SINCLAIRJOHNSTON

CONSULTING CIVIL AND STRUCTURAL ENGINEERS

SINCLAIRJOHNSTON

NEW BRIDGE
CAMDEN STABLES
LONDON NW1

REPORT IN SUPPORT OF PLANNING APPLICATION AND LISTED BUILDING CONSENT FOR REINSTATEMENT OF BRIDGE

STRUCTURAL ENGINEERING ASPECTS

J.S. Johnston BSc CEng FICE FIStructE FCONSE
An Engineer Accredited in Conservation
Sinclair Johnston & Partners Limited
93 Great Suffolk Street
London SE1 0BX

Tel: 020 7593 1900
E-mail: sjohnston@sinclairjohnston.co.uk
Mobile: 07966 161 464

8370/JSJ **JULY, 2015**

I N D E X

APPENDICES

NEW BRIDGE LINK CONNECTING THE TACK ROOM TO THE PROVENDER STORE, CAMDEN STABLES MARKET, LONDON NW1

1.0 INTRODUCTION

1.1 This report presents the structural engineering information about the proposed alterations to the above existing buildings as illustrated on Heritage Architecture's drawings and other documents submitted with this application for planning permission and listed building consent.

1.2 The structural drawing in Appendix A show the proposed plans for the bridge together with the necessary strengthening works to the buildings which the bridge connects.

1.3 This drawing is not the final working drawing, but is an advanced (RIBA Stage 'D') drawing and show all the structural elements that are considered necessary to realise the project and will be developed into working drawings in due course, when all the planning consents are granted.

1.4 The structural drawing is based on the current architectural proposals prepared by Heritage Architecture, as at September, 2014, and has been developed and refined in discussion with the design team and client.

1.5 The drawing and details have been extensively reviewed and discussed with Malcolm Tucker, Industrial Archaeology advisor, to the Regent's Canal Conservation Area Advisory Committee.

1.6 The full set of survey drawings and Architects proposal drawings are not included in this structural report, but are part of the full planning application submission.

1.7 An investigation of the main areas of the existing construction has been carried out by SJ&P and the results are integrated into our detail designs.

1.8 The Tack Room and Provender Store of Camden Stables Market are included on the List of Buildings of Architectural and Historic Interest as Grade II. The historic development and significance of the building are dealt with in the Architects submission.

1.9 In this context, therefore, while alterations are designed in accordance with modern techniques, complying with the current Building Regulations good practice and British Standards, the existing buildings will be dealt with in accordance with current good conservation practice with minimum intrusion or disturbance to the existing fabric and minimal loss of historic material.

1.10 The Tack Room and Provender Store are located fairly centrally in the Stables Market and are reached from the market entrance off Chalk Farm Road.

1.11 The proposed works that are relevant to this report are in summary:

- The reinstatement of a bridge at 1st floor level to provide a link between two existing buildings. (See Photos 01-03 and drg. 8370-401/ Rev. B).
- Raising the height of an existing opening formed by an existing concrete lintel with new brick lintel over an opening at the end of the bridge. (See Photo 03 and section AA on drg 8370-401/ Rev. B).
- Strengthening of concrete beam over the opening in the wall at ground floor, to accept the revised loading from the new bridge above. (See photo 01).
- Making good of the existing brickwork walls where the new beams are to bear with the addition of a Yorkstone padstone.

1.12 The information gathered to date and structural engineering advice as set out in this report is intended to demonstrate that the proposed works may be carried out with well understood and well rehearsed construction methods; without recourse to any unusual or exceptional procedures, and with proper professional care in the design and construction so that the requirements of The London Borough of Camden planning department, to preserve and protect and enhance existing listed buildings, are met in full.

1.13 Sinclair Johnston & Partners Limited have considerable experience of the alteration and repair of historic buildings similar to Camden Stables Market, and indeed worked on several other buildings at stables market in 1998. The overseeing director's CV is included in Appendix D.

2.0 BUILDING STRUCTURE AS EXISTING AND HISTORICALLY

2.1 Refer to Appendix C for historic photos 04 and 05 which show the original bridge.

2.2 The bridge connected the current 2 storey and 3 storey buildings, both constructed with load bearing London stock brickwork walls, in the mid-19th century and both listed grade II.

