The Lighthouse Block. London. WC1X 8BB

Planning & Listed Building Conditions Discharge

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Drawings submitted in response to the following conditions:

Planning Application

2008/5358/P	Pre-commenecement Condition 9: Full Discharge Cleaning & repointing of the existing brickwork

Listed Building Applications

2008/5366/L	Pre-Commencement Condition 5 + 6: Full Discharge
2011/5463/L	Pre-Commencement Condition 4 + 5: Full Discharge Safety & stability of the building fabric and the protection & repair of the Lighthouse Structure
2008/5366/L	Pre-Commencement of Relevant Parts 7C: Full Discharge Works to the Lighthouse structure
2008/5366/L	Pre-Commencement of Relevant Parts 7C: Full Discharge Works to the Lighthouse structure

latitude

The following brochure contains information applicable to the discharge of conditions relating to the conservation and retention of the existing Grade II listed Lighthouse structure and facade. The conditions are as follows:

Pre-commencement condition 9 of the planning consent 2008/5358/P:

'A method statement for the cleaning and repointing of the bricks shall be submitted to and approved in writing by the Council before works are commenced. The relevant part of the works shall not be carried out otherwise than in accordance with the details thus approved'.

Pre-commencement condition 5 of the Listed Building consent 2008/5366/L and pre-commencement condition 4 of the subsequent Listed Building Consent 2011/5463/L:

'Before any work is undertaken in pursuance of this consent to demolish or to alter by way of partial demolition any part of the building, structural engineers' drawings and/or a method statement, indicating the proposed method of ensuring the safety and stability of the building fabric and the adjoining buildings to be retained throughout the period of demolition and reconstruction, shall be submitted to and approved by the local planning authority. The relevant work shall be carried out in accordance with such structural engineers' drawings and/ or method statement thus approved'.

Pre-commencement condition 6 of the Listed Building consent 2008/5366/L and pre-commencement condition 5 of the subsequent Listed Building Consent 2011/5463/L:

A method statement for the protection and repair of the light house structure shall be submitted to and approved in writing by the Council before works are commenced. The relevant part of the works shall not be carried out otherwise than in accordance with the details thus approved'.

Pre-Commencement of Relevant parts condition 7C of the Listed Building consent 2008/5366/L:

'*Details in respect of the following shall be submitted to and approved in writing by the Council as local planning authority in consultation with English Heritage before the relevant work is begun. The relevant work shall be carried out in accordance with such approved details:*
c) Schedule of repairs and method statement for works to the lighthouse structure'

The Lighthouse building has undergone considerable weathering and deterioration and is on English Heritage's building at risk register. The intention of the current proposal is to retain and conserve as much of the listed historical fabric as possible. Facade conservation specialists PAYE were duly appointed to establish the current condition of the facade in general and the brickwork in particular. They produced 2 reports, one for remedial work required to the brickwork and the second outlining the condition of the facade. It was clear that certain areas of the facade like the window surrounds, sky surfaces of cornices, ground floor pilasters and dormer surrounds were significantly damaged and in most cases needed replacing. We have included their recommendations along with the original condition reports in the brochure.

On 10th January 2012, Charles Rose (Heritage and Conservation Officer, L.B. of Camden) visited the site with a view to review the condition of the Lighthouse structure and the facade. The areas on the facade specifically reviewed were the window cills on the 1st and 2nd floor, the condition of existing brickwork and pointing, the stone pilasters with their carved heads on the ground floor, the dormer surrounds, the stucco window surrounds, 4th floor balustrades and the sky surface to the cornices. The Lighthouse structure and the room situated underneath were also inspected Following this the PAYE reports along with a covering letter and a draft method statement were issued by Latitude Architects to Charles Rose for his comment. The correspondence, drawings and method statements relating to these items are included in the brochure.

The concluding part of the brochure illustrates the construction sequence for the proposed Lighthouse building. This documentation is intended to clarify how the existing facade shall be restrained and made safe and stable during the construction period.

From: David Oreilly [mailto:dor@latitudearchitects.com]
Sent: 09 December 2011 18:00
To: Rose, Charles**Cc:** Whelan, Sara; john ford; Andrew Gilbert
Subject: Lighthouse - amended drawings

Dear Charlie

Following our earlier telephone conversation, please find attached the amended elevations and 4th floor plan clarifying the works to the existing Lighthouse structure including the cast iron railings.

I trust this is all as we discussed, but if you have any further queries please do not hesitate to contact me.

I also confirm your site visit for 10 January 2012 at 9am. In advance of the meeting I have attached some recent photos for you to view.

Regards
David O'Reilly
Associate Director RIBA
dor@latitudearchitects.com

latitude

From: "Rose, Charles" <Charles.Rose@Camden.gov.uk>
Date: Tue, 13 Dec 2011 18:13:38 +0000**T**
o: David Oreilly <dor@latitudearchitects.com>**Cc:** "Whelan, Sara" <Sara.Whelan@Camden.gov.uk>
Subject: RE: Lighthouse - amended drawings

David

There is another small issue I forgot to pick-up last time we spoke.

I can confirm that the glazed balustrade to the 297-380 would be seen in long and short views and is considered harm the character and appearance of the listed section of the block.

In this regard I recommend you either:
- Reduce the size of the terrace and set back the balustrade to the inner side of the lighthouse structure - this would prevent people walking around the structure but would prevent the balustrade from being seen or,
- Redesign the balustrade to be more sympathetic with the age and style. This could beachieved by installed metal balustrade or wire handrail

Please give me a call if you have any question.

Regards

Charles Rose
Heritage and Conservation Officer
Telephone: 020 7974 1971

From: David Oreilly [mailto:dor@latitudearchitects.com]
Sent: 15 December 2011 12:46
To: Rose, Charles**Cc:** Whelan, Sara; john ford
Subject: Re: Lighthouse - amended drawings

