CONSERVATION STRUCTURAL ENGINEER'S ADVICE

ON:

REPAIRS TO DEFECTIVE BRICKWORK

AT:

94 HAVERSTOCK HILL
LONDON, NW3

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

8701/JSJ/VME **JULY 2016**

I N D E X

APPENDICES

94 HAVERSTOCK HILL, LONDON, NW3

1.0 INTRODUCTION AND BRIEF

1.1 J.S. Johnston was instructed by Donald MacGregor of McGregor Associates, Architects on behalf of our client Haverstock Hill Limited to inspect the upper part of the building and provide conservation engineering advice on external structural defects.

1.2 Our inspection was carried out in the company of Mr. MacGregor on 7th July, 2016, at which time the weather was clear and dry.

1.3 There was scaffold access to the upper parts of the rear, flank and front walls, from first floor up to roof. Unfortunately there was no access to the interior at this time.

1.4 Each element was inspected in turn and a detailed note complete with photographs as follows in section 3 of this report.

1.5 A summary of the advice is shown on the annotated elevations attached at 1:100 scale at A3 sheet size.

1.6 This advice is based on what was visible and accessible at this time, and no assurance is given that elements which were concealed or inaccessible are free from rot, decay, cracks or other defects.

2.0 DESCRIPTION OF BUILDING

2.1 The "Load of Hay" Tavern is dated 1863 – see cover photograph and is now included as grade II on the "List of Buildings of Architectural or Historic Interest". See Appendix C.

2.2 The exterior at upper levels, as examined, would seem to be fairly much as built without significant alterations. The ground floor elevation too, may well be original. See photographs 7280 and 7281.

2.3 The defects generally are localised and due to inherent or constructional details in the lintels, though the fracture full height at the left end of the front elevation may be due to the tendency of the building to rotate or settle with the clay slope of Haverstock Hill, falling away to the south.

2.4 The external walls are all traditional solid yellow London stock brick with many original decorative elements.

2.5 The interior was not accessible but is assumed to be timber floors and timber or brick internal partitions.

2.6 The roof is timber framed, covered in slate with a central valley parallel to the front elevation. (Photographs 7272).

2.7 The left flank and front elevations have numerous decorative elements. These are mostly stock items simply added to ornament the yellow London stock brick façade. They mostly survive intact except where ruptured by structural movement over certain windows as described in section 3 of this report.

Photo 7280 – Front Elevation

Photo 7281 – Front Elevation

Photo 7282 - Roof

3.0 DAMAGE AND REPAIRS

3.1 **Rear Elevation First Floor, Only Window Arch at this Level.**

(Photograph 7251) Historic crack through the right hand side of the arch as viewed, but any dipping or dropping of the arch is trivial. Rake out the joint and repoint across the crack. The arch generally is tuck pointed, mostly in good order with a few bits to be made good.

Before raking out and repointing insert one heavy timber prop made tight with folding wedges under the fractured area, remove on completion of work.

Photo 7251

3.2 **Flank Elevation Rear Window First Floor**

Ornate rendered surround with decorative band. Window head has dipped in the middle in the past, mostly historic, though with perhaps slight recent movement.

However, situation does not merit the loss of historic fabric involved in cutting out what we take to be original decorative elements and lintels.

Cut out bed jointed brickwork 40mm deep in the first brick course and third brick course above the window, as marked with chalk cross on **Photograph 7252** and insert 6mm "Helifix" square twisted stainless steel bar set in "Helibond" grout. The length of bars about 1.7m/1.8m. Each bar to be inserted and grouted and pointed up before the next recess cut out. Cracks in the decorative render, cut back and made good.

Before doing any of the work insert timber spreader plate and two timber props with folding wedges underneath the soffit of the head of the window, and remove on completion.

Photo 7252

3.3 **First Floor Flank Wall Middle Window.**

(Photograph 7253) This has sagged in the middle and open bed joints have occurred in the brickwork above to about 5mm or 6mm. In the past there has been severe water washing down from defective rainwater goods above. Window lintel cracked as previous, but here much higher risk of decay in the timber lintel. There is said to be cracking on the inside face.

Prop lintel on the outside with timber spreader plate and two heavy timber props. Likewise on the inside, strip plaster on the inside, check timber lintel which may well be decayed, cut out and replace with concrete lintel 140mm wide 100mm deep with at least 150mm bearing each end.

Outside take cast of decorative moulding and set aside. Take off decorative moulding carefully keep in the lintel propped, expose what is taken to be timber lintel, prop brickwork above, take out timber lintel, install concrete lintel 100mm wide, 140mm deep with bearing 170mm i.e. just within the decorative reveals so the end of the pre-cast lintel is not exposed.