2.3 It is clearly evident a bridge once existed here, where voids are visible in the brick wall for the bearing of the original bridge beams. There is also a horizontal external member spanning between the two buildings, carrying lightweight services; a remnant of the original bridge balustrade.

2.4 There are existing openings at either end of the bridge, with a brick arch over (See Photographs 01&02) and one window with a concrete lintel over (See Photograph 03).

2.5 A continuous feature can be seen in the west wall at 2nd floor. The brickwork forming the wall above and below this feature looks of a similar age and detail and thus it is unlikely the feature once formed an opening which has since been filled in, so the purpose of this feature is unknown, but unlikely to be pertinent in developing the proposals. (See photo 03).

2.6 A large beam under an infilled brick arch, below the proposed bridge to the Tack Room, and above an opening at ground floor level appears to have a slight sag (See photo 01).

2.7 It is not clear exactly when the bridge was removed; what is known is that it was standing in 1975 and no longer there in 1996/7.

3.0 FURTHER INVESTIGATIONS

3.1 Closer inspection of the beam over the opening at ground floor to the Tack Room, is required to determine its material, condition and magnitude of deflection.

3.2 The condition of the brick walls will require closer examination, particularly in the locality of where the original bearing points are planned to be reused.

3.3 Investigation of the 1st floor structure at the junction between the bridge and the internal rooms.

4.0 PROPOSED WORKS TO THE EXISTING BUILDING

4.1 The extent of the proposed works is shown on Heritage Architecture drawings and our drawing 8370/401 rev. B.

4.2 The changes affecting the structure of the building are outlined in item 1.10 above and are discussed in more detail in the following items.

4.3 The intention is to construct the new bridge using similar structural principles as would have been employed in the original construction, but enhanced to comply with modern requirements for public access.

4.4 The bridge, formed from two trusses in green oak will span approximately 7m between the two buildings. The bridge will be designed to carry an imposed loading of 5.0kN/sqm (100lb/sqft) to allow for pedestrian access. The original bearing points will be reused and the brickwork made good and strengthened as necessary, including the introduction of stone padstones.

4.5 The Oak timber balustrades on either side of the bridge will be laterally retained by concealed steel bracing. The top balustrade rails will be designed for a line load of 1.5kn/m restrained from lateral movement in the transverse direction by their connection via timber posts to the bridge primary beams, which are braced for torsional restraint. The timber posts which are part of the side trusses support the timber rail vertically along its length.

4.6 Some modest temporary structure, such as needling through the brickwork, will be required to allow for the replacing of the existing lintel, to the west elevation of the Provender Store.

5.0 CONCLUSIONS

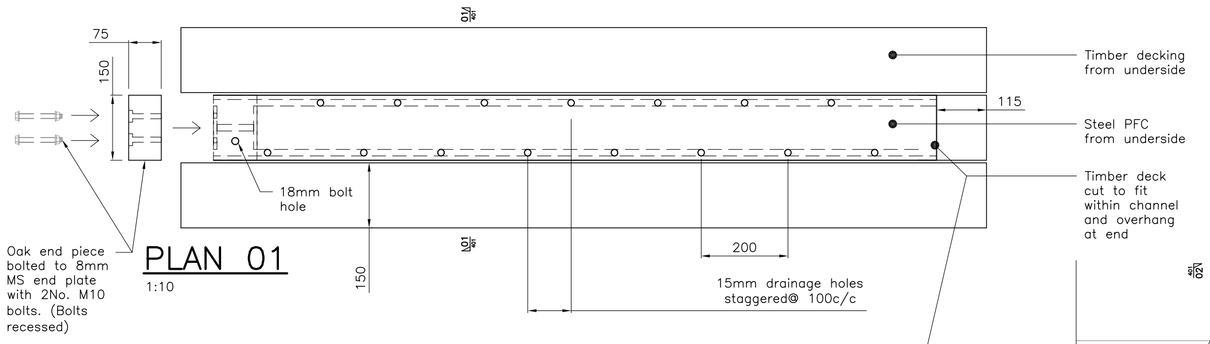
5.1 The proposed alterations do not affect the existing building structure or external appearance, apart from what is seen from the works required to reinstate a bridge with one of very similar appearance, and structural principles, to that which once existed.

