

# The Waterproofing of the critical areas at The Royal North Shore Hospital

## *Waterproofing Technical Analysis*



## Royal North Shore Hospital Redevelopment and Community Health Service Project

The Wolfin GWSK Waterproofing Membrane System has been installed on the critical areas of the Royal North Shore Hospital – over the electrical and plant areas on the Emergency Entrance & Main Ambulance Driveway.

### Cavity Flashing Terminations:

The initial perimeter termination works were carried out over two years ago when the membrane was terminated into the existing concrete shell of the building, and a 400mm horizontal strip of membrane was installed and protected with fibrous cement sheeting. This enabled the bricklayers to install and complete their works, leaving 100mm of protected membrane extending out past the completed brick walls, remaining intact to be connected onto years later. This type of installation allows the builder to encase the shell of the building, and remove the scaffolding on completion whilst maintaining the integrity of the waterproofing.

The membrane itself was terminated within the walls of the hospital – where it acts as a cavity flashing.



*The Wolfin membrane system continues under the block façade to form the cavity flashing*

## Site Specific Detailing:

Where the decorative poles are, steel plates were pre-installed in-situ into the slab, metal rods were then welded to the steel plates. A square section of Wolfin GWSK membrane was then installed and detailed to each extruded rod with standard Wolfin ring patches. The poles were then installed and fixed into place, and again, 100mm of membrane extended out past the plate perimeters to be connected onto at a later date.

*Decorative poles are bolted to the planter floors with SS booker rods chemically anchored into the concrete and sealed with the Wolfin system.*



## Planter Box W/P- The Wolfin Way:

The garden beds were also waterproofed using the Wolfin System (FLL Test-Certified Root Proof).

The horizontal membrane was pre-installed and protected to where the block work planter boxes were to be installed, to enable the brick layers to carry out their works and build their walls directly over the membrane, including detailing each individual starter bar. Again, the membrane is protected and extended 100mm past the walls to be connected onto at a later date.

## Non Mechanical Fixing of Wolfinsteel Terminations:

In regards to the steel curved planter box, no fixings were to be visible when fixing the Wolfin profiles in place, this is where the Projex Group special adhesive, Wolfinator, came into its own, as the Wolfin applicators were able to adhere the profiles to the curved steel planter walls with the Wolfinator adhesive.

Wolfinator was also used to fix the Wolfinsteel profiles to the steel “H” frame support columns for the covered glass walkway. As the frames were welded to pre-installed in-situ plates in the concrete the Wolfin membrane needed to be carried up and around the columns to create a watertight termination for the membrane. A special profile order was placed with the suppliers Projex Group, for a flat 100mm Wolfinsteel section so that the profile of the columns could be matched. (Wolfinsteel Profiles can be made to order)

The Wolfin membrane system can be effectively sealed to awkward shapes. In situations where the Wolfin system cannot be mechanically fastened to the substrate (steel, glass, fibreglass etc) the Wolfinsteel is adhered to the substrate with Wolfinator, a construction grade adhesive.



*The Wolfin membrane system is sealed to the steel “H” columns that support the covered walkways.*

Once all trades had completed their works the remaining areas were primed. The fibrous cement sheet protection previously installed over the membrane extensions were removed and the balance of Wolfin GWSK direct-stick membrane was installed, connecting onto the previously installed membrane to the perimeters, planter boxes, extruded poles and “H” frames.

In areas where concrete was to be installed over the completed membrane, 5mm thick Projex Shockmat was laid over the membrane as a protection matting prior to the placement of the reinforcing steel. Asphalt was laid directly onto the Wolfin GWSK Membrane on all the remaining deck areas.



*Looking west past the Ambulance parking area*

The perimeter curbing was installed over the Wolfin membrane to ensure that the waterproofing of the deck area continued to its extremities without jeopardising the integrity of the waterproofing system.



*Concrete curbing placed on 5mm Projex Shockmat membrane protection layer*

## Installation of the Wolfin Waterproofing System More Critical Areas



*Anchor points for concrete curbing and islands have been detailed & waterproofed using standard Wolfin installation procedures. Over 3,500 square metres of Wolfin were used in this area.*



*Wolfin IB is welded directly to PVC pipes*

The Wolfin membrane has been welded directly to the PVC rainwater and wastewater service pipes and outlets and terminated into the concrete columns to ensure the integrity of the waterproofing to all areas.

## Wolfin QA & Inspections

At all completed stages of the works, and prior to the areas being handed over to the Builder's relevant trades, each completed section was inspected by a (Wolfin Membranes Australia) inspector and Quality Assurance sheets were issued and forwarded to the Builder.

The Wolfin System was installed by GBA Waterproofing, a Licensed Wolfin Applicator.

Wolfin Membrane Systems have been installed on many hospitals in Australia. In Sydney the installations include St George Private Hospital, Prince of Wales Hospital, Sydney Childrens Hospital, Royal Hospital for Women, Liverpool Hospital and Royal Prince Alfred Hospital.

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