

PROPERTY & BUILD

Building bridges

Showcase foreshore project receives more accolades

HOTEL HEAVEN

*Tourism demand
drives building boom*

COMMERCIAL INVESTOR INCENTIVES

Plenty of projects in the pipeline



SAFE SITE EFFICIENCY IS OUR BUSINESS.

INTAKS is the award-winning scaffolding and roof-edge protection system that delivers efficiency on site, reduces costs and improves safety.



COMMERCIAL

- ✓ 2015 Site Safe awards winner
- ✓ 2014 Safeguard Winner
- ✓ Silver at NZ Design awards
- ✓ 100% NZ Made

Commercial or Residential
we cover it all.

Call us to discuss any
requirements you may have

INTAKS is available for
purchase and hire



RESIDENTIAL



PROPERTY&BUILD



Taumanu Reserve Bridge 10



Resene Timber Design Awards 23

Cover stories

Wellington leading the national pack when it comes to commercial and industrial sector confidence, Colliers International Research reports 6

The largest recreational reclamation in the Southern Hemisphere has collected yet another major award 10

The ongoing tourism boom is boosting demand for new hotels throughout the country but will it be enough to meet the need? 16

Cities

Future cities need to focus on liveability and healthy living, Green Property Summit told 20

Design

Major design awards showcased creative uses for wood in everything from architectural excellence to engineering innovation 28

Facilities Management

A global leader in architectural revolving doors and security entrance systems is expanding Down Under 30

Materials

Emission reduction potential, high asset value and growth in public awareness are driving explosive growth in green buildings 22

New Zealand should combine its sustainable timber resources with an innovative manufacturing system to build faster and more efficiently, an overseas expert urges 23

Property

There's an urgent need to reform city planning to integrate planning, decision-making and funding says Property Council Chief Executive Connal Townsend 5

An historic 1920s Auckland warehouse has been transformed into a modern, stylish workspace 26

Supporters

Intaks 2 Regus 25 Chapman Tripp 31
iPlex 21 Red Cross 27 Quest 32

mediaSOLUTIONS

Editor
Geoff Picken
021 2 507 559
geoff@infrastructurebuild.com

Associate Editor
Steve Best
027 510 0241

Art Director
Lewis Hurst
lewis@hcreative.co.nz
021 14 66 404

Web development
Neo Chen
neosync@icloud.com

Managing partner
Phil Pilbrow
027 564 7778, 09 489 8663
phil@infrastructurebuild.com

Publisher
Mike Bishara
027 564 7779
mike@infrastructurebuild.com

Printed by
Crucial Colour
24 Fairfax Avenue, Penrose,
Auckland +64 9 589 1550

Published by
Media Solutions Ltd
3c, 12 Tamariki Ave, Orewa 0931
PO Box 503, Whangaparoa 0943
09 444 5140, 09 489 8663

Subscriptions
Digital editions free to
qualified readers.
Annual subscription print edition
\$39 Overseas rates – see online

www.propertyandbuild.com Free access to searchable archives in key categories such as Local Government, Construction, Cities, Energy, Environment, Transport, Water, Communication, Property Development, Investment & Policy, Training & Management, Technology and Innovation. Free online access to daily news features, case studies and events. Original material may be reproduced with permission and acknowledgement contact mike@infrastructurebuild.com.

ISSN 2324-3163 (Print) ISSN 2324-3171 (Online)

New Zealand magnet cities and the infrastructure conundrum

Auckland in the 1990s was a very different city that saw itself as something it was not, at least not yet

It had international ambitions but could not yet compete with other cities around the world. Auckland was simply New Zealand's biggest city, nestled quietly away at the bottom of the Pacific.

Fast forward twenty years, and Auckland is what KPMG calls a Magnet City. It attracts people, investment, and ideas. They are internationally connected.

Magnet Cities grow. Auckland can now stand shoulder to shoulder with other international cities, but there is still work to be done.

The problem is that despite its 1990s vision, Auckland prior to amalgamation failed to plan for the success it would attract.

The result; a severe housing shortage with soaring prices and a lack of infrastructure to cope with a rapidly growing city.

Because of poor planning and previous under-investment in infrastructure, Auckland is barely treading water.

But it is not all doom and gloom. Auckland Council and central government do have projects underway that will ease some transportation woes. And they are working on how to fund infrastructure to cope with future population growth.

The City Rail Link (CRL) is already stimulating development, spawning the construction of office and retail in the CBD.

For example, the Precinct Properties Commercial Bay development is integrating a 39-level commercial office tower with a world-class

retail centre on Auckland's waterfront. Further commercial and residential development is occurring along Albert Street.

Large transport projects are underway. The \$1.4 billion Waterview tunnel will link the southwestern and northwestern motorways. The tunnel is the missing last connection of the existing motorway network.

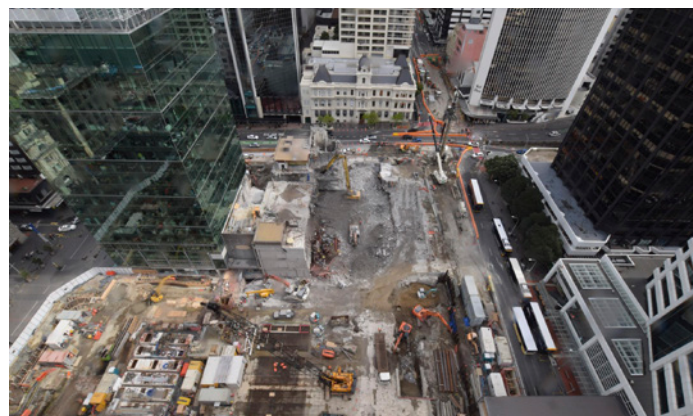
Integration initiative

More importantly, the government and the Auckland Council have recently agreed to the Auckland Transport Alignment Project (ATAP) to help ensure integrated planning, decision-making and funding for future Auckland transport projects.

One of those future projects is the Northern Corridor which will turn a section of the SH18 Highway east of Albany into a full motorway, providing a direct connection to Northbound SH1 Highway. This initiative will stimulate future population growth and housing development in the area.

At the other end of New Zealand's North Island, Wellington is evolving into a different kind of Magnet City, one that invests in and promotes its own uniqueness. It is not trying to compete with Auckland, far from it, but rather complement it.

Wellington wants to become what in Magnet City parlance is known as a "second city". Its attraction strategy is how it is different to Auckland and in doing so highlights its own strengths;





the movie / tech industry, tourism, cafes and culture, tertiary education, and government.

Fortunately, Wellington is not grappling with major transport infrastructure challenges. The recently opened Mackays to Peka Peka expressway will relieve existing congestion around the Kapiti Coast.

The soon-to-be-completed Transmission Gully motorway will provide an additional transport route up the coast, linking into the Hutt Valley, and feeding into and

“Central and local government talk past each other rather than engage in active conversation on the issues they are both facing”

out of the CBD, port, and airport. The areas it will open up for development to accommodate growth are huge.

Those investments are not primarily about solving existing problems but are to avert future ones and unlock growth potential.

This proactivity could be called ‘luck’ because, like Auckland in the 1990s, there is no obvious coherent spatial or development plan.

Regulation strangulation

What is missing in Auckland and Wellington, and the rest of New Zealand’s major urban areas, is integrated urban planning, decision-making and funding for infrastructure and the built environment.

Central and local government talk past each other rather than engage in active conversation on the issues they are both facing.

A contributing factor to this is the complex myriad of legislation and regulation. While many claim New Zealand has a world-class Resource Management Act, the truth is it is not working for the environment or development.

In reality, built environment and infrastructure decision-making and funding are spread over many

acts, and more keep being added to the statute book to circumvent it and speed up development. It is a mess.


It is time for a total rethink in New Zealand about how we plan, fund and build our cities. That does not mean we need to throw the baby out with the bathwater.

We need to review spatial planning, land use planning, local and central government decision-making and funding for the built environment and infrastructure development. Planning and environmental protection needs to integrate with economic development.

There is an increasing groundswell towards such a reform. Property Council will be a central part of that conversation.

Why? Because New Zealand cities must grow, and evolve in a coherent way. This is non-negotiable if they are to flourish as Magnet Cities in the Asia-Pacific.

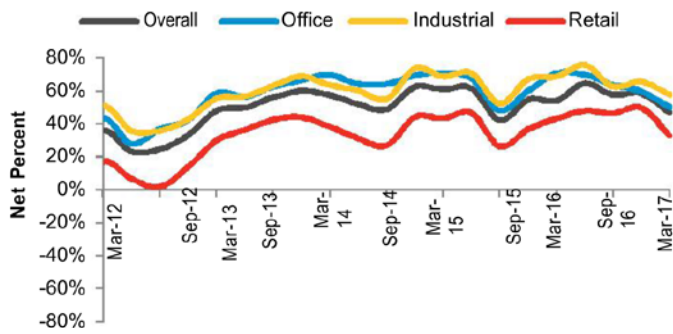
Connal Townsend is Chief Executive of the Property Council NZ, which represents the interests of the commercial property investment industry – including commercial, industrial, retail and property funds



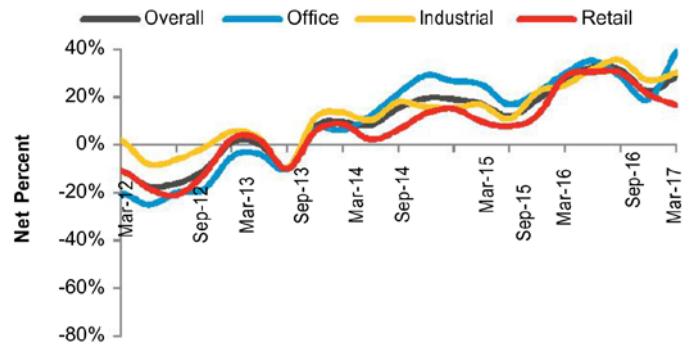
Wellington office market leads generally positive sector sentiment

*There has been a dramatic spike in the Wellington office sector,
according to the Colliers International New Zealand Q1 2017
commercial investor confidence survey*

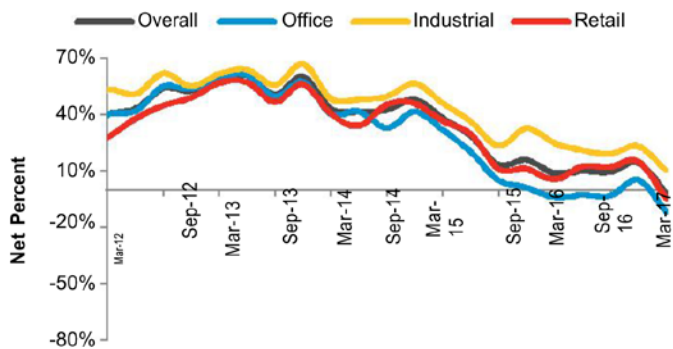
Auckland Investor confidence



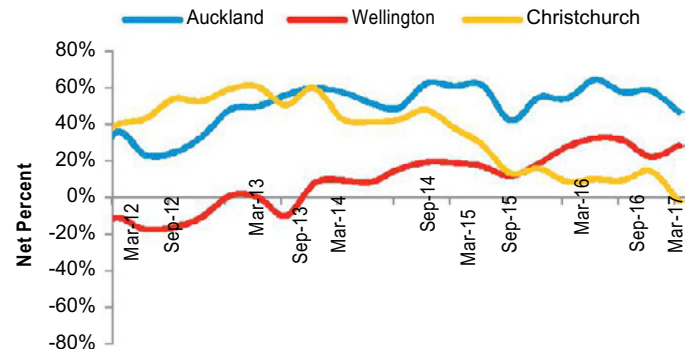
Wellington Investor confidence



Christchurch Investor confidence



Overall three main centres



The confidence level reached 39 per cent, the highest result recorded since the survey began in 2006, the firm reports

Post-quake activity in Wellington has seen a 7 per cent reduction in office stock, pushing vacancy rates down in the CBD.