5.2 The structural aspects of the proposals only affect the areas that have been altered since the buildings were originally constructed. The intention is to restore the buildings back to their original condition in the locality of the bridge.

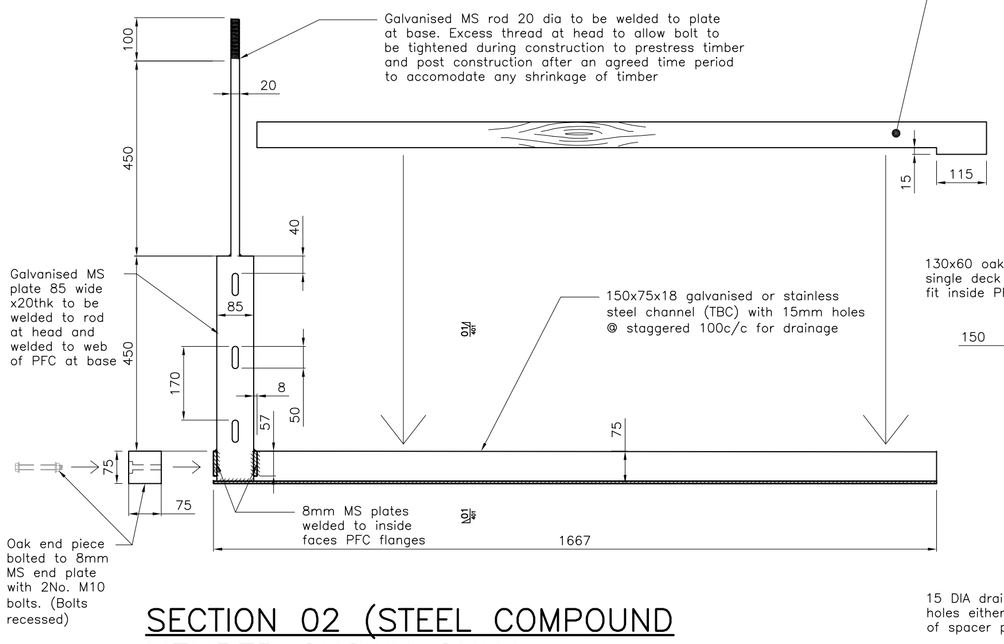
5.3 As may be seen from comparing drawing 401 Rev. B with historic photograph 05 attached, the proposed bridge closely resembles the original. The new bridge, however, is designed for modern pedestrian loadings both vertically and horizontally for public use whereas the original was a facility for the site workers only.

