Granite Le Pelley

STONEMASONS • NATURAL STONE SPECIALISTS

NEW LOOK - 6 KING STREET, ST HELIER

CLIENT: NEW LOOK

CONTRACT ADMIN:ABS CONSULTANT LTD

ARCHITECT: ANTONY GIBB LTD

STRUCT ENGINEER: ROSS GOWER ASSOCIATE

The historical document described the property as a good example of 1930c commercial house style consisting of a three storey five bay front south elevation. Originally the façade was described as rendered but after removal of the paint it was discovered to be possibly a unique example of an Art Deco Limestone Façade in Jersey.

DESCRIPTION

1st Stage: Cleaning

Removal of the existing paint coating from the stone facade with a combination of specialist superheated water system (DoFF from Stonehealth) as well as proprietary paint softeners.

2nd Stage: Investigation and Repair Proposal

Granite Le Pelley assisted Structural Engineers, Ross Gower Associates in the investigation of the state of the elevation and then the development of a restoration method. The investigation revealed that two existing structural steel beams, supporting the upper elevation and the roof, were rusty and spalling which was causing the deterioration of the limestone façade. Granite Le Pelley then took great care to research the most suitable source of replacement stone.

3rd Stage: Structural Work

Granite Le Pelley carried out the temporary support of the upper elevation, removed the rusty steel beams and replaced them by casting a new in-situ structural concrete beam.

4th Stage: Restoration Work

Granite Le Pelley carried out the restoration of the limestone facade. This involved different varieties of repair: Plastic (mortar) repairs, replacement of sections of stone, replacement of whole stone pieces, replacement Carved Stone (carved by Mark Guest), lime mortar repointing, lead flashing, limewash and render.

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1st Stage - Cleaning

Granite Le Pelley proceeded to remove the paint with the DOFF system and proprietary paint softeners. As the main entrance of the shop had to be kept open, Granite Le Pelley installed a temporary system to cover the entrance, to protect the public and collected the waste water from the cleaning process above the entrance.

The DoFF System is a superheated water system (from Stonehealth) that uses a combination of low pressure and high temperature (up to 150°C) to remove ingrained dirt, biological matter and paint with minimal impact to the stone substrate (see photos right).

2nd Stage - Investigation/Report

The cleaning of the elevation revealed an exceptional limestone façade. Granite Le Pelley were requested to assist the design team in the investigation of the state of the elevation and produced a detailed condition report and repair proposal.

The stone façade was found to have some deterioration due to:

- Old bitumen and layers of impermeable modern paint had caused deterioration of the stone by preventing moisture egress from the wall,
- Hard cement pointing further limited the moisture from finding a way out of the building and had caused damage to the edge of the stone blocks,
- Rusty steel beam had caused damage to the upper elevation (by expanding),
- Water penetration through the various cracks increased the deterioration of the stone and steel beams,
- Poor previous repairs made with harder material (cement) had fallen out
- by delamination.

The selection of the replacement stone began with assessment of the existing stone by the Island's Geologist. Once identified, Granite Le Pelley has investigated and submitted the selection of replacement stone to the Historical Officer and Architect for approval: Limestone selected is Marnhull.

