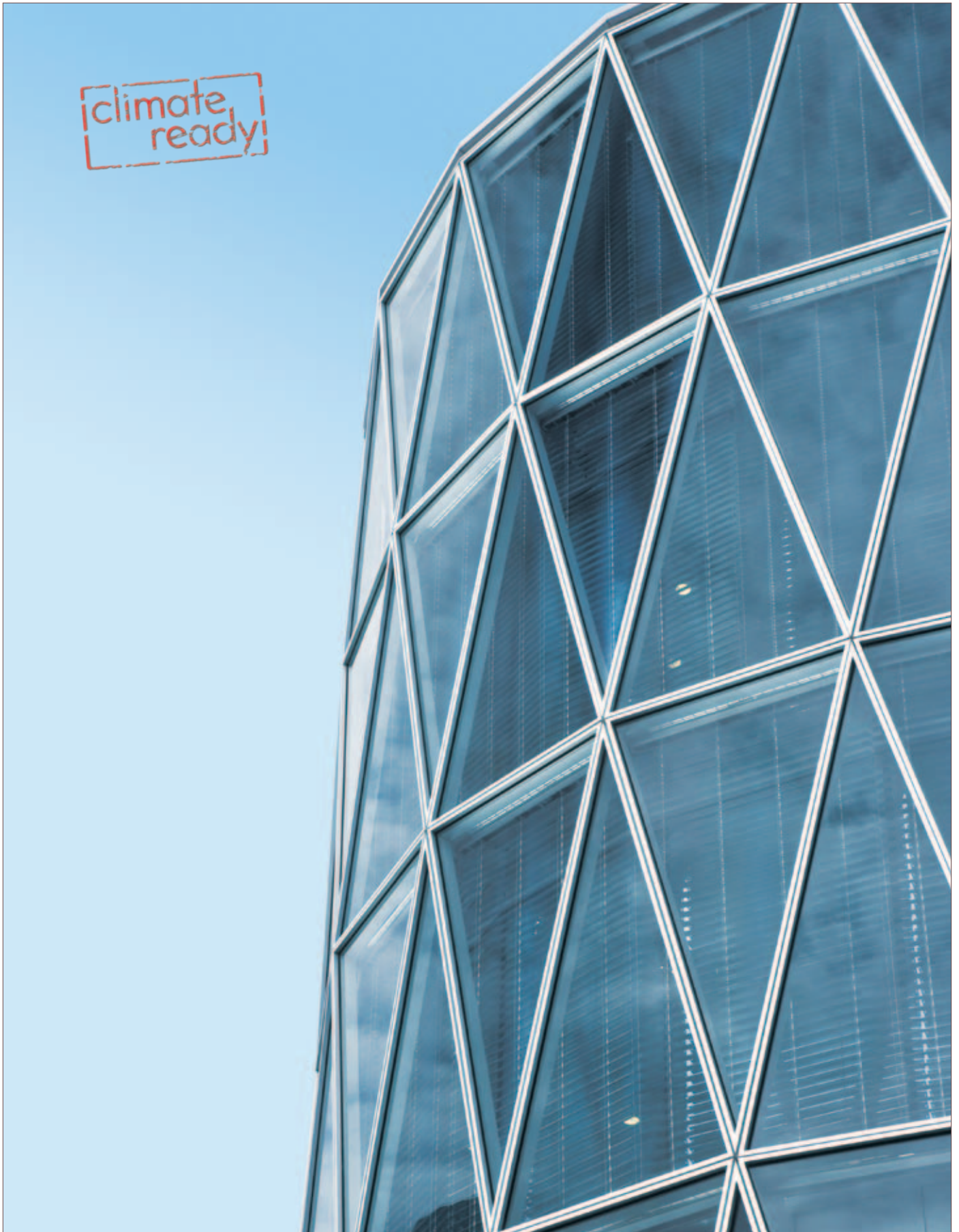


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NZI - Auckland, New Zealand

Building highlights innovative functionality within an unique infrastructure



Owners - M6 Investments and Newcrest Group

Architects - Jasmax

Client - IAG New Zealand

Project Manager/Contractor - Scarbro

Builder - Scarbro Construction

Engineers - Buller George Engineers

Facade Contractor - Connell Wagner

Facade Consultant - Thermosash

Awards - NZ Green Building Greenstar NZ 5
- Interiors 2009 Pilot Certified Rating.
- New Zealand Property Council Awards 2010
Winner Supreme Award

Photography: Simon Devitt

Above: NZI's north west elevation .

NZ Green Building Council's Greenstar NZ 5 star rating for Office Design

The NZI Centre is a commercial office building bordering Auckland's CBD. It is on the site of the former Seamart building in the Viaduct Harbour precinct and was completed in 2009.