Prime office vacancy rates are at an all-time low of 1.2 per cent - less than 3,000 sqm of space.

Colliers believes the disruption to the demand and supply equation will see the market swinging heavily in favour of the landlord, with rents expected to go up over the next 12 months.

There is a resurgence of retail activity in the Wellington CBD with a flurry of new store openings from both from national and international retailers.

Prime retail space is scarce in central Wellington. Since the arrival of David Jones last year, retail vacancy on Lambton Quay has declined from 4.0 per cent (Dec-15) to 3.5 per cent (Jun-16) and now 3.3 per cent (Dec-16).

Nationally in comparison to Wellington, commercial investor confidence dropped.

However, it remains robustly positive at plus 24 per cent, and there is no shortage of new projects in the pipeline across a variety of property sectors.

Supply can be slow to react to demand, and it is no surprise that developers are increasingly confident in undertaking development projects in times of shortage of

commercial space.

In Auckland, Goodman has recently announced it will be investing in excess of \$44 million across five developments at Highbrook Business Park.

Two of those will be industrial facilities, as well as future stages of The Crossing (offices), and a Quest serviced apartment expansion.

Spark is committing to a new 5,085 sqm purpose-built, four-level office development in Cathedral Square, being developed by Nexus Point, signaling a return to the CBD in Christchurch.

Strong net migration in the year to February rose to 71,333, the fifth consecutive month of net migration

gains, setting a record yet again.

The tourism boom has stimulated increased overseas investor interest with four hotel developments announced in the last month.

These include a \$60 million, Holiday Inn Express in Queenstown; 21-level, Four Points by Sheraton Hotels in central Auckland; a six-level, Sebel Hotel in Manukau City, and a seven-level, Hilton DoubleTree in Wellington.

The combination of these developments will add a much-needed 742 additional guest rooms to the accommodation supply.

There are no signs of a slowdown in visitor numbers, as more arrive

for the World Masters Games and the British and Irish Lions Tour, which will add further pressure to the accommodation supply.

Office

Auckland metropolitan office vacancy reached 5.6 per cent, an eight-year low in September 2016. Developers that had the foresight and ability to absorb higher levels of risk and plan for this a few years ago are now receiving strong enquiries for their new premises.

Colliers expects overall stock to increase by 5 per cent by June and vacancy to only peak at 8.2 per cent (lower than the June 2014 vacancy rate).

Mixed results from quarterly count

Colliers' March 2017 quarter Commercial Property Investor Confidence Survey unearthed some interesting statistics:

- New Zealand overall net confidence (optimists minus pessimists) reduced to 24 per cent, compared to 32 per cent in Q4 2016
- the last five years have seen the national result vary from positive 10 per cent (June 2012) to positive 32 per cent (December 2016)
- the top four markets are Queenstown, Tauranga/Mt Maunganui, Auckland and Hamilton for the third quarter in a row; Queenstown's 67 per cent confidence rating helping it maintain the highest spot it has held for the past seven quarterly surveys
- Wellington overall confidence has increased to 29 per cent, up from 22 per cent recorded in Q4 2016, with the Wellington office sector reaching 39 per cent, its highest confidence rating since the survey began in Q1 2006
- Christchurch investor confidence has reduced to -2 per cent, down from 15 per cent last quarter, and is now at a similar level across all sectors to Q1 2011
- overall, 10 cities recorded a reduction in investor confidence, most of them modest, with two increases, Wellington and Napier/Hastings, the same two markets that showed an increased confidence in residential pricing
- some 2,299 responses were utilized to construct the survey results.

New Zealand Key Economic Indicators - April 2017

	Dec-16 (yr rate)	Dec-16 (qtr rate)	Sep-16 (qtr rate)	Q-o-Q Change	Dec-15 (yr rate)	Y-o-Y Change	2017F*	2018F*	2019F*
GDP Growth	2.7%	0.4%	0.8%	-0.4%	2.2%	0.5%	3.1%	2.9%	3.4%
Current Account (% of GDP)	-2.7%	NA	NA	NA	-3.4%	0.6%	-3.2%	-4.0%	-4.5%
CPI Inflation	1.3%	0.4%	0.3%	0.1%	0.1%	1.3%	1.0%	1.8%	1.8%
Net Migration Gain (000's)	70	18	18	1	65	5	71	69	62
Retail Sales (ex-auto)	5.0%	0.8%	0.4%	0.4%	4.9%	0.1%	5.6%	5.0%	5.4%
Unemployment Rate	5.1%	5.2%	4.9%	0.3%	5.4%	-0.3%	5.0%	4.8%	4.8%

	Jan-17 (yr rate)	Dec-16 (yr rate)	M-o-M Change	Jan-16 (yr rate)	Y-o-Y Change	10 Year Average	2017F*	2018F*	2019F*
Tourist Numbers Growth	6.9%	9.9%	-1.9%	5.1%	1.7%	3.7%	7.0%	6.5%	4.9%
Official Cash Rate	1.75%	1.75%	0 bps	2.5%	-75 bps	3.61%	1.75%	1.75%	2.50%
90 Day Bank Bill Rate	2.0%	2.0%	4 bps	2.6%	-60 bps	3.9%	2.0%	1.9%	2.5%
10 Year Government Bond	3.3%	3.2%	6 bps	3.1%	23 bps	4.6%	3.0%	3.5%	3.8%
Floating Mortgage Rate	5.7%	5.7%	1 bps	5.8%	-5 bps	6.8%	5.1%	5.1%	5.6%
3 Year Fixed Housing Rate	5.5%	5.5%	0 bps	5.4%	16 bps	6.9%	NA	NA	NA
Consumer Confidence	127	129	-1%	120	6%	119	NA	NA	NA
NZD vs US	0.72	0.71	1%	0.66	9%	0.75	0.70	0.69	0.67
NZD vs UK	0.58	0.58	0%	0.46	25%	0.47	0.57	0.53	0.50
NZD vs Australia	0.94	0.95	-1%	0.93	1%	0.85	0.92	0.91	0.87
NZD vs Japan	82	82	0%	76	7%	74	79	80	81
NZD vs Euro	0.68	0.67	1%	0.60	14%	0.57	0.66	0.68	0.69

Source: NZIER, Colliers International Research *March year forecast

New Zealand Prime Indicators

Property Sector	Prime Rents (% Change)		Prime Capital Values (% Change)		Prime Vacancy Rate		
	12-Months to Mar-17	12-Month Forecast	12-Months to Mar-17	12-Month Forecast	Historical	Current	12-Month Forecast
Office					Mar-16	Mar-17	Mar-18
Auckland Metropolitan***	5.8%	1.1%	9.7%	4.8%	5.7%	6.1%	8.9%
Office					Dec-15	Dec-16	Dec-17
Auckland CBD	7.6%	6.5%	14.7%	7.7%	1.2%	2.8%	5.4%
Wellington CBD**	4.4%	24.5%	8.8%	31.3%	2.1%	1.2%	N/A
Industrial*					Feb-16	Feb-17	Feb-18
Auckland	3.6%	2.0%	12.6%	2.0%	1.7%	1.4%	2.2%
Industrial*					Sep-15	Sep-16	Sep-17
Christchurch	1.0%	0.0%	6.1%	0.0%	0.3%	0.3%	0.5%
Industrial*					Nov-15	Nov-16	Nov-17
Wellington**	3.9%	5.0%	6.7%	5.0%	4.0%	0.6%	1.0%
Retail					Dec-15	Dec-16	Dec-17
Auckland CBD	1.7%	4.0%	11.2%	4.0%	2.5%	2.4%	2.2%
Wellington CBD**	6.7%	-0.6%	9.6%	-2.1%	7.3%	8.8%	7.1%
Auckland Shopping Centre	7.0%	5.1%	13.0%	5.1%	1.3%	1.7%	1.6%

Source: Colliers International Research

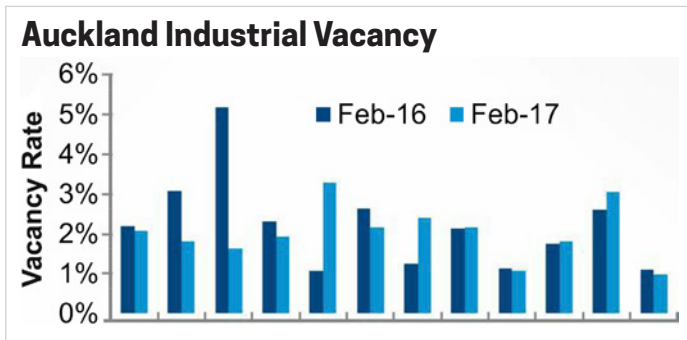
*A combination of industrial office and warehouse space at a ratio of 20:80

Wellington rental figures are gross and capital values based on net rent. Wellington Retail Vacancy figures are overall. *Financial indicators are Auckland City Fringe.

Commercial Property Investor Confidence Survey Results

Region	Mar-17	Dec-16	Sep-16	Jun-16	Mar-16	Dec-15	Sep-15
Queenstown	67%	69%	70%	73%	67%	62%	52%
Tauranga/Mt Maunganui	56%	65%	61%	66%	58%	55%	42%
Auckland	47%	59%	58%	65%	54%	55%	42%
Hamilton	41%	45%	42%	31%	38%	28%	28%
Wellington	29%	22%	31%	33%	28%	19%	12%
Nelson	22%	27%	18%	13%	18%	16%	-1%
Napier/Hastings	13%	12%	14%	17%	8%	6%	-8%
Dunedin	10%	25%	10%	5%	8%	-1%	-7%
Rotorua	4%	11%	N/A	N/A	N/A	N/A	N/A
Christchurch	-2%	15%	9%	10%	9%	16%	13%
Whangarei	-5%	13%	-8%	-4%	-20%	-24%	-24%
Palmerston North	-6%	5%	1%	-5%	-6%	-14%	-12%
New Zealand Overall	24%	32%	30%	32%	27%	26%	17%

Note. Figures are rounded



The last quarter has seen the completion of Auckland Airport's Quad 7, Mitre 10's Albany head office and EMA's employment campus in Newmarket, increasing the office stock by 18,600 sqm. A further 17,500 sqm is expected to be completed by the end of this year.

Retail

A new 590 sqm dining precinct at 125 Queen Street has been completed and is now in the process of being leased.

The developer, Special Situations Assets Limited, acquired the building in 2014 after it had been vacant for five years, with the goal to bring premium retail, dining and office space to the Auckland CBD market.

New World supermarket is in the basement of the building, with the ground floor hosting ASB along with further retail space still available for lease.

The dining precinct is located on level 1, with a gym, crèche and 28 level office tower directly above. The exterior also has a giant LED signage screen for tenant use.

The laneway-style dining precinct

is similar to the already established Elliot Stables and can be accessed through the iconic façade on Queen Street or at street level on Swanson Street.