J.S. JOHNSTON BSc CEng FICE FIStructE FCONSE

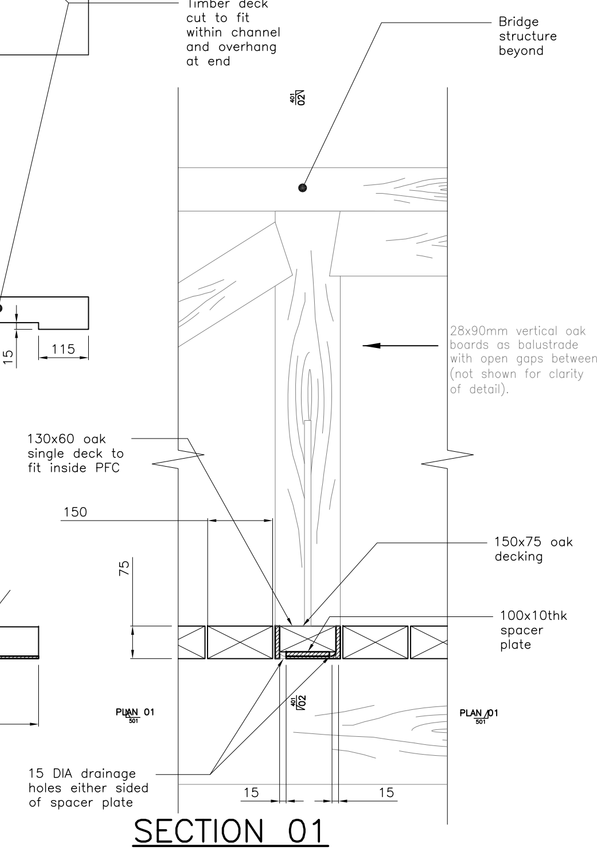
APPENDIX A



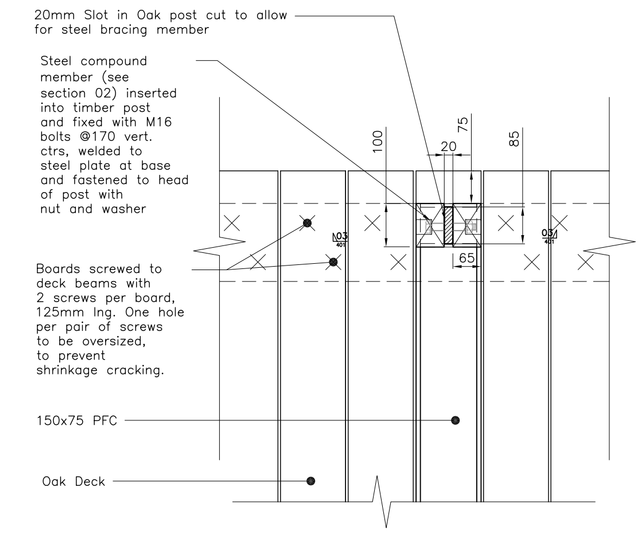
PLAN 01
1:10



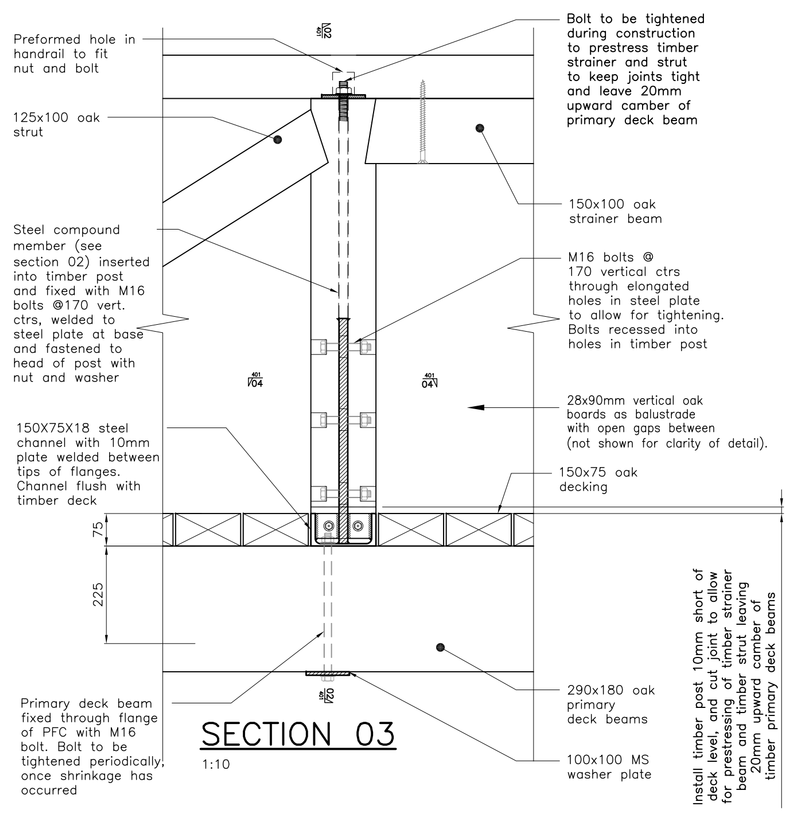
SECTION 02 (STEEL COMPOUND MEMBER SHOWN ONLY
1:10