Rebuild small area of brickwork above about two to three bricks long over about four brick courses. Rake out second bed joint above the window head and install one “Helifix” square twist bar with the window about 1.7m long.

If, as may be possible the moulding comes off in pieces, it can be put back fixed with stainless steel screws, otherwise fix stainless steel expanded mesh over the new concrete lintel, run new sand:cement moulding to match existing decorative elements.

Check that all rainwater goods above are in good order and valley gutter etc., swept clean.

Photo 7253

3.4 **Flank Wall Forward Window**

(Photograph 7254) Slight distortion in the head of the window, minor cracking through the decorative moulding, prop the window head, discard the redundant security box on the right hand side, cut out bed joints in the brickwork above 40mm deep, first bed joint and third bed joint above the window insert 6mm "Helifix" square twist stainless steel bar set in "Helibond" and grout and repoint to match existing. Rake out and make good the cracks in the decorative moulding and remove props.

Photo 7254

3.5 **First Floor Front Elevation, Left Hand of the Three Windows**

Significant crack through the window head decorative detail, the horizontal cantilevering pediment and the moulded arch above.

Prop the window head and then carefully take out the broken elements to examine the construction, these marked with yellow chalk on site. See **photograph 7255 and 7256.**

The cantilever outstand element may be brickwork built out from the face of the wall and then rendered or pieces of Yorkstone or similar built into the wall cantilevering out, not clear today, and not possible to open up to inspect until propped.

Prop the horizontal outstand element of the parapet below which is almost directly under. **(Photograph 7257).**

Rake out all the broken material.

Take off the decorative corbel brackets, right and left of the window and set aside for replacement on completion. Take off decorative element and vertical plain rendered area, take out existing lintel which is either decayed timber or failed brick arch, install concrete lintel 100mm wide, 150mm deep with 220mm bearing each end, put back decorative elements on stainless steel mesh.

Make good with stainless steel mesh and render the horizontal and pedimented decorative elements.

Directly above the window rake out and stitch the brickwork using two or three carefully chosen matching bricks, cut out two bed joints in the brickwork about 1.8m long, 40m deep and bed in 6mm stainless steel “Helifix” bar as before.

Photo 7255

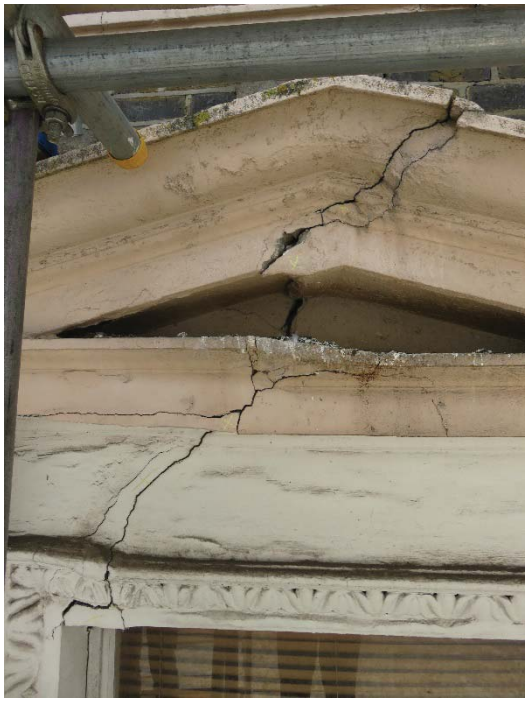


Photo 7256

Photo 7257

3.6 **First Floor Central Window**

(Photograph 7258) Scrape off old paintwork on the horizontal pediment, check condition of stone or render behind, but otherwise no apparent structural defect.

Photo 7258

3.7 **First Floor Right Hand Window**

(Photographs 7259 and 7260) This in fair order, slight cracking through the decorative element and the horizontal outstand above. Prop head of window, break out any loose fragments on the horizontal elements and simply make good.

In the brickwork above run two courses of 6mm “Helifix” bar as previous.

Photo 7259

Photo 7260

3.8 **Second Floor Rear Elevation**

(Photograph 7261) This is the stair window at half landing level. Plain brickwork semi-circular arch, slight raking out and replacement of tuck pointing.

