricks to be templated fully to allow replacements to be rubbed to original profiles. Complex features such as the carved brick pediment require individual numbers plotted on a layout elevation using tough polyethylene sheeting and permanent markers showing numbers and jointing pattern.

The contractor shall not cut any wooden element unless this is agreed with the architect. It is expected that wooden elements fixed to other backings will be gently prised off and fixings cut or removed as they are removed. Panelled linings are

expected to be removed from their carcassing and/or other backing by the removal and/or cutting or surface fixings.

The polished stone shall be removed in whole pieces by, the cutting of fixing cramps or, if absolutely necessary and then only with the greatest care, the removal of masonry backings. Broken fragments of floor tiles are to be stored together on a stone by stone basis.

No power tools shall be used for any dismantling without the prior consent of the architect.

# 6.0 RECORDING PROCEDURE AND PRACTICE

# 6.1 Sequence of Recording

Before commencing recording work, the contractor shall agree, in writing, with the architect the full scope and nature of the recording process. He will agree:

- What individual detail elements are to be recorded and where profiles are to be made.
- Which particular elements should be recorded as a 'squeeze'.
- The full nature and scope of the drawn setting out record.

### 6.2 Particular Issues

Before taking squeezes to record details, the contractor shall strip all decorative coatings of typical work.

# 7.0 PROTECTION AND STORAGE

# Stone

Remove mortar using nylon or other non-metallic bristle brushes. Fix number tag of Tyvek or similar material and permanent marker. Use closed cell softening and bubble wrap between stones and protect against moisture, dust and impact, on pallets. All parcels must be clearly labelled externally.

### Brick

As stone, but with course number and location, cross-referenced to drawing.

The contractor shall suitably protect all materials as they are dismantled. Any timber element shall be protected by parcelling in bubble wrap. 'Squeezes' shall be strapped to plywood backing sheets and parcelled in bubble wrap. All parcels shall be labelled on the outside in a manner describing their contents and with their descriptive numbers.

The contractor shall transport the material from site to store and shall stack material under the supervision of the architect, or his agent. Long lengths of panelling shall be laid flat and blocked off the floor, or any other material laid below, with continuous

soft wood battens long the stiles, rails and muntins. Battens should be deep enough to prevent damage to proud surfaced planted mouldings.

The store shall be weather tight and environmentally controlled to ensure a relative humidity level similar to the expected conditions of the re-built rooms (assume 40% - 55% RH). The contractor shall provide suitable scaffolded racking within the store to house small joinery elements and polished stonework.

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