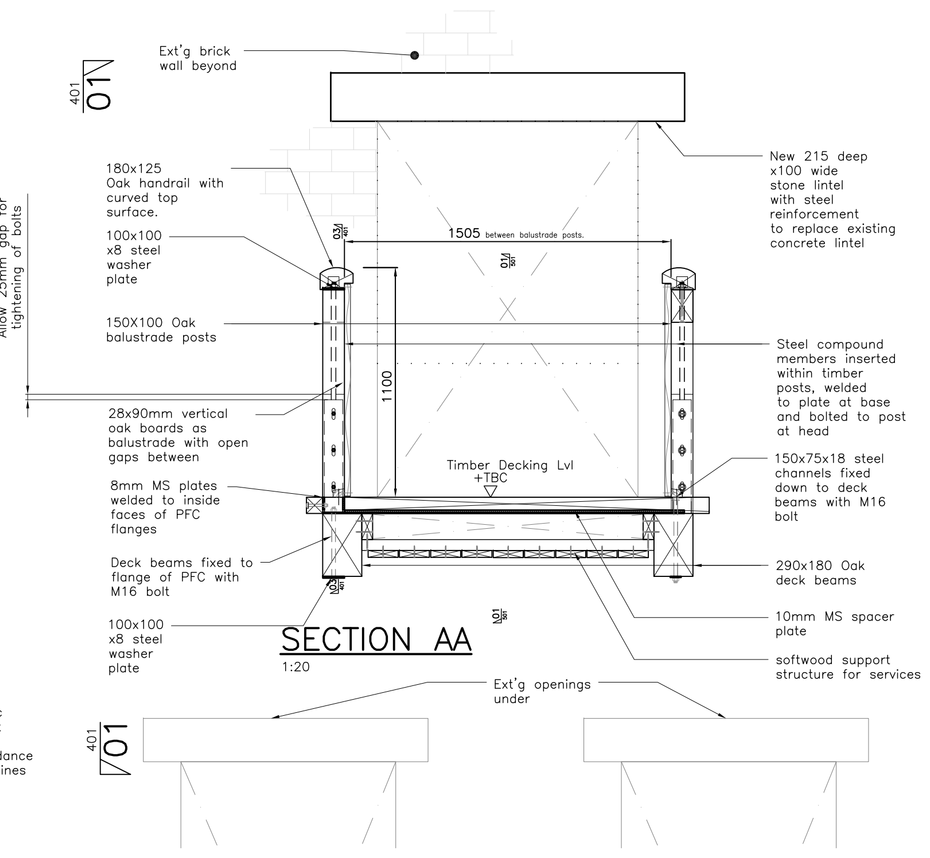
SECTION 01
1:10



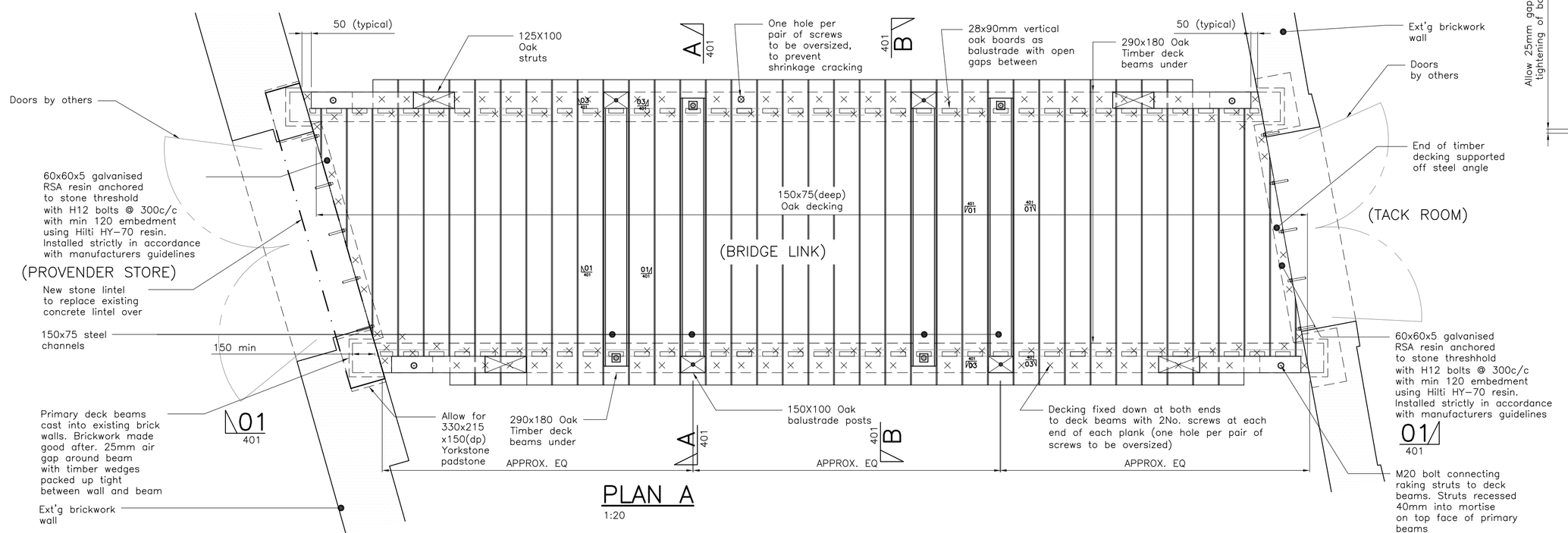
SECTION 04
1:10



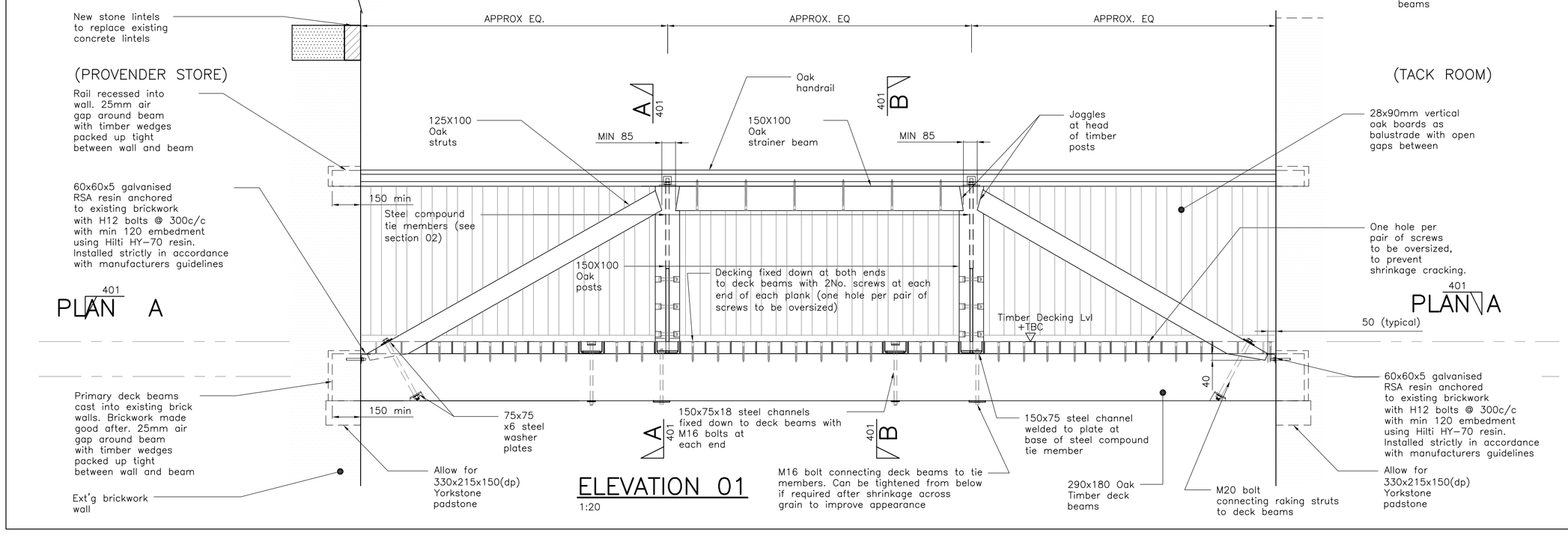
SECTION 03
1:10



SECTION AA
1:20



PLAN A
1:20



ELEVATION 01
1:20

SECTION BB
1:20

NOTES:

1. All structural engineering drawings are to be read with the specification and with all relevant Architect's and Service Engineer's drawings and specifications.
2. Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to intended scale this bar should be 50mm long @ A1 or 25mm long @ A3:
3. All dimensions are in millimetres and levels in metres.

