



CAPABILITIES PORTFOLIO



We've built Insol on a culture of innovation and determination, we're solutions focused, and we pride ourselves on having great relationships with our suppliers and clients — allowing for open and honest project planning and ultimately, to get an exceptional job done.

Greg Simmons, CEO



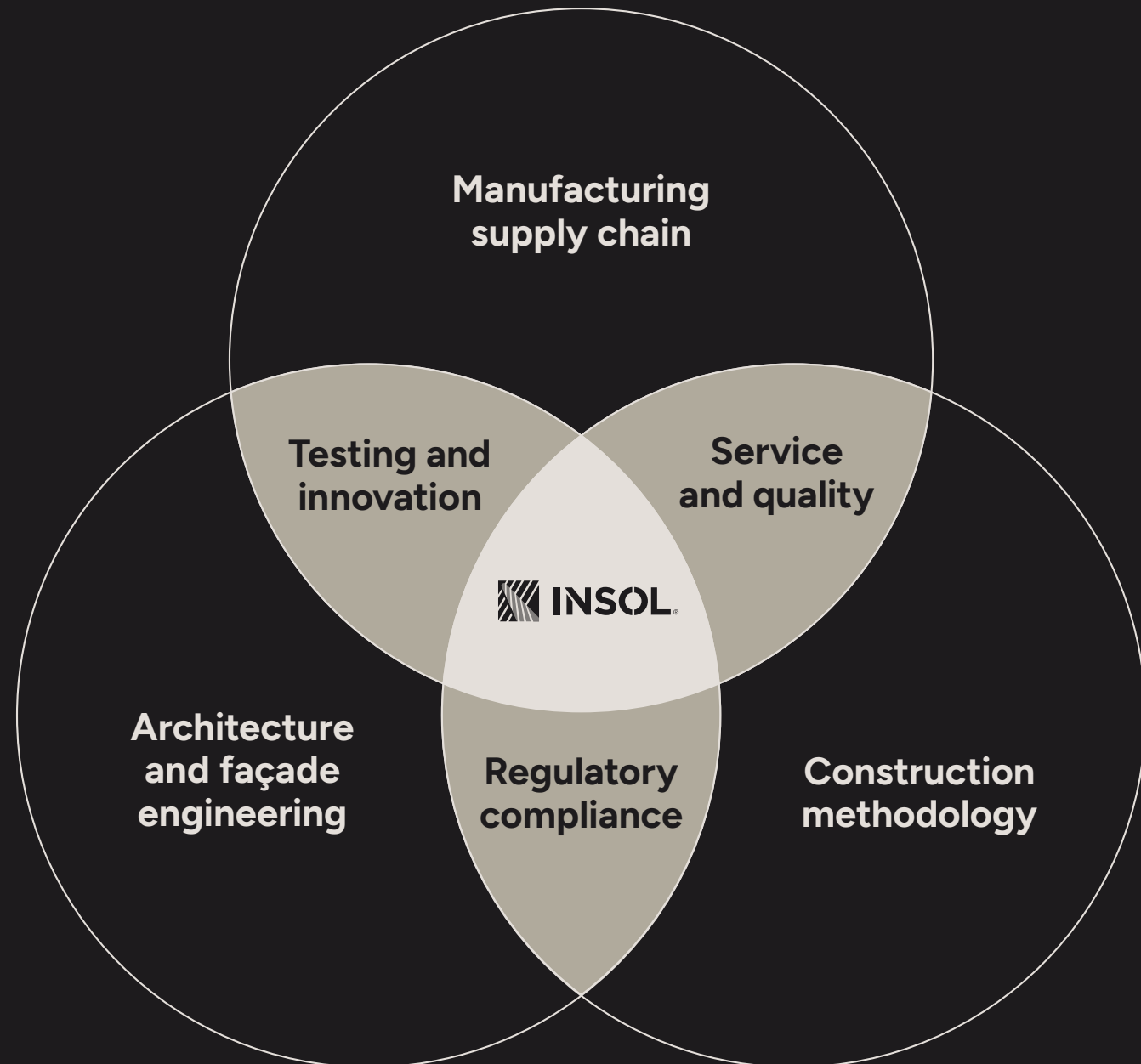


Insol is a family business with roots in the construction industry that date back more than 60 years.

In 2003 we started out with a vision of providing architectural louvre systems to high end commercial & residential projects. We were inspired by what was trending and developing internationally, brought what was happening abroad to our shores and adapted it to suit the NZ market.

Over the years our innovative, dynamic, and solution focused approach has lead to projects involving far more than just louvres. We are now completing large contracts as a full service provider of bespoke architectural facade enhancements.

Today we're proud to be a team of designers, engineers & project managers with a vast variety of skills and backgrounds. The large pool of technical knowledge and experience allows us to add significant value with design-build bespoke architectural facades. Our expertise in manufacturing and product design, coupled with our broad knowledge of architectural detailing and construction methodology brings solutions that are simpler, faster, and cost effective, while maintaining architectural intent.





Façade treatments have played a crucial role in architectural design for centuries. And today, architects can push design boundaries further than ever before with the smart application of technology

Architectural façades now contribute so much more to the aesthetics and performance of a building.

The design and performance possibilities are truly becoming endless.

Sophisticated facade treatments enhance property values and can communicate a profound message about the design and purpose of the structure. And intelligent design combined with innovative engineering can deliver solar performance benefits that contribute to the life-time energy efficiency of a building.

With today's stringent construction standards and the increasing complexity of project design and performance requirements, it's crucial to work with a professional and experienced company that you can trust to deliver on your architectural intent.

At Insol, our team of designers and engineers have a deep understanding of façade engineering. Our award-winning, innovative approach consistently out-performs others and exceeds expectations.

In this guide we showcase customised façade solutions that we've recently delivered for our clients to highlight the breadth of work and design and engineering excellence that we could bring to your next project.

Enjoy.



INSOL

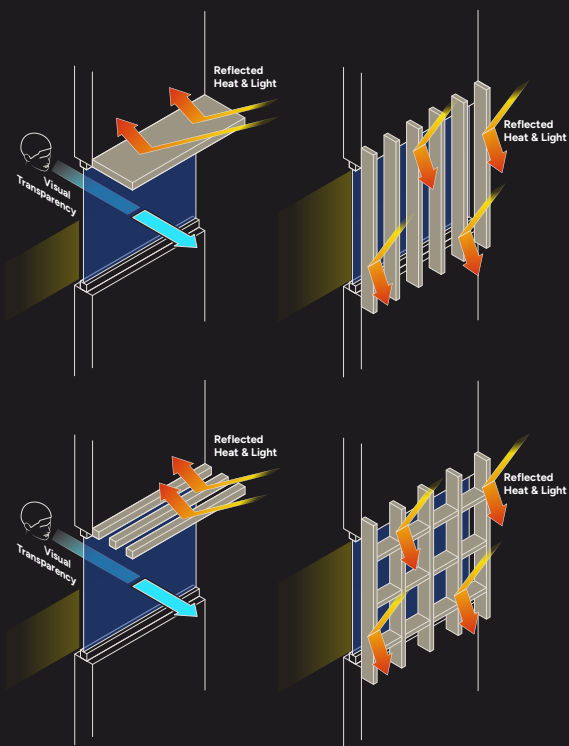
FAÇADE TESTING LABORATORY



Louvres

The right louvres enhance and define the character of a building. Beyond the aesthetics, they deliver real benefits for solar control, screening and occupant comfort. Louvres can be used for shading, aesthetics and privacy.

In the hot summer months when the sun is high in the sky, the louvres will shade your windows only allowing filtered light into the building. In the cooler months when the sun is lower in the sky, the angle of the louvres means that light can stream through into the building, keeping things warmer inside.