Photo 7261

3.9 **Second Floor Flank Wall above Rear Window Below**

Crack running up through the brickwork. Rake out and insert two more "Helifix" bars about 1.8m long as previous. First brick course and third brick course below the decorative "Grioche" band. **(Photograph 7262).**

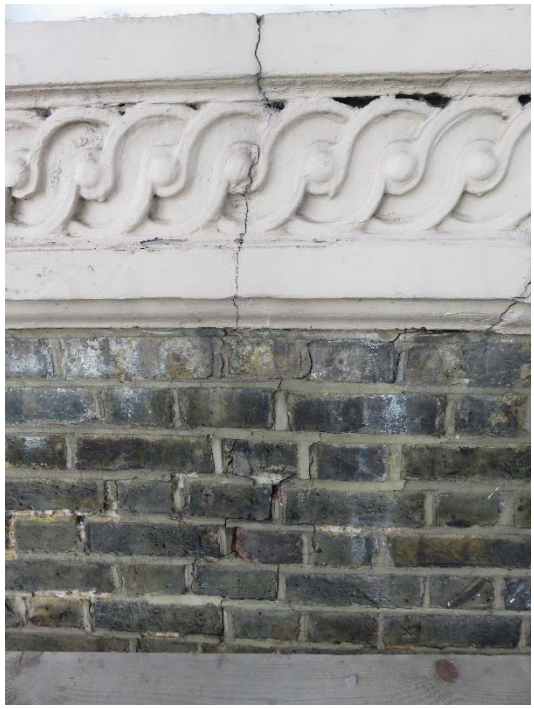


Photo 7262

Above the middle window brickwork mortar has been washed out as below. This to be raked out and deep pointed to reset the bricks**. (Photograph 7263).**

Photo 7263

3.10 **Second Floor Flank Directly above Forward Window**

Very slight cracking through the brickwork towards the decorative band, rake out and add two more “Helifix” bars inserted, about 900mm long, as previous.

3.11 **Second Floor Front above Left Hand of Three Windows and Below Cill of Left Hand of Three Windows**

(Photograph 7264) Cracking up through the brickwork, fix "Helifix" bars as previous. Take out all previous repairs and make good.

It is inherent in this work that the distortion is built into the building in areas like this remain, it is not part of the conservation practice to try and "straighten-out" the building.

Photo 7264

3.12 **Central Second Floor Window**

Area of brickwork above the head of the central window below in fair order, subject to repointing.

3.13 **Second Floor Front Window Right Hand Reveal**

(Photograph 7266) Horizontal cracks at 400mm centres. Left hand reveal horizontal cracks through the rendered reveal at 350mm centres **(Photograph 7265)**. No precise cause in relation to this cracking. May be day joints, may be joints between pre-cast decorative elements, joints to be raked out and made good, not structural concern.

Photo 7265

Photo 7266

3.14 **Second Floor Right Hand Window Cill and Head of First Floor Window**

Brickwork in fair order subject to repointing. Minor cracking in the decorative band. Cracking in the rendered reveals as previous, but not structural elements.

3.15 **Flank Wall at Scaffold Level which is Head of Second Floor Windows**

Brickwork adequate. Has been patch pointed in the past without crack, only very slight cracking in the window head, not of consequence.

3.16 **Flank Wall Above Central Window**

(Photograph 7268). Almost above but slightly to the rear of the first floor central window cracking runs up to the top decorative band, again add three "Helifix" bars about 900mm long as previous.