DESIGN LOADS

IMPOSED LOADS=5KN/M2

LATERAL LOADS=1.5KN PER M RUN ON HANDRAIL OR 1.5KN/M2 ON PANEL

CONSTRUCTION

A) JOINTS TO BE CUT SO AS TO CREATE AN UPWARD CAMBER ON THE TWO MAIN BEAMS OF APPROX. 20MM, BY TIGHTENING THE THREADED ROD DURING ASSEMBLY AS DESCRIBED ON THE DRAWING

B) ENSURE SPLINTERS ARE REMOVED

C) DRAINAGE HOLES TO BE KEPT CLEAR

C) FIX DECK BEAMS WITH HEARTWOOD FACING UPWARD

D) ENSURE THE 4NO. TIMBER END PIECES TO DECKING (SEE SECTION 02) AND THE PRIMARY DECK BEAMS ARE FIXED PRIOR TO INSTALLATION OF TIMBER POSTS (WHILST THERE IS ACCESS FOR BOLTS)

MAINTENANCE

BOLTS MUST BE CHECKED AND TIGHTENED ON-SITE PERIODICALLY TO ALLOW FOR SHRINKAGE, AS DESCRIBED ON DRAWING, ESPECIALLY ON MAIN BEAMS. TIME SCALE TO BE AGREED

FINISHING

SIZES OF TIMBERS SHOWN IS ACTUAL MINIMUM REQUIRED IN FINISHED STATE, REDUCED FROM LARGER SAWN SECTIONS, IF REQUIRED.

ALL FIXINGS TO BE STAINLESS STEEL OR MILD STEEL, HOT DIP GALVANISED AS SHOWN. DISSIMILAR METALS TO BE SEPARATED WITH ISOLATION WASHERS OR SEPARATING MEMBRANE OF SUITABLE APPROVED MATERIAL

ALL TIMBER TO BE GREEN OAK. OAK TO BE UNFINISHED I.E LEFT TO WEATHER NATURALLY

Rev	Date	Issued	Amendment
B	19.06.15	SJ	Revised to date
A	05.06.15	DF	Revised where clouded
–	14.04.15	DF	First issue for comment