Industrial

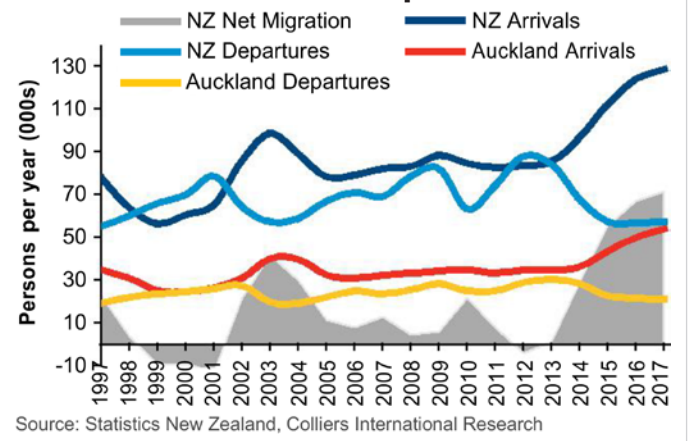
The strength in the Auckland industrial market continues with the latest survey showing 2.1 per cent overall vacancy, the lowest on record since the survey began over 20 years ago.

In the last six months, prime vacancy has declined from 1.7 per cent to 1.4 per cent, and secondary vacancy from 2.4 per cent to 2.3 per cent.

Despite over 250,000 sqm of new development being completed in the past 12 months, the amount of prime space available remains tight, causing an overflow of demand into the secondary sector, particularly concentrated in the Mt Wellington, Onehunga / Penrose and Rosebank / Avondale areas.

This recent crop of developments includes the new state-of-the-art Sistema factory of 53,000 sqm completed Q3 2016 at Auckland Airport.

Permanent Arrivals and Departures



Commercial Interest Rate Guide

Date	3 Year Term (Indicative Borrowing Rate)
April 2016	4.83%
May 2016	4.85%
June 2016	4.88%
July 2016	4.77%
August 2016	4.59%
September 2016	4.52%
October 2016	4.57%
November 2016	4.81%
December 2016	4.96%
January 17	5.22%
February 17	5.10%
March 17	5.10%

Source: ANZ Bank & Colliers International

Note: the lending rate quoted in the table is not necessarily what you will be offered, and should be regarded as indicating medium term trends.

A bridge to success

The largest reclamation in the southern hemisphere built for purely recreational purposes can't seem to stop collecting major awards

CONSTRUCTION





Auckland's Onehunga Foreshore Restoration Project has garnered numerous accolades over the past couple of years, the most recent being the Isthmus Group winning the prestigious WAN Transport Award 2016 award for the Taumanu Reserve Bridge.

The \$5 million bridge was a worthy winner of a WAN award that celebrates designs that are driving change within the transport sector – projects that not only enhance movement and access, but also advance social mobility and reinvigorate civic spaces, from trains and tram stations to airports and seaports.

Taumanu Reserve Bridge restores a connection to a re-imagined coastal landscape created after motorway development in the 1970s severed the local populace from the sea.

To resolve the problem of a park in two parts, a bridge of sufficient form and experience was required to stitch the halves together, with a legibility that was of the park and not the motorway.

Beautifully balanced and proportioned, the bridge moves into the adjacent constructed and planted landforms and abutments and is bookended by basaltic concrete panels.

The jury praised the resulting seamless integration of the bridge with the landscape, with Transport for London Technical Sponsor for River Crossings Catherine Hallett hailing the “innovative” design.

“It stands out, it does exactly what it says it’s going to do. It links to the beach, it looks like the beach. Beautiful to walk across,

beautiful to look at, with function & form - it ticks all the boxes for me.”

Artwork on the bridge’s interior timber panelling was commissioned with guidance from the project’s Mana Whenua Maori advisors and undertaken by artist Bernard Makoare. The resulting contemporary design was carved by machine, while in counterpoint anodized aluminium shells adorn the gateway upstands.

HOK Vice President Anthony Leslie was equally complimentary, appreciating the intricacy of the design. “The detailing is fantastic. I think this project is beautiful and a very unusual and sensitive solution to a problem.”

Technical tasks

It wasn’t all plain sailing for urban and landscape design consultancy Isthmus, however, as Associate Sean Burke recalls. “The bridge had some technical challenges in terms of spanning and providing sufficient clearance to SH20 as well as ensuring a balance with access grades and park footprint,” he explains.

“These problems disappeared with the introduction of a camber to the bridge, which as well as making it stronger provided a reveal sequence of the harbour as part of the user experience.”

In addition, a throw screen was added to the design brief late in the piece, which necessitated a reworking of the structural elements associated with the timber cladding as well as developing a concept for the throw screens themselves.

“Some innovative thinking from all parties, including the contractor and fabricator, allowed a solution to be found which met engineering and architectural objectives as well as fitting within budget,” Burke notes.

Installation of the bridge truss was a further logistical problem requiring a full motorway closure. “The night lift was delayed twice due to high winds, but in the end it went without a hitch.”

Isthmus was well placed to handle this difficult project, having

“I think this project is beautiful and a very unusual and sensitive solution to a problem”

worked on a number of large-scale public realm projects over the past 30 years including the New Plymouth coastal walkway as well as Oriental Bay and Kumutoto in Wellington.

“We have also provided technical input into roading and energy infrastructure through the consenting, design and build phases across many projects such as the North Island Grid Upgrade, Tauhara II and the Waitahora Windfarm,” Burke adds.

“In addition, we have completed a number of smaller bridge projects, including the Te Puru bridge as part of the Beachland to Mareaetai coastal walkway, and feature bridges for Hobsonville Point.”

The project had a long gestation Burke explains, beginning in the late 1970s with the construction of the first SH20 – although the proposed duplication in the mid-2000s brought community dissatisfaction to a head (see *Long labour of love* sidebar).

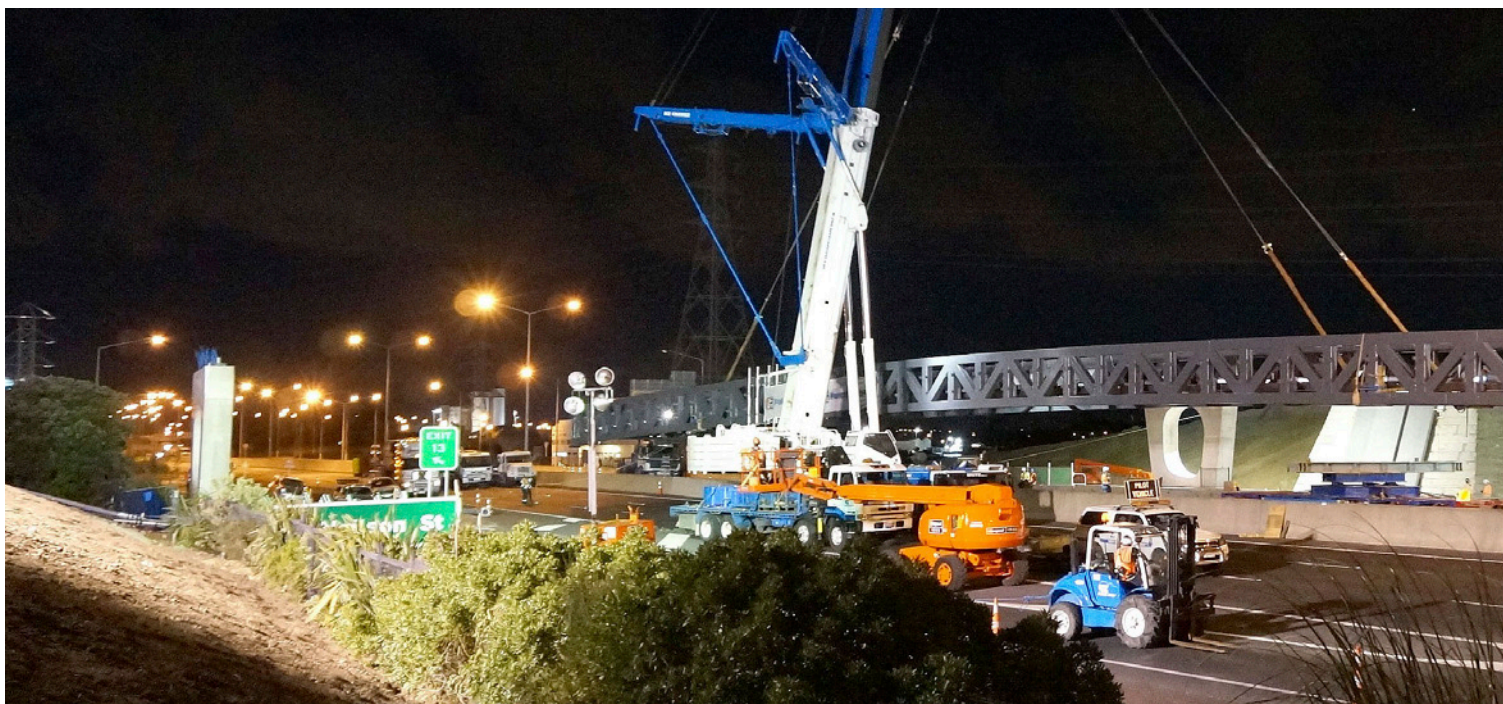
The community successfully argued for the park proposed in the 1970s to be built and funded by NZTA and Auckland Council. “Our involvement began in about 2009 and the wider foreshore project commenced in 2010 and was completed, including the bridge, in 2015,” Burke says.

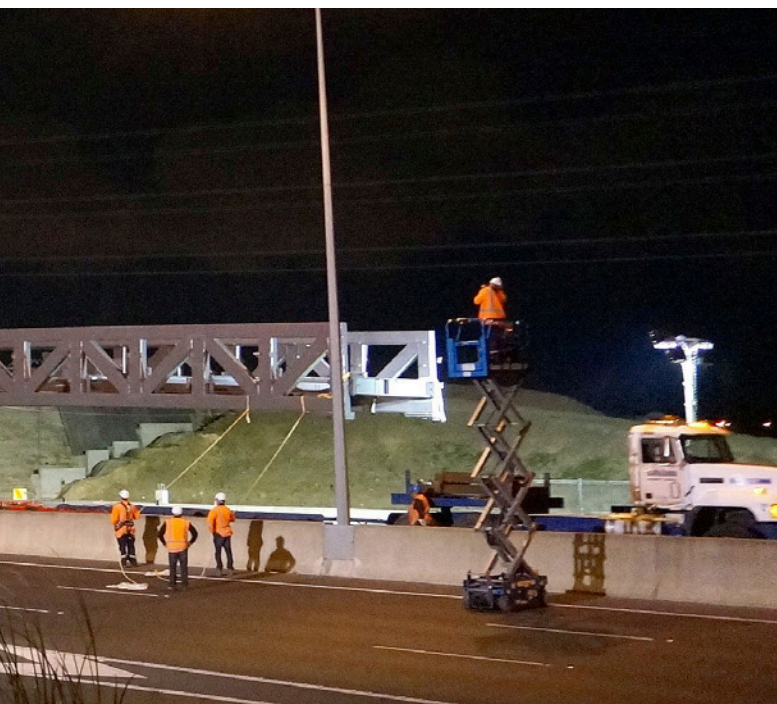
“All in all it was an excellent example of a five-year collaborative effort by the Fulton Hogan Consortium, which also included Tonkin + Taylor, as well as bridge design sub consultants Aecom, with bridge fabrication being undertaken by Eastbridge.”