East Tamaki Multi-Storey Car Park, Auckland | Solaris Louvre





East Tamaki Multi-Storey Car Park

Location

East Tamaki, Auckland

Architect

Warren & Mahoney

Contractor

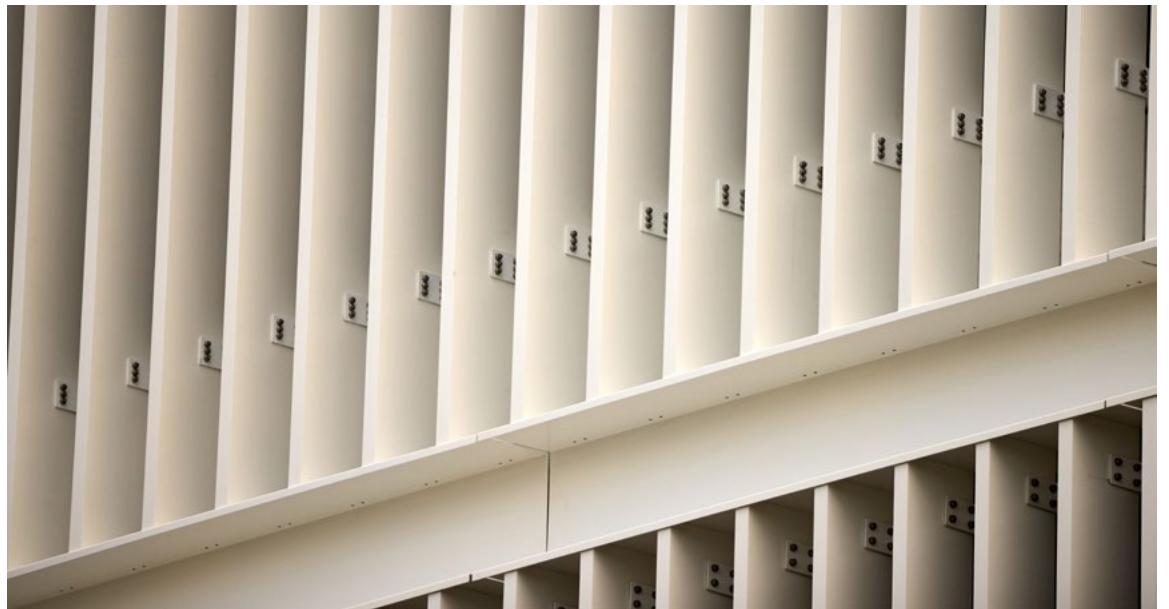
Macrennie Commercial Construction

This large multi-storey car park in East Tamaki extends over 6 floors, with room for over 945 vehicles and multiple charging stations for EVs. The original design included the mandatory vehicle impact barriers and pedestrian fall restraint as separate from the louvred facade exterior — a necessary complication for car park users that adds safety but detracts from the architectural vision.

Multiple elevations of the car park are wrapped in Insol Solaris louvres. Secured vertically at 300mm centres, behind each level is a bird mesh and continuous crash rail. Then the louvre panels are fixed at the floor level with a continuous aluminium channel. The strength of the fixings was engineered to meet the Building Code, turning each louvre blade into a vehicle impact barrier capable of containing an out of control vehicle, preventing it from plunging over the side.

Now complete, the East Tamaki Car Park is one of the most rewarding projects we've been involved with from a purely engineering perspective.







25-27 Landing Drive

Location

Māngere, Auckland

Architect

Jonathan Walker Architects

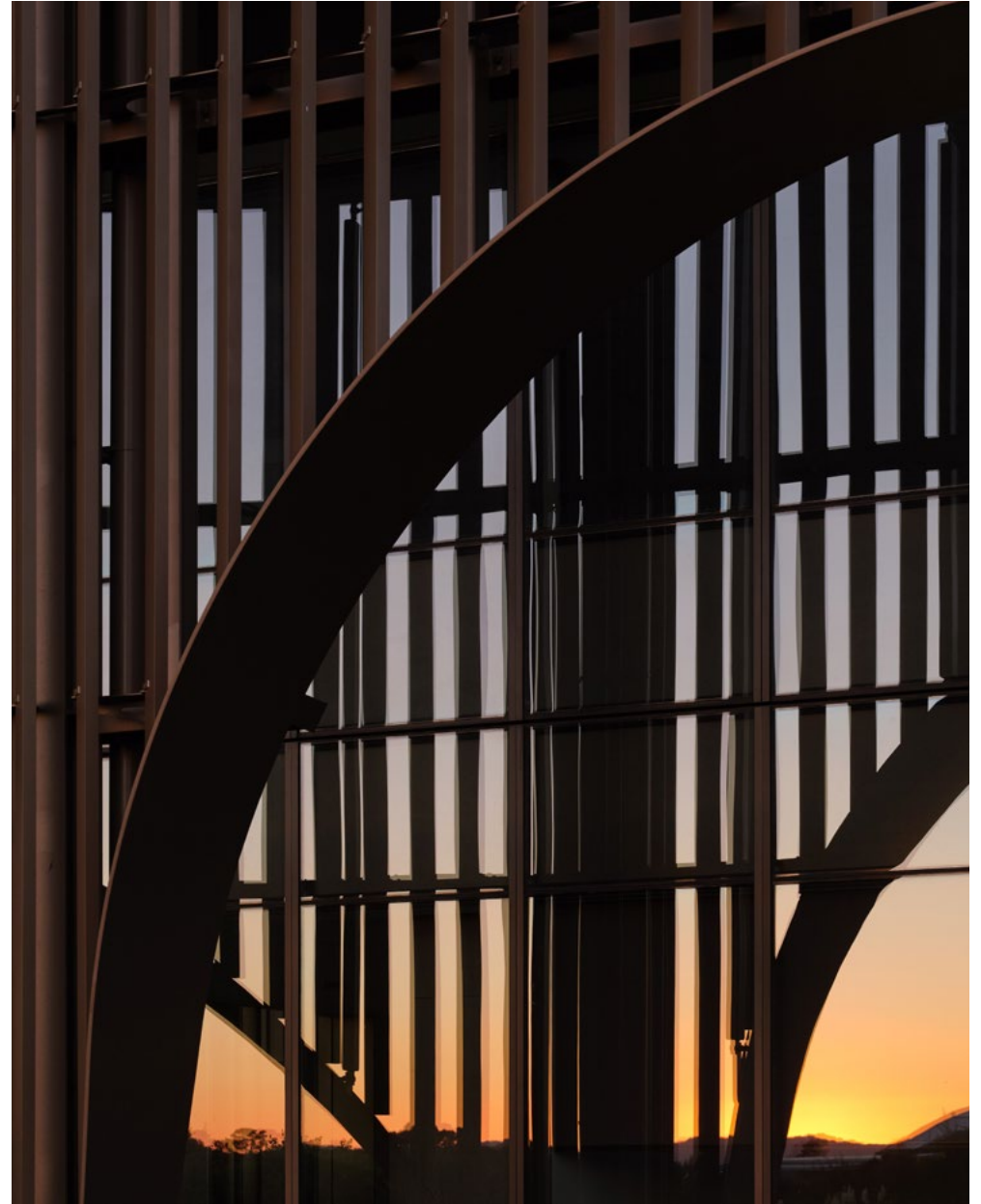
Contractor

Q Construction

Located 3 minutes drive from Auckland Airport, The Landing is a multiple award-winning business park and home to New Zealand's logistical, technological and light commercial sectors. The latest addition at 25-37 Landing Drive comprises two new warehouses and ancillary offices, with yard space. Designed as a single contiguous structure, the two warehouses are separated by a full height internal wall. Warehouse A provides 10,366m² with an additional 225m² of office space on each of the two floors. Warehouse B is smaller at 5,592m² with an adjoining single level office adding a further 317m².

Solaris 150x50 louvres are used to create an impactful feature, with different blade lengths used to span from the roofline to where they reach the curved steel eyelash structure. On office A, a total of 118 louvre blades were used, with 48 used on the single story office space at Office B. Fixed at 300mm centres, the blades were supported by steel tab upstands at the base of the curved eyelash, and to a secondary steel structure behind the louvres where longer spans are required. All louvres were finished in a standard Duratec powdercoat with a 25 year coating warranty.