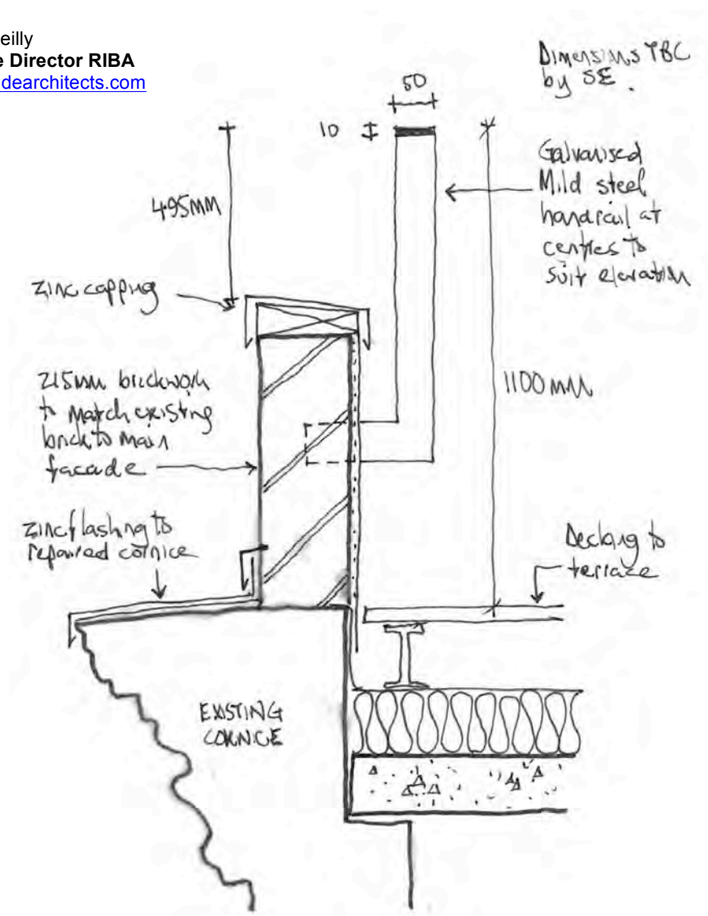
Dear Charlie

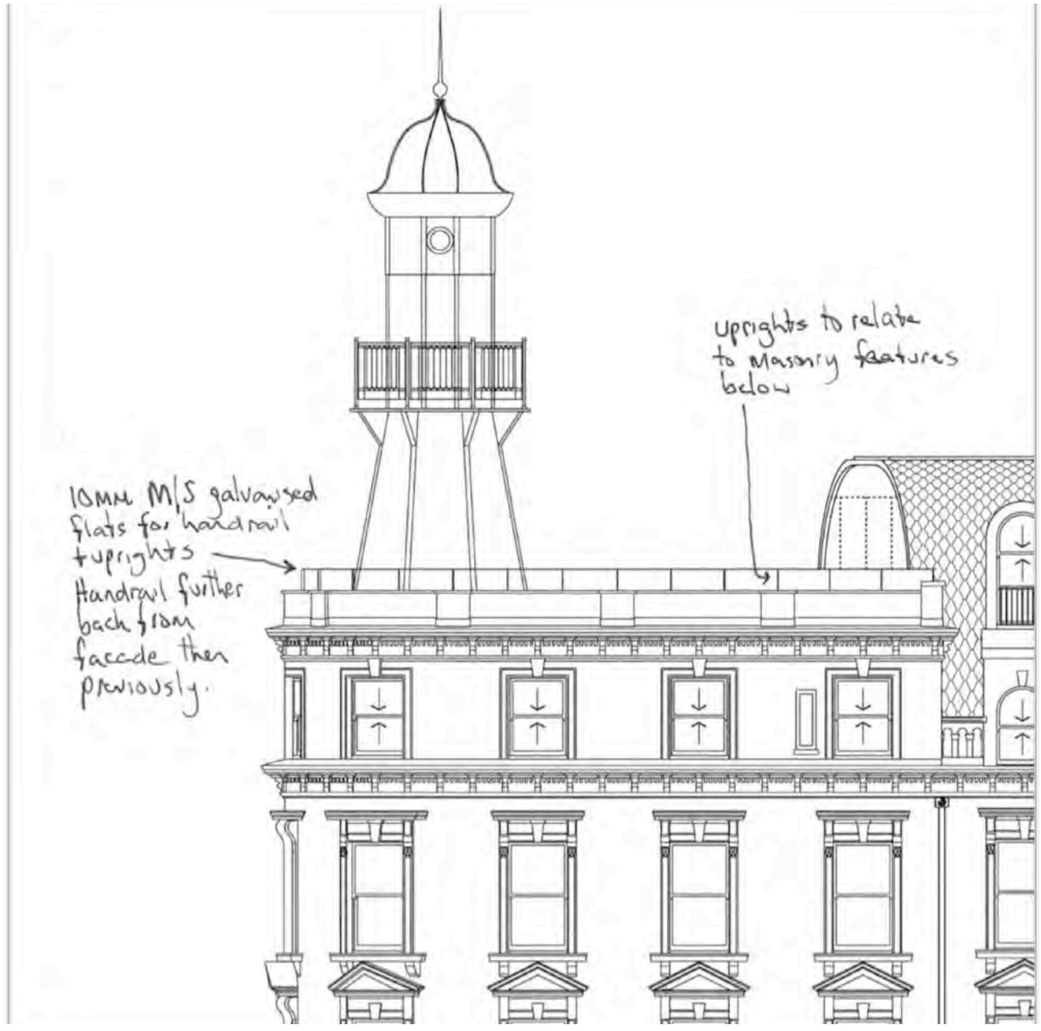
Following on from your e-mail below, I tried calling you a moment ago to discuss the attached details in advance of sending them to you, but I understand you are busy elsewhere.

The revised drawings (which we are issuing to you as draft for discussion), shows the glass balustrade replaced with a galvanised mild steel handrail and uprights (approx.. 10mm wide by 50mm deep) in line and centred with the piers below. We are proposing to replace the brick at this level for a few reasons. It is a poor quality brick in relation to the rest of the façade below and it is in poor condition with some serious cracking throughout. It is also only 100mm thick and we believe 215mm thick brick would be more secure for the future of the building. We would replace it with a Gault brick to match the existing. Due to the increased thickness of the wall and the detail of the handrail connection with the wall, it will naturally be set back further from the façade than previously shown. Hopefully this responds to both of your suggestions below.

I trust the above and what is attached is clear, but please do not hesitate to contact me if you have any queries or require further information. Assuming this is sufficient will we need to resubmit the plans and elevations?

Regards
David O'Reilly
Associate Director RIBA
dor@latitudearchitects.com





From: "Rose, Charles" <Charles.Rose@Camden.gov.uk>
Date: Thu, 15 Dec 2011 16:39:33 +0000
To: David Oreilly <dor@latitudearchitects.com>
Cc: "Whelan, Sara" <Sara.Whelan@Camden.gov.uk>, john ford <johnford@uk2.net>
Subject: RE: Lighthouse - amended drawings

David
Thanks for the email. I am happy to accept the balustrade detail (for the whole of the terrace) as shown. Please amend drawings accordingly.

I am unsure of finish but would recommend the balustrade by powder coated black rather than metallic

Kind Regards
Charles Rose
Heritage and Conservation Officer
Telephone: 020 7974 1971

From: David Oreilly [mailto:dor@latitudearchitects.com] **Sent:** 18 January 2012 19:01**To:** Rose, Charles**Cc:** Whelan, Sara;john ford; Andrew Gilbert**Subject:** Lighthouse - PAYE reports

Dear Charlie

Thank you for meeting us on site last week. As promised, please find attached the PAYE reports as well a letter from PAYE which I trust responds to the queries you raised on site.

Assuming you are satisfied with the reports recommendations, the following is how we wish to proceed:

Lighthouse structure
- survey/ detailed drawings to be produced for approval;
- replace the zinc cladding to the Lighthouse structure with all detailing to match the existing;
- keep as much of the existing timbers behind the zinc subject to condition survey;
- keep as much of the existing structural timbers subject to condition survey;
- look at the possibility of inserting another door into the structure at the 4th floor terrace level to allow for future maintenance of the inside of the structure, with a ladder to be inserted for access to the upper levels;
- remove bituminous cover where the cast iron railings are located and finish with a zinc flashing;
- missing sections of cast iron railings to be replaced and painted black;
- introduce glazing to port holes to keep pigeons out;

Main building
- replace the 3rd floor dormers and balustrading;
- replace the 'sky' surface on the cornices;
- remove the historical guttering detail at 3rd floor level;
- replace the stone cills to the 1st and 2nd floors with precast stone;
- replace the pilasters and their decorative heads with precast with a plinth to the base of the pilaster shafts. Rainwater pipes to be accommodated within the pilaster as original detailing;
- clean the building using a combination of Doff and Neolith 625 with Torc to be used where more severe staining has occurred (e.g. around leaking rainwater pipes);
- repair/ make good the stucco surrounds;
- introduce timber cornice between the pilasters to match original detailing/ profile. This would follow the weather profile seen against the decorative head on the Gray's Inn Road elevation;

Just to be clear, all the above will be in line with PAYE's recommendations and the detail of which will be submitted for approval by Camden.

Regarding the room under the Lighthouse structure itself, have you had an opportunity to consider the possibility of removing the lath and plaster to review the existing structure and the treatment of the ceiling?

I trust the above is both clear and a reflection of our meeting. However, if you have any queries or require further information, please do not hesitate to contact me.

Regards
David O'Reilly
Associate Director RIBA
dor@latitudearchitects.com

latitude
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T +44 (0) 20 7234 0235
www.latitudearchitects.com

From: "Rose, Charles" <Charles.Rose@Camden.gov.uk>
Date: Wed, 1 Feb 2012 10:16:08 +0000
To: David Oreilly <dor@latitudearchitects.com>
Cc: "Whelan, Sara" <Sara.Whelan@Camden.gov.uk>
Subject: RE: Lighthouse - PAYE reports

Hi David

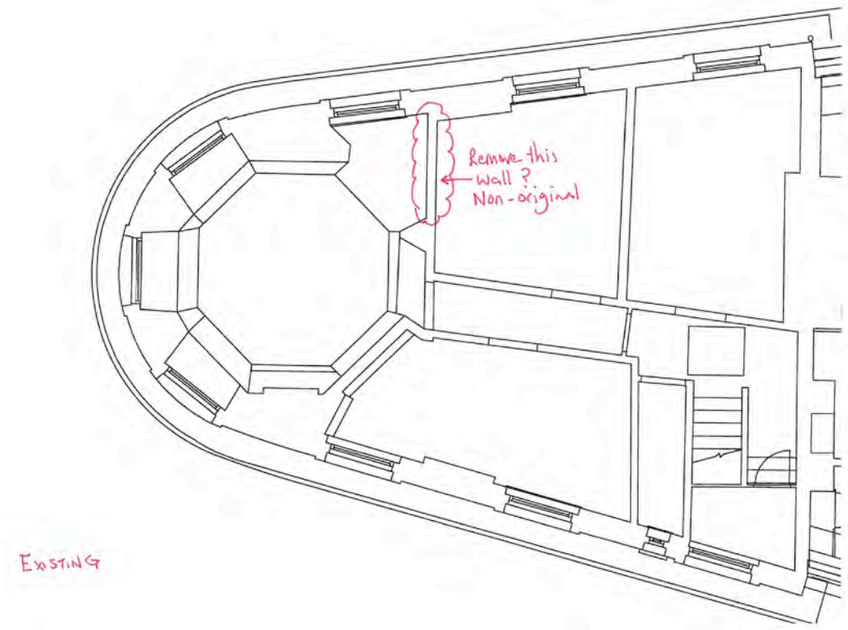
I have now had an opportunity to read the PAYE reports. I can confirm I am happy to agree the list below based on the reports and the site inspection which took place on 10th January 2012. We look forward to receiving the details for approval in the near future

I have also had chance to consider the 3rd floor. In this regard I would expect that room to be restored to its original state. This includes lath and plaster walls and ceilings as per your email on 30th January. I would strongly advise you reclaim the fireplaces found in the other parts of the listed building, and any other features of interest which can be reused for this space.

If you require further information, please do not hesitate to contact me

Kind Regards

Charles RoseHeritage and Conservation OfficerTelephone: 020 7974 1971



From: David Oreilly [mailto:dor@latitudearchitects.com]
Sent: 30 March 2012 11:34
To: Rose, Charles**Cc:** Whelan, Sara
Subject: Lighthouse - 3rd floor heritage room

Hi Charlie

Having done further reviews of the 3rd floor room directly under the Lighthouse with the structural engineers, we believe the wall that runs north-south (and as a result doesn't complete the octagon) is not original.

The structural engineers believe the wall that would have completed the octagon was previously removed and to allow this to happen the north-south wall was erected to help with the bracing of the Lighthouse structure above.

