

The Christchurch Botanic Gardens Visitor Centre – four layers integrate the visitor centre with the working facilities of the gardens



Photo by Pam Carmichael, courtesy of Christchurch City Council

Botanic Gardens Visitor Centre connecting people to plants

By Lee Suckling

The only capitol building to be given post-earthquake go-ahead by the Christchurch City Council (CCC) in the immediate wake of the February 2011 earthquake was the Botanic Gardens Visitor Centre.

Six years since its concept was first designed, the visitor centre was opened by the Duke and Duchess of Cambridge in April 2014 and has become a roaring success amongst Christchurch's public, and indeed the world.

Designed by Auckland-based architecture firm Patterson Associates, the visitor centre began as a CCC-run competition for a new building design to mark 150 years of the Christchurch Botanic Gardens, back in 2008. Pattersons conceptualised a greenhouse-inspired design, which uniquely was positioned 100 m west of the designated site.

"The Avon River wraps around the whole area, with only bridges piercing in," says project director Andrew Mitchell of Pattersons. "The only thing that permeates is Christ's College [a historic secondary school]. It's the only part of the gardens with a walled boundary, and we wanted to create a design that backed onto it to soften that boundary."

The design additionally allowed for new access ways into the spiderweb-like garden structure and also would open up the adjacent riverbank for public access. "There was green space that was never accessible by the public, and we wanted to change that," Mr Mitchell says.

CIVIC VALUE

After being shortlisted as one of the top four designs, Pattersons won the competition in 2009 and was awarded the contract. The project was put on hold before going out to tender after the September 2010 earthquake, then given the green light – until the February quake put it on hold once again. After February, "the council canned every project in the city except this one," says Mr Mitchell. "It was seen to have a lot of civic value."

After a lengthy year of approvals in a "tough post-earthquake environment for new construction", Mr Mitchell says tendering was complete by the end of 2012 and Leighs Construction appointed the builder for the 3200 sq m project. "They were a good fit: a good size, a local company, and they were very keen on the project," he adds.

With Ian Harrison Associates for quantity surveying, the engineer appointed was Structura, while Viking Roofing was confirmed

for TPO roofing (thermoplastic polyolefin, or TPO, is a single-ply roofing membrane), Cosgroves for fire, Alpha Interiors for ceilings, Thermosash Commercial for windows, Bates Joinery for joinery, E-Cubed Building Workshop for environmental engineering, and consultants Mott Macdonald and Marshall Day as facade engineer and acoustic engineer respectively.

LAYERED PROJECT

Four layers comprise the realisation of the Botanic Gardens Visitor Centre. "The brief from the client was to integrate the visitor centre with the working facilities of the gardens, to show the people of Christchurch what they do," says Mr Mitchell. "It's connecting people to plants, not hiding everything away."

The back layer of the site is the working facilities themselves: the garages and spaces for diggers, lawnmowers, soil and other horticultural essentials. "We cleared a large area of existing buildings, but kept many of the existing sheds," says Mr Mitchell. "We wanted to keep the old facilities functioning so the gardens staff could remain in operation throughout the one-year construction phase. We later did a staged handover and demolished the old buildings."

As the first phase began and tree removal was undertaken

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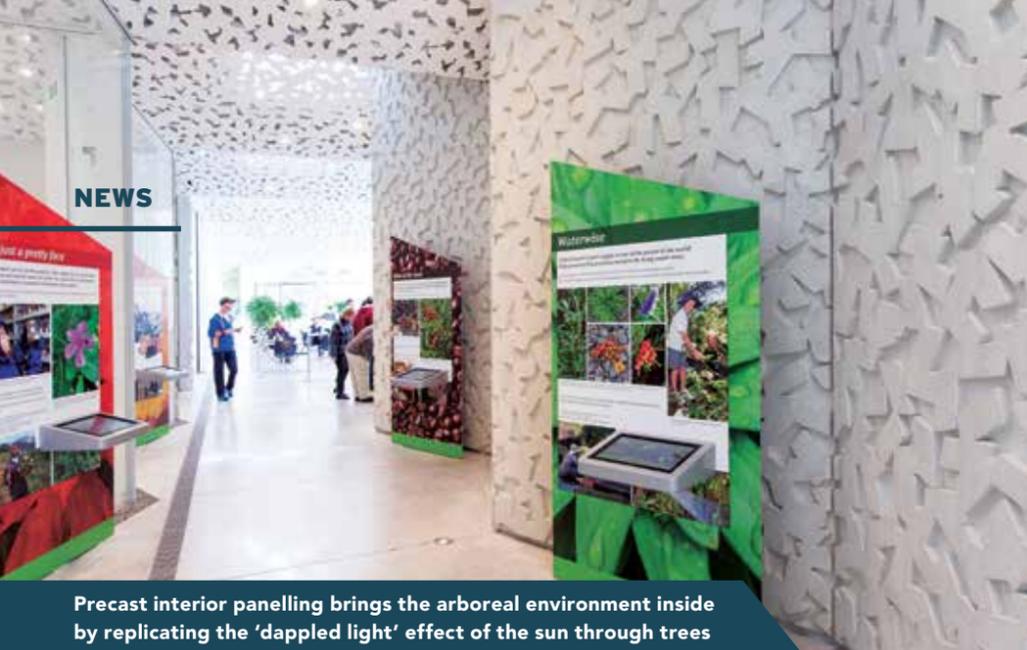
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Precast interior panelling brings the arboreal environment inside by replicating the 'dappled light' effect of the sun through trees



Inside the visitor centre – the facility has been very well received by the public

Photos courtesy of Christchurch City Council

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in-house by CCC, increasing public interest in the site needed management, with effective barriers for safety. "Another challenge was managing the flow of construction vehicles into the gardens, as it's a pedestrian-only zone," Mr Mitchell adds.