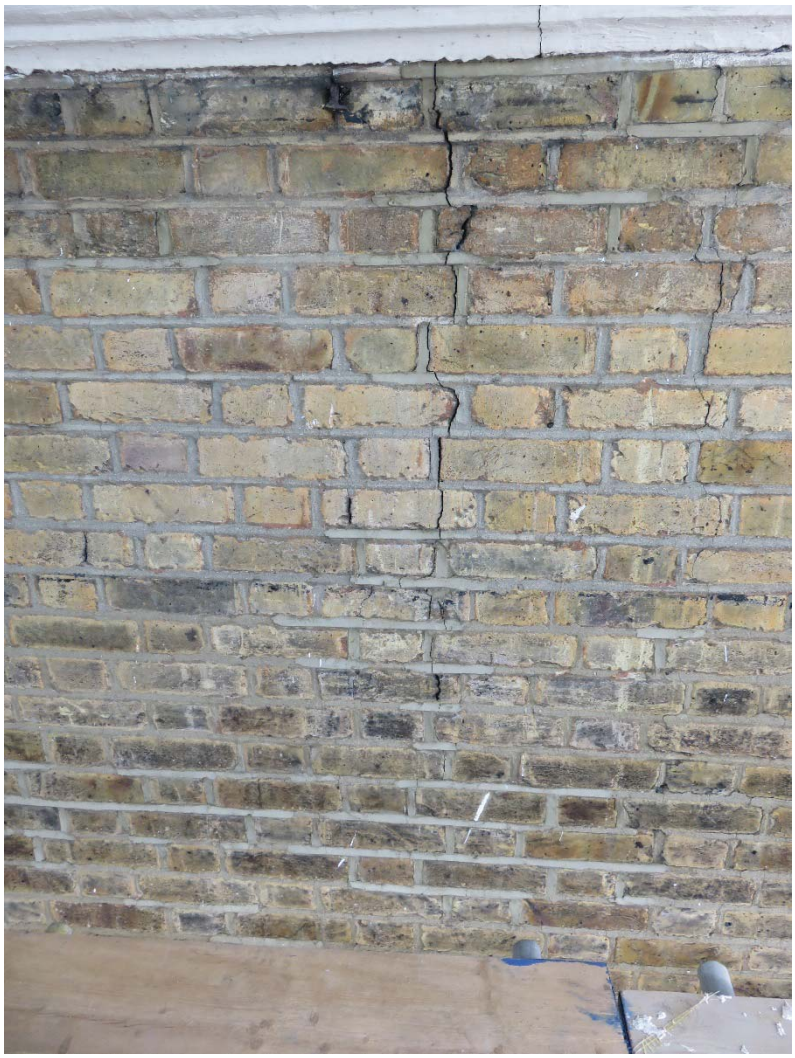


Photo 7268

3.17 **Front Elevation Head of Second Floor Left Hand Window**

(Photograph 7269) Left hand window to front elevation fracturing through the left part of the decorative window head and fragment of mortar missing. **(Photograph 7270).**

Prop window head, decorative head of window - take off the decorative moulding above, take out lintel which may be timber lintel or more likely straight soldier course type brick arch, insert pre-cast concrete lintel about 150mm bearing each end, but not so long as to show outside the rendered reveal, fix stainless steel expanded metal mesh and fix back decorative elements or replace as necessary.

The brickwork has dropped about 4mm or 5mm, rake out and insert three "Helifix" bars about 900mm long in alternate bed joints.

Photo 7269

Photo 7270

3.18 **Top Floor Head of Middle Second Floor Window**

No structural comments.

3.19 **Head of Right Hand Second Floor Window**

No structural comments.

3.20 **Significant Chimney at Rear Left Corner**

(Photograph 7275) This leans inwards, but it is two bricks wide about 450mm wide and about 1.4m up to the edge of the capping above the inner face of the roof slope.

New mansard slope is steeper than this and should be designed to fix to the chimney and provide further restraint to it, although chimney should be stable in its own right.

Photo 7275

3.21 **Flank Wall to Rear of Forward Window at High Level**

(Photograph 7276) Fracture continues up through the outstand coving and the decorative bands above and the top coving. The whole area to be checked with tapping hammer and any loose bits repaired and the top of the coping at least one or two stainless steel staples or 'dogs' inserted in the brickwork.

(Photograph 7277) Top level front left corner, again cracking up through the coving of the decorative band up through the top of the coping, this to be stitched with stainless steel.