Isthmus continue to hone its Taumanu Reserve Bridge urban and landscape design skills working on a wide variety of projects, including several for the Transport Agency.

“We undertake a wide variety of work, including in the housing space with Hobsonville Point, but also urban work such as the Freyberg Square upgrade and park development such as Barry Curtis Park,” Burke adds.

Little wonder then that Isthmus had been shortlisted for WAN awards previously with Barry Curtis Park and was one of the final candidates in the Infrastructure category of this year’s WAN award - again for Taumanu Reserve Bridge.





“We have also just won the World Architecture Festival Landscape Award for Kopupaka Park at Westgate for Auckland Council, while the New Plymouth walkway also won an International Federation of Landscape Architects award some 10 years ago,” Burke notes.

Engineering excellence

The Onehunga Foreshore Restoration Project was itself an award winner, having previously been recognised with one of engineering’s most prestigious awards - the IPENZ Arthur Mead Environment & Sustainability Award.

The IPENZ judges’ award citation was complimentary of the project now known as Taumanu Reserve and the Fulton Hogan-led team that constructed it: “This project addresses the long-standing separation of the Onehunga community and a foreshore that

was accessible and well used prior to the construction of the Southwestern Motorway,” they observed.

“Featuring basalt tongues, beaches and reduced access areas to provide habitat for avian wildlife, it capitalised on the enthusiasm of the community, and involved them to create a reserve and foreshore that gives the impression of having been naturally formed prior to the motorway construction. During land reclamation, the entrants pioneered a consent process that has been adopted by Auckland Council.”

Tonkin + Taylor acted as lead consultants for the Taumanu Reserve project, contributing hard engineering expertise along with environmental guidance and design coordination, Design Manager & Senior Civil Engineer Mark Foster explains.



“This was a unique project but similar undertakings with Isthmus include the Oriental Bay foreshore redevelopment, the Maratai to Beachlands Coastal Walkway that included the award-winning Te Pura Bridge and the New Plymouth Coastal Walkway,” he adds.

Some 25 staff were involved on what was one of the environmental and engineering consultancy’s biggest undertakings as lead consultant on a lump sum project, although it is also working on the \$1.4 billion Waterview Connection as one of three design consultancies involved in the Well-Connected Alliance that includes the NZ Transport Agency, Fletcher Construction, McConnell Dowell Constructors, Beca Infrastructure, Parsons Brinkerhoff and Obayashi Corporation.

Tonkin + Taylor was tasked with providing an exhaustive range of skills and services including:

- design management
- RMA planning
- obtaining resource consents for the 250,000m³ reclamation in the Manukau Harbour
- stakeholder management and consultation
- civil design
- pavement design
- structural design
- coastal processes assessment and plan form design
- coastal structures design
- earthworks and geometric design

- cycleway design
- stormwater design
- geotechnical design and liquefaction assessment
- geotechnical monitoring
- contaminated land assessments
- construction supervision
- marine and terrestrial ecology.

Regulatory restrictions

Given this extensive brief it’s little wonder that Taumanu posed several key challenges, the major one being the New Zealand regulatory context. “The environmental regulations specifically discourage reclamation but this project required a large amount of reclamation so overcoming those hurdles was a major complexity,” Foster notes.

“We worked very closely with resource management planners to effectively tailor the design specifically to the legislation rather than shoehorning the design into the legal requirements, as often happens with other projects.”

Working with the coast was equally important as a key requirement was the restoration of the natural character of the coastlines. “We basically built the project around restoring what was once lost – we strove for a natural-looking project so everything was designed to look as if it was always there and not man-made,” Foster explains. “Without that approach it would have been tricky to get a resource consent.”

The other key complexity was the fact that the project had been initiated and driven by the community and therefore had a wide range of stakeholders, often with competing objectives that had to be delicately balanced.

The third key challenge was the difficult geotechnology. “Some parts had up to 10 metres of very soft soil while others were on rock, so it was tricky dealing with the challenges of the differing geology and ground conditions.”

“We chose to go with a highly collaborative, highly integrated approach to the design and it really bore fruit”

Tonkin + Taylor successfully overcame these various challenges, designing a stunning reserve that includes:

- 1.4km of restored coastline
- 6.4 hectares of new parkland and beaches along a one-kilometre stretch of coastline
- extension of the existing parkland surrounding the Onehunga Lagoon
- a meandering shared-use path through the extensively landscaped parkland
- a series of rock headlands, three new sandy beaches and six

- gravel/shell pocket beaches
- a pedestrian path and cycle path along Orpheus Drive
- the Taumanu Bridge, a shared-use pedestrian/cycle bridge over SH20
- public amenities – boat ramp, toilet block, park furniture and a new carpark
- infrastructure upgrade of existing stormwater services including extension of the Onehunga Lagoon outlet culverts
- upgrade of Transpower’s pylon footing.

Needless to say, Taumanu provided Tonkin + Taylor with several key lessons that are standing it in good stead as it works on two similar projects on the Kapiti Coast and north of Auckland, both of which also include a seawall and a coastal walkway.

“The main lesson for us was using the legal framework to provide a really good basis for steering the design, which came to fruition thanks to our really collaborative approach with Isthmus,” Foster maintains. “We chose to go with a highly collaborative, highly integrated approach to the design and it really bore fruit.”

The Onehunga Foreshore Project proved equally instructive for head contractor Fulton Hogan, as Project Manager Nariman Behzadi explains. “It was a major undertaking that demanded a core engineering team consisting of



park for the people of Onehunga was something a bit different for Fulton Hogan to be involved in and we are very proud of the result that our design partners and our construction teams have achieved.”

His team also learned a lot when it came to lifting the 84-metre-long bridge structure, which was fabricated in Napier, brought to the site and assembled before being lifted and placed using a 450-tonne Grove GMK 7450 mobile crane with 100t counterweight and MegaWingLift from NZ Cranes.

“The beam truss weighed 113 tonnes and used 96 per cent of the crane’s capacity, which required six months of detailed planning by the NZTA, NZ Cranes and the Auckland Motorway Alliance,” Behzadi recalls.

This challenge was further compounded by consent restrictions that meant any detours or lane closures could not add more than five minutes to the travel time of motorists to or from Auckland airport.

Several traffic analyses and studies were undertaken with Beca and the NZTA to ensure there would be no delays on what was a key arterial route to the airport.

“We estimated it would take us four to five hours to set up the crane offline before one lane was shut to enable us to do more work,” he explains. “We would then shut the second lane and move the crane closer to the final position.”

The Fulton Hogan team was given a seven-hour window on the weekend to complete the demanding task in order to minimise

the effect on the travelling public, but the lift itself was completed in four to five hours. “We started at 7pm with a staged closure and had the crane on the road and the first section closed around 10 pm,” Behzadi reveals.

“The programme called for the beam to be placed around 3-3.30am, the crane dismantled by 5am and off the road at 5:30am but the lift started at 12 and the beam was placed by 1am.”

The task gave Behzadi and the Fulton Hogan team a new-found appreciation of the extensive preparations required for such big lifts. “It took us six months’ work, which included modelling how the bridge was going to act once it was lifted using a single crane,” he recalls.

“Lifting at certain points results in a lot of flexing and bending, and the beam was so long it had to be supported on two jinker units.”

Meticulous modeling

The Fulton Hogan team therefore had to model the entire transport route to ascertain the best and most efficient method of getting the bridge to the lifting position. “This also showed us what services such as street lights and fencing barriers needed to be shifted or removed ahead of time.”

The crane placement position straddled two high pressure gas lines servicing north Auckland, which in turn demanded close liaison with Vector, who were eventually placed on standby along with the fire brigade. “We had to locate the entire length of gas line in the work area and include it in the model to ensure correct pressure loadings on the pipes.”

An added complication arose when the team found the task couldn’t get the lift to work with one crane, having abandoned the original approach that required two cranes and would have taken at least two days. “There was no way that could have been done in the seven-hour window allowed by the NZTA.”

As if that wasn’t enough, high winds caused the cancellation of the initial planned lift. “The wind was gusting at up to 50km per hour, but the crane’s limit was 36km per hour due to its weight,” Behzadi says.

A rock concert meant the road couldn’t be closed on the second weekend while the wind disrupted the team’s carefully laid plans again on the third weekend. “We had to wait right up until the night to make the call to go ahead with the lift.”

The frustration and delays were all worth it however, as the high-precision lift in December 2014 won Fulton Hogan both the Project of the Year and People’s Choice awards at the NZ Annual Crane Association Conference Awards.

“We are currently implementing the lessons learned on the Taumanu Bridge lift on a bridge site on the Albany Highway in Auckland’s North Shore involving a 40m, 70-ton load that is next to a school, gas line and a sewer,” Behzadi reveals.

The Taumanu Bridge project has clearly not only spawned several award-winning concepts, but also laid the foundation for further cost-effective development of similar New Zealand infrastructure in future.

four permanent staff on site and three senior managers off-site,” he says.

“In addition, there were six on the structures team and up to 20 operators handling the earthworks, which saw 180-200 truck movements per day at the height of the earthworks season.”

Behzadi was personally involved in the structure team, although the most difficult aspect of the project was finding new methodologies to build the bridge and innovative ways of reclaiming land.

“Creating an iconic bridge and

Long labour of love

The Onehunga Foreshore Restoration Project is the result of 40 years of community advocacy, most recently led by The Onehunga Enhancement Society.

The community was keen to reconnect the Puhea Creek to the sea, the creek having been separated from the harbour in 1975 when the motorway was built and proposed amenity enhancements were not carried out.

The community’s aspirations to reconnect Onehunga to the sea and recapture the lost biodiversity and recreational opportunities came to the fore decades later as plans to complete SH20 took shape.

As a result, the \$28 million Onehunga Foreshore Restoration Project was advanced under a partnership between Auckland Council through the Maungakiekie-Tamāki

Local Board and the New Zealand Transport Agency.

Fulton Hogan (with Tonkin + Taylor Ltd, Isthmus Ltd and URS) won a design competition to design and build the park.

Their concept looked to the original shoreline that had been shaped by the Manukau’s natural forces: a sweeping bay with volcanic lava flows and smaller pocket beaches nestled between rocky headlands.

Independent commissioners in 2012 shared their vision, granting resource consents for the project subject to conditions.

Construction required some 334,000 cubic metres of fill, rock, sand and topsoil, and a special earthworks methodology was developed to allow fill to be placed in a tidal

area in an environmentally-sound manner.

More than 30,000 plants and 350 trees were planted, including pohutukawa, cabbage trees, totara and kowhai, which provide an ideal habitat for the native birds that are found in the foreshore.

Auckland Council and Watercare also collaborated to identify and fix potential sources of stormwater contamination within the 10 sub-catchments that feed into the Onehunga Bay, leading to a significant improvement in water quality.

The environmental restoration and future management of the Manukau Harbour remains an ongoing focus for the local board, Manukau Harbour Forum, Auckland Council, Mana Whenua and the community.





The proposed new luxury hotel development at One Market Square will directly face Viaduct Harbour on two sides and offer guests stunning views of Auckland

“Your room is ready...”

The ongoing tourism boom has sparked a corresponding flurry of new hotel developments virtually the length and breadth of the country

Queenstown has taken the lead during New Zealand’s most buoyant period of hotel transactions in a decade, notching up both the largest sales volume and the biggest individual transaction.