West End Car Park, Christchurch | Custom Louvre



Aotea Centre Theatre, Auckland | Custom Louvre



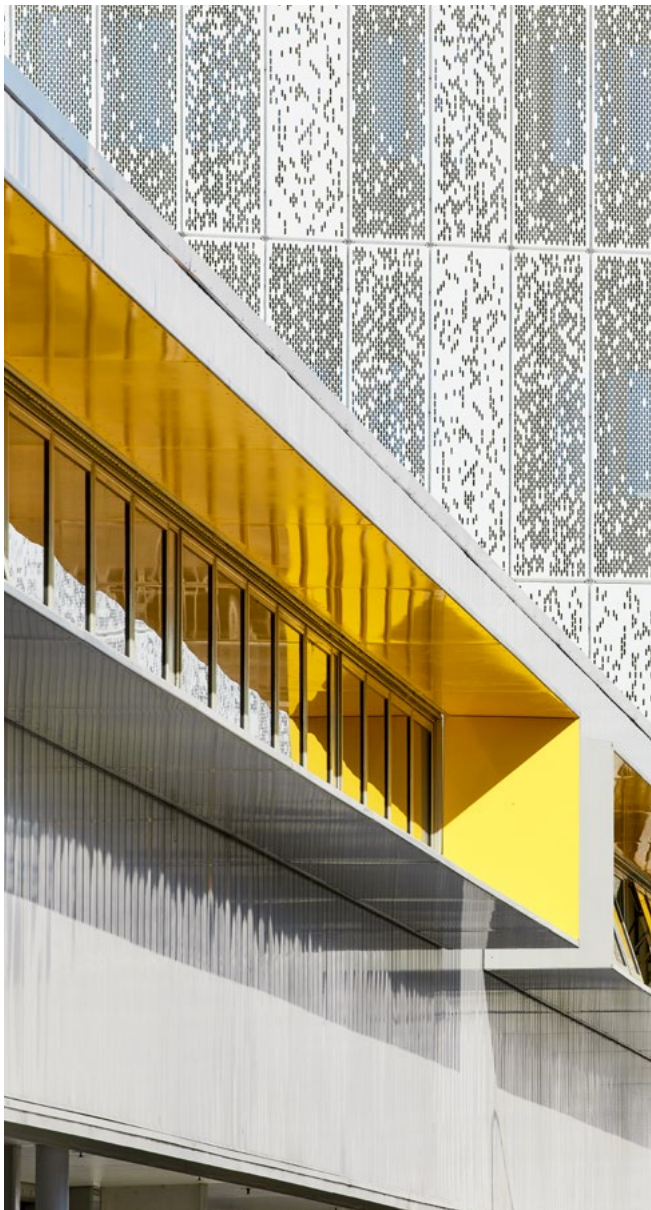
Mount Albert Grammar School, Auckland | Dapple "Dusk"



Queensgate Shopping Centre, Lower Hutt | Solaris Rectangular Louvre



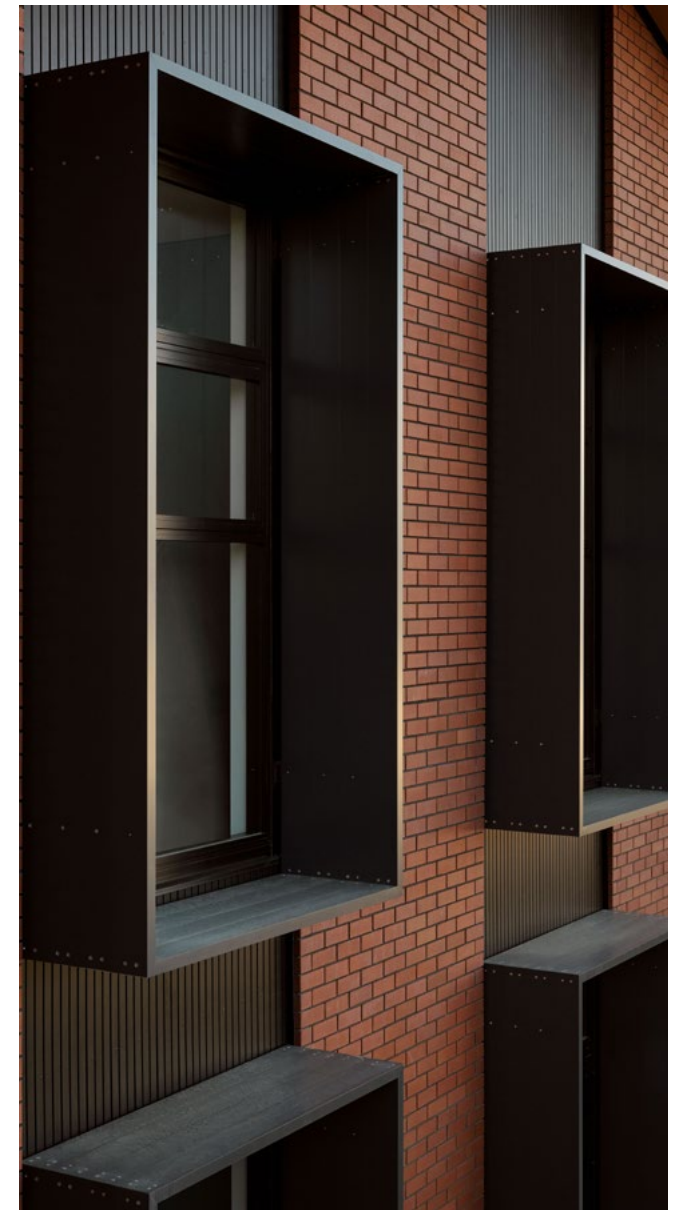
38 Glenda Drive Office, Queenstown | Aurora 200 Louvre



University Campus, Christchurch | Custom Window Shroud



Rolleston Library, Canterbury | Custom Rainscreen Louvre



Murrays Bay School, Auckland | Solaris Window Shroud



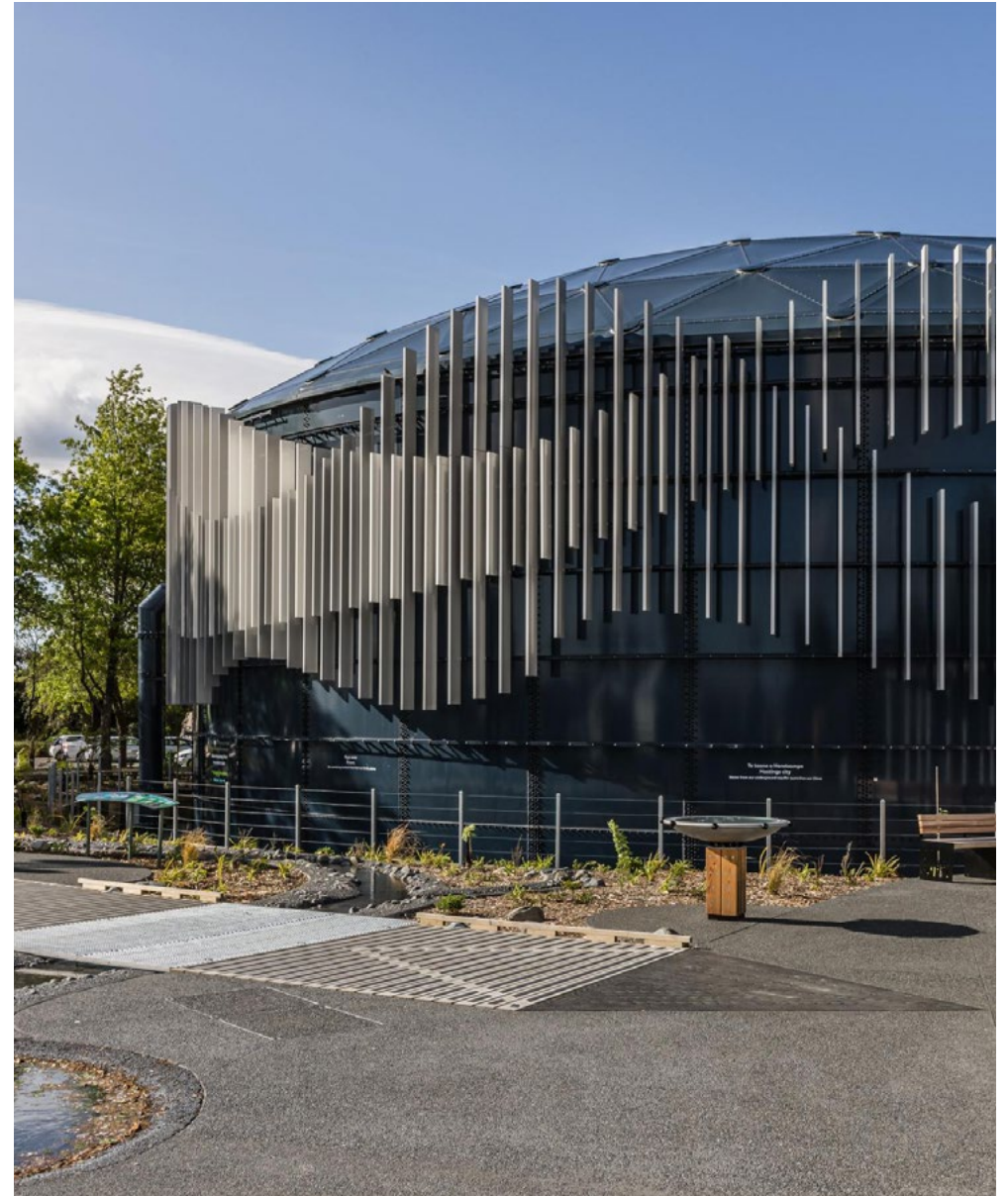
The Pā: University of Waikato | Custom Caldera Aluminium and Glass Louvres