The next layer comprises the working staff operations: the biodiesel boilers, potting corridor, herbarium, staff toilets and staffroom, and office spaces. This was constructed alongside the exhibition room, a library, and a multifunction room.

Bradford Precast made all the panels in nearby Ashburton, while structural steel integration was 3D modelled by iDetail "to ensure everything popped together," Mr Mitchell says. Steel integration, updated to comply with post-quake building codes, was coordinated by all trades involved in the project with software Tekla BimSight to guarantee everything fitted perfectly onsite.

LIKE ORIGAMI

Faber, the largest manufacturer of greenhouses in New Zealand, completed the greenhouse construction in a traditional Dutch style, with a "straight off the shelf" roof pitch, and fully automated machinery for temperature control and management of heat and shade screens. "It's a tried and true system," says Mr Mitchell, "rather than us trying to develop something on our

own." This comprised the third stage of construction as the bulk of the building.

The fold of the roof pitch – at 22.5 degrees – was replicated in the front and final layer of the building as the facade, which sits in front of the retail area and café of the visitor centre's frontage. "The 22.5 degree fold inverts itself like origami, all the way along the facade," Mr Mitchell explains.

The glass within the facade was mocked up 1:1 by Thermosash and put through the rigmarole of seismic testing under conditions stronger than Christchurch experienced with the 2010–11 earthquakes to ensure its seismic strength. "These big pieces of glass sit in rock, and were tested well above the seismic movements expected," says Mr Mitchell. "This is not a typical facade; it doesn't just clip on. The glass is part of the overall structure, and it had certain levels of criteria to meet."

The TPO roof is made from 100% recyclable roof membranes, and a bore-water heat exchange facilitates heating and cooling within the building, ensuring eco-conscious elements make the visitor centre sustainable for the future.

Precast interior panelling brings the arboreal environment in, moreover, by replicating the 'dappled light' effect of the sun through trees inside the visitor centre. Such sculptural panelling follows a 'frit' pattern: a ceramic-baked composition fused by

an oven, quenched by glass, and granulated.

SYMBOLS OF THE FUTURE

While the Botanic Gardens Visitor Centre incorporates a modern and daring geometric structure, the architecture team were not afraid of the Christchurch public's reception of the building.

"The traditional roof pitch is a nod to Christchurch's past, while the other elements look high-tech and symbolise the future," says Mr Mitchell. "We were opened by the royals, and it's been very well received by the public."

The Christchurch Botanic Gardens Visitor Centre was shortlisted for the World Architecture Festival 2014's Completed Buildings Display.



Freelance writer Lee Suckling has lived and worked across the globe, but now chooses to live in Christchurch; his specialties include interiors, architecture, construction and urban planning

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The centre under construction – all panels were precast offsite, and steel integration was coordinated to guarantee everything fitted together perfectly



Photos courtesy of Pattersons

Free process library for New Zealand councils launched

Local councils throughout New Zealand now have free access to a new online library that allows them to share their process knowledge and experience with other councils.

The Local Government Shared Process Library NZ consists of around 1000 processes developed by councils and uploaded to the cloud for sharing. Promapp Solutions, which provides business process management software, announced its intention to make the library available to all New Zealand councils in October.

New Zealand councils have a history of sharing with each other, but this is the first time that sharing has been centralised nationwide, and demand for access to the online library has been high, says Ivan Seselj, CEO of Promapp. "In the past three weeks, we have registered council members from nearly half of all councils in New Zealand. It's a significant result and I think it shows that councils are eager to gain detailed insights into the way other councils operate and improve their own processes, performance and customer service," he says.

"Councils today are under significant pressure to do more with less, to operate efficiently and deliver good service on a lower cost base. This online library allows councils to spend a few minutes browsing processes that have already been created by other

New Zealand councils, instead of spending hours creating one from scratch."

SAVING MONEY FROM THE START

The library includes processes for activities where there is high public interest, such as building consents, resource consents, wastewater management, environmental health and environmental monitoring, and liquor licensing. The library also includes an extensive set of processes for dealing with land information, parking, libraries and museums, recreation and leisure, community development, animal management and compliance, as well as customer services and service delivery.

Councils are saving money right from the start. "We have over 1000 processes in the library," says Mr Seselj. "When you think that each process required meetings and input from a number of managers before it was developed, then add in the costs of analysis, development, documentation review and approvals, it's clear that each process may represent anything from one thousand to tens of thousands of dollars in costs and time. Councils have made a substantial and very real