SCHEDULE OF WORKS

Project: Proposed Fabric Repairs

Re-building of 4No pilasters to Albany Street entrance and replacement of existing (and introduction of new) brackets to support front elevation stone cornice / balcony

At: No 2 Marylebone Road, London NW1 4DF

Prepared For:

Consumer Association / Which ?
2 Marylebone Road
London
NW1 4DF

Prepared By:

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1. STRUCTURAL ENGINEERS RECOMMENDATIONS (HURST PEIRCE & MALCOLM)

Balcony at West End of South Elevation:

There is a stone balcony running the full length of the south elevation either side of the front entrance porch; it is about 800mm wide and 90mm thick. It was previously asphalted.

There is a balustrade set into the balcony in lead filled pockets at centres varying from 1.7-2.7m. Between these, thinner 'balcony hangers' have been installed which may be a retro-fit. There are 120mm deep shaped cantilever brackets at varying centres along the length of the balcony.

The balcony is made up of 4 stone slabs and is built into the wall by 200mm between the windows; it can be seen that the slabs are not built into the wall at windows where they just bear onto the cills – with relatively wide windows, which is an unusual detail for a cantilever balcony.

Pictures taken prior to our inspection show a significant step in the balcony at a crack at the West End and the balustrade feet and hangers to be broken. At the time of inspection the step was nominal and the broken balustrade feet and hangers had been repaired which it is understood to have been carried out by a metalworker as part of his repair to the balustrade. However, the hangers are bent due to issues with alignment.

Other defects seen at the site visit include cracking to the stone at balustrade feet due to corrosion, further corrosion/misalignment at baluster feet and cracking to the stone at the east end and in front of one of the windows.

On initial inspection there is no support to the cracked section of stone at the West end - this explains the significant step indicating it had dropped and presumably wedged in place; perhaps because the balustrade hangers had snapped or another event. It is fortunate that this had not collapsed.

Whilst the slabs appear to be stable, because of the lack of restraint at windows, the assessment is that this must be because of a combination of support from the balustrade (which relies on lead pockets and the misaligned baluster posts and hangers) and continuity between the restrained sections of stone between windows. Unfortunately this cannot be relied upon in the long term; the balustrade posts and hangers are prone to corrosion, the lead seating does not provide a robust fixing and, with the pattern of cracking, the slabs cannot be justified to span under their own weight between the cantilever brackets which are undersize for the load being carried.

With this in mind, the occupier's Structural Engineers recommend the following works are required:

Provide propping to balcony full length
Install additional cantilever brackets – see sketches in the Appendix.
Carry out stone repairs to broken sections of stone at balustrade fixing points (pin and resin new sections of stone in place.)
Carry out resin injection at cracks in stone.
Re-fill lead at joints.
No access to be permitted on the balcony in future.

It was noted that the balcony at the east end has been subject to a significant amount of earlier repair, including the introduction of substantial cantilever brackets and crack repair/stitching throughout so this is not a new issue on this building.

Pilasters to Albany Street Portico

The porch roof structure is supported by 4No fluted stucco rendered pilasters, arranged in pairs either side of the entrance. They are about 480mm diameter at the base reducing to 350mm at the top where they have square heads picking up the porch roof with a stone balustrade around. They are in the region of 3m high.

The pilasters are formed from stucco covered brickwork – the bricks are soft and can be marked with a fingernail (probably many are place bricks) and would initially have been laid in lime mortar although previous repairs were visible in cement mortar in places.

The pilasters are cracking to varying degrees with cracks up to 20mm width (material falling out of the cracks has enlarged some of these to 30/40mm) in the worst area. The cracks are radial. There are generally 2No per column; in the worst case there are 3No cracks which are likely to join at the centre.

The crushing strength of the brickwork was originally enhanced by its confinement (held together) by the stucco to take the vertical load but the cracks indicate a compression failure of the pilasters; likely to be a combination of age of the brickwork and perhaps water ingress, breakdown in the stucco and loss of confinement by the render.

The stonework specialist has proposed the materials and treatment below:
Reconstruct 4 No entasised columns using class B semi-engineering bricks incorporating stainless steel brick tor at every 4th course leaving joints raked back to accommodate subsequent stucco render coatings. Provide and fix stainless steel EML at staggered 300mm cts using S/S screws and penny washers.

