



What Lies BENEATH

Sometimes the biggest problems are the ones you can't see

During a recent call-out to inspect a badly leaking roof at an aging medium-rise office block in the Sydney CBD, the team from specialist waterproofing and surface coating contractor

Sydney Seal Insulation Works Pty Ltd uncovered an array of problems stemming from literally decades of 'patchwork' repairs. Sydney Seal Projects Manager, Chadi Al Hakim, explained:

"We were called out to the building following a major rain storm, which had resulted in the roof leaking so badly that a large portion of the building had to be shut down and the top level cleared out."

"What our crew found when they inspected the roof, was multiple layers of waterproofing materials – both membranes and coatings – that had been patched together over a number of decades."

"Unfortunately, the combination of multiple layers of different materials and partial patching not only resulted in 'pooling' of water along join lines and in other areas, it also allowed water to penetrate between the many layers and onto the roof surface. This resulted in a number of other hidden issues," he added.

While it was clear that a significant amount of water was leaking through the roof, the type of materials used on the roof, together with the number of different layers of waterproofing and other materials used (including synthetic grass), made it all but impossible to pinpoint a single area where the water was penetrating

the roof. The only solution, to remove all of the layers, strip the roof right back and 'start from scratch'.

Removal of the synthetic grass and the loose-laid PVC waterproofing membrane 'blanket' beneath the grass layer exposed an additional two layers of torch-on water proofing membrane which, by its appearance, had been applied in a 'patch by patch' manner over a number of years.

Unfortunately, cutting away the torch-on membrane exposed what was to be the biggest issue of all – the fact that all of the layers had been installed onto a screed layer which was now covered with stagnant water and covered with mould. With this discovery, the decision was made to strip the roof off to the base slab, removing all of the existing membranes and coatings, and then waterproof the roof using the high performance Coniroof® 2160 waterproofing system from BASF.

Following the removal of all of the old waterproofing materials, the roof surface was prepared using a combination of shot blasting and grinding. The prepared exposed roof surface was then left to dry thoroughly, with moisture testing carried out to ensure that it dried sufficiently.

Surface faults, cracks and other damage was repaired prior to the application of two primer coats of Concessive® 2525, the first with a sand cast and the second with no sand. Concessive® 2525 is a solvent free

➤ Leaking rooftop uncovers a long history of sub-standard waterproofing applications

➤ Coniroof® 2160 delivers the ideal waterproofing solution for building rehabilitation works

➤ Inner-city building repair exposes unintended consequences of previous repair attempts





epoxy binder and structural adhesive which forms the base / primer layer for the Coniroof® 2160 system. This was followed by a 2mm thick trowel application, and a subsequent 1mm thick application of Conipur® M860 - a solvent free, two-component, self-levelling, polyurethane based, elastomeric coating.

The final stages of the waterproofing project incorporated a roller-applied layer of Conipur® TC 459 top coat with a sand cast to aid with slip resistance, and then a final layer of Conipur® TC 459 top coat without sand.

This multi-layered approach helped to ensure that the three components are able to provide a high performance, reliable, trafficable waterproofing membrane, that would continue to perform for many years to come, despite the age and condition of the roof.

Speaking about the project, Chadi Al Hakim said that these kinds of 'multi-layered' waterproofing membrane failures were not uncommon, particularly in inner-city areas where an ever-increasing number of older buildings are being refurbished for either commercial or residential use.

"Unfortunately, we're seeing a lot more of this type of waterproofing failure, especially in older buildings that have had new membrane applied over whatever was on the roof - which as is the case with this building, can be any number of layers," he said.

"The Coniroof® 2160 system provides the ideal solution for buildings such as these. With all of the old membrane removed and the surface properly prepared, Coniroof® 2160 can provide a high quality, high performance waterproofing system that can add decades to the serviceable life of the building," he added.



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