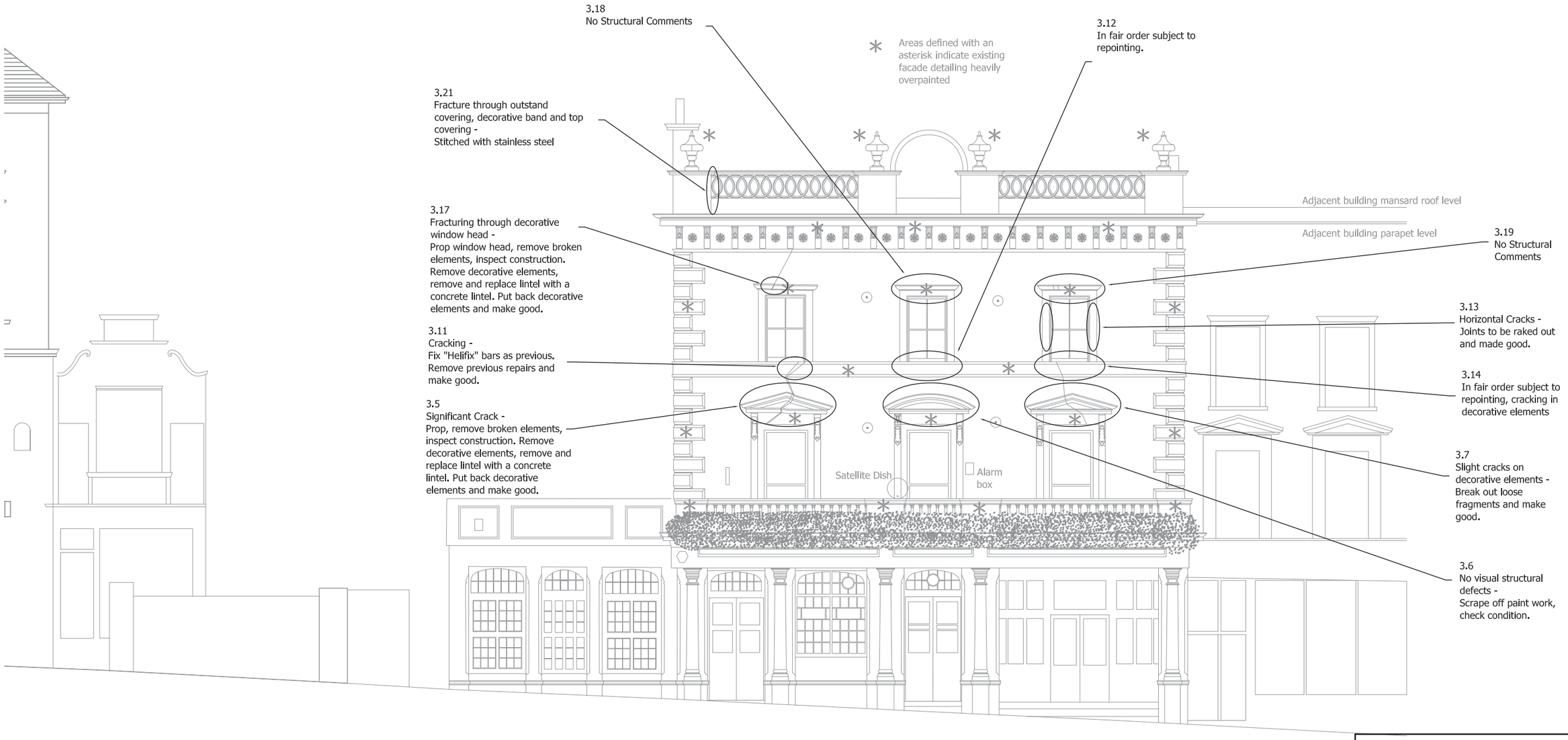
Photo 7276

Photo 7277

94 HAVERSTOCK HILL, LONDON, NW3

APPENDIX A

EXISTING ELEVATION MARK UPS ON A3 AT 1:100



THIS DRAWING IS NOT FOR CONSTRUCTION

Rev	Date	Issued	Amendment
—	08.12.16	LH	Issued for information

SINCLAIRJOHNSTON
Consulting Civil & Structural Engineers
93 Great Suffolk Street
London SE1 0BX
T: 020 7593 1900
F: 020 7593 1910
www.sinclairjohnston.co.uk

