PRESERVATION TECHNOLOGIES NEWSLETTER
November 2011

Dear clients and friends:

Welcome to our latest newsletter. Compared to previous years this one is a bit overdue and we have selected projects completed a while ago, but nevertheless of interest.

As always, we hope you find time to read the news update and find interest in our selection of projects. In this issue we have focused on:

- two North Shore residential project upgrades
- a large roof membrane project

Read on...

Two North Shore residential upgrades

Working under the direction of the consultancy company Bellmont Facade Engineering, Preservation Technologies undertook these two projects simultaneously. This allowed for a fast decision-making process on both projects due to the regular site inspections and general site meetings required for both projects. This was particularly important in the case of Project 2, because of the defects discovered as the project developed

Project 1: 49B Upper Pitt St, Kirribilli

This project covered general repairs to the structure including concrete repairs, brickwork and service pipework, but also a substantial upgrade to the overall aesthetics of the building. Below are listed the main work items specified by the consultant following an extensive investigation of the building prior to the tender process:

- Replace window corner posts due to severe corrosion of the posts and displacement of the surrounding brickwork
- Repair concrete slab edges and soffits
- Remove all exterior lintels, Install new prestressed clay lintels and flashings, and rebuild all affected brickwork
- Inspect all window sills and repair brickwork to match existing profiles
- Install new Helifix cavity brick ties to all facades
- Prepare for and apply a multi-

Under way: from Harbour Bridge

Corrosion of posts, spalling slab

View along West elevation

Before:viewed from Kirribilli St

Rendering almost complete

Project completed

coat polymer render system to all facades. This to include a tinted topcoat and sealer rather than painting the building
- Replace all external vent and sewer pipes
- Repair barge capping as required
- Coat all balcony soffits and slab edges.

In addition to the above, the client chose to remove all balcony tiles and membrane and retile them to ensure no further water ingress occurred into the slabs.

Project 2: 168 Kurraba Rd, Neutral Bay

This beautiful old building, "Casa Madrona", had suffered the ravages of time, particularly concrete deterioration of balconies, the main entrance canopy, garage and stair soffits, as well as water ingress into some units and the garages. Generally the building required a full facelift including repainting.

Below are listed the main work items specified by the consultant following an investigation of the building prior to the tender process. A fixed scaffold system was established around the building to maximise multiple trades being able to work on the building, comprising:

- Repair concrete at the main entrance canopy, small Juliet type balconies and supports, concrete stairs to the rear of the building, garage soffits and lintels.
- Investigate water ingress to north-facing units including remedial works and reinstatement of internal finishes
- Demolish all balconies and supports, install new reinforcement and form up and pour new slabs. Upon completion. membrane the slabs and install tiles.
- Remove the existing balustrades and design and install a new system
- To the large terrace area, remove existing finishes, prepare the deck, apply a new liquid membrane system including detailing works and install new screed and tiles to falls.
- Undertake render repairs prior to coating works
- Wash down, prepare and apply a facade coating system to the entire building.


Before: Kurraba Road frontage (left) and elevation (right)

Two significant work items increased in size during the project, namely the balcony repairs and also the concrete repair work to the front entrance canopy.

Balconies renewed

The balconies were constructed using coke breeze concrete and once break-out started, it became evident we could not save the slabs.

Suitable propping and support work was put in place and all slabs were demolished.

All balconies demolished due to reo corrosion


Left: Walls rebuilt and stabilised before formwork erected. Right: Concrete mix pumped to balcony sites ready for membrane and tiling

Below: Formwork in place, new steel dowelled in and reinforcement placed


Balconies before (below left) and after (below right): reinstated with new steel supports and balustrade

Typical balcony demolished back to brickwork

This exposed the outer skin of brickwork, which also revealed stability issues. Once the brickwork was reinstated, new reinforcement was put in place, formwork installed and the balconies cast with ready mix concrete.

Also additional support columns were designed and installed for all balconies. Once cured, the slabs were protected with a new membrane system, the doorways were detailed and new tiles laid to falls.