Colliers International’s hotel sales survey has found more than \$500 million of hotel inventory changed hands in 2015/16, the strongest period on record since 2005/06.

Queenstown accounted for just over 30 per cent of the total sales volume, with nine sales over the 24-month period totalling some \$173m.

The booming tourist hot spot also notched up the largest single hotel transaction of the last decade, with the 273-room Novotel Lakeside Queenstown changing hands for \$91m.

Wellington was second in total sales volume, with five transactions worth \$133m accounting for 26 per cent of the total. Auckland came in third with \$94m of sales, followed by Christchurch with \$78m.

Dean Humphries, national director of hotels at Colliers International, says the strong figures reflect high levels of confidence in

New Zealand’s hotel sector.

“Investors are clearly recognising the huge economic benefits of New Zealand’s tourism boom,” he says.

“There was a record 3.5 million visitors to New Zealand last year, and the government is forecasting 4.5 million annual visitors by 2022.

“That growth has driven record trading numbers in gateway cities like Auckland and tourist hot spots like Queenstown.

“As a result, investors are benefiting from strengthening investment yields.”

Humphries says yields have compressed in the order of 100 to 200 basis points across the five main tourism markets, with the strongest yields being achieved in Auckland and Queenstown.

Almost two thirds (65 per cent) of hotel transactions were completed via public marketing campaigns, with Colliers International brokering over 90 per cent of those deals.

New Zealand-based investors bought about \$200m of hotel assets in 2015/16, accounting for just under 40 per cent of transactions by value.

The biggest source of foreign capital was Hong Kong, accounting for 30 per cent of the total sales by value, followed by Singapore, with 18 per cent of total sales.

Humphries says investors shouldn’t expect the market’s buoyancy to continue this year.

“We anticipate sales activity will be significantly reduced as investors choose to hold onto assets to take advantage of the strong trading conditions,” he says.

“There will still be investment opportunities, however, particularly as we expect hotel development activity to increase.”

“Investors are clearly recognising the huge economic benefits of New Zealand’s tourism boom”



Auckland Airport is currently investing more than \$1 million every working day on infrastructure improvements, including new hotels to meet ongoing demand from local and international travellers

Severe shortfall

Humphries says new development opportunities will be driven by the tourism boom and a projected shortfall of 4500 hotel rooms across the country's five largest tourism markets by 2025.

"We expect the majority of development activity will occur in Auckland, Christchurch, Queenstown and Wellington," he predicts.

"We're already seeing new opportunities arise, such as the One Market Square development at Auckland's Viaduct Harbour."

Viaduct Harbour Holdings Limited has appointed Colliers International to undertake a global search for a world-class development partner to build a 165-room luxury hotel on the One Market Square site, which was previously occupied by the Simunovich Fisheries building.

Angela Bull, Viaduct Harbour Holdings Limited chief executive, says the waterfront site is exceptional, directly facing the Viaduct Harbour on two sides and with stunning views of Auckland.

"Viaduct Harbour is an outstanding lifestyle precinct in Auckland with unrivalled access to the water, quality restaurants, apartments and an international marina.

"One Market Square is perfectly positioned for a world-class hotel that will add to the vibrancy and attractiveness of the precinct.

"We know that Auckland is critical to New Zealand's tourist

market and there is a clear need for luxury hotel accommodation in the CBD," she says.

"A luxury hotel has many synergies with the amenities and attractions located in the Viaduct Harbour and will act as a catalyst to attract even more visitors to the area.

"With 165 rooms, and a rooftop bar proposed, we see this development as adding to the desirability of Viaduct Harbour and the continued investment in the precinct and surrounding area."

Bull says the company is looking for a suitable development partner who will build a world-class, iconic waterfront hotel that all Aucklanders can be proud of.

"We want a landmark development that will complement the many great buildings already built or underway in the wider Viaduct Harbour and Wynyard Quarter area."

The preliminary design by Warren and Mahoney, a leading architectural firm behind some of New Zealand's most iconic buildings, will be made available to the successful development partner.

The design offers a floor area of 12,000sq m on a 1,288sq m site. With the waterfront on two

sides of the site, the hotel's views across the harbour and beyond will never be built out.

Bull says the development partnership model will keep the strategic waterfront land in New Zealand ownership, while opening the project up to beneficial foreign investment.

Other major, publicly announced Auckland hotel projects include:

- Four Points By Sheraton, a 255-room hotel in a refurbished 21-level office tower on Queen St
- Sebel Hotel, a new 152-room, six-level hotel on Lakewood Court, Manukau
- SO Sofitel, a 130-room hotel on the former Reserve Bank site on Customs St East
- Park Hyatt, a new 190-room hotel on the former Team New Zealand site in Wynyard Quarter
- Ritz-Carlton, a new 300-room hotel to be located on Albert Street
- Pullman Hotel, a new 250-room hotel to be built beside the Novotel at Auckland International Airport.



The Auckland Harbour view of One Market Square

"Auckland Airport plays a key role in New Zealand's growing tourism industry and in connecting Auckland to New Zealand and New Zealand to the world"

Airport action

Elsewhere, Auckland Airport and Tainui Group Holdings have announced an agreement to develop a new 5-star hotel adjacent to Auckland Airport's international terminal and the existing 4-star Novotel hotel. The new premium 250-room hotel will be operated by AccorHotels under the Pullman brand.

Additional hotel development has long been a feature of Auckland Airport's 'airport of the future' vision, but Mark Thomson, Auckland Airport's general manager – property, says the timing has been influenced by unprecedented demand for hotel accommodation in Auckland.

Building the hotel now also responds directly to strong demand for accommodation that provides easy access to the airport terminals, he explains.

"Auckland Airport plays a key role in New Zealand's growing tourism industry and in connecting Auckland to New Zealand and New Zealand to the world," Thomson says.

"This hotel, which will benefit from its premium location adjacent to the international terminal and the current Novotel, will provide more choices for travellers looking for high-quality accommodation within walking distance of both terminals.

"Being able to walk to the terminals, rather than drive, has considerable appeal to hotel patrons and will also help reduce vehicle movements on our roads."

The new hotel will trade as the Pullman Auckland Airport and will be developed in a 50:50 partnership with Tainui Group Holdings.

As part of this agreement, Auckland Airport has increased its ownership stake in the Novotel hotel to 50 per cent.

"The partnership with Tainui Group Holdings and AccorHotels has been very successful and we are pleased to be extending this relationship to another hotel project," Thomson adds,

The hotel building will carry the name 'Te Arikinui', which is the chiefly title that the Late Maori

Queen Te Atairangikaahu chose when she ascended to the Te Wherowhero (throne) at the time of her Coronation. The chiefly associations of Te Arikinui are in keeping with the 5-star premium experience to be offered at the hotel.

Tainui Group Holdings Chief Executive Chris Joblin says the agreement reflects the strength of the relationship that has been established between Tainui Group Holdings and Auckland Airport.

"This is an exciting project that will result in two complementary assets located in an exceptional position at New Zealand's main gateway," he notes.

"This creates tremendous scope to create a unique, authentic New Zealand experience for airport visitors and hotel guests, including through unique cultural elements incorporated in the design."

Construction is expected to start by the end of this year, with the hotel scheduled to open by late 2019.

By this time, Auckland Airport's international terminal will have undergone significant expansion and work will already be underway on the domestic section of the future combined domestic and international terminal.

Auckland Airport is currently investing more than \$1 million every working day on infrastructure improvements, and expects this level of investment will likely continue into the near future.

Not enough rooms at the inn?

The new properties follow a recent report that estimated a total of 26 additional hotels, above and beyond what is currently planned, will be needed over the next 10 years to meet expected tourism demand in major tourist centres.

The research was a key part of Project Palace, a programme to accelerate new private sector investment in New Zealand's hotel infrastructure led by New Zealand Trade and Enterprise and the government's Investment Attraction Taskforce.

NZTE, Tourism New Zealand (TNZ), and the Ministry of Business, Innovation and Employment (MBIE) commissioned the research report in 2016 to gain a more accurate understanding of the demand and supply for hotel accommodation now and in the future across peak and off-peak seasons.

Focused on Auckland, Rotorua, Wellington, Christchurch and Queenstown, the report shows that if demand and supply estimates are borne out the shortfall in new hotel rooms is expected to be up to 4,526 across these centres by 2025 - over and above new hotels currently planned and equivalent to 26 hotels the size of the Sofitel Viaduct in Auckland.

NZTE, TNZ and MBIE are working together with local government and the private sector to identify available locations for additional hotels in each of the five locations studied and to pave the way for attracting new investment in hotel development.

NZTE will use the research as the basis for a prospectus that outlines the business case for investment in New Zealand hotels to domestic and international investors, utilising its strong international networks.

Economic Development Minister Steven Joyce has asked NZTE to catalogue and present hotel opportunities in other New Zealand centres as well, noting that tourism directly contributes \$11 billion or almost 5 per cent to GDP.

Attracting high-value foreign investment into New Zealand is part of the government's Investment Attraction Strategy, and contributes to government's Business Growth Agenda target of attracting an extra \$160 billion to \$200 billion of capital by 2025.

The research found:

- there is a current shortage of hotel rooms



Queenstown

during high demand periods in all the centres – this is particularly in summer and autumn (December and March quarters) and when there are major events on

- Auckland and Queenstown had consistently high occupancy rates (>80 per cent) throughout 2015 and Queenstown is rapidly becoming an all-seasons location
- Wellington enjoyed a stable occupancy rate (78 per cent) in 2015, with the December and March quarters having higher occupancy than the June and September quarters
- Rotorua and Christchurch had high occupancy rates (>80 per cent) in the December and March quarters in 2015, but lower occupancy during winter and spring (June and September quarters)
- forecasts suggest that the demand for hotels will outstrip supply over the next 10 years in all regions so occupancy rates will continue to grow
- international visitor arrivals will be a major driver of hotel demand (their numbers are expected to grow 5.4 per cent per annum), while domestic demand is expected to grow at 2.5 per cent per annum – China and Australia are expected to be largest contributors to the growing international demand
- historical preferences suggest that demand for four-star and above quality hotels will be strongest over the next 10 years
- the market research was based on a range of data sources including MBIE's International Visitor Arrival forecasts and data, Tourism Industry Aotearoa hotel data, and Statistics New Zealand's Commercial Accommodation Monitor. Colliers International provided proprietary information about planned hotel developments.

Future cities all about liveability and well-being

Liveability and creating healthy communities will be the focus of future cities according to international sustainability experts

Katie Swenson, a US-based leader in sustainable design for low-income communities, emphasised the importance of well designed, sustainable and affordable housing.

Speaking at the recent Green Property Summit, Swenson argued that housing people and creating engaged communities not only has good social outcomes, but also saves a city money.

"Failing to do so means you will be engaging with this problem via your health and social services. Therefore, the role our buildings play in creating healthy, engaged communities has far-reaching social consequences.

"For the homeless, when you design a home that is beautiful and well suited, 98 per cent remain stably housed. This indicates there are health benefits to how and where we live. This is a consideration for the property industry."

Swenson outlined her work for Enterprise Community Partners and the establishment of the Green Communities Criteria, the only national green building standard with direct applicability to affordable housing.

"Low-income communities experience disproportionately high rates of obesity, heart disease, diabetes and mental health issues.