Blue Mountains Campus, Upper Hutt | Solaris 300 Louvre



Sylvia Park Tower, Auckland | Custom Sunshade Fins and Vertical Louvres



Waiaroha Heretaunga Discovery Centre, Hastings | Solaris Louvre



Outlook Apartments, Auckland | Custom Aluminium Tube Screen



Dapple / perforated screens

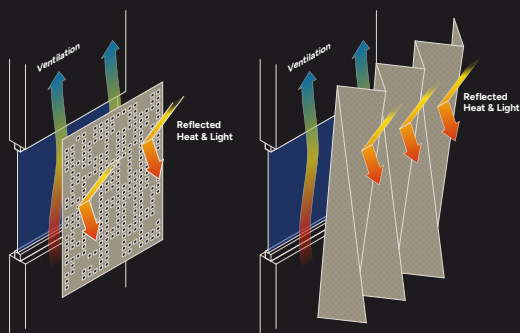
Perforated Screening is highly effective for diffusing light, allowing it to pass through while reducing intensity.

It is an efficient method for covering large areas, and often used as decorative accents, either over cladding as a rainscreen or over glazing as shading.

As well as shading and privacy, it also has some benefits for noise and sound suppression, which helps create quieter and more comfortable environments.

Also known as double-skin facades, ventilated facade systems will help in protecting buildings against the combined action of wind and rain.

Treatments can be applied to new or on older buildings as part of adaptive re-use upgrades.



Lichfield Street Car Park, Christchurch | Custom Dapple





Auckland International Airport Transport Hub

Location
Auckland

Architect
Peddlethorp Architects

Contractor
ICON Construction

The design of the Transport Hub talks to a narrative of 'people will keep moving but the land will remain', referencing the cultural framework of the airport.

At the same time, the design has lines to reflect the ascent/descent of airplanes on the runways nearby. Featuring perforated metal in two different colours and perforation sizes (a custom version of Dapple "Dusk"), the facade extends to the concourse area on the southern side of the building, where they are joined by the large perforated fins that also feature on the office space.

In total, the Transport Hub has 8500m² of facade. That's a lot of perforated holes in an area located in a high wind zone, which is why comprehensive wind testing was completed at WindLab prior to design approval.







Les Mills Car Park

Location

Auckland

Architect

Warren & Mahoney

Contractor

Leighs Construction

The project involved screening the entire carpark with a façade that was porous and had textural depth. The architectural intent involved a three dimensional diamond pattern that was perforated and interspersed with bronze tinted vision panels.

The initial designs involved a heavy three-dimensional structural steel frame with flat panels fixed to it. We were able to provide significant value engineering wins for the client by simplifying the structural steel frame and creating the three dimensional effect within the façade panels.

Further value was added by designing the structural steel subframe so that it would double as the vehicle barrier, and the façade to act as the fall arrest barrier.

Installation was carried out from the inside with the panels being winched down from the to deck level of the carpark.

The result was a distinctive building that looks different from almost every angle thanks to a unique 3-dimensional profile. By day, the landmark structure catches the eye. After sunset, it comes alive and sparkles, a glittering addition to Auckland's nightscape.







Ormiston Town Centre, Ormiston | Custom Dapple and Custom Louvre



Holiday Inn Express, Queenstown | Custom Perforated Panels



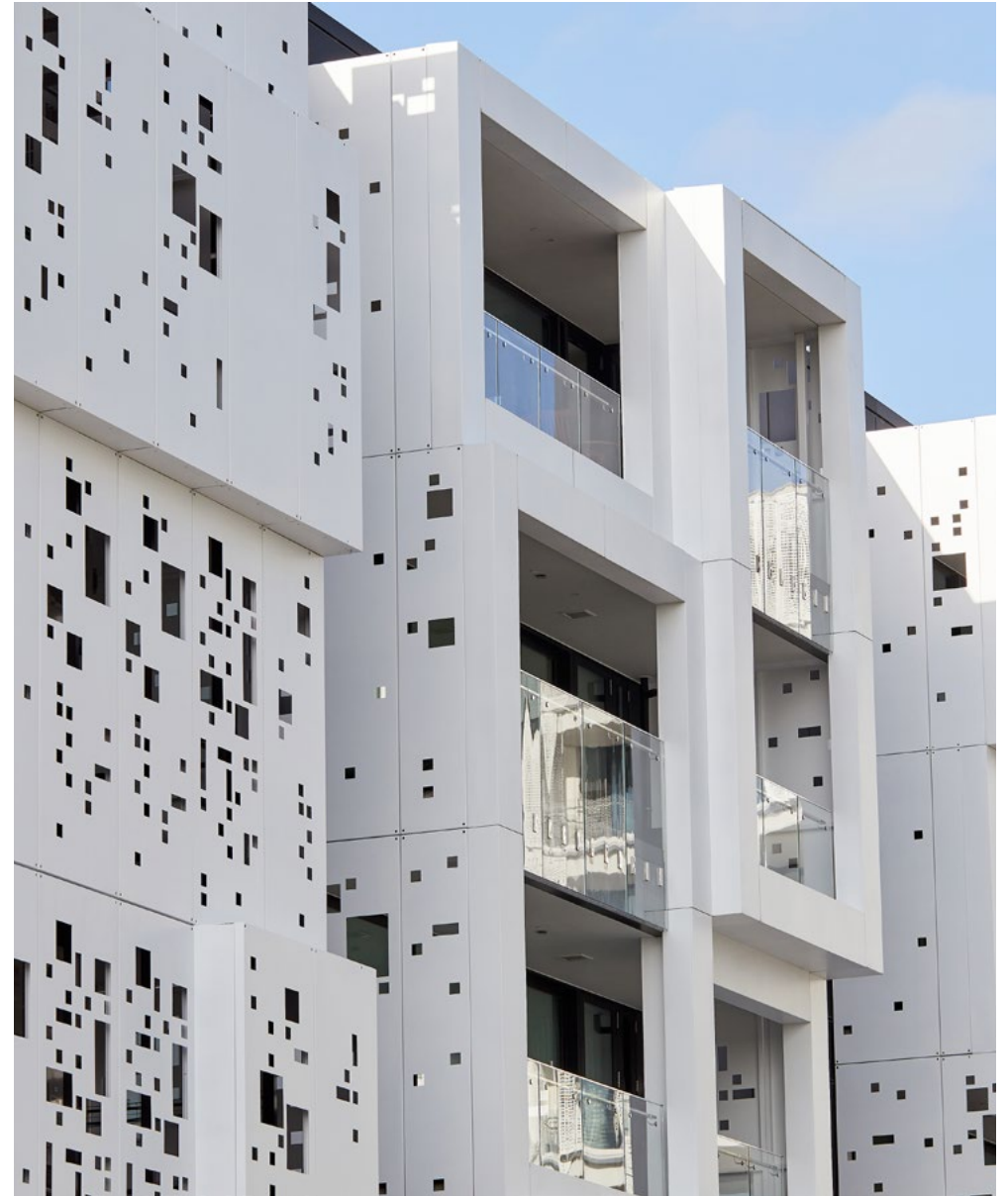
Thirty Eight Elizabeth, Tauranga | Caldera Louve