Finally, a new balustrade railing system was selected by the owners and installed.

←*close-up of existing canopy before repair*

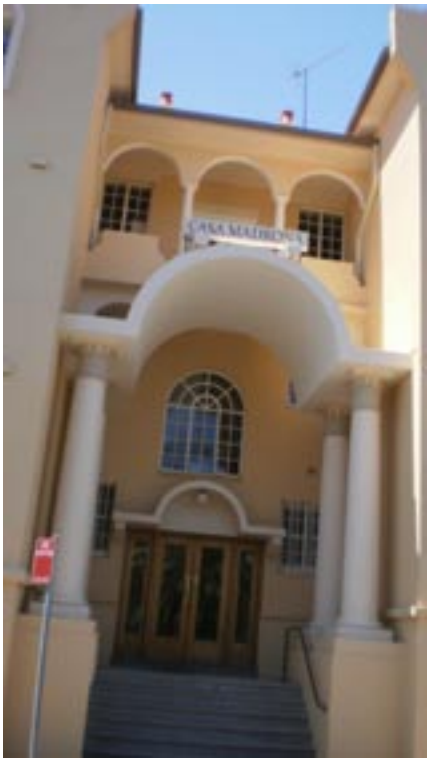
Entrance canopy demolished

Formwork & doweling in place

Steel reinforcement in place

Concrete placed over formwork

Finishing off the concrete



The entrance canopy after being expertly restored and protected

Canopy renewed

The main entrance canopy was to be repaired using conventional concrete repair techniques. However once initial break-out commenced, it became evident that the cost would be prohibitive, such was the deterioration.

A new support structure was erected under the canopy so that the demolition work could be undertaken safely. Then a new formwork system was installed to replicate the curved entrance.

Dowelling of steel into the building and installation of the steel reinforcement for the structure followed.

Ready mix concrete was then pumped from the street onto the formwork and shaped to replicate the old canopy.

Once in position, the concrete was finished off and cured with a curing compound.

When fully cured, the formwork and support structure was removed and the area made ready for protective coatings and installation of the new building name beam.

Further demolition and re-creation of arched elements took place on the same facade once areas were opened up for repair, but not as significant as the canopy.

When all facade works and repairs to garages were completed the building was protected with a membrane coating system.

After: Casa Madrona beautifully repaired and protected

Large roof membrane on the Seymour Centre

The roof membrane remedial works were carried out on the building referred to as the "Seymour Centre" located within University of Sydney complex. Although the project seems pretty straight forward, it did have its challenges.

Working in a university complex demands strict controls on labour movement, deliveries, noisy work hours and the use of large plant. Also the fact that the work involved stripping off the old membrane system required very co-ordinated planning to ensure no water ingress into the theatre centre below.

Distinct roof sections stripped, primed and coved

Detailing was a significant element of the works due to large perimeter areas

Mineral finish layer installed and detailed

A crane was needed to lift materials to the roof areas

Placement of significant quantities of palletised membrane had to be carefully thought through, not only to ensure production targets were met, but also to minimise loading on the roof. This became even more critical once it emerged that the slab thickness was less than originally thought by the building management.

An external scaffold stair was installed to allow the site team access to the roof. Use was made of crane lifts to place the membrane and other materials over the large roof area, which comprised a number of individual roofs at different levels. A safe work barrier system was also installed throughout the roof area as most perimeters had no balustrade. The main work items were:

- Cavity flashing works
- Remove the existing membrane and prepare the slab including priming
- Install a two-layer waterproof membrane system with the top layer being a mineral finish
- Overcoat the entire roof membrane with a UV stable coating.

Ancillary works carried out were;

- Replace security mesh to a light shaft
- Design various sized colorbond capping and install to the lower level walls
- Install abseil anchors
- Install brick ties to some perimeter walls.

A UV-stable coating was applied

As always should you want further information on a highlighted project, or have your own project to discuss, please contact John O' Connell.
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Until our next update.