To remove the north-south wall (which we have planning approval for) we would need to reinstate the original 135 degree angle wall. This is shown on the attached part plans. We as a design team think this is a positive move and hope you also agree with this.

I tried ringing you a while ago to discuss it with you before sending the e-mail, but understand you are away from your desk, so if you need any further explanation or just want to discuss it further, please do not hesitate to contact me.

Regards,
David O'Reilly
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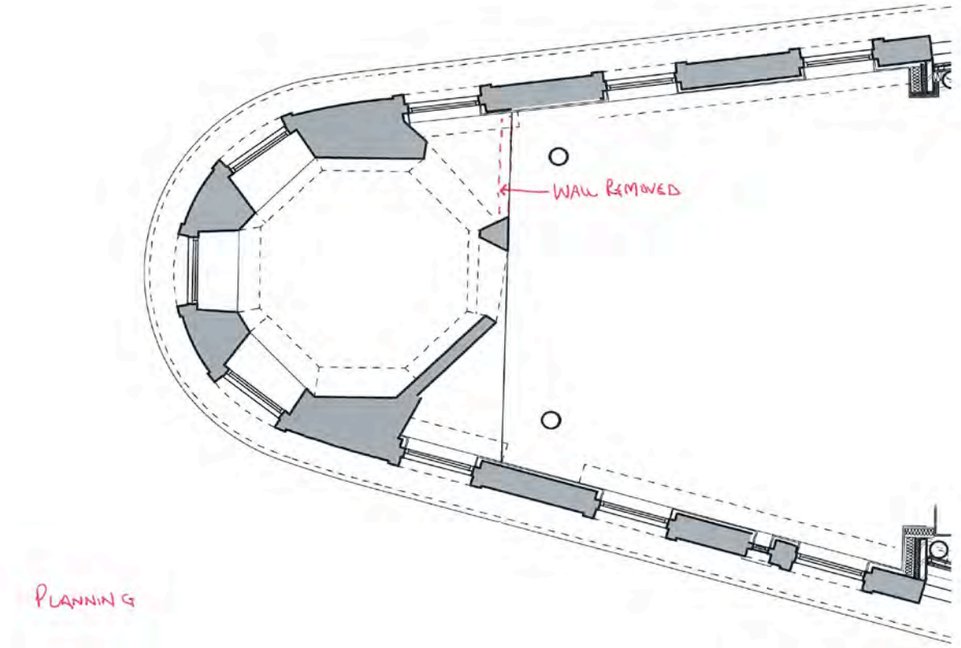

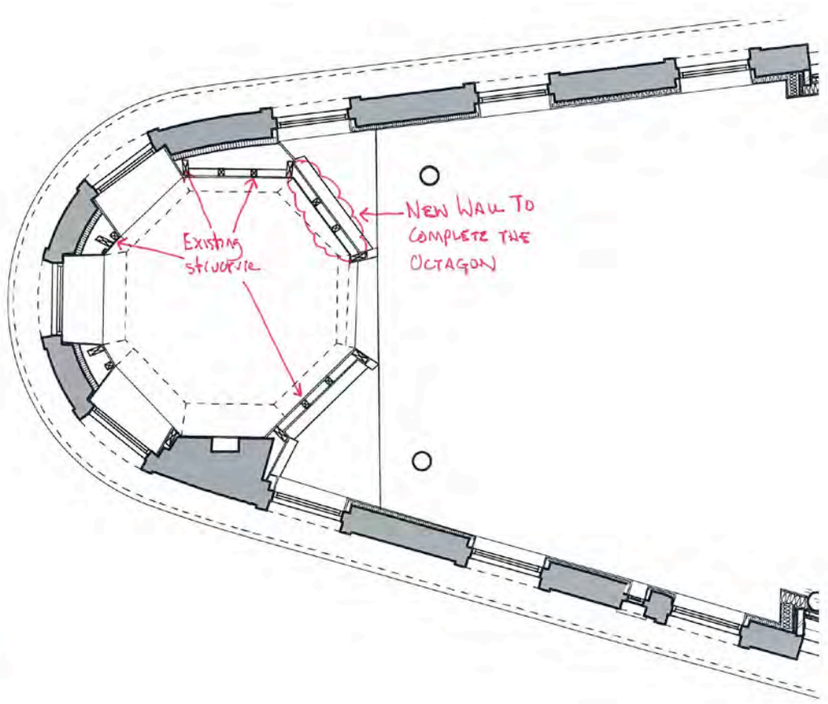

From: "Rose, Charles" <Charles.Rose@Camden.gov.uk>
Date: 30 March 2012 16:57:39 GMT+01:00
To: "'David Oreilly'" <dor@latitudearchitects.com>
Cc: "Whelan, Sara" <Sara.Whelan@Camden.gov.uk>
Subject: RE: Lighthouse - 3rd floor heritage room

David
Thanks for the email. All very clear. I agree with your decision and would be happy to accept the proposed revision.

I suggest we tie up the revision as part of the one of the conditions

Regards

Charles Rose
Heritage and Conservation OfficerTelephone: 020 7974 1971

From: David Oreilly [mailto:dor@latitudearchitects.com] **Sent:** 13 June 2012 12:54
To: Rose, Charles
Cc: Whelan, Sara; Anurag Verma
Subject: Re: Lighthouse - 3rd floor heritage room

Hi Charlie

We are in the process of submitting drawings etc to discharge the planning and listed building conditions and was going to suggest we tie up the works to the 3rd floor 'Heritage' room as part of the Lighthouse structure schedule of works to discharge condition 6 in the listed building consent.

You will also notice that we are suggesting the artificial bat roosting site (condition 15 of the planning consent - pre-occupation) could be located within the Lighthouse structure. Obviously further details will need to be produced for this condition, but I was hoping to get agreement in principle that this was an acceptable location. This would be the method statement:

Repair Strategy for the Lighthouse Structure

§ The contractor shall provide safe access to the timber structure of the Lighthouse and the third floor timber at the bottom of the lighthouse to allow inspection from touching distance.
§ A dimensional survey and detailed drawings showing existing condition to be produced by contractor (to be instructed by Ramboll asap but we will leave in the list just in case).
§ The contractor shall undertake a visual inspection and micro drilling of the timbers at their ends where decay is suspected. Record sketches to be produced showing the length and type of decay, joint defects, shakes and poor quality timber.
§ Typical details for repair or replacement of decayed/ damaged timber and any adaptation necessary to existing timbers or joint repairs will be prepared by the engineer and agreed with the Conservation Officer. § The principles of the repairs will be to minimise the loss of significant historic fabric and to undertake repairs which are compatible with the existing form of construction.
§ The contractor shall prepare detailed fabrication drawings for construction based on the typical details, for approval by the engineer and Conservation Officer.
§ Timber to be used for replacement elements shall be in accordance with the specification and a sample is to be approved by the engineer and Conservation Officer.
§ The zinc cladding to the Lighthouse structure is to be replaced with all detailing to match the original. Once the zinc cladding has been removed, the Conservation Officer is to visit site to review the timber beneath before further works can progress.

§ The design team and contractor to look at the possibility of inserting another door into the structure at the 4th floor terrace level to allow for future maintenance of the inside of the structure, with a ladder to be inserted for access to the upper levels.
§ The existing bituminous covering on the timber balcony where the cast iron railings are located is to be removed and replaced with zinc sheeting, flashings and collars.
§ The missing sections of cast iron railings are to be replaced to match the existing and painted black.
§ The existing cast iron railings are to be renovated/ made good as necessary and painted black.
§ The existing door on the balcony is to be renovated. If the 4th floor terrace door can be inserted, the existing door is to be fixed shut, subject to Conservation officer approval.
§ Glazing is to be introduced into the existing portholes to keep pigeons out, with discrete lighting inside, details to be agreed with Camden Planning.
§ Ventilation of the structure to be considered and agreed with the Conservation Officer.
§ An artificial bat roosting site is to be incorporated within the Lighthouse, details to be agreed with the Conservation Officer.

Works to the 3rd floor 'Heritage' Room

§ The intention is that the room is restored to its original state.
§ The existing lath and plaster to the walls, ceiling and the window linings is to be replaced with new

lath and plaster to match the existing as Latitude Architect's architectural specification M20/330A.

- The existing window cills are to be replaced to match the existing.
- The existing north-south wall adjacent to gridline B is to be carefully removed and a 135 degree wall to complete the octagon is to be installed with timber bracing to the structural engineer's specification. The wall is to be finished with lath and plaster to match the existing as Latitude architectural specification M20/330A. This is shown on Latitude Architect's 3rd floor GA plan – [15.1]05.
- The fireplace surround from the adjacent room is to be reclaimed and reused in this room in the existing chimney.
- The existing floor-boards are to be reclaimed subject to a condition report and installed on a floating floating floor as Latitude Architect's architectural specification K21/111A. The floating floor is to reduce vibration transfer from the existing tunnels below.

Attached is the lath and plaster specification for the 'Heritage' Room as well as the reclaimed floor boards specification.

Please can you confirm if the above is acceptable to you and we will issue the method statement formally to discharge this condition. I look forward ot hearing from you, but if you have any queries please do not hesitate to contact me.