From a structural engineering perspective, the proposed materials will assist in the longevity of the new pilasters – the semi-engineering bricks will be stronger than the soft bricks (which have deteriorated) and the EML will assist to confine the brickwork.

2. STONEWORK RESTORATION COMPANY METHOD STATEMENT (TRITON)

1. Fully boarded tubular access scaffold to be erected, maintained , adapted and dismantled.

2. Include for all relevant Local Authority permissions and fees.

3. The scaffolding to be erected in accordance with our requirements and inspected and approved by our Group Health and Safety Manager prior to works our commencing.

NB. It was noted that there are 2No Acrow Props centrally positioned within the opening to the front of the entrance portico. It is our opinion that the load to the portico over should be spread using short scaffold boards between the heads of the Acrow Props and the structure above.

MASONRY

1. Photograph, profile, details, measure and record existing construction prior to dismantling works commencing.

2. Using suitable diamond blade, carefully isolate retained sections to head of portico and to supporting plinth at base. Carefully dismantle and clear away 4 No existing portico columns.

3. Reconstruct 4 No entasised columns using class B semi-engineering bricks incorporating stainless steel brick tor at every 4th course leaving joints raked back to accommodate subsequent stucco render coatings.
Brick columns to be approximately 400mm in diameter at the base and reducing to 270mm in diameter at the head.

4. Provide and fix stainless steel EML at staggered 300mm cts using S/S screws and penny washers

4. Reform column heads, column caps and fluted columns in progressively weakening coats of lime based mortar to reproduce original detail as closely as possible and ready for decoration by others.

NB. It had been assumed that the vertical fracturing of the exiting columns had been caused by rusting steel within the portico columns. No evidence of steelwork was identified during our initial inspection. It may well be therefore that the fractures are caused by overloading of the portico head. To this end we suggest a Provisional Sum is allowed for approval of the above proposal by a structural engineer or to suggest an alternative form of construction proposed.
Please allow a Provisional Sum for making good of masonry following enabling works.

3. STRUCTURAL ENGINEERS BRACKET DETAILS

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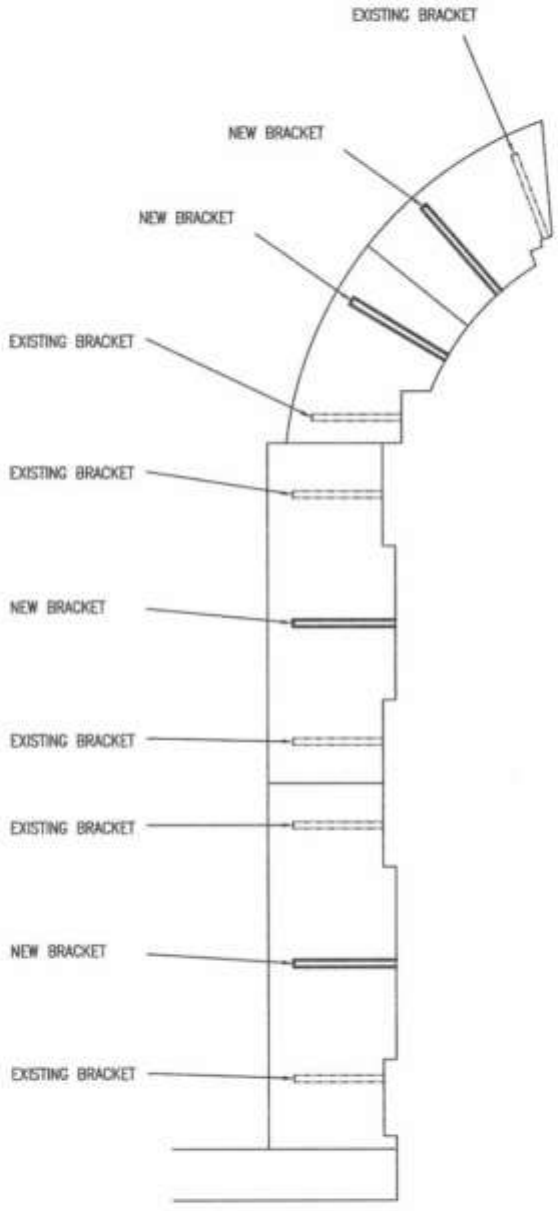
PROJECT 2 MARYLEBONE ROAD