94 HAVERSTOCK HILL, NW3

Remedial works to South–West elevation

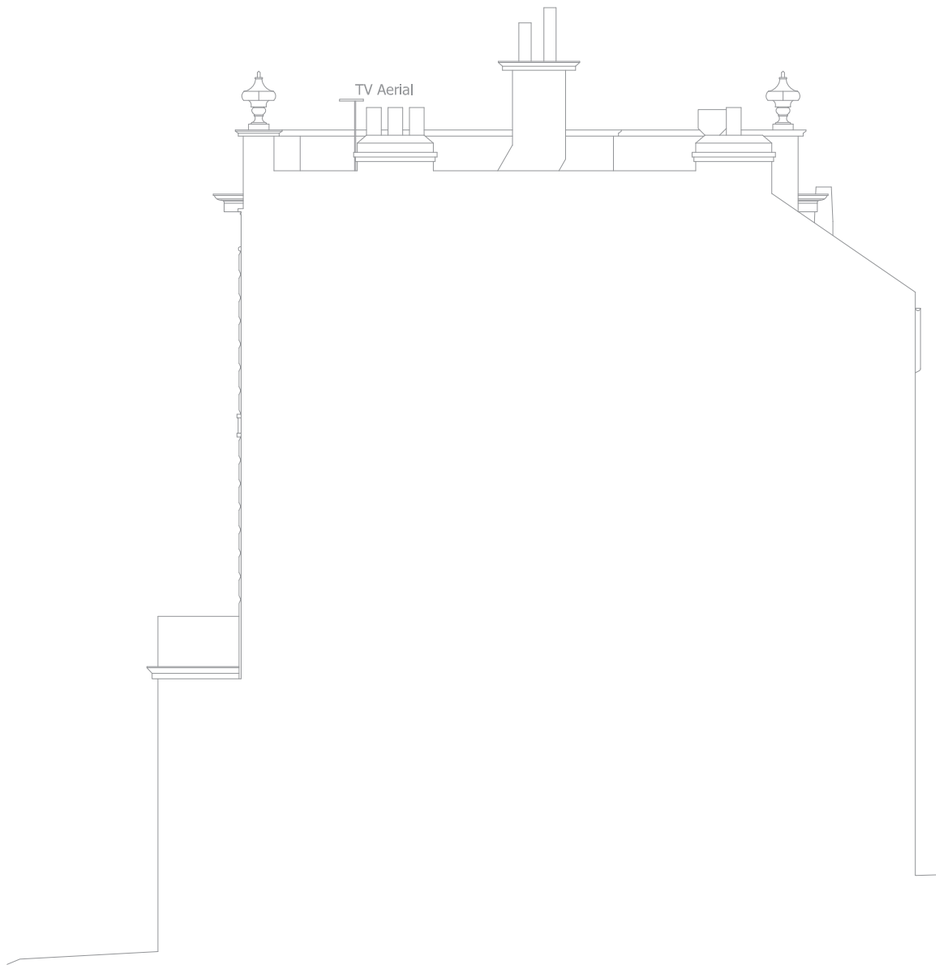
Status *FOR INFORMATION*

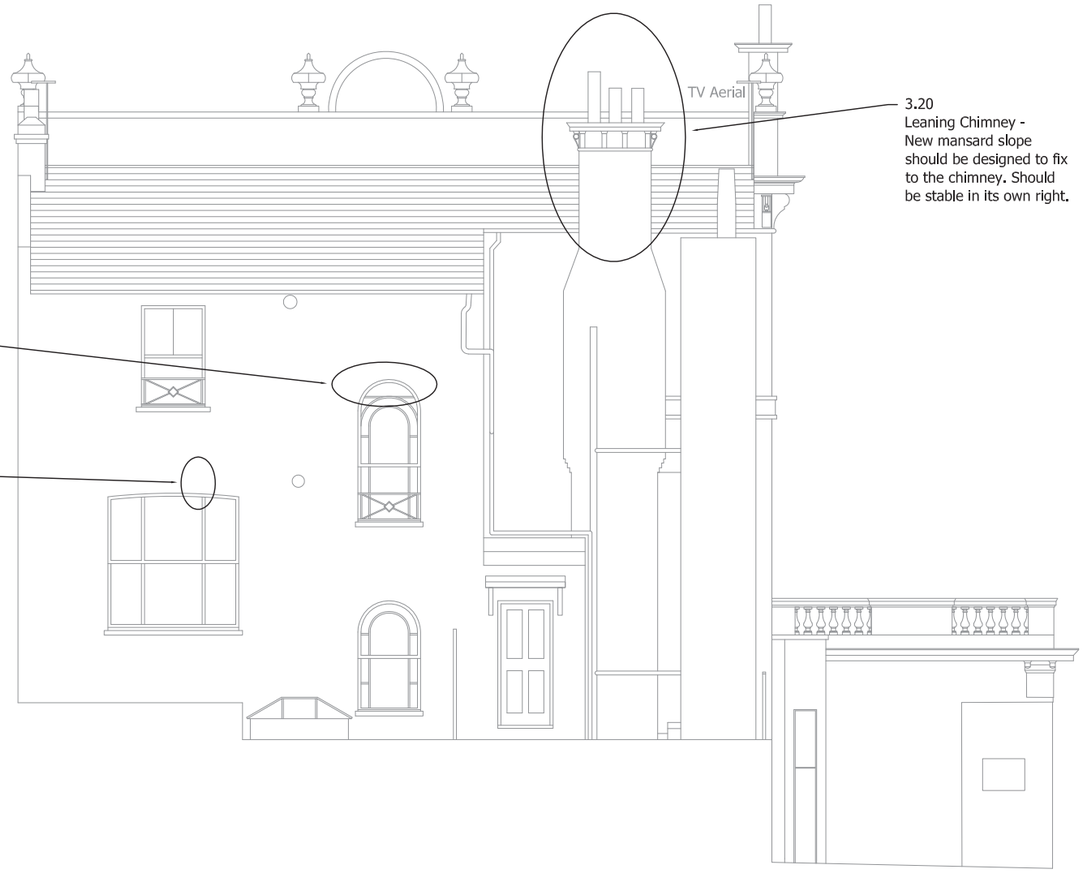
Drawn L Heselden

Scale 1:100 at A3

Project No./Drawing No. 8701/040

Rev —





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Consulting Civil & Structural Engineers