"The Green Communities Criteria, which is a national green building standard, harnesses the power of design to improve residents' health through "Active Design" requirements. This can include simple, cost-effective measures like improving stairwell access and visibility.

"We also promote healthy neighbourhoods, rather than just buildings. Access to services around a building are also important, and help create a happy, engaged community where people want to live."

Summit speaker Davina Rooney, from Stockland Australia, agreed, suggesting that we need to plan our future cities better to improve health and liveability.

"Obesity has a post code. The urban planning we do now, and the infrastructure we put in place, will have a direct impact on the health of our children."

American guest speaker Paul



"Cities of the future will be neighbourhoods connected by high speed internet, which links all the systems needed to support these communities"

Rode also emphasised the importance of using technology to design, plan and connect our cities.

"Ten years ago, green design was all about energy efficiency as the cost of utilities was going up. Today, technological innovation means utility costs are declining. Now, green development is about liveability and creating communities and improving existing buildings.

"Cities of the future will be neighbourhoods connected by high speed internet, which links all the systems needed to support these communities.

Rode's advice to New Zealand: "Make sure your buildings are better integrated into the site. Your street and traffic flows are not coordinated with pedestrians, it's crazy walking around here."

Keynote speaker Dr John Keung, CEO of Singapore's Building, and Construction Authority (BCA) made the case for more government leadership in sustainable building. "Government must walk the talk."

Andrew Eagles, CEO of the Green Building Council, launched a policy position paper at the conference.

"Better buildings and homes mean a better quality of life. It's time to have a conversation about the built environment in New Zealand".

"Working with industry and government to set out a trajectory for the built environment will provide certainty for the construction and property sector and greater productivity and better outcomes

for New Zealanders," Eagles says.

To energise the private sector towards green sustainability, Keung suggested greater financial incentives. "It is the classic carrot and stick approach. We set the minimum standard.

"However, if a developer reaches the higher targets, they get additional funding support or space to develop."

Peter Mence, chief executive, Argosy Property Limited and national president, Property Council New Zealand, called on the property industry to do more.

"As a property industry, we must manage our resources reasonably.

"Personally, I do not believe the industry is moving fast enough, we need to lift our game."

In his closing address to the summit, Property Council Chief Executive Connal Townsend agreed.

"We all need to get on board and create sustainable, green buildings that people want to live and work in," he says..

The summit was a joint event by the New Zealand Green Building Council (NZGBC) and Property Council New Zealand.

Iplex quality product and technical support

Leading New Zealand manufacturer of plastic pipelines and systems for the infrastructure sector

Iplex Product Catalogues
<http://tinyurl.com/pjztopz>

Iplex Case Studies
<http://tinyurl.com/pb4taxf>



Stormwater, sewer, roading and trenchless

Aquacell

Infiltration - rainwater collected in galleries and allowed to seep into the surrounding soil. Attenuation - stormwater collected in a detention gallery and released at a reduced rate through a flow control device. AquaS-wale™ provides a low maintenance, low impact stormwater management solution tailored to meet the site-specific demands of both subdivisions and commercial developments.

<http://tinyurl.com/pp86af5>

Nexus™Hi-Way

Heavy-duty, double wall polyethylene pipe combining a smooth inner wall with a corrugated outer wall welded together during manufacture. Subsoil drains under roads, constructed in accordance with Transit NZ Specification NRB F/2: 1989, construction work-site drainage, subsoil drainage under carriageways or driveways, drainage of rubbish tips and public land fill sites.

<http://tinyurl.com/nqsuovs>

Restrain

For gravity pipeline projects using trenchless technology. Applications include gravity sewer, stormwater, electrical and telecommunication ducting. Suitable for use with horizontal directional drilling, auger boring, guided boring, pipe bursting/cracking.

Product Information: <http://tinyurl.com/p9uaotv>

Case Studies: <http://tinyurl.com/ox25u5s>



Apollo

Biaxially oriented PVC pressure pipe for use in water and waste water pipelines. With exceptional toughness and impact resistance, Apollo PVC-O pipe can provide greater hydraulic capacity than PVC-U pipes of the same OD size and similar pressure class. Light weight and available in two dimensional Series (Series 1 & 2) Apollo PVC-O pipe is manufactured in New Zealand and available in the size range DN100 - DN300mm. Manufactured in accordance with AS/NZS4441.

Product detail: <http://tinyurl.com/pocxtfl>

Case Studies: <http://tinyurl.com/pkr68v9>

Novafuse Fusible PVC

FPVC™ provides the only available method of installing a continuous, monolithic, seal ring-free PVC pipe, capable of use in numerous trenchless or conventional open-cut installation. Applications include pressure and non pressure pipelines for drinking water, wastewater, electrical, industrial and telecommunications industries. Fused and installed throughout the US, Canada, Central America, Hawaii, and NZ.

Product detail: <http://tinyurl.com/pduvfsg>

Case Study: <http://youtu.be/VUR5v7raSH0>

Poliplex PE100

PE100 polyethylene pressure pipe up to 2000 mm outside diameter and manufactured in accordance with AS/NZS4130. Suitable for a diverse range of infrastructure applications from water and waste-water to sewer rising mains, irrigation mainlines and above ground pipelines.



Flowtite GRP Pipe

Glass reinforced polymer producing a high strength, corrosion resistant, light weight pipe system suitable for water, waste-water, chemical and industry applications. Available from PN1 to Pn32 in a range of diameters from 300mm to 3000mm, Flowtite is suitable for above ground applications and conventional trenched pipeline and is also available in jacking pipe and slip-lining pipe options for trenchless installation.

Also:

BLUE BRUTE PVC-U Pressure Pipe CIOD Series 2. Standards: AS/NZ 1477

BLUE RHINO PVC-M Pressure Pipe CIOD Series 2. Standards: AS/NZ 4765

NOVAKEY PVC-U Pressure Pipe Metric Pipe Series 1. Standards: AS/NZS 1477

Telecommunications, electrical and gas
<http://tinyurl.com/nbljtup>

For technical services:

Iain McNaught 027 243 3000,

Frank O'Callaghan 027 495 4523,

Todd Randell 027 211 4838



There is more to Iplex than pipe manufactured and delivered to your project site. Talk to us about what you need. Iplex Pipelines, manufacturing and supplying PVC, PE and GRP pipeline solutions to the New Zealand market.

0800 800 262
www.iplex.co.nz

IPLEX
Pipelines



Green building boom

The global green building materials market is expected to exhibit double-digit growth over the next five years, according to a new report

The sector was worth an estimated US\$171,475 million in 2015 and is expected to grow at a CAGR of 11.9 per cent from 2016 to 2022.

This means total global market revenue will reach US\$377,029 million by 2022, says *Allied Market Research's Green Building Materials Market by Product Type and by Application—Global Opportunity Analysis and Industry Forecast, 2014–2022*.

The emission reduction potential of green building materials, high asset value of green buildings, growth in public awareness regarding green materials, and an increase in client and market demand are the major factors driving the green building materials market across the globe.

Reduced operating costs and enhanced worker productivity due to healthier indoor environments are among other reasons behind the spectacular market growth.

A wide variety of green building materials are currently available in the market, including linoleum, galvalume panels, and fibre-cement composites.

They are expected to play an increasing role in the new low-rise

and high-rise residential buildings, retrofits of existing buildings, and new industrial buildings where dramatic growth of green building materials is expected.

Increasing acceptance of certification systems such as DGNB, LEED, BREEAM, GREEN STAR, HQE, and EnergyStar that evaluate green building performance is also playing a major role in the building materials boom.

“Though cost concerns, market barriers and lack of government policies encouraging green construction are some factors which hinder the growth of green building materials, continuous innovation and the rise in growth of the building and construction sector provides great potential for market expansion,” says Eswara Prasad, team lead, chemicals & materials at Allied Market Research.

Exterior products accounted for more than one-third of the market in terms of revenue in 2015. Employing green building exterior products in the construction industry offers energy efficiency, durability, low maintenance, and operation cost and waste reduction compared to traditional construction techniques.

The residential buildings segment holds the largest share by application in terms of revenue and is expected to grow at a CAGR of 11.2 per cent.

An increase in concerns regarding rising energy prices, accelerating climate change, negative health impacts associated with building materials, and stormwater runoff polluting rivers and lakes have reinforced the need for green building construction in this sector.

The report's key findings include:

- Asia-Pacific is expected to

continue to lead the market during the forecast period, followed by Europe

- solar products market revenue is projected to grow with a high CAGR of 13.5 per cent
- roofing is the fastest growing segment in green building exterior products, registering a CAGR of 12.2 per cent
- Brazil accounted for three-fifths of the Latin America, Middle East and Asia (LAMEA) green building materials market in 2015
- India is growing at the fastest rate in the Asia-Pacific green building materials market, and is expected to register a CAGR of 12.7 per cent from 2016 to 2022
- France accounted for 11.1 per cent of the European green building materials market in 2015

Asia-Pacific and Europe collectively contributed more than half of the global green building materials market revenue in 2015.

In the same year, Asia-Pacific dominated the market, owing to the presence of healthier neighborhoods and pressure of environmental regulations pertaining to harmful emissions.

New low-rise and high-rise residential buildings, retrofits of existing buildings, and new industrial buildings are major areas where dramatic growth of green building materials is expected

New resource for faster, more efficient buildings

New Zealand is missing a prime opportunity to combine its sustainable timber resources with an innovative manufacturing system to build faster and more efficiently, an overseas expert claims

Daryl Patterson, Head of Operational Excellence at Lend Lease Australia, states Cross Laminated Timber (CLT) is that missing link.

CLT is an engineered wood system made from several layers of dimensional lumber boards, stacked crossways and bonded together.

Speaking at the recent Wood Processors & Manufacturers Association of New Zealand (WPMA) and Property Council New Zealand Tall Timber Buildings symposium, Patterson questioned why, given New Zealand's ample timber resources, there is not greater use of CLT in the local construction sector.

"New Zealand is fortunate as all manufactured timber is made here. In Australia, we import manufactured timber as we don't have the large timber resources to supply the raw product.

"You also have the design talent, a market that accepts timber and local manufacturers who have invested heavily in the technology to deliver and supply CLT."

Patterson says he investigated CLT after seeing how 3D printing and robotic technology could be used to manufacture multi-storey buildings.

"We had a design team look at this and the challenge was not the printer but the ink. We had to ask what will we make these buildings from. We needed a lightweight, strong, easy to manufacture, raw material.

"We looked at over 100 options and it kept coming back to timber: easy to construct, sustainable, durable and cost-efficient."

CLT provides the dimensional stability, strength and rigidity of alternative products at similar costs and can be digitally fabricated.

"This technology allows for mass customisation as the tools of design talk to the tools of production.

"We can now design and manufacture an entire apartment block in a warehouse, from a computer software program and robotics



OREGON DEPARTMENT OF FORESTRY

"New Zealand should champion this system and become the world leader in CLT-constructed buildings"

operated by one guy."

Patterson cites London's Graphite Apartments as an example.

"We looked first at the 2008 construction of the Graphite Apartments, in London. This was social and affordable housing where CLT was being used in very economically tight circumstances.

"They had to make it work and reducing cost was the rationale for using CLT. They could build faster, cheaper and break the height record for timber buildings by 50 per cent."

Patterson believes the cost saving is partly due to the speed of construction and the ability to make the building watertight far earlier in the construction process

than can be achieved with traditional materials.