Regards,

David O'Reilly**Associate Director RIBA**
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London SE1 1QU
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330A PROPRIETARY LIME:SAND NATURAL HYDRAULIC LIME FOR NEW LATH & PLASTER WORK TO THE RAKED WALLS AND THE CEILING WITHIN THE 3rd FLOOR 'HERITAGE ROOM

- Substrate: Existing raking timber joists/ studs.
  - Preparation: Replace timber lathing, as clause 626.
- Manufacturer: St. Astier, The Lime Centre, Long Barn, Morestead, Winchester, Hants SO21 1LZ (Tel 10962 715350) E: info@thelimecentre.co.uk Attention of David Thompson or Nigel Wright.
- Render coat: Rendering stuff made with St. Astier NHL-2 in a 1:2 ratio with well graded sharp sand 3.5mm down and animal hair. Trowel apply as evenly as possible. pressing home to form rivets between and behind the laths. Tighten the entire surface using a cross grained wood float, closing back by further dampening and tightening in a close circular motion. Key the surface with a comb by scratching across the direction of the laths. Pre-wet the lath to reduce suction. Mist the surface of plaster with lime or clean water to control drying rates, never over wetting.
  - Product reference/ Type: St. Astier NHL-2.
  - Fibre reinforcement: Natural hair or alkali resistant as per manufacturer's recommendations.
  - Thickness (excluding dubbing out and keys): Lay-on ensuring a good penetration between the lath. Enough plaster should be pushed between the lath to create sufficient keys, approx 4-5mm remaining below the lath.
- Floating coat: Rendering stuff made with NHL-2 in a 1:2 ratio with well graded sharp sand 3.5mm down. Apply with a laying-on trowel onto a dampened background, filling out minor irregularities in thin layers. Maximium thickness to be 12-16mm in one pass. Tighten-in and key as above.
  - Product reference: St. Astier NHL-2.
  - Fibre reinforcement: [Natural hair or alkali resistant as per manufacturer's recommendations]
  - Thickness: 12-16mm thick maximum.
- Final Coat: [Setting Stuff or Finishing coat: St. Astier NHL-2 mixed 1:1 with fine silica sand 0.08 to 0.075mm clean and free of silt or clays. Apply with a laying-on trowel in two passes to an overall thickness of 2mm approximately. Tighten the entire surface using a cross grained wood float, damping as necessary as the set takes up. Finish with a steel float and dampening as necessary, finishing in one direction].
  - Product reference/ Type: [St. Astier NHL-2 in a 1:1 fine silica sand 0.08 to 0.075mm].
  - Thickness: [2mm approximately maximum].
  - Finish: Steel float.
- Accessories: Stops and beads, as manufacturer's recommendations.
- Other requirements: Do not work if temperatures are likely to fall below 8 degrees celcius during the execution of the work or until the mortar has hardened. Exclude all strong draughts from the area to ensure even and consistent drying rates. Never force dry the works by excessive heating - should gentle heating be required - propane gas heatersonly should be used, as this produces both moisture and heat which aids the setting process.

GENERAL

418 CONTROL SAMPLES

- Complete sample areas, being part of the finished work, in locations as follows: Lath and plaster as clause 330 or 330A for approval of Camden Planning department.

421 SCAFFOLDING

- General: Prevent putlog holes and other breaks in coatings.

111A WOOD FLOATING FLOOR TO 3rd FLOOR 'HERITAGE' ROOM

- Substrate: 18mm Particleboard to BS EN 312, Type P5, tongued and grooved all edges on 19mm Gyproc Plank on a resiliant joist cap on the existing timber joists, subject to site inspection and confirmation of the condition of the existing joists by the structural engineer.
  - Preparation: Existing joists to be inspected to confirm that they are level within permitted tolerances.
- Resilient layer: Acoustic Resilient Joist Cap fitted over existing joists with a perimeter isolation strip so the floating floor is fully isolated from the structural floor and walls and to allow expansion.
  Custom Audio Designs Ltd
  Independant Acoustics and Noise Control Specialists
  5 Ridgeway Office Park
  Bedford Road
  Petersfield
  Hampshire
  GU32 3QF

  T: 01730 269572
  F: 01730 265846
  E: sales@customaudiodesigns.co.uk.
  - Recycled content: 100% as manufacturer's literature states.
- Vapour control layer: Not required.
- Acoustic insulation: [100mm, 60Kg/m3 Acoustic Mineral Wool supplied by Custom Audio Designs Ltd]
- Strips/ Boards: Free from decay, through splits and insect attack (including ambrosia beetle damage, unless permitted in the class/ grade specified). Planed all round.
  - Manufacturer/ Supplier: Existing timber boards subject to site inspection and confirmation of their condition.
  - Wood species: Existing timber.
  - Appearance class/ Grade: As existing.
  - Finished face width: As existing.
  - Finished thickness: As existing.
  - Edges: Side and end matched.
  - Moisture content at time of fixing: 6-9% TBC by flooring contractor.
  - Method of joining: Secret nailing.
  - Layout: [TBC] .
- Finish: Sealed and oiled as M60/160A and K21/370. Boards to be prepared in acordance with BS 8201 and Sealing Timber Floors: A Best Practice Guide to floor preparation and the selection, application and maintenance of floor lacquers by Trade Technology.
- Accessories: Threshold strip for change in level to main office area & skirting to match flooring TBC.
- Fire rating: [2 layers of 12.5mm wallboard to be installed to the underside of the existing timber joists to ensure 30-minute fire seperation between the 2nd and 3rd floors as K10/232] .
- Other requirements: TBC

GENERAL/ PREPARATION

210 WORKMANSHIP GENERALLY

- Moisture content of timber supports: 12-14%.
- Methods of fixing and fasteners: As section Z20 where not specified.
- Protection: Protect from dirt, stains and damage using suitable coverings and boards laid as the work proceeds.

From: "Rose, Charles" <Charles.Rose@Camden.gov.uk>
Date: 14 June 2012 12:57:29 GMT+01:00
To: "'David Oreilly'" <dor@latitudearchitects.com>
Cc: "Whelan, Sara" <Sara.Whelan@Camden.gov.uk>, Anurag Verma <av@latitudearchitects.com>
Subject: **RE: Lighthouse - 3rd floor heritage room**

David
Thanks for the email.

The level of information to discharge the condition looks to be sufficient. I would suggest you submit an application to discharge the relevant conditions, including C15, on this basis

Kind Regards

Charles RoseHeritage and Conservation OfficerTelephone: 020 7974 1971

By Appointment to
Her Majesty The Queen
Building Facade Restoration
and Conservation

PAYE

Mr. David O'Reilly
Latitude Architects
15 Weller Street
London
SE1 1QU

17th January 2012

Ref: DM/11224/L9913

Dear Mr O'Reilly

Re: Lighthouse Block Kings Cross Façade Condition Survey

Following receipt of your email 12/01/2012 I am pleased to respond to the queries raised as follows.

Replacing only the top section of the 2nd floor natural stone window sills with a pre-cast capping would effectively replicate the cement mortar repair that has previously been carried out and would create a shear plane between the softer Bath stone and harder pre-cast mortar.

The overall condition of the high level architectural detailing is poor with missing and structurally unstable elements with signs of on-going deterioration of the fabric indicating that there are likely to befuture similar repair issues if the inherent cause of the problem isn't rectified. In most cases the more ornatedetailing of the balustrade has been lost through inappropriate repair and sections have become fractured.

Due to the construction of the dormers and balustrade it would seem unlikely that the balustrade could be successfully salvaged and kept in place without the need for extensive temporary shoring up and protection.

Following completion of the façade repairs and general refurbishment, aesthetically the facades will remain true to the original architectural style although due to the extent of repair or replacement that may have been carried out significant sections will be effectively new.

I trust that we have satisfied your requirements but please contact the undersigned should you need any additional information or assistance.

Yours sincerely,

David Manktelow
Business Development Manager
PAYE
Encl

PAYE Stonework & Restoration Ltd
Stationmasters House, Mottingham Station Approach, London SE9 4EL
Tel: 020-8857 9111 Fax: 020-8857 9222
e-mail: PAYE@PAYE.net Website: www.PAYE.net
Reg. No. 2743908 VAT No. 608 0053 77

LIGHTHOUSE BLOCK KINGS CROSS

CLEANING AND INVESTIGATION TRIAL REPORT

Stationmasters House, Mottingham Station Approach, London SE9 4EL

Tel:020 8857 9111 **e-mail: PAYE@PAYE.net** www.paye.net

CONTENTS

PAYE

By Appointment to
Her Majesty The Queen
Building Facade Restoration
and Conservation

PAYE

Mr John Ford
UK Real Estate Limited
22 Blenheim Terrace
London
NW8 0EB

19th December 2011

Our Ref:DM/LAC/11224/L9782

Dear Mr Ford

RE: Lighthouse Block Cleaning and Investigation Trials

Following completion of the site cleaning and investigation opening up trials we are pleased to submit a report on the results which includes our observations, conclusions and recommendations together with reference photographs of the trial areas.

Cleaning trials where carried out on Pentonville Road elevation to brickwork and painted stucco using dilute Neolith 625 and DOFF hot wash.

Investigation opening up trials where undertaken on Pentonville and Gray's Inn Road facades to help determine the construction and condition of the painted features.

Observation

The facades have been constructed using facing brickwork and painted decorative stucco with localised use of natural Bath stone for 2nd floor window sills and ground level pilasters.

The masonry has not been repaired or maintained for a number of years and is in a deteriorated and potentially unsafe condition.