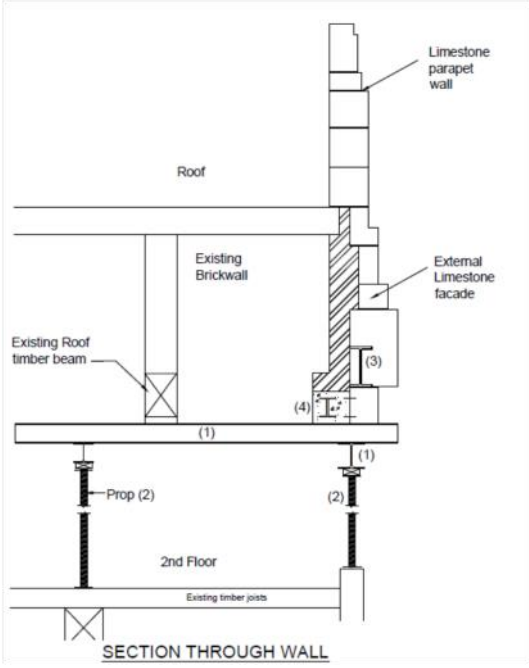
3rd Stage - Structural Work

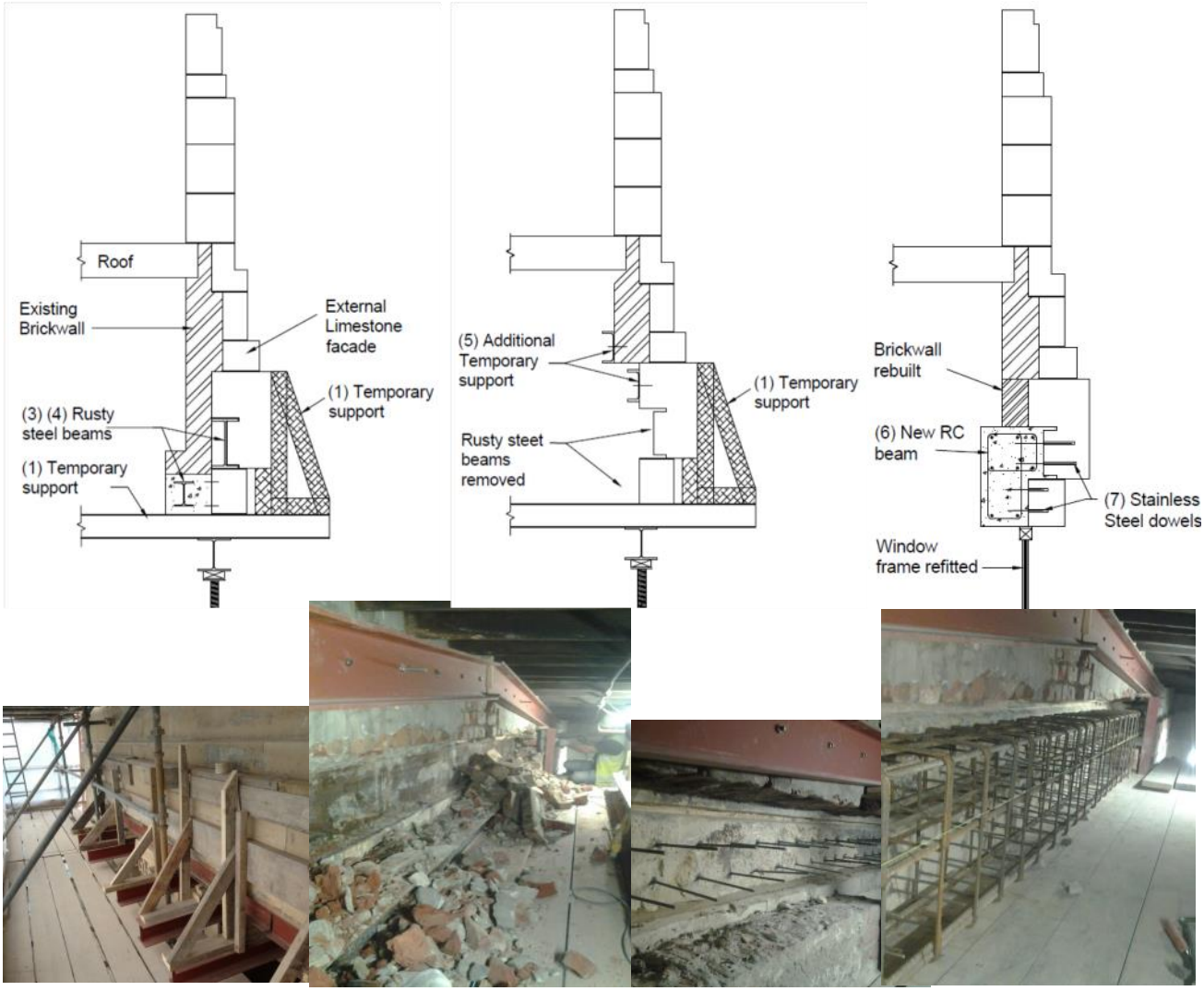
Granite le Pelley developed the method to carry out the major structural work that consisted of:

Temporarily supporting the upper elevation using steel beams (1) and props (2) located below the 2nd floor lintels and above (5).

Removing the existing steel beams (3) & (4). Due to their weight (400kg) and length (8 meter), the steel beams were cut into several pieces before being removed.

Casting in-situ reinforced concrete beams (6) with previously resined in stainless steel dowels into the back of the stone (7).





4th Stage—Restoration of Stone

A. Plastic (mortar) Repairs

This method was used for small repairs, where the stone was exhibiting very friable, deteriorated surface but is otherwise sound without too much deep damage and completed by pinning where necessary.

This method consisted of digging out the repair to 20/35mm and installing stainless steel pins and wiring to secure the repair. Squaring or undercutting the shoulders so as to provide a secure key and then applying specialist restoration repair mortar (4 colours used to match stone colour).

B. Replacement of Sections of Stone

This was undertaken where the stone had fallen away in larger chunks but there still remained the majority of the stone in place which was sound and stable and it was possible to ‘indent’ a new piece of stone, carefully sourced to match existing and to replace the missing portion.

The method consists of digging or cutting out the stone and then cutting a square 50mm depth new cladding piece, installed by pinning and grouting the back.

C. Replacement of Whole Sections of Stone

The parapet wall was in poor condition and a large section of wall had to be dismantled and replaced using new ashlar block.




D. New Carved Stone

One of the existing carved stones was in a very poor condition and had to be replaced entirely. Mark Guest (Jersey Stonemason) reproduced a new carved stone copying the existing. The second carved stone was kept and partially repaired using mortar repair.




E. Lime Repointing

The pointing generally needs to be softer than the stone to allow the moisture to pass through the pointing and not through the stone. The existing cement pointing was raked out (4/6mm width and 15/20mm depth) and repointed using a mix of (1/2/1): NHL/Sand/stone dust. The stone dust was produced from the existing damaged stone.


F. Limewash

After agreeing the appropriate colour with the Architect and Historical Buildings Officer, limewash coating was applied in four coats. The limewash used was produced by Rose of Jericho Ltd.

Other work

Lead Capping

All the top of the wall was capped with lead to protect the top of the wall from water penetration.