Bringing that knowledge back to Australia, Lend Lease went on to build the Forté, Melbourne's tallest timber building in 2013.

"What we found using CLT was, not only was it faster to build than a conventional building by 30 per cent, we also reduced truck movements to and from the site by 90 per cent."

Patterson says other benefits included a quieter construction site, a smaller construction crew and significant thermal properties. He adds the feedback from buyers was overwhelmingly positive.

"Buyers were not concerned about what the building was built out of. They just wanted a nice, modern home and we were able to deliver that on time, at a reasonable price using CLT."

Patterson also made reference to the recent, \$150 million 5 King development in Brisbane, which is busting the scale for timber buildings at 52 metres high and features over 25,000 square metres of CLT.

"Brisbane is a tough market to

sell commercial buildings in. We wanted to bring construction costs down to reduce rent and attract tenants.

"There is strong interest by investors in sustainable, well-designed, CLT-constructed buildings as they are known to attract and retain tenants.

"These buildings offer a lower carbon footprint than other building materials and they are also great environments to work in."

The implications for New Zealand, Patterson argues, are huge.

"In Christchurch, you have 1000 new buildings constructed with steel and concrete. These products are being imported from other countries when New Zealand is growing and manufacturing even better buildings in timber frame.

"CLT has the durability, strength, stability, seismic resilience, thermal performance, fire resistance, moisture management and vapour diffusion, healthy indoor environment, and design flexibility.

"New Zealand should champion this system and become the world leader in CLT-constructed buildings."

Flexibility, global connectivity driving new office leasing solutions

As the sharing economy continues to transform every aspect of life, Kiwi businesses are seeking alternatives to one of the last bastions of business tradition: the fixed office environment

To meet growing demand for more flexible working arrangements, Regus, the world's largest flexible workspace provider, is opening its seventh New Zealand location — its third in Wellington, located on level 6, 1 Willis Street.

The new prime CBD workspace features private offices, shared spaces and carefully designed drop-in areas available for an hour, a week, a month or longer. It's all about maximizing productivity and comfort, and minimizing the limitations that fixed space can present.

"Businesses need faster and more flexible options for all sorts of reasons: short-term projects, new branch offices, expanding into new markets, better use of working capital, growing teams and more," explains Regus New Zealand Country Manager, Pierre Ferrandon. "Many now choose to work this way on a permanent basis because it makes sense and is more efficient for their business and people. In the on-demand, shared economy, there really isn't any reason to have money, energy and time tied up in assets that are often in use for shorter and



shorter periods of time."

Past solutions for many have included makeshift meeting spaces and spare rooms.

"Coffee shops and home offices are no longer enough. The next wave is about having anywhere, anytime flexibility, with the security, discretion, professionalism and comfort of a permanent base. It's not just about mobility any more, it's about quality mobility," says Ferrandon.

The new Wellington Regus workspace will provide fresh,

purpose-built premises for local, out-of-town and overseas business travelers. It also offers crucial global connections for its Wellington-based tenants, with access to new networks and more than 3,000 Regus offices around the world.

"The global aspect is especially important to New Zealand businesses, given the distance from many key markets. They need to have their networks well formed already if they are going offshore, and be ready to hit the ground run-

A fully-furnished and equipped workspace – simply turn up, plug in and get straight down to business

ning. With 3,000 locations in 107 countries, Regus can help provide the bridge for that."

Regus' customers range from sole-practitioner consultants, professionals and knowledge workers through to medium-sized organizations looking to test a new market, and multinational corporations building a New Zealand presence.

"The variety of nationalities, people, business types and sizes you'll find in a Regus office is very much part of the appeal for many of our customers," says Ferrandon.

"While Regus clients will often come from diverse backgrounds, sectors and parts of the world, the space and network provides common ground for those who want to work in quality space, surrounded by other successful businesses."

Regus' commitment to helping New Zealand businesses thrive and grow in new ways extends to its sponsorship of the New Zealand Innovation Council – a homegrown membership organization with the goal of developing and growing great companies. As part of its commitment to support Kiwi innovation, Regus has developed a dedicated offer for the finalists in the council's Innovation Awards at the newly opened Wellington workspace.

** Some terms and conditions apply, see the Regus website www.regus.co.nz for further information.*



Flexible workspaces, better for your business. ●



Why be tied to a long term lease and under utilised space when you could choose to work flexibly and cost effectively?

With 7 New Zealand locations & 3000 globally, Regus offer flexible terms meaning you can expand or downsize when you need to, and enter new markets at low cost.

Call us to see how you can reduce the cost of your real estate.



Office space



Meeting rooms



Business lounge



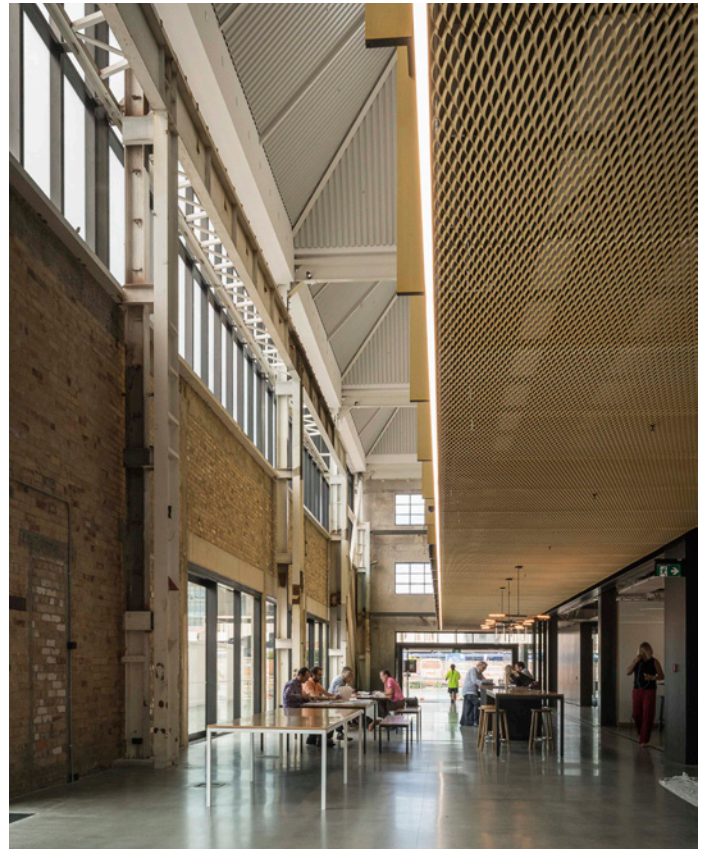
Virtual office

0800 555 703
regus.co.nz

Regus[™]

Character warehouse reinvented as modern workplace

The Mason Bros. building in Wynyard Quarter has been officially opened by following a 13-month redevelopment



Located at 139 Pakenham Street, Mason Bros. is the first completed development by Precinct Properties within the Wynyard Quarter Innovation Precinct.

Designed by Warren and Mahoney, the extensive redevelopment of the 1920s warehouse has retained many of the existing character features while creating a completely modern working environment.

The distinctive sawtooth roof remains a feature and the original red brick façade has been exposed.

A new internal 'laneway' runs north to south through the building, creating a social gather space for occupants.

Precinct CEO Scott Pritchard says Mason Bros. is unlike anything in the Precinct portfolio. "Mason Bros. is such a special building," he enthuses.

"We have preserved and celebrated as many of the original features as possible while creating an

internal environment that is very contemporary. The construction has been much like creating a ship within a bottle."

Precinct Properties entered a development agreement with Panuku Development Auckland (formally Waterfront Auckland) to develop up to 46,000m² of commercial space within the central area of Wynyard Quarter in 2014.

Mason Bros. is the first completed development, with the next building, 12 Madden Street due to be completed in the middle of the year and leasing underway for a further building at 10 Madden Street.

Mason Bros. forms part of the Wynyard Quarter Innovation Precinct, an initiative driven by ATEED (Auckland Tourism Events and Economic Development).

Pritchard says that there has been "real demand" to be located within the Innovation Precinct.

"Businesses are really coming to see the benefits of proximity to tech entrepreneurs and start-ups

to support business growth and spur innovation," he believes.

"That partnered with the fantastic amenity and design of the Wynyard Quarter makes for an incredibly attractive location."

Panuku Development Auckland CEO Roger McDonald is delighted that the building is complete. "Precinct Properties has done an outstanding job in redeveloping the Mason Bros. building in a way that retains its heritage aspects while reflecting the innovative character and aspirations of the space which forms part of the Wynyard Quarter Innovation Precinct," he says.

"Panuku has high standards of its developers and has maintained 100 per cent trust in Precinct as the right development partner to deliver a quality product to its present and future tenants and in turn continue the success story of the Wynyard Quarter."

The building was originally home to Mason Bros Engineering Co. Ltd, an engineering and shipbuilding firm.

Precinct have celebrated the heritage of the building by reinstating 'Mason Bros' as the official name of the building.

As part of the official opening the original name plaque was reinstated. The plaque was gifted by Kevin Schulz, who began as an apprentice at Mason Bros Engineering in 1966.

In keeping with the sustainability targets for Wynyard Quarter, Mason Bros. has been designed and constructed to target a 5-star Green Star rating and a NABERSNZ rating of 4.5 stars.

A world-leading building information management system created by Beca has been installed to help deliver on this goal.

Mason Bros. is fully leased, Warren and Mahoney having occupied the building in December 2016 and Mott McDonald and ATEED due to move in over the coming months.

The redevelopment was delivered by NZ Strong with Beca as project managers and Mott McDonald as engineers.

FIRST AID TRAINING



NEW ZEALAND
RED CROSS

RĪPEKA WHERE AOTEAROA



- Red Cross offers a wide range of courses.
- Red Cross can organise courses to be run at your workplace.
- Red Cross have full time professional tutors delivering consistent training nationwide.
- Red Cross can tailor courses to suit you.
- Red Cross have the most up-to-date training techniques and training aids.
- Red Cross provide a variety of courses and are happy to discuss your needs.
- Red Cross stock a comprehensive range of first aid equipment including fully automated external defibrillators.

Use the Red Cross Advantage – first aid courses include: **Comprehensive Plus** (16 hrs), **Comprehensive** (12 hrs), **Essential** (8 hrs), **Save-A-Life** (4 hrs). **Revalidation** or **Tailored Training** to suit you at your place or ours.

Book Now: www.redcross.org.nz

AUTOMATED EXTERNAL DEFIBRILLATORS

Is your location prepared with a Powerheart G5?

- Real-time CPR feedback
- Rescue Ready® self-testing
- User-paced prompts
- Fast shock times
- Customised escalating energy

0800 RED CROSS

0 8 0 0 7 3 3 2 7 6

COMPARE OUR PRICES AND **SAVE**
CALL FOR A FREE NO OBLIGATION QUOTE

When a sudden cardiac arrest (SCA) strikes, the first few minutes are critical to survival...



The Powerheart G5 self checks over 62 items daily

Traditional material provides innovative solutions

Wood is no longer “just” a framing option for bungalows, as the NZ Wood-Resene Timber Design Award winners clearly prove

Nine winners in categories ranging from architectural excellence and engineered innovation to novel applications of fibre and student design were announced at a gala function in Auckland on 9 March.