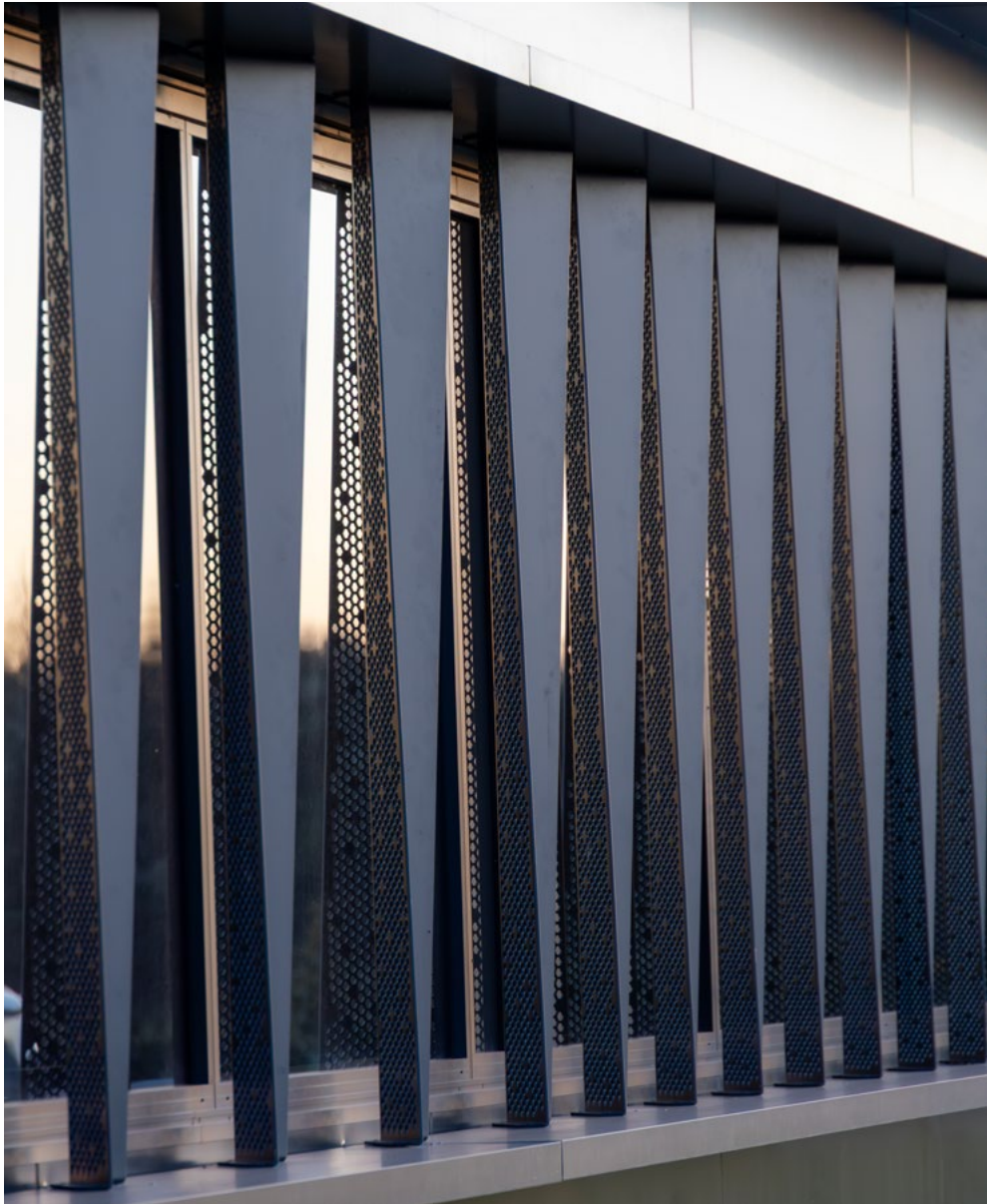
Lichfield Street Car Park, Christchurch | Custom Dapple



Forte Health, Christchurch | Custom Dapple



Alexandra Park, Epsom | Custom Dapple



Whites Powersports, Hamilton | Dapple "Starlight" Fins



College Hill, Auckland | Dapple "Light Burst"

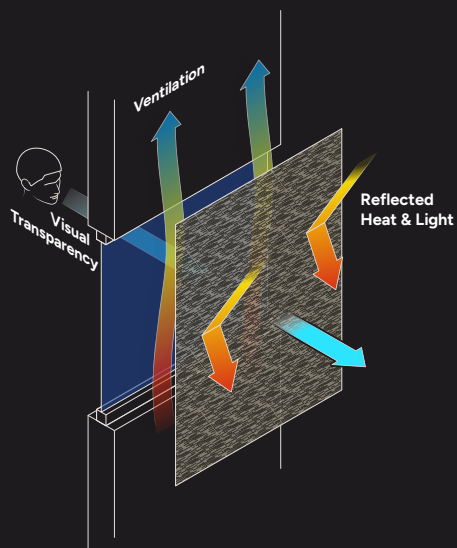


Fabric and mesh

Fabric and mesh screening is well known for its ability to provide shading and privacy benefits with a very little impact to the view out of the building.

It is lightweight so does not require excessive support structure, and able to cover large areas efficiently. As well as shading, cooling and privacy, it also has some benefits for noise and sound suppression, which helps to create quieter and more comfortable environments.

Also known as double-skin facades, ventilated facade systems will help in protecting buildings against the combined action of wind and rain. Treatments can be applied to new or on older buildings as part of adaptive re-use upgrades.



Toka Puia Car Park, Auckland | Custom Dapple Mesh





Toka Puia Car Park, Auckland | Custom Dapple Mesh



Xero Building, Wellington | Tensioned Fabric



Park Hyatt Hotel, Auckland | Custom Mesh



12 Oxford Terrace, Christchurch | Tensioned SS Mesh



Hereford Street Car Park, Christchurch | Custom Mesh

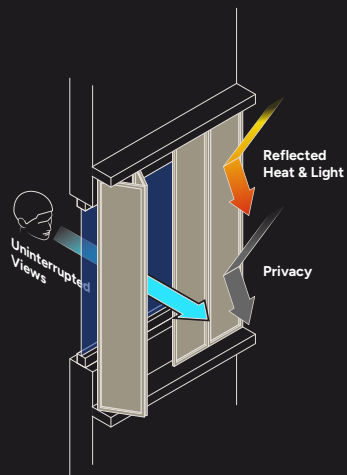


Operable screens

Operable screens sit outside the building envelope to provide protection from the sun, but can be opened to highlight beautiful views. When closed, shutters create a solid barrier that blocks the view into the building, providing a sense of privacy and security for those inside. In addition, screens will regulate the amount of light that enters a home, reduce noise pollution, and add to the overall aesthetic of the structure.

Operable screens are typically either sliding or bi-folding, and can be manually operated or fully automated.

Many infill options are possible including perforated metal, mesh, fabric and slats. The location of sliding screens creates an extremely demanding environment for mechanical structures, and particular attention (including extensive testing) must be taken when designing and specifying operable louvre screens.