Status

PLANNING

SINCLAIR JOHNSTON
Consulting Civil & Structural Engineers

93 Great Suffolk Street
London SE1 0BX
T: 020 7593 1900
F: 020 7593 1910
www.sinclairjohnston.co.uk

CAMDEN STABLES, NW1

TACK ROOM BRIDGE LINK PROPOSED

Drawn D Firth Scale As Shown at A1

Project No./Drawing No. 8370/401

Rev B

APPENDIX B

RECENT PHOTOGRAPHS

Photo 01.JPG

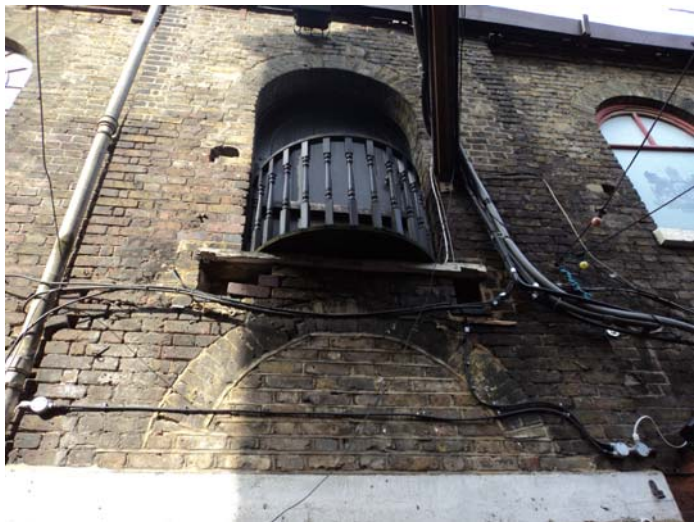


Photo 02.JPG

Photo 03.JPG

APPENDIX C

HISTORIC PHOTOGRAPHS

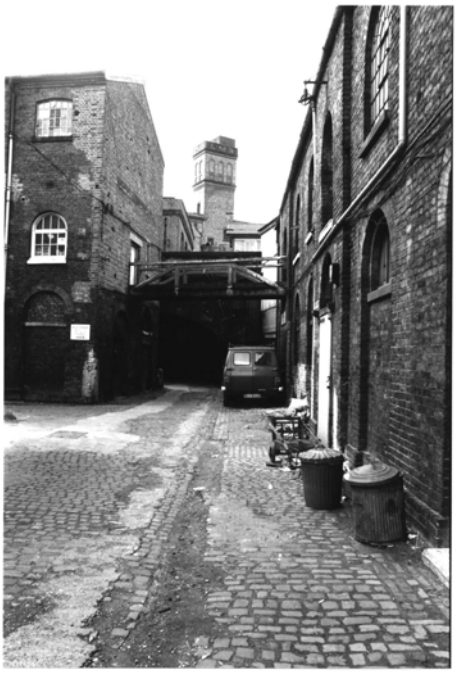


Photo 04.JPG

Photo 05.jpg

APPENDIX D

CV FOR AUTHOR

JAMES SINCLAIR JOHNSTON BSc CEng FICE FIStructE FCONSE

Position Director

Qualifications

1970	BSc (Hons) Civil Engineering, Queens University, Belfast	
1983	Fellow	- Institution of Structural Engineers
1999	Fellow	- Association of Consulting Engineers
1992	Fellow	- Institution of Civil Engineers
1996	Member	- Pyramus & Thisbe Club for Party Wall Surveyors
2004	Engineer	- Accredited in Conservation (ICE/IStructE)
2008	Associate Member	- Ecclesiastical Architects and Surveyors Association

Experience

1983-present	Founding Partner/Director of Sinclair Johnston & Partners Consulting Engineers.
	44 years' experience of Structural design new and existing buildings including historic buildings and ancient monuments and conservation work. Preparation of expert evidence for litigation. Assessment of listed buildings for planning departments.
	Clients include, City of Westminster, Bedford Estates, Diocese of London, Lord Chancellor's Department, Royal Borough of Kensington & Chelsea, Barts & London NHS Trust, The Crown Estates, The Portman Estates, The Church Commissioners and numerous commercial organisations and private owners.
2005	Appointed Engineer, Cathedral Church of St. Nicholas, Newcastle Upon Tyne
2007	Appointed Specialist Consultant, Structures, London Diocesan Advisory Committee
2009	Appointed Specialist Consultant, Structures, Gloucestershire Diocesan Advisory Committee

Professional

1983	Lecture Use of Cast Iron in Building to Ironbridge Gorge Museum Trust.
1983-84	Structural Advisor to Care of Buildings Exhibition at Hampton Court Palace.
1982-86	Initiate the CIRA Project Structural Renovation of Traditional Buildings.
1987-89	Seminars Latent Defects on the assessment of structural defects.
1987-97	Convenor, Clapham Society Planning Committee.
1991	The London Programme Thames Television. Subsidence problems.
1992	Bonding Timbers in Old Brickwork - Structural Survey Magazine.
1994	26 & 27 Bedford Square Construction Repair Magazine, July/August.
1994	Autumn Lecture - Society for the Protection of Ancient Buildings.
1998	Structural Repair Course; Society for the Protection of Ancient Buildings.
2001-10	Committee Member, Society for the Protection of Ancient Buildings
2002	Lecture "Conservation and the Structural Engineer" to Gloucestershire DAC.
2003	Lecture "James Gibbs and the Eighteenth Century Hospital".
2005-14	RICS/SPAB – Training Seminars for student surveyors.
2008	Lecture "Structural Assessment of Historic Churches" - Chichester DAC.
2011	Member – Georgian Group Design Review Panel
2013	RICS "Building Defects" CPD seminars
2013	Sky News – Opinion on collapse of plaster ceiling, Apollo Theatre.
2015	Awarded Certification as a'Conservation Accredited Engineer' by CARE

Sinclair Johnston
and Partners Limited

93 Great Suffolk Street
London
SE1 0BX

t. 020 7593 1900
f. 020 7593 1910
email@sinclairjohnston.co.uk
www.sinclairjohnston.co.uk