The Resene Supreme Award went to Cathedral Grammar Junior School in Christchurch, submitted by Ruamoko Solutions with Andrew Barrie Lab, Tezuka Architects, Ohno Japan and Contract Construction.

“Cathedral Grammar stands out as an example of what can be achieved with effective collaboration and innovation in timber design, fabrication and construction,” the judges said.

“The expression of the structural timber frames at a human scale is inviting, and promotes a tactile response from young occupants.”

This entry also won Timberlab Solutions Ltd’s Commercial Architectural Excellence section and was highly commended in the NZ Timber Design Society’s Engineering Innovation competition.

Jon Tanner, Wood Processors and Manufacturers’ Association’s (WPMA) chief executive, points out that wooden buildings weigh less than comparable steel-concrete

structures – a major advantage in fine, liquefaction-prone soils.

Engineered beams in laminated veneer lumber (LVL) or cross laminated timber (CLT) can provide equivalent strength and improved fire resistance to steel beams, which can warp dangerously in extreme heat. Timber chars, but rarely burns right through.

“Modern timber construction methods mean multi-storey residential and commercial complexes are being built worldwide, some up to 18 storeys tall,” says Debbie Fergie, WPMA’s promotion manager.

“Astute asset owners are taking advantage of the cost-effective solutions such buildings can provide. Such structures are erected very quickly compared to others too.”

Wood’s inherent flexibility can also be maximised in infrastructure applications, as demonstrated in the Kopupaka Park solution in Northwest Auckland that won Smartclad’s Exterior Innovation and Infrastructure award.

This was submitted by Isthmus Group Ltd, and judges gave kudos to the team for “thinking outside the box and using timber for infrastructure projects.”

This project had earlier won the

Landscape of the Year award at the 2016 World Architecture Festival in Berlin.

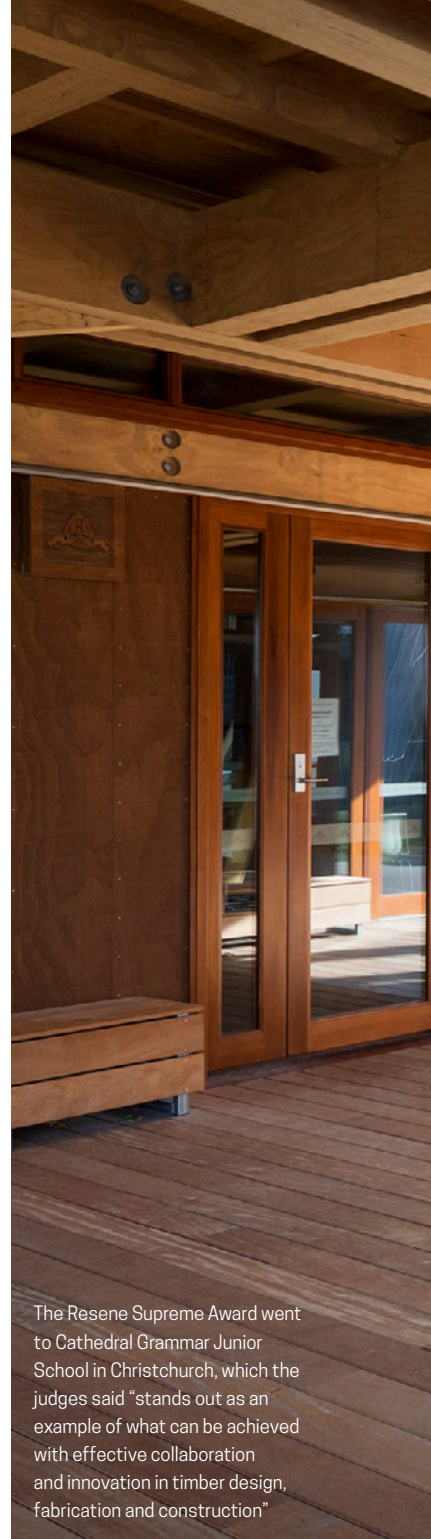
The Carter Holt Harvey-sponsored Residential Architectural Excellence category was won by the Point Wells Gables project, designed by Aaron Paterson and Steven Lloyd of the Paterson Architecture Collective, Steven Lloyd Architecture and Glamuzina Architects.

Judges commented: “The use of traditional timber technologies, highly manipulated and carefully detailed, achieves high emotional impact.”

This project was also highly commended in the Interior Innovation category and was the only entry to be highly commended in the Resene Supreme Award.

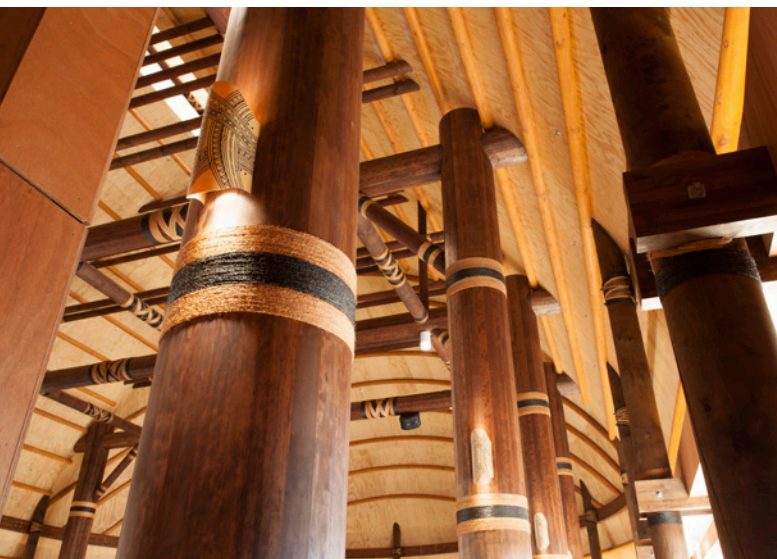
Winner of the Interior Innovation category, sponsored by Taranaki Pine, was another Auckland project, the Government of Samoa’s Fale in Mangere, from Walker Community Architects Ltd.

“Traditional methods of building have been scaled up to make a large community space, while maintaining the... richness derived from shaped and honed timbers and traditional bound joints,” said the judges.



The Resene Supreme Award went to Cathedral Grammar Junior School in Christchurch, which the judges said “stands out as an example of what can be achieved with effective collaboration and innovation in timber design, fabrication and construction”





The Innovation of Student Design Award was won by two third-year University of Auckland students - "Marking the Journey of Tatau" (tattooing) from Amanda Wijaya is described as a progression through a building likened to the three stages of tatau - the stretching, the tattooing, and the transition to adulthood, enhanced by the louvered and coffered rafters, ceiling and panels.

The second winner was a multifunctional pavilion by Louie Tong. "Rigorous mathematical and geometrical analysis has informed a student design-and-build project at Henderson High School, which can be seen as a deliberate provocation to engage students' imagination and interest in mathematics, material and construction," said the judges.

LtoR: The Point Wells Gables project won the Residential Architecture Excellence category with its use of traditional timber technologies, highly manipulated and carefully detailed to achieve high emotional impact"

The Isthmus Group's striking Kopupaka Park solution in Northwest Auckland won Smartclad's Exterior Innovation and Infrastructure award.

Walker Community Architects Ltd's Government of Samoa Fale in Mangere took the Interior Innovation award.

Global entrance solutions leader expands Down Under



A global leader in architectural revolving doors and security entrance systems, Boon Edam, is expanding its operations Down Under through a partnership with the leading Australian-owned automatic door manufacturer Auto Ingress Pty Ltd

Boon Edam Australia Managing Director Michal Fisher, says the two companies will partner nationally in the sales, installation, maintenance and retrofit of the entry technologies of Boon Edam, which has dozens of Fortune 500 companies among its global clients, including some of the world's largest firms.

Major benefits of the partnership include:

- expanded availability of 24/7 service and maintenance agreements for existing, new and retrofit installations of Boon Edam technologies in public and private facilities, including office buildings, data centres, airports, healthcare facilities, shopping centres and retail outlets, major hotels, restaurants and national attractions visited by millions of people a year.
- a greater range of choices throughout Australasia of world-class architectural entrance and security solutions from Boon Edam, drawing on its 140 years of global experience and now distributed in partnership with market leader Auto Ingress, which has more than 20,000 installations nationally and in export markets. Auto Ingress has more than 20 years' experience in automatic door operations to suit extremely

busy entrances to facilities such as shopping centres, hospitals, universities and other major publicly accessible facilities.

- greater on-the-ground expertise to benefit both existing and new clients of both companies, throughout Australasia. Auto Ingress' local capabilities complemented by Boon Edam's local expertise and direct links globally to advanced entrances solutions. Boon Edam's solutions are focused on architects, builders, facility managers, property owners, new project developers and specifiers seeking entrances solutions which harmonise aesthetics with entry solutions that reflect the importance of facility entries as mobility hotspots in today's security-conscious world.

"The partnership of Auto Ingress' local expertise and service with Boon Edam's global leadership is a major advantage for clients of both companies," says Fisher, who is expanding Boon Edam's presence in Australasia with a team that includes locally-based facility design, security and maintenance personnel.

Auto Ingress has a highly complementary quality ethos, being dedicated to achieving market leadership through products that are extremely reliable, quality

Boon Edam was responsible for the world's highest revolving doors on the observation deck of the 124th floor of Dubai's 442m-high Burj Khalifa building

manufactured to stringent ISO 9001-2000 conditions, are low maintenance, economical to install, aesthetically pleasing and supported by market-leading warranties.

Auto Ingress, with its own broad network of technicians, has secured long term relationships with many local and regional contractors, ensuring prompt, reliable service.

Auto Ingress Director Rob Jessen says the partnership offers major benefits to customers. "Boon Edam is the world No 1 in architectural revolving doors and way up there also in security doors," he notes.

"Their top quality products and outstanding service standards ideally complement Auto Ingress'

product and service range."

Boon Edam Australia provides local expertise and direct access to its global experience in tailoring quality entrance systems to manage issues ranging from architectural presentation, energy conservation and HVAC issues, through to protecting sensitive facilities and precincts against unauthorised access by unwanted visitors posing threats to physical and cyber security.

The latest Boon Edam installations globally include the giant 5-metre high revolving doors on the new Rialto building regeneration project in Melbourne (the tallest such doors in the Southern Hemisphere).

The company was also responsible for the world's highest revolving doors ever installed in the façade of a building, on the observation deck of the 124th floor of the 442m-high Burj Khalifa building in Dubai that is the world's tallest structure.

"With over 140 years of experience in engineering quality entry solutions, Royal Boon Edam has become expert in creating future-proof mobility hotspot solutions that meet the diverse requirements of sustainability, security, and service while also being aesthetically outstanding," says Fisher.

Strong foundations

The best start to any infrastructure project is expert legal advice. Our specialist environmental and resource management, and construction and major projects lawyers work with you to deliver successful outcomes throughout the life cycle of your project.

Visit www.chapmantripp.com/construction



FIRST IN LINE
FOR A COFFEE

NEXT IN LINE
FOR SENIOR
PARTNER

GO PLACES

Where are you going?

You might want to answer, 'to work', or 'to the shops'. But we're all going somewhere bigger than that. We're heading there with every action, every decision, every seemingly insignificant step.

Well, we're here so you can keep moving. Wherever you need to be, you'll find us.

Wherever you're going,
stay with Quest.

0800 9444 00
questapartments.co.nz


QUEST
APARTMENT HOTELS