Hills Lodge, Arrowtown | Aurora 150 Operable Louvres

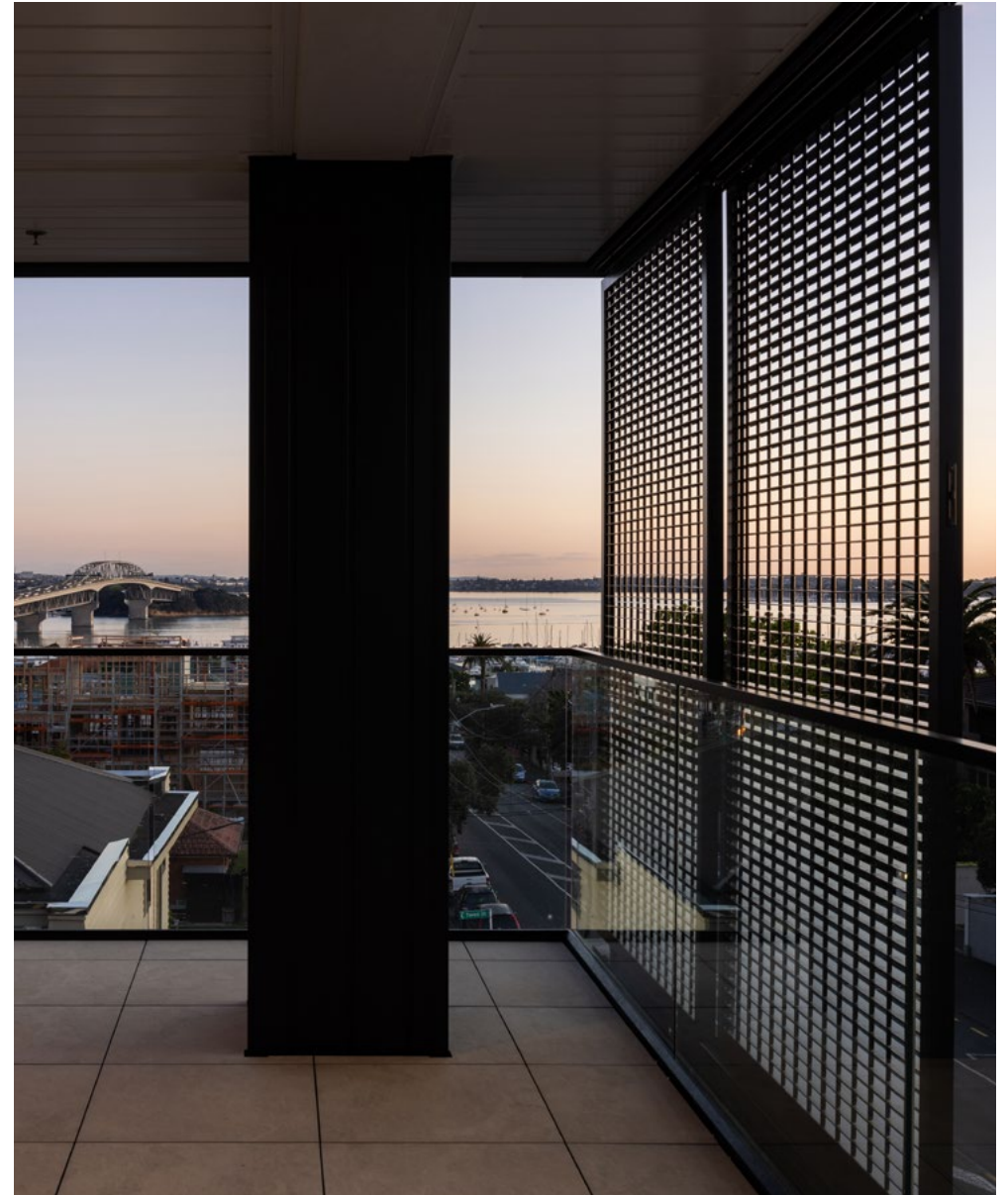




Wellington City Mission, Wellington | Dapple "Custom pic-perf"



Park Hyatt Hotel, Auckland | Custom Mesh



XXXII Shelley Beach Road Apartments, St Marys Bay | Azimuth Sliding Screens



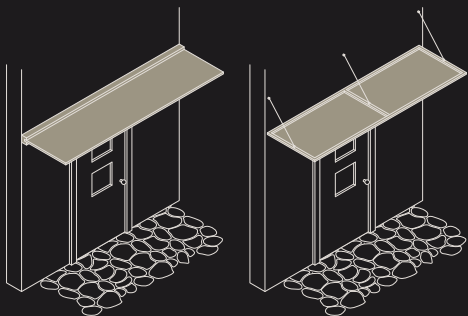
Canopies

Pedestrian friendly areas are characterised by the need to maximise the ease and comfort of the walking experience. They must have good 'walkability' if the built environment is considered to be walking friendly.

Research shows people don't walk where there is poor quality lighting, a lack of shade and/or a lack of shelter from inclement weather. Canopies help overcome each of these objections. Where local Councils have designated Friendly Zones, canopies are usually subject to design considerations within the rules for Pedestrian Friendly Frontages.

Our canopies will help businesses (and Councils) meet the guidelines and goals set. They can provide continuous weather protection and form the essential link from location to location. We have designed canopies which create both aesthetic and social benefits, creating the best possible conditions for pedestrian freedom of movement.

They provide an economic boost to shopping areas, with studies showing a pedestrian first design improves retail performance and competitiveness.





6 Carr Road

Location

Mt Roskill, Auckland

Architect

RCG

Contractor

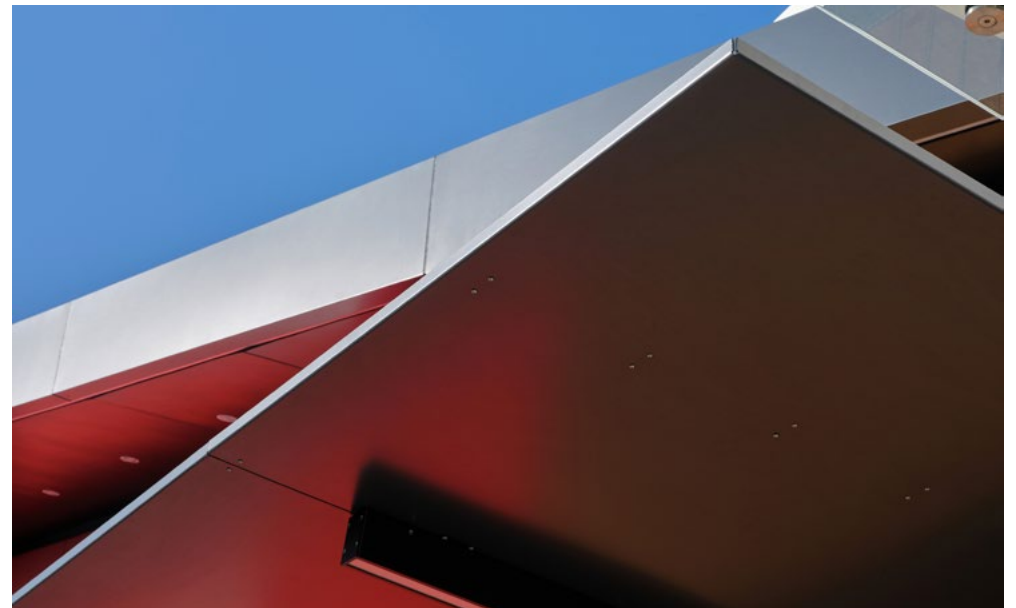
Macrennie Commercial
Construction

6 Carr Road enjoys impressive road frontage and easy access via the nearby State Highway. The development included new builds and the refurbishment of existing industrial units.

To make these buildings more attractive and consumer friendly, the architects wanted a canopy which would provide a sheltered walkway for shoppers, allowing them time to slow down and dwell (if they like) before entering the store. This aids the transition from the outside to the decompression zone immediately within store entrances, which is an important design element in influencing buyer behaviour and maximising retail sales.