TITLE
SOUTH WEST BALCONY SLAB WORKS

Status	Drawn	Checked	Passed	Date
PRELIMINARY	JRH			DEC 15

Scale	Drawing No.
NOT TO SCALE	21104 / SK01



PROPOSED BRACKET LOCATION

NOTES	CDM DETAILS (Refer note 2)	ENG
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS, DETAILS AND SPECIFICATIONS. 2. CDM DETAILS REFERS TO THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS. THE READER MUST REFER TO METHOD STATEMENTS OR RISK ASSESSMENTS AS APPROPRIATE, WHICH IDENTIFY UNUSUAL AND ABNORMAL RISKS THAT A COMPETENT CONTRACTOR COULD NOT BE EXPECTED TO ANTICIPATE.		

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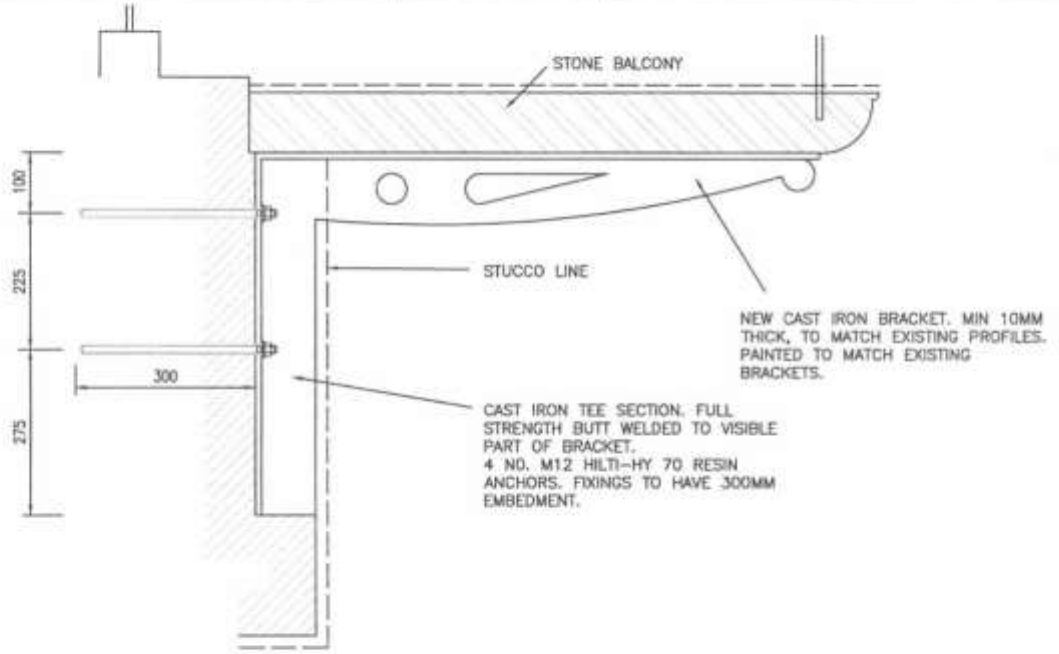
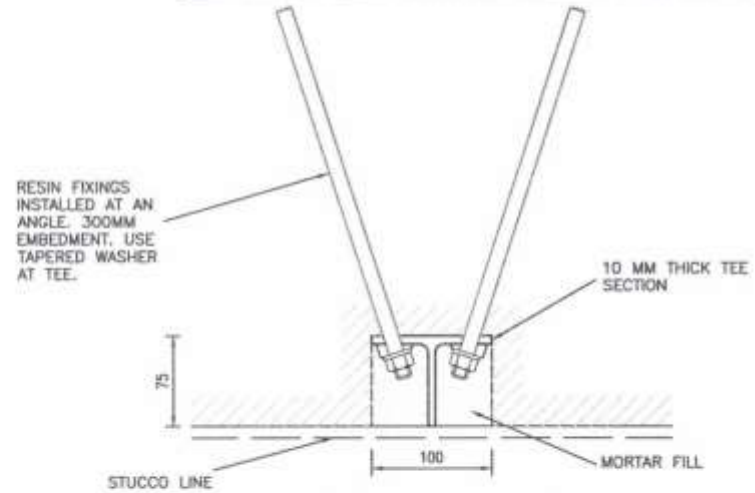


SECTION THROUGH BRACKET



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4. PHOTOGRAPHS 1 – 5 INC

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5