



The Christchurch Hospital Acute Services Building, otherwise known as Waipapa, opened in 2019, was a \$483 million anchor project outlined by the Christchurch Central Recovery Plan. The building houses operating theatres, an intensive care unit, state of the art radiology department, acute medical assessment, an expanded emergency department and a rooftop helipad. The building was a 62,000 sqm project designed by Katoa Health Design with main building contractors being CPB Contractors.

Equus Industries is pleased to have been involved in a number of elements of this project including DuO and Duotherm membrane roofs, balconies, plant decks, Keim Granital coatings on the building's exterior, Tanking membrane to the underground construction, and Aquafin 2KM for waterproofing the water tanks.

DUO AND DUOTHERM ROOFING

Equus Soprema Duo roof & deck membrane system was installed to the Level 2, 3, and 9 roofs and external plant decks of the Acute Services Building. The system, comprising DuO GW (Grey White) cap sheet and DuO base sheet welded to concrete, plywood and roof board substrates. Additionally, the Duotherm warm roof system integrated the DuO membrane system with a mechanically fastened base sheet laid over Kingspan thermal insulation board. A project specific vapour barrier was also added to ensure vapour distribution.

These systems were chosen for this project for their ability to provide the building with robust, UV-resistant, and flexible waterproofing, backed by a guaranteed R value. This ensures guaranteed condensation control for a healthier building, and reducing energy costs when it comes to heating and cooling.

Unlike traditional waterproofing membranes, Equus Soprema's DuO and Duotherm systems offer a unique combination of UV resistance, flexibility, and condensation control, making them the preferred choice for the Christchurch Hospital project where durability and performance were paramount.

Warm roofs contribute to eco-conscious building practices by reducing heat loss through the roof, thus decreasing energy consumption for heating and lowering carbon emissions. This aligns with sustainable building practices, promoting energy efficiency.

Equus offers a warranty of up to 25 years, supported by a 20-year



Soprema insurance-backed warranty, the only one of its kind in New Zealand. With minimal chip loss during installation and throughout the lifespan of the membrane (estimated at 5% compared to industry estimates of 30%), these membranes ensure the aesthetics and effective waterproofing performance over the product's lifetime.

DUOTHERM BALCONY WITH PAVERS

A Duotherm warm roof system was also installed on the level 3 outdoor courtyard area with pedestals and concrete pavers installed over top. The system consisted of a DuO GW cap sheet and DuO base sheet torched over a roof board, thermal insulation board and vapour barrier. The roof board provides excellent compressive strength to increase the roof durability for foot traffic.

KEIM GRANITAL EXTERIOR COATINGS

Keim Granital, a sustainable, water-borne, liquid mineral silicate coating was applied to the exterior concrete panels of the building. The durability of the coating provides the building with a colourfast and water repelling protective finish.

The unique composition of Keim paints ensures high breathability, resistance to weathering and a low maintenance finish. Unlike traditional paint systems, Keim paints chemically bond with the substrate, forming a long-lasting finish that withstands harsh environmental conditions without peeling or fading.

Our Keim coatings not only provided durable protection to the building's exterior but also contributed to its sustainability goals. While ensuring long term protection, the water-borne, mineral silicate coating reduces the environmental impact of the project. Keim Granital paints are eco-conscious, being made from natural mineral ingredients containing no harmful solvents or VOCs. This reduces indoor air pollution and environmental impact. Additionally, these paints have a long lifespan and exceptional durability, minimising the need for frequent repainting and reducing waste.

TANKING

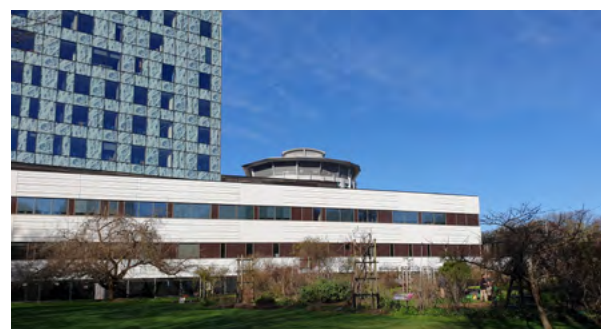
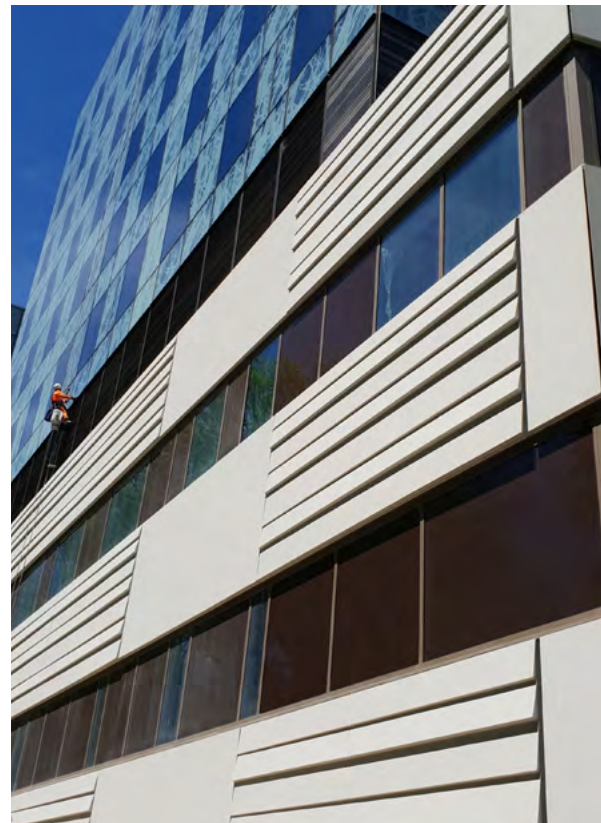
Equus Soprema DeboFlex 3.5 Special tanking membrane is a high-quality waterproofing membrane designed for torch application or loose laying in underground waterproofing. Applied to the underground construction of the building, it produces a strong, puncture-resistant layer that bonds to the concrete.