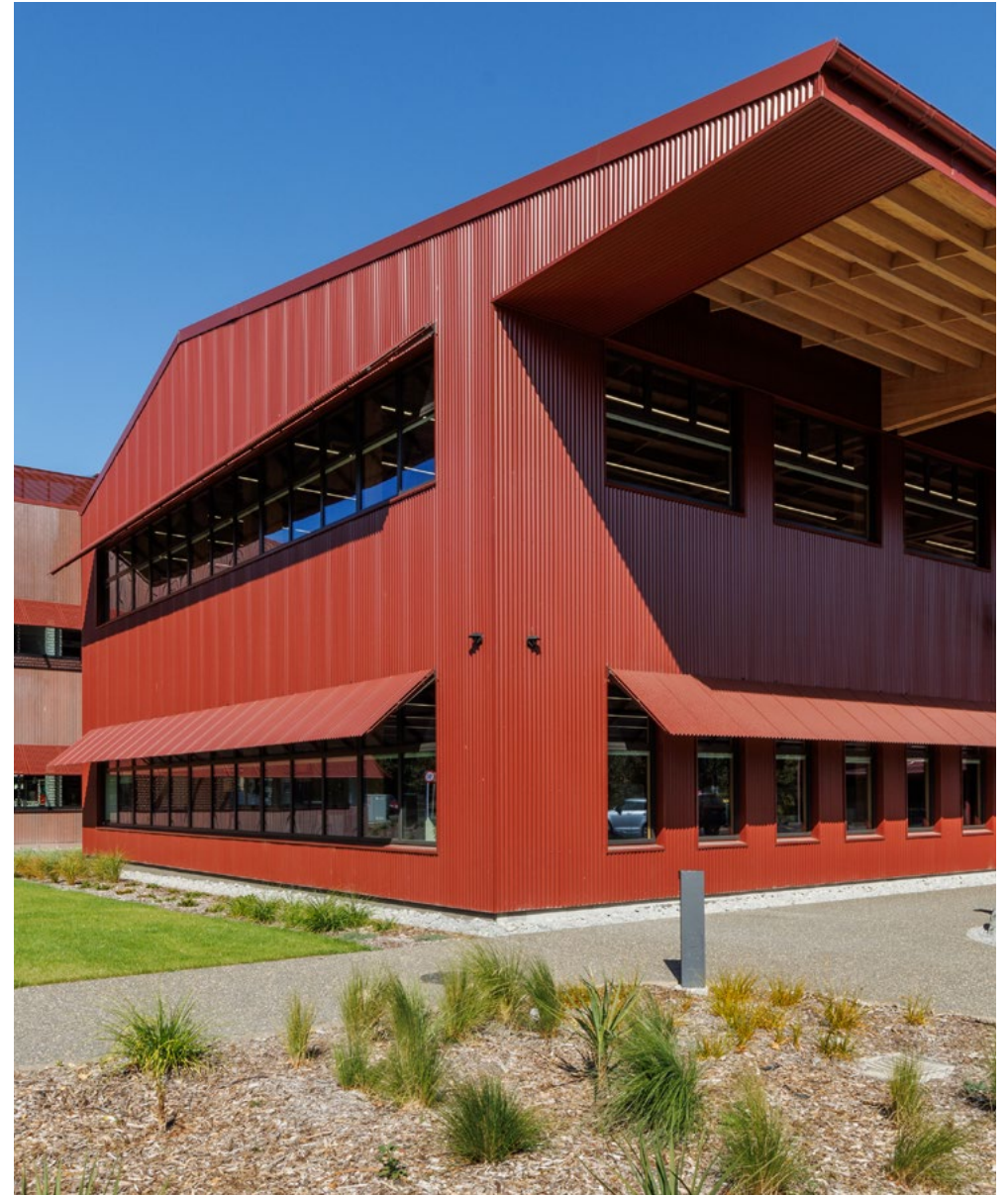
The design included 4mm aluminium canopies, 2m deep, with strengthened laminated glass canopies at each end. Integrated lighting and signage adds to the retail branding opportunity and extends a warm welcome to customers after dark.







Ngāmotu House, New Plymouth | Custom Dapple Rainscreen, Solaris Louvre



AgResearch, Christchurch | Dapple "Twilight" Sun Shade



Paisly Place, Auckland | Equinox Canopy



Farmlands Hastings | Equinox Canopy



The Insol Wind Tunnel

With the ability to generate a constant wind speed of up to 200 km/h (124 mph), the Wind Tunnel at the Insol Facade Testing Laboratory is unique in the Southern Hemisphere.

Louvre profiles, connection details, and assemblies can be tested at full scale. Wind related issues such as wind noise and aero-elastic flutter can be ironed out in the process. Performance and behavior of dynamic elements such as sliding or bi-folding screens can be determined in a safe environment.

This testing is unique to Insol.

For more information about the Wind Tunnel, please refer to our website or scanning the QR code below.

insolarchitectural.com/windlab



WindLab™





Auckland International Airport

The Auckland International Airport Transport Hub is arguably the busiest in the country. With over 10,000 vehicle movements per day and tens of thousands of passengers walking past, any issues of noise from the perforated facade would create a significant and embarrassing problem for our gateway to the world. Testing the initial perforated pattern found noise generation to unacceptable levels at 15 m/s (or 54 km/h) with a very unpleasant pitch recorded. With tolerance for wind-induced noise set to zero, the testing followed an iterative process whereby each pattern created was altered until no noise was recorded.

By incrementally changing the pattern we were able to preserve the original vision for the Transport Hub. No noise was generated by the adapted pattern even in wind speeds exceeding the daily average at the Airport, or at an expected (and unexpected) gust level.

Furthermore, we were able to prove the fixings would be able to hold fast against vibrations and expected wind loadings, maintaining the structural integrity of the facade.

WindLab™







Kōawa Studios

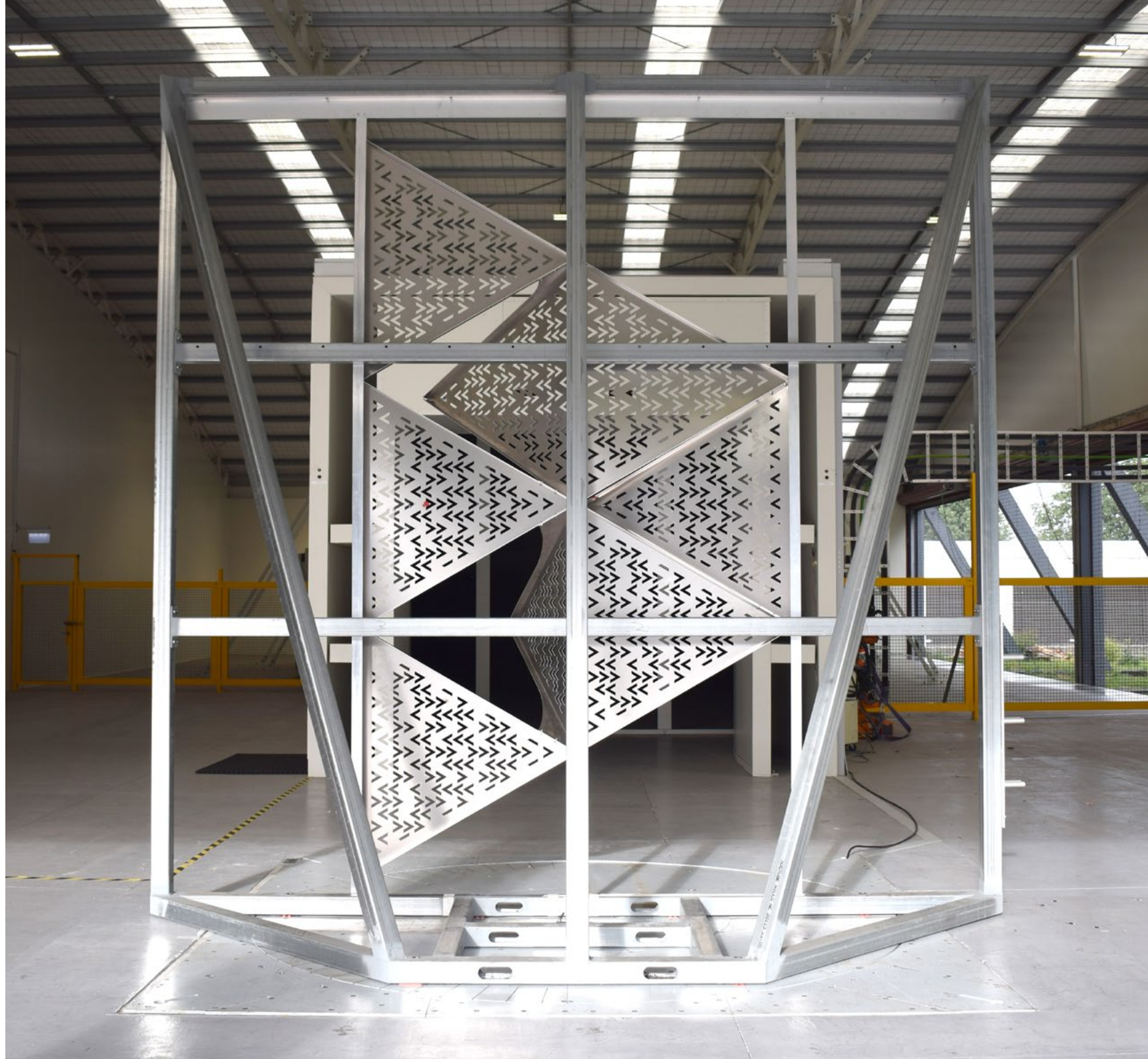
Kōawa Studios houses state-of-the-art facilities including sound recording studios, sound edit suites, foley, motion capture and stop motion animation studios, green screen and virtual production sound stages, mill space, computer labs and a multipurpose theatre for e-sports and events.