The architectural firm, Jasmax collaborated with Connell Wagner facade engineers, Stephenson & Turner mechanical engineers and Thermosash to design the triple glazed, double skin diagrid facade. The innovative glazing system was integrated on four of the five office levels with Horiso manufacturing the Specialty Venetian Blinds for installation in the facade void.

The tenant NZI, was the first business in New Zealand to occupy a 5 Star Green Star building. The move was part of their sustainability objectives; to be carbon neutral by 2012.

“The office building is leading the way within New Zealand for the new generation of socially responsible developments that place the occupant environment at the centre of the design.” Jasmax, Architects

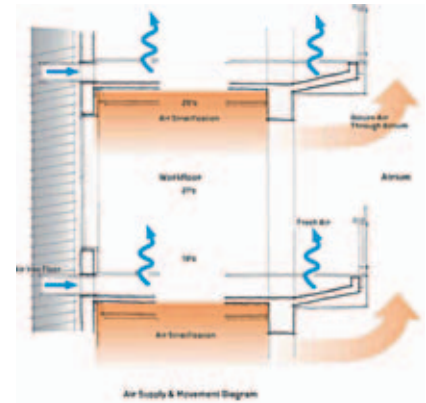


The NZI Centre is located on the corner of Fanshawe Street and Nelson Street overlooking the Viaduct Basin with extended views of Freemans Bay.



Office Design and a Green Star NZ 5 Star – Interiors 2009 Pilot Certified Rating.

The first step was the creation of a void that formed the atrium between the arc floor plate and the facade. This became a key element in providing environmental benefits. Fresh air infiltrates the building, and natural light penetrates all floors through the circular skylights. A naturally displaced return air path; stack effect; removes the need for a ducted return air system with a high energy consumption.



The void also created an arc shaped floor base along the western side of the building, providing several benefits. Ideal floor plans could be developed, the main facade could be placed to gain the most natural light infiltration and an opportunity to design the interiors to “embrace the outside environment”.

The external architectural skeleton of the building has five facades each facing a different direction. Collaboration with several industry experts included analysing and testing solar control and urban design options to ensure the required outcomes were attained.

Three of the building’s facades became floor to ceiling double glazed skins with a diagrid outer structure. Natural light filters through providing the

Cover: Top left: Aerial view showing building surroundings.
Top right: Atrium level with antilevered stairs.
Above: Building air flow diagram.

A New Direction

The social and environmental focus for the new NZI Centre was integral in the brief given to Jasmax to design a building that would meet, as a minimum, the NZ Green Building Council’s Greenstar NZ 5 star rating for Office Design.

“The country’s first large new office block to have under floor air conditioning.”

Jo Mullany - IAG, Communications and Media Manager.

This strategy was considered to be the first of its kind in a commercial building project in New Zealand. The design involved delivering internal aesthetics, comfort and functionality for the occupants, while being externally pleasing in its prominent surroundings.

Architectural Concept

The concept was developed from studying the site and its surrounding environment. The design objective was not to shut out the external life of the city and to balance this internally with a quiet, diversified working environment for a single corporate tenant.

Design Initiatives

The main challenge to overcome while designing the building, was its triangular footprint on a busy intersection. However, the site had other location advantages, its close proximity to ferry, bus and rail terminals for easy transport access and the mature trees to the west would provide in part, a natural view. Several design strategies were explored and with input from other parties, the final design produced initiatives never achieved before. At every level, the building was designed with Environmentally Sustainable Design (ESD) principles and with an aim of achieving a NZ Green Building Council’s Greenstar NZ 5 star rating for

“It was about having a focus that allowed staff to look into the atrium and then into the city.... where the life of the building revolves.”

Nick Moyes - Jasmax Design Director.



occupants with city views on all 4 levels. All five facades required excellent thermal heat gain and solar glare control,

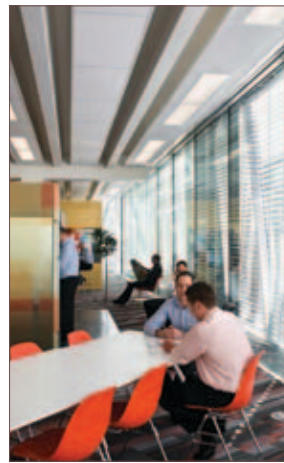
Project collaboration and Green Star input

The local company New Zealand Window Shades was contracted by Newcrest to provide the solar control solutions for the project. They understood the highly technical challenge of producing different solutions for the facades including taking into account the buildings' skeleton curvature. New Zealand Window Shades produced the Silver Sunscreen Rollershades for the western and southern facades and chose to partner with Horiso, to provide the solar control for other facades.