Cleaning trials using DOFF and Neolith 625

The level of soiling on brickwork could be described as medium to heavy with areas of hardened deposits around locations of block downpipes. The bricks appear to have been historically cleaned using a high pressure abrasive system as the face is pitted and textured.

The same brick can be seen on the flank returns and chimney stacks, these have not been cleaned by this method and retained the original smooth finish.

PAYE Stonework & Restoration Ltd
Stationmasters House, Mottingham Station Approach, London SE9 4EL
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The facing bricks used appear to be Gaults also known as Gaunts which are close to an engineering brick in hardness and sometimes difficult to clean if soiling has been allowed to accumulate. The use of abrasive systems is not uncommon when cleaning these bricks but in this case on the Lighthouse Block the bricks have been over cleaned and damaged.

Cleaning trials where carried out at 1st and 2nd floor levels on Pentonville Road using DOFF and DOFF combined with dilute Neolith 625. Both systems achieved a visible difference in appearance removing surface soling with the DOFF/Neolith system producing the cleaner result.

See photographs Ref: PR/CT01-04

In locations of staining from blocked downpipes there was less obvious difference in appearance with hardened deposits remaining on the surface.

See photographs Ref: PR/CT05-06

A DOFF/Neolith trial was carried out to a section of previously un-cleaned flank return brickwork at 3rd floor on Pentonville Road to help determine if these could be potentially cleaned and salvaged for use in the re development. A degree of soiling was successfully removed but further cleaning would be necessary to make them useable.

See photograph Ref: PR/CT07

Painted stucco is heavily soiled and has not been cleaned or re-decorated for some considerable time. Using the DOFF hot wash system successfully removed the majority of atmospheric pollutants but with some notable visible traces remaining.

See photographs Ref: PR/CT08- 09

Opening up investigation trials

To help establish the condition and construction of painted masonry embellishments a number of small 6mm holes where drilled into features at each level of scaffold together with the opening up of two select areas.

In the majority of cases each of the holes drilled detected a hard dense outer mortar which gave way to a less dense inner core. Natural Bath stone was detected and has been used for 2nd floor window sills and ground level pilasters.

Opening up a section of the upper and lower cornice on Gray's Inn and Pentonville Road revealed that the cornice had been screeded over with a hard dense mortar; this had de-bonded from the substrate.

The exposed sections of cornice showed a typical projecting stone slab that had been built out in brick and tile creasing to form the basic shape of the nosing and then hand run in mortar. The substrate mortar was found to be damp and friable, bricks and tiles where loose and could be easily removed.

See photographs Ref: LB/OP10-14

A section of moulded stucco window surround was removed from the 3rd floor on Gray's Inn Road which had been displaced due to corrosion of an embedded section of steel. Removing the damaged moulding revealed that the mortar had been applied over the facing brickwork without any sign of keying in to help adhesion of the mortar.

The corrosion of the embedded steel and use of hard dense mortars most likely combined to cause the failure of the window moulding.

See photograph Ref: LB/OP15-18

Conclusions

Cleaning trials:

The DOFF/Neolith cleaning combination provides an effective result on removing surface soiling from previously abrasively cleaned facing brickwork, isolated use of a low pressure wet abrasive such as TORC may be necessary to help improve isolated areas of staining around blocked downpipes and flank returns and chimney stacks if these bricks are to be salvaged and re-used.

DOFF hot wash removed a good proportion of surface soiling from the painted stucco trailed which may be sufficient enough to allow re-decoration but an element of paint stripping may also be necessary to improve the appearance of new paint work.

Opening up investigation trials:

The exposure of the cornices indicates that the condition of these features are in a poor state of disrepair and will present further problems in the future if left unattended.

Removal of embedded steel and other corroding fixtures should be removed and loose de-bonded stucco mouldings removed and replaced incorporating stainless steel reinforcement as necessary.

Recommendations

Based on the trial results cleaning brickwork and painted stucco using a combination of DOFF and Neolith 625 produces a good level of clean which would help to improve the overall appearance of these facades.

Extensive masonry repair and replacement needs to be carried out as matter of urgency due to potential health and safety concerns and to preserve the historic listed facades.

Consideration may also be given to the introduction of lead capping to projecting features to help improve the lifespan of repaired masonry.

We trust that the report is of interest and satisfies your requirements please contact the undersigned should you require any additional information or assistance with this or other similar projects.

Yours sincerely

David Manktelow
Business Development Manager
PAYE

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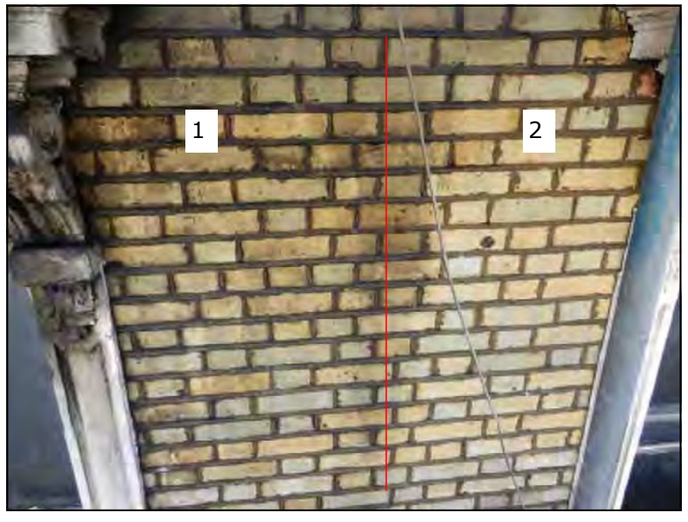
REFERENCE PHOTOGRAPHS **3**

PR/CT01: DOFF cleaning in progress



PR/CT02: 2nd floor post cleaning. N01 DOFF clean, level of surface soiling reduced.
N02 DOFF/Neolith clean, level of surface soiling improved.

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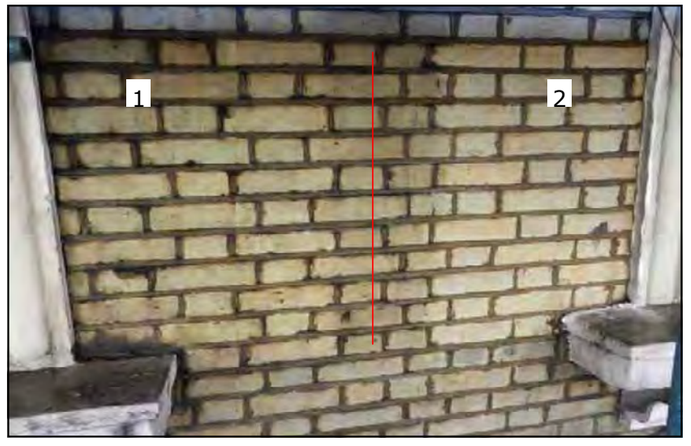
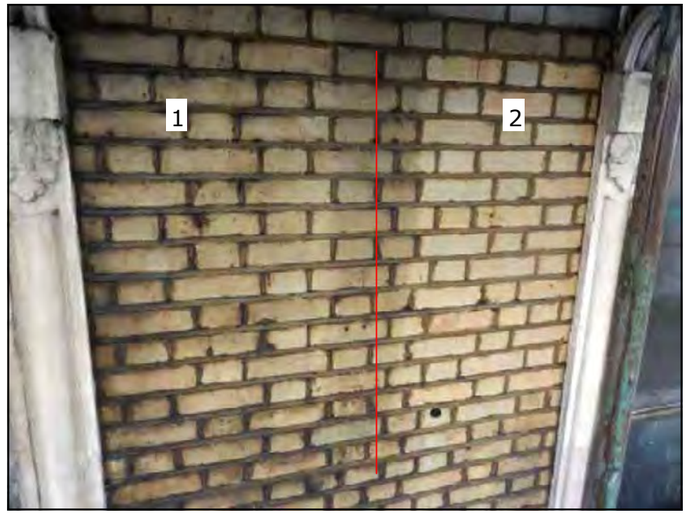
Lighthouse Block
Facade cleaning trial



PR/CT03: Post cleaning 2nd floor window sill level.
N01 DOFF clean, level of surface soiling reduced.
N02 DOFF/Neolith clean, level of clean improved.



PR/CT04: Post cleaning 1st floor level.
N01 DOFF clean, level of surface soiling reduced.
N02 DOFF/Neolith clean, level of clean improved.

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PR/CT05: Scrubbing brickwork following application Of Neolith 625 to heavily stained area around blocked downpipe.
PR/CT06: Post clean, surface soiling improved but hardened deposits remain. Further cleaning required to improve finish.

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Lighthouse Block
Facade cleaning trial

PR/CT07: Pentonville Road elevation 3rd floor flank. Area of brickwork cleaned using 1 No application of dilute Neolith 625 and DOFF hot wash.

A degree of soiling was removed but the result was patchy.

Use of TORC low pressure wet abrasive would help improve the overall appearance of the brickwork but would not necessarily achieve the same finish as the main facing bricks as these appear to have been previously over cleaned using a high pressure wet abrasive and coarse abrasive medium.

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Lighthouse Block
Façade cleaning trial

PR/CT08: 2nd floor DOFF cleaning painted stucco window head.
PR/CT09: Post clean heavier surface soiling remains in less exposed locations. Paint stripping maybe required in order to provide a suitable background for re-decoration.