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

94 HAVERSTOCK HILL, NW3

Remedial works to East elevations

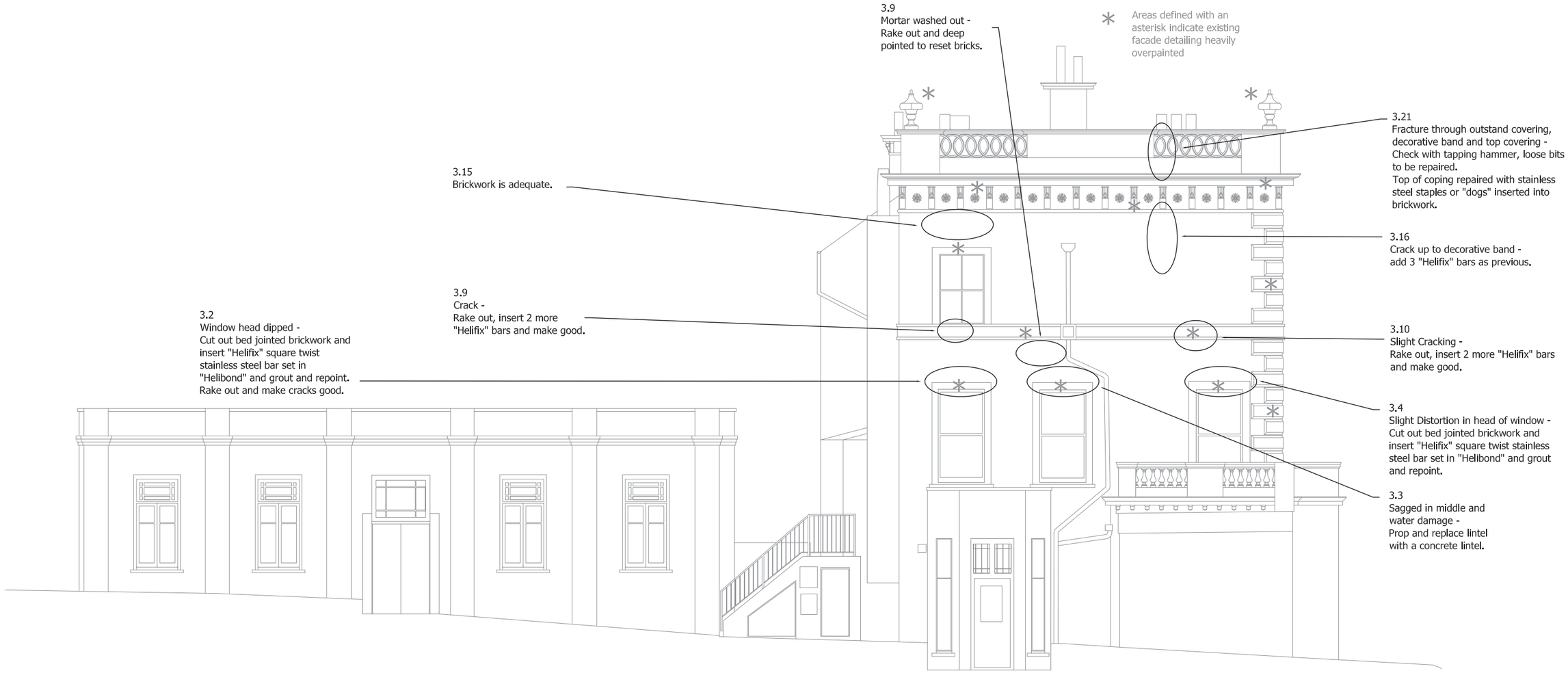
Status *FOR INFORMATION*

Drawn L Heselden

Scale 1:100 at A3

Project No./Drawing No. 8701/041

Rev —



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Consulting Civil & Structural Engineers