The membrane is versatile and effectively waterproofs various structures and substrates, offering robust protection against water ingress in underground areas. DeboFlex 3.5 Special is engineered to withstand high hydrostatic pressure, providing long-term durability and peace of mind for both contractors and property owners.

In 2023, it was superseded by Colphene BSW tanking membrane system, which matches DeboFlex's high quality performance while offering other notable features such as quicker installation and chemical bonding to the concrete.

AQUAFIN 2K/M PLUS WATER TANK

The lower ground fire water tank for the building underwent interior waterproofing, covering both walls and the floor. Aquafin 2K/M Plus, a two-component waterproofing system, was chosen for this. It creates a seamless, crack-bridging membrane with excellent adhesion to concrete, ensuring flexibility. This system was applied to the concrete walls and slab of the water tank room, forming a watertight barrier.



Aquafin 2K/M Plus ensures exceptional durability and reliability for long-term waterproofing protection. Specifically designed for demanding waterproofing applications, it offers high resistance to water penetration by ensuring a secure seal that withstands constant exposure to water pressure within a tank. It is also considered an environmentally conscious product, due to it being a water-based, which reduces volatile organic compounds (VOCs) emissions and minimises environmental impact during application.

CHEVALINE DEXX PLANT ROOMS

The Chevaline Dextr liquid-applied, reinforced membrane was applied to the floors of level 2 and level 9 plant rooms, with a Traxx 2000 topcoat used in walkways for added durability.

The membrane is formulated in NZ for high adhesion and water resistance, creating a flexible, seamless, waterproof layer that is quick to apply and cost-effective.

Chevaline Dextr demonstrates environmental consciousness with its zero-odour application and low VOCs. Our in-house material recycling program further reduces environmental impact by diverting used paint from landfills, conserving resources, and minimizing pollution risks to soil and water.

MAINTENANCE

At Equus we aim to provide high-quality products that require as little to no maintenances as possible to keep ongoing costs down.

The underground and water tank waterproofing solutions are maintenance free, and the exposed waterproofing membranes essentially maintenance free. The only maintenance we recommend is usual roof maintenance such as cleaning gutters and outlets carried out by the facilities management team, and usual cleaning of the plant deck floor. In 15-20 years another topcoat is recommended to the Chevaline Dextr floor to extend the life and the warranty.

WARRANTY

Equus provided a material warranty on all products and systems. Each system has its own warranty and the warranty periods range from 15-25 years. Soprema also provided an insurance-backed warranty on the Duo membranes, as they do for all duo projects.

ECO CONSCIOUS FEATURES

Effective waterproofing of the hospital building minimises its environmental impacts by preventing water infiltration, which can cause structural damage and mould growth, it reduces the necessity for costly repairs and material replacements. And most importantly, enhances energy efficiency by sealing gaps and cracks, decreasing air leakage and energy use.

The warm roof mitigates heat loss through the roof and helps a building maintain its internal temperate, decreasing energy consumption for heating and cooling. This aligns with sustainable practices by reducing carbon emissions and promoting energy efficiency in buildings.

Keim mineral silicate paints, Chevaline Dextr and Aquafin 2K/M Plus are eco-friendly options with low VOC emissions. This reduces air pollution and environmental impact. Chevaline Dextr is also a product used in our in-house recycling program which reuses and repurposes paint materials.



Overall, our products exhibit long lifespans and exceptional durability, diminishing the need for frequent repairs or recoating and reducing waste.

Main Contractor: CPB Constructors

Architect: Katoa Health Design, association with Warren and Mahoney, Chow:Hill and Thinc Health

Equus Certified Applicators:

Roofs and Plant Deck: Waterproofing Concepts Ltd

Balconies: Waterproofing Concepts Ltd

Exterior Coatings: Canterbury Waterproofing Ltd

Underground Tanking: Canterbury Waterproofing Ltd

Water Tank Waterproofing: Waterproofing Concepts Ltd

Plant Rooms: Waterproofing Concepts Ltd

NEXT STAGE:

Construction is now underway of the \$83 million third tower project, next to the existing Waipapa Building completed in 2019. Situated on the eastern end, the tower will match the footprint, façade, and internal design of the current towers. Adding a further 16,000 square metres to the hospital, it is set to open in late 2025. As with the existing building, The finished tower will be waterproofing in Equus solutions. You will find a Duo roofing membrane, Keim exterior coatings, Chevaline Dexe interior plant decks, and Colphene underground waterproofing.

Our team are on site regularly in conjunction with Equus Certified Applicators WPC Ltd, and contractors Naylor Love providing QA and site meetings.

Product Solutions

- [Duo Membrane](#)
- [Duotherm Warm Roof](#)
- [Chevaline Dexe](#)
- [Keim Coatings](#)
- [Underground Waterproofing](#)
- [Contact Us](#)
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