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Lighthouse Block
Investigation opening up trials

LB/OP10: Lower cornice Pentonville Road. Stucco visibly saturated and failing.

LB/OP11: Following removal of the hard dense top screed the original substrate mortar was found to be very loose and friable.

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Lighthouse Block
Investigation opening up trials

LB/OP11: The hard dense cement mortar screed was found to have de-bonded from the original lime mortar.

LB/OP12: The construction of the stucco cornice has been exposed showing the cantilevered stone slab off which corbelled brickwork and tile creasing has been built to form the basic shape of the cornice. The detailing is applied by hand running mortar over the formwork.

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Lighthouse Block
Investigation opening up trials

LB/OP13: The upper cornice has been similarly screeded with a hard dense cement mortar.

LB/OP14: The applied cement screed is very thick and has de-bonded from the original stucco mortar.

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LIGHTHOUSE BLOCK KINGS CROSS

FAÇADE CONDITION SURVEY REPORT

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CONTENTS

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SURVEY REPORT **1**

LIGHTHOUSE BLOCK KINGS CROSS
FAÇADE CONDITION SURVEY REPORT

An external visual and hammer test survey of the existing facades was carried out on the 16th and 17th December 2011 the weather was dry.

Access was provided by boarded tubular scaffolding erected by others.

The survey was principally carried out to record visible defects affecting the brickwork and painted architectural features forming cornices, dormer windows, window surrounds and pilasters which may be attributable to natural weathering and lack of appropriate repair and maintenance.

HISTORY

The Grade 11 listed building dating from around 1875 has been vacant for a number of years is to be redeveloped to provide retail and commercial office space. The existing facades are to be retained as part of the development proposal.

OBSERVATIONS

It was apparent that the façades had not had any visible repair or maintenance carried out for some considerable time with sections of masonry missing and in an unstable state of severe deterioration.

From the opening up trials that were carried out in conjunction with the survey it has been confirmed that the majority of the architectural features are painted stucco, cement or lime render applied over brickwork to form moulded detailing combined with pre-cast items for cornice and pediment window corbel brackets, florets and roof level balustrade.

Natural Bath stone has been used for 2nd floor window sills and ground to 1st floor pilasters. Facing brickwork has been built using a brick which has the characteristics of a make known as a Gaunt or Gault which is typically pale white-yellow in colour and similar in hardness to an engineering brick.

The stucco masonry is heavily soiled with dust and exhaust emissions due to the close proximity of the building to Gray's Inn Road and Pentonville Road which are continuously congested with traffic.

The road facingbrickwork shows evidence that it has previously been abrasively cleaned as the surface is rough and pitted in texture. Brickwork to the chimneys and returns over roofs has not been cleaned and remains heavily soiled.

There are a number of embedded corroding sections of steel and redundant fixings in the facades which have caused notable damage to surrounding brickwork and stucco render due to fracturing of the masonry. The brickwork is generally in good condition and the pointing although not original appears sound.

A number of dentil blocks are missing from the cornice that appear to have been damaged due to corrosion of fixing dowels. Other blocks were randomly hammer tested but none were found to be currently unsound.

From the site investigations it would appear that the sky surface of the main cornices has been have been screeded over using a hard dense semi concrete mortar which has de-bonded for the original lime mortar stucco. Removal of this screed exposed the construction of the cornice and condition of the stucco mortar which was damp, loose and friable.

Fracturing of the nosing and upper mouldings to the cornices was also noted indicating that the hard inflexible mortar used for repair was failing and de-bonding from the substrate beneath.

At the left hand end of the 3rd floor cornice North elevation the original detail of the cornice remains in place which includes a front gutter running to an embedded downpipe. The over screeding to the remainder of this and the upper cornice has allowed water to run back to the timber sills potentially causing decay of the sill.

At cornice level on the East West curved elevation there are significant open fractures through the upper cornice and brick parapet above that maybe due to structural or thermal movement of the building.

Further structural movement was noted at the right hand end of the South elevation upper cornice with significant fracturing through the masonry and displacement of the parapet wall.

A number of the plain dormer window surrounds on Grays Inn Road are in an unstable condition the render has failed and exposed brickwork is frost damaged and missing. The dormer surrounds on Pentonville Road show similar problems with render cracked and loose; the curved pediment head dormers also show signs of fracturing.

The roof top balustrade is extensively weathered with the majority of the moulded detailing eroded and missing; these features were probably produced as pre-cast elements and assembled on site.

Moulded stucco to window surrounds and the sky surface of window heads was found to be hollow and de-bonding from the backing substrate. The investigation trials revealed that the stucco surrounds have been formed over brickwork without any sign of keying into the substrate. This form of construction combined with the weight of the material used is likely to be the cause of failure affecting the surrounds.

A number of the window heads are fractured and the stucco hollow sounding when tested, these fractures maybe related to embedded timber lintels which have rotted and dropped.

At 2nd floor level natural Bath stone has been used to manufacture the window sills. Every sill has been previously repaired using a cement mortar which has failed or beginning to fail as the hard mortar is incompatible with the softer natural stone and has de-bonded.

There has been considerable alteration to the original facades between ground and 1st floor level which has resulted in extensive damage to and loss of the 1st floor window sills along with a number of the Bath stone pilasters which have been cut in

half to accommodate shopfronts or that have been tiled over to alter the appearance.

Pilasters which are in line with downpipes originally appeared to have had the pipe fixed through the centre of the stonework. These embedded downpipes have caused significant loss of stone due to corrosion to one of the pilasters on the North elevation and fractured through another. Stonework has been previously mortar repaired and painted which is now flaking and peeling.

RECOMMENDATIONS.

Based on these initial findings it is clear that elements of the existing masonry require extensive repair and replacement in order to maintain the integrity of the facades for the long term.

A number of the dormer window surrounds are in a near state of collapse and will require either complete or part demolishing; associated balustrade may also need to be dismantled to accommodate these works which may be possible to salvage and reuse however allowances should be made to replace these with new as the construction and condition of the units is unclear.

The hard dense cement screed used to re-fluanch the cornices has de-bonded from the original substrate and needs to be removed and replaced with an improved detail to ensure that rainwater runs off and away from the building facades. The condition of the substrate exposed during the investigation trials was found to be in a poor condition which if found to be typical will require extensive re-building of the cornice upper moulded section.

The introduction of a lead or zinc capping and flashing may be considered if practical which would help provide protection to the repaired cornice and a drip detail to aid the water dispersion.

Corroding sections of steel and redundant fixings should be carefully cut out and surrounding stucco and brickwork made good with either new stucco or bricks to match the original.

Severely fractured and displaced masonry will require careful repair, dismantling and re-building. Additional control measures may need to be put in place to prevent further movement if the cause is associated with thermal expansion and contraction.

The second floor natural Bath stone windows sills which have all been repaired using a hard cement mortar require extensive work to ensure that they remain in a stable condition. From the survey it was noted that a number of the sills were in a state of deterioration with missing, loose and fractured mortar and loss of stonework. The cement mortar should be carefully removed from all sills and the condition of the exposed stonework assessed for the most appropriate means of repair or possible replacement.

Subject to further investigation provision should be made to either replace or repair the brackets underneath the sills which may become damaged or loosened during works involving the 2nd floor sills.

Further internal investigation of lintels over windows should be carried out to determine if these have failed resulting in the fracturing and de-bonding of external stucco window heads. Consultation with a suitably qualified structural engineer should be considered in order to specify the most appropriate course of action for their repair or replacement.

Moulded window surrounds which are loose and de-bonding from the brick substrate should be carefully removed and replace with new introducing stainless steel reinforcement as necessary to help improve the strength of the repair.

The 1st floor window sills will require reinstatement which ideally could be manufactured as pre-cast units for ease of installation.

The ground floor pilasters require extensive repair or replacement in order to establish the original architectural detailing. As the original pilasters are in a natural Bath stone and vulnerable to damage at ground levelconsideration should be given

to the introduction of a granite plinth to help provide suitable protection. Dependant on the planning conditions it may be possible to use a pre-cast stone as an alternative in cases of complete replacement.

The existing paint will need to be removed from retained pilasters in order to provide a suitable surface for re-painting if required and to establish the level of repairs required.

Cleaning the brickwork to remove surface soiling using a combination of dilute Neolith 625 and DOFF hot wash would improve the overall appearance, localised use of a low pressure wet abrasive may also be necessary to remove patches of heavy staining as a result of blocked downpipes.

This approach could also be applied to existing matching brickwork due for demolition which could be first cleaned then carefully dismantled for salvage and re-use in the extension and new build facades that form part of the re-development.

Prior to repair and re-decoration the existing painted stucco will also require cleaning to remove heavy atmospheric soiling.

CONCLUSIONS

Due to the poor condition of the facades close monitoring of the masonry should take place during the demolition works and installation of the façade retention system in order to help minimise the risk of further damage and loss of architectural detailing.

In the event removal of architectural masonry is required due to health and safety concerns or to make way for new structural steel we recommend a precise dimensional and photographic survey first takes place to accurately record the detailing for future reproduction.

The use of hard cement mortars for the repair of original stucco has not benefited the substrate material and presents a potential on-going problem that will possibly result in further deterioration and failure of the material in the future.

We would recommend that the retained facades are regularly surveyed and monitored following completion of the re-development to assess the condition of the masonry and to take appropriate action.