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

94 HAVERSTOCK HILL, NW3

Remedial works to North–West elevation

Status *FOR INFORMATION*

Drawn L Heselden

Scale 1:100 at A3

Project No./Drawing No. 8701/042

Rev —

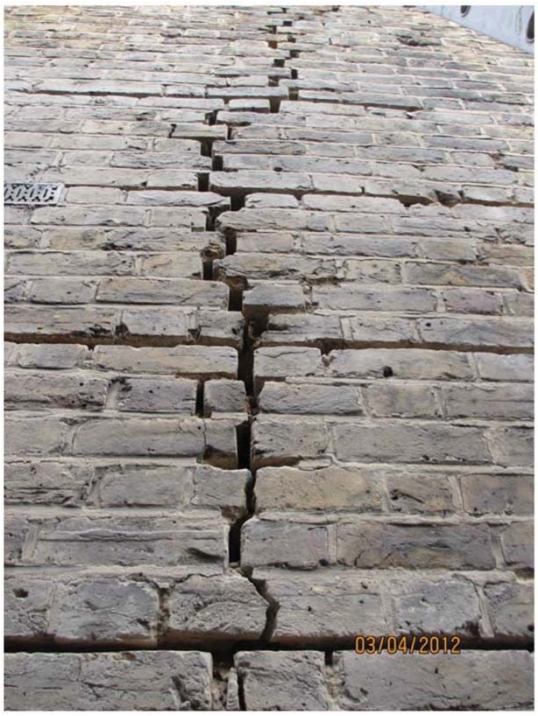
94 HAVERSTOCK HILL, LONDON, NW3

APPENDIX B

TYPICAL “HELIFIX” CRACK REPAIR

"Helifix" crack repair system, twist bars, grout and applicator available from:

www.helifix.co.uk



Bed joints in stock brickwork recessed to 40mm depth, staggered each side of fracture

Bed joints carefully cut out with hand tools only to minimise disturbance.

Special device for cutting out bed joints without damaging the edge of the bricks.

94 HAVERSTOCK HILL, LONDON, NW3

APPENDIX C

EXTRACT FROM "LIST OF BUILDINGS OF ARCHITECTURAL OR HISTORIC INTEREST"

Images of England

Non Print Page

© Mr Steve Kirkland

IoE Number:	478170
Location:	LOAD OF HAY TAVERN, 94 HAVERSTOCK HILL (east side) HAMPSTEAD, CAMDEN, GREATER LONDON
Photographer:	Mr Steve Kirkland
Date Photographed:	10 July 2005
Date listed:	14 May 1974
Date of last amendment:	14 May 1974
Grade	II

The Images of England website consists of images of listed buildings based on the statutory list as it was in 2001 and does not incorporate subsequent amendments to the list. For the statutory list and information on the current listed status of individual buildings please go to The National Heritage List for England.

CAMDEN
TQ2784NE HAVERSTOCK HILL
798-1/52/785 (East side)

CAMDEN TQ2784NE HAVERSTOCK HILL 798-1/52/785 (East side) 14/05/74 No.94 Load of Hay Tavern II Formerly known as: The Noble Art HAVERSTOCK HILL. Public house. 1863, replacing an earlier public house on the site. Yellow stock brick with stucco dressings and ground floor; vermiculated stucco quoins. EXTERIOR: 3 storeys and cellars. Double fronted with 3 windows and single storey, 3-window C20 extension at north end. Ground floor public house frontage with Corinthian pilasters carrying entablature with modillion cornice and C20 fascia. Recessed main entrance to right with engraved glass to doors and screens; elaborate wrought-iron grille of foliate and scroll design forming arch over main entrance. Segmental-arched openings to ground floor, windows and half glazed double doors with small panes. Enriched architrave sashes to upper floors; 1st floor with console bracketed pediments (centre segmental) and continuous balustraded balcony. 2nd floor with bracketed cornices and enriched sill band. Console bracketed cornice with rosettes in the frieze, surmounted by a parapet pierced with a design of linked circles. Round-arched centre piece inscribed "Load of Hay Tavern rebuilt 1863"; urns on dies flanking centre piece and at angles. Left hand return with panel in balustrade inscribed "The Load of Hay Tavern". INTERIOR not inspected.

94 HAVERSTOCK HILL, LONDON, NW3

APPENDIX D

C.V. FOR J.S. JOHNSTON

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/CARE) Renewed to 2020
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 have included, 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 public and 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".
2005-16	RICS/SPAB – Training Seminars for student surveyors.
2008	Lecture "Structural Assessment of Historic Churches" - Chichester DAC.
2011-16	Member – Georgian Group Design Review Panel
2013	RICS "Building Defects" CPD seminars
2013	Sky News – Opinion on collapse of plaster ceiling, Apollo Theatre.
2010-15	Lectures to Conservation course, Oxford Brookes University.
2010-16	Lectures to Conservation course, RSUA.
2016	Oxford University – Lecture on 'Condition Surveys of Historic Buildings'.