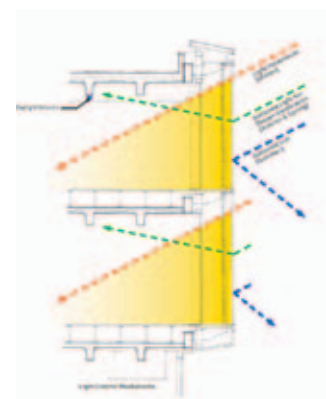
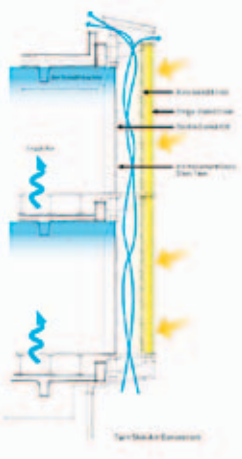
This successful collaboration contributed an important factor in achieving the Green Star building status.

Horiso had contributed to achieving 5 Star Green Star rating for office design with several buildings and were contracted to manufacture the 80 Specialty Venetian Blinds required for the project. The blinds were installed in the space between the outer glazed skin and internal glazed walls, where they serve to control the amount of solar heat and glare that passes into and through this void. Sensors were installed on the building exterior to detect the solar conditions. Responding to these varying conditions the Specialty Venetian Blinds will automatically raise, lower and tilt, to provide optimum interior comfort and working conditions.

The installation of Horiso Specialty Venetian Blinds into the east facing double skin facades of the building contributed to providing long-term sustainable and employee health benefits.



In summer, blinds remain partially or fully closed, absorbing and reflecting solar energy to shield the interior from solar gain. Vents at the top and bottom on each floor open, allowing warm air to be continually replaced with cooler air reducing the extensive use of other cooling systems.



In winter, blinds remain mostly open and are operated to maximise passive solar heating and control glare. Facade vents remain closed, creating a thermal barrier of warmer air in the void. Individual control programs for each bank of blinds

Above left: Seating areas within the southern facade.

Left: Interior showing vertical green garden within interior

Above top: Casual meeting areas

Above left: Diagram shows double skin air convention

Above right: Specialty Venetian Blinds light control diagram.

on the multi faceted building can account for their particular orientation and provide maximum solar efficiency and internal comfort levels.



Fitout Concept

'Organisation as living entity' was the main concept for the fitout. During briefing workshops the idea of the building being related to a greenhouse, with its large glass facades, became the inspirational idea. This strongly influenced the fitout layout becoming a space, that resembled a growing workplace. The language of the tree was translated into places within the building and was influential in organising the business. The roots or anchors of the company; training, shared cafes,



public interaction; were located on the ground level. The vertical and horizontal circulation of the stair, lifts and walkways were described as the trunks and branches with nodes along the way for conversation opportunities. And the vertical green garden and other foliage expressed the changing nature of the team's immediate working environment.

In conclusion, this innovative building demonstrates a commitment to the green initiatives within the New Zealand market. Internally it is light and airy, with the external building texture enriching the city and responding to the surrounding environment. The result is a finely tuned and engineered building that has been cleverly crafted to excel in design and sustainable performance.

Above left: Fitout plan showing the analogy with tree language.

Left: The cantilevered meeting rooms within the atrium.

Above right: The apex view reflecting the city beyond.

www.horiso.com.au

Images and content references:

Archdaily

Anne Gibson - nzherald.co.nz

Jasmax Architects



NZI's Environmentally Sustainable Design achievements

- Lifts generate electricity on their descent which is feed back into the building's energy grid.
- Green Roof absorbs up to 1.3 tonnes of CO₂ per year and release 870 kg of oxygen.
- Interior green living walls between floors.
- Specialty Venetian Blinds in double skin facade contribute to reducing energy usage and improving staff wellbeing.
- 80% of rainwater captured is filtered and used as grey water.
- Paper files reduced by 70% to reduce storage areas.
- Ground floor atrium cafe noise absorbed by acoustic panels installed on every level.
- Large circular roof skylights filter natural light through building.
- Under floor air conditioning reduces energy costs.

Key building facts

- 12,000 square metre block over 6 levels.
- Car spacing for 60 cars and bike spacing for 65.
- Treble skin of glass on northern side of building.
- 350 square metres of roof area with sedum and succulent plantings.

- 200 indoor plants sunk into floor areas.
- Showers and change facilities provided for walkers, joggers and bikers.
- First office block to have under floor air conditioning.
- Building caters for staff from 4 other office blocks.
- Building has 43 meeting rooms named after prominent New Zealanders.