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THE LIGHTHOUSE BLOCK KINGS CROSS
FACADE CONDITION SURVEY NORTH ELEVATION

Dismantle defective hi-lighted brick and stucco window dormers and rebuild to original detail PH.N01

Cut off loose flaunching to cornice sky surface and fractured nosing, repair with revised detail. PH. N02

Original cornice front gutter detail. PH.N04

Remove defective hi-lighted balustrade and replace with new pre-cast

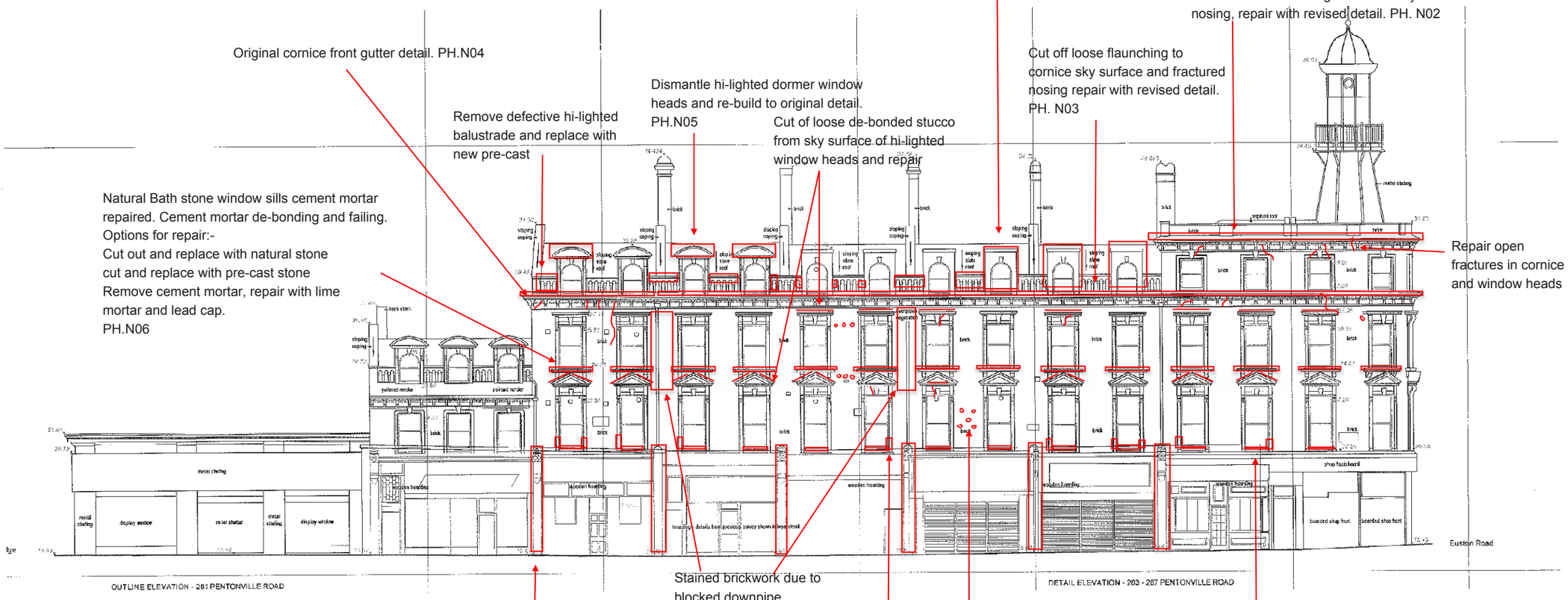
Dismantle hi-lighted dormer window heads and re-build to original detail. PH.N05

Cut of loose de-bonded stucco from sky surface of hi-lighted window heads and repair

Cut off loose flaunching to cornice sky surface and fractured nosing repair with revised detail. PH. N03

Natural Bath stone window sills cement mortar repaired. Cement mortar de-bonding and failing. Options for repair:-
Cut out and replace with natural stone
cut and replace with pre-cast stone
Remove cement mortar, repair with lime mortar and lead cap.
PH.N06

Repair open fractures in cornice and window heads



Stained brickwork due to blocked downpipe

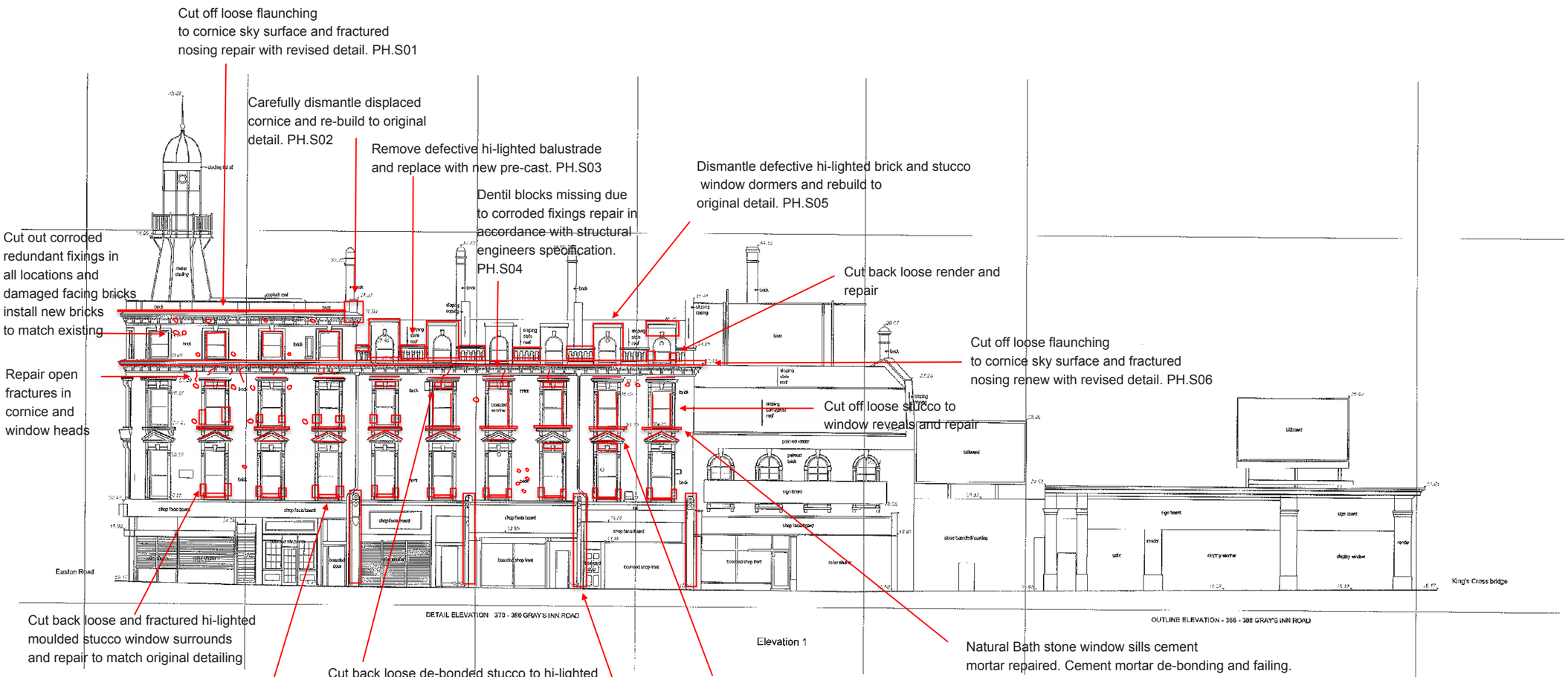
Paint strip and repair damaged Bath stone pilasters. Replace missing and severely damaged pilasters with new. PH.N07 N08 N09

Cut out corroded redundant fixings in all locations and damaged facing bricks, install new bricks to match existing

Cut back loose and fractured hi-lighted moulded stucco window surrounds and repair to march original detailing. PH. N010

Window sills missing or defective renew in pre-cast stone.

THE LIGHTHOUSE BLOCK KINGS CROSS
FACADE CONDITION SURVEY SOUTH ELEVATION



Elevation 1

Cut off loose flaunching to cornice sky surface and fractured nosing repair with revised detail. PH.S01

Carefully dismantle displaced cornice and re-build to original detail. PH.S02

Remove defective hi-lighted balustrade and replace with new pre-cast. PH.S03

Dentil blocks missing due to corroded fixings repair in accordance with structural engineers specification. PH.S04

Dismantle defective hi-lighted brick and stucco window dormers and rebuild to original detail. PH.S05

Cut out corroded redundant fixings in all locations and damaged facing bricks install new bricks to match existing

Cut back loose render and repair

Repair open fractures in cornice and window heads

Cut off loose flaunching to cornice sky surface and fractured nosing renew with revised detail. PH.S06

Cut off loose stucco to window reveals and repair

Cut back loose and fractured hi-lighted moulded stucco window surrounds and repair to match original detailing

Cut back loose de-bonded stucco to hi-lighted window heads and repair to original detail