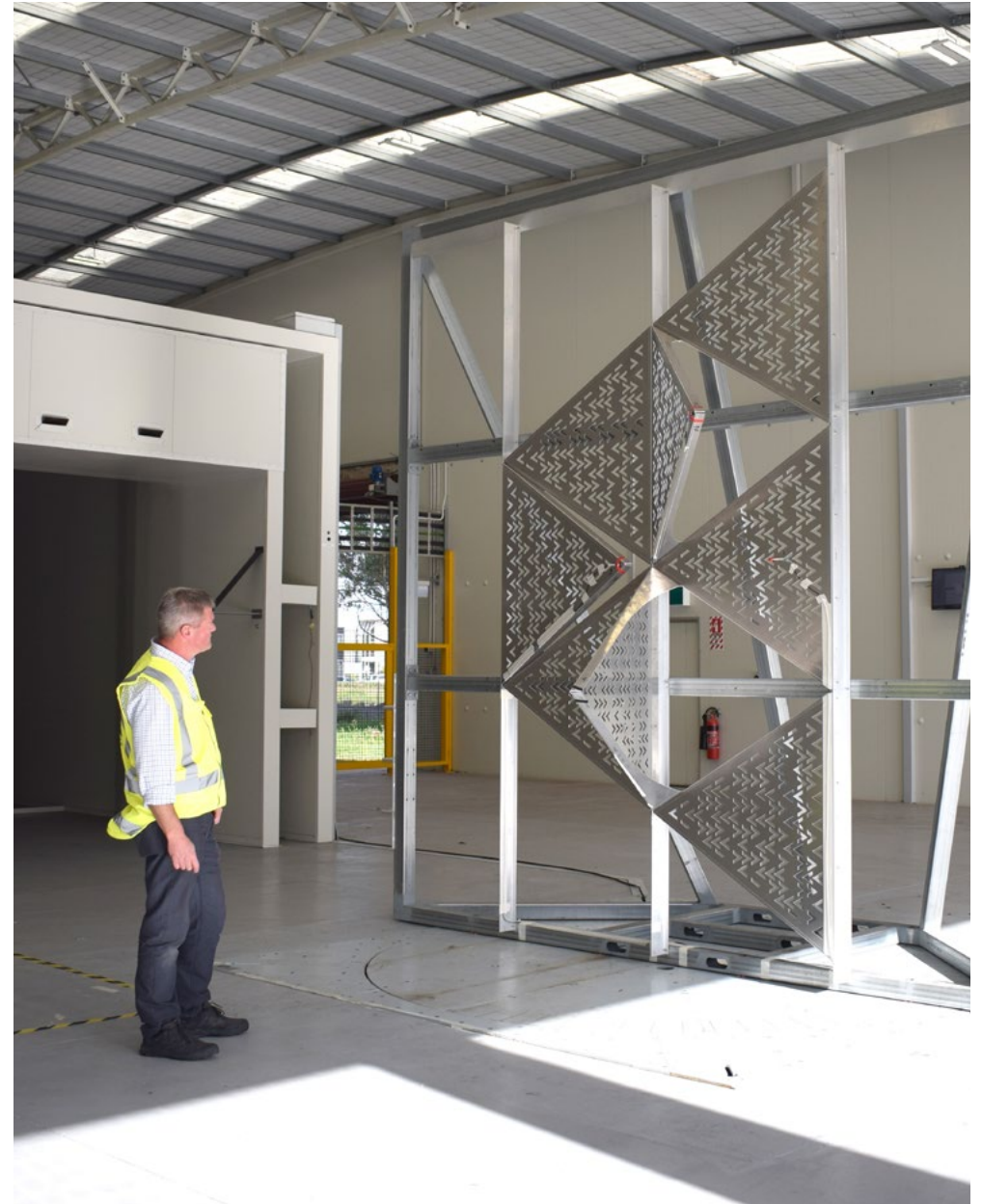
With the stakes so high and no appetite for a 'take two' when it comes to the design of the building, it was imperative every element was tested.

This was especially true for the 700+ triangular panels which will cover the entire west facing facade of the facility. Approximately half of these panels protrude outwards at various angles, effectively creating a series of sails with multiple opportunities to catch the wind and whistle.

A PMU was constructed to accurately represent a 3x3 section of the facade. The 6 triangular shaped perforated facade sections would be rotated and angled on the wind tunnel turntable to systematically check through to the worst case scenario for wind induced noise. No acoustic or deflection issues were detected during testing.

WindLab™







Scammonden Bridge

Scammonden Bridge, part of the M62 motorway in West Yorkshire, England, was upgraded in 2020 with a 2.4m high anti-climb fence. However, the high winds that have plagued the bridge since its opening, and which led to the development of a new road sign for high wind zones, caused the new fence to deteriorate within three years due to vortex induced oscillation (VIO). The wind-induced vibrations caused sections of the fence to fail beyond repair.

To resolve the issue, the client engineer proposed a solution involving mass dampening, which required comprehensive testing. Windtech engaged our team to conduct wind tunnel tests at the Insol Wind Tunnel, where we tested a performance mock-up of the fence under varying wind speeds. Initial tests showed promising results, significantly reducing vibrations, but some VIO remained, prompting further adjustments to the design. After refining the design, vibrations were reduced to a negligible level, confirming the new fence would effectively counter high winds and last much longer. This ensures the fence can now function as intended, enhancing safety for both pedestrians and motorists on Scammonden Bridge.

WindLab™





Services we provide

Our experience and innovation challenges the status quo and delivers outstanding solutions. We seamlessly take your architectural façade projects from concept to completion. Creating unique façade solutions, that look superior and function to perfection.

Design

We provide design and engineering services supported by advanced computer modelling and physical tests. Our design skill and experience means we successfully tackle large and complex projects with demanding architectural details and construction methodology.

Function

We have the widest range of sun shading and ventilation louvre profiles available in the industry, operable roofs, high performance ventilation systems and bespoke façade systems.

Installation

We have a nationwide network of fabricators and carefully selected installation crews. Being closely associated with five partner companies across Australasia, we're able to call on significant resources enabling us to undertake large, complex projects anywhere in the South Pacific.





Meet the team



Greg Simmons | CEO



Tom Simmons | General Manager



Jim Hart | Lead Designer — Special Projects



Bradley Murray | Pre-construction & Design Manager



Daniel Forrest | Project Management Support



Vincent Murray | Operations Manager



Dale Condon | Factory Manager



Archie Simmons | Client Relations



Shane Hart | Client Relations



Insol – the choice for superior solutions

We're a team of professional and trusted innovators who truly understand the requirements of both architects and construction professionals.

Our experience across design, engineering, manufacturing and construction projects is unmatched by anyone else in the industry. We will work with you to custom design, engineer and build to your specific requirements.

If you're wanting superior architectural façade solutions to suit New Zealand conditions and construction and design standards, then we're the team for you.

Got a project that requires a unique facade treatment?

Share your plans and get advice from our experts.

enquiries@insol.co.nz

University of Canterbury Engineering Precinct,
Christchurch | Custom Window Shrouds



CAPABILITIES PORTFOLIO

We design and manufacture complex and
beautiful facades to meet the needs of
architects around the world

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