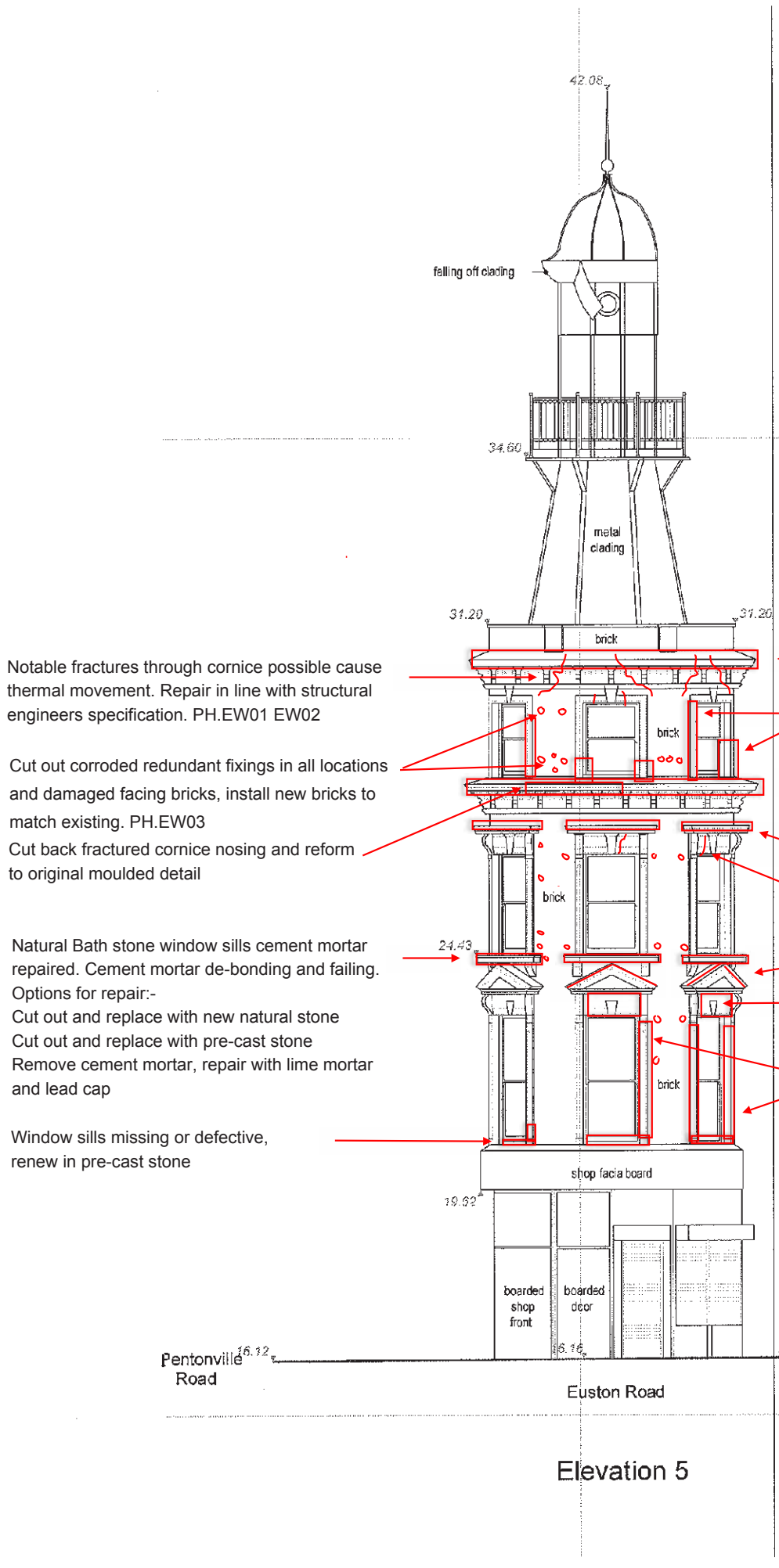
Cut off loose de-bonded stucco from sky surface of hi-lighted window heads and repair

Natural Bath stone window sills cement mortar repaired. Cement mortar de-bonding and failing.
Options for repair:-
Cut out and replace with new natural stone
Cut out and replace with pre-cast stone
Remove cement mortar, repair with lime mortar and lead cap.
PH.S07

Window sills missing or defective renew in pre-cast stone

Paint strip and repair damaged Bath stone pilasters. Replace missing and severely damaged pilasters with new. PH.S08

THE LIGHTHOUSE BLOCK KINGS CROSS
FACADE CONDITION SURVEY EAST WEST ELEVATION



Notable fractures through cornice possible cause thermal movement. Repair in line with structural engineers specification. PH.EW01 EW02

Cut out corroded redundant fixings in all locations and damaged facing bricks, install new bricks to match existing. PH.EW03

Cut back fractured cornice nosing and reform to original moulded detail

Natural Bath stone window sills cement mortar repaired. Cement mortar de-bonding and failing. Options for repair:-
Cut out and replace with new natural stone
Cut out and replace with pre-cast stone
Remove cement mortar, repair with lime mortar and lead cap

Window sills missing or defective, renew in pre-cast stone

Cut off loose flaunching to cornice sky surface and fractured nosing repair with revised detail.

Cut back loose and fractured moulded stucco window surrounds and renew to match original detailing

Cut off loose fluanching to cornice sky surface repair with revised detail.

Cut off loose de-bonded stucco to sky surface of window heads and renew
Repair open fractures in moulded stucco window heads

Cut off loose de-bonded stucco from sky surface of window heads and repair
Cut back loose de-bonded stucco to window heads and repair to original detailing

Cut back loose and fractured moulded stucco window surrounds and repair to match original detailing

Elevation 5

REFERENCE PHOTOGRAPHS 3

LIGHTHOUSE BLOCK KINGS CROSS
PENTONVILLE ROAD NORTH ELEVATION

PH. N01. Dormer windows render loose and de-bonding, brickwork substrate frost damaged. Take down and re-build

PH. N02. Cement mortar repair to upper cornice loose and de-bonding from the original substrate, continuous fracture through nosing. Remove complete and repair.

PH. N03. Cement mortar repair to lower cornice loose and de-bonding from original substrate, fracture through nosing, downpipe outlets blocked, weathering detail to window sills ineffective. Remove complete, repair substrate and revise weathering detail.

PH. N04. Original cornice detail with front gutter running to downpipe outlet. Flaunching below window sills and less built up to the base of balustrade.

LIGHTHOUSE BLOCK KINGS CROSS
PENTONVILLE ROAD NORTH ELEVATION

PH. N05. Curved pediment dormer window heads fractured and loose stucco, frost damaged brick and tile substrate. Take down and re-build new.

PH. N06. All natural Bath stone window sills cement mortar repaired. Repairs are loose and failing. Remove mortar and assess condition of exposed stone for most appropriate option on repair or replacement.

PH. N07. Natural Bath stone ground level pilasters. Stonework has been damaged by corroding embedded downpipes and inappropriate cement mortar repairs.

PH. N08. Top section of pilaster fractured and displaced. Carved detailing painted and mortar repaired.

LIGHTHOUSE BLOCK KINGS CROSS
PENTONVILLE ROAD NORTH ELEVATION

PH. N09. Lower section of pilaster which has been previously cut and altered to accommodate a change in shopfront.

Stonework has also been tiled and painted over.

PH. N010. Moulded stucco window surrounds loose and de-bonded from the brick substrate. Carefully remove and repair to match original detailing.

LIGHTHOUSE BLOCK KINGS CROSS
GRAY'S INN ROAD SOUTH ELEVATION

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PH. S01. Cement mortar repair to upper cornice loose and de-bonding from the original substrate, continuous fracture through nosing. Remove complete and repair.

PH. S02. Significant fracture and displacement of stucco cornice. Carefully take down and re-build incorporating pre-cast corbel and dentil blocks

LIGHTHOUSE BLOCK KINGS CROSS
GRAY'S INN ROAD SOUTH ELEVATION

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PH. S03. Sections of balustrade are fractured and extensively eroded. Remove and replace using pre-cast units.

PH. S04. Dentil blocks missing from cornice damaged due to corrosion of embedded fixing dowel. Cut out corroded fixing and replace with new pre-cast block secured using stainless steel threaded rod.

LIGHTHOUSE BLOCK KINGS CROSS
GRAY'S INN ROAD SOUTH ELEVATION

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PH. S05. Dormer windows render loose and de-bonding, brickwork substrate frost damaged. Take down and re-build

PH. S06. Cement mortar repair to lower cornice loose and de-bonding from original substrate, fracture through nosing, downpipe outlets blocked, weathering detail to window sills ineffective. Remove complete, repair substrate and revise weathering detail.

LIGHTHOUSE BLOCK KINGS CROSS
GRAY'S INN ROAD SOUTH ELEVATION

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PH. N07. All natural Bath stone window sills cement mortar repaired. Repairs are loose and failing. Remove mortar and assess condition of exposed stone for most appropriate option on repair or replacement.

PH. N08. Natural Bath stone pilasters have been dramatically altered to accommodate previous change in shopfront. Remove and replace with new to match original carved detailing.

LIGHTHOUSE BLOCK KINGS CROSS
EUSTON ROAD EAST WEST ELEVATION

PH. EW01 EW02. Significant fractures through upper cornice and parapet wall possibly due to thermal movement. Replace and repair sky surface and nosing as previous.
Introduce control measures as necessary in accordance with structural engineers specification to prevent further possible movement.

LIGHTHOUSE BLOCK KINGS CROSS
EUSTON ROAD EAST WEST ELEVATION

PH. EW03. Corroding sections of embedded steel and redundant fixings are causing damage to brickwork and stucco. Carefully cut out and repair using new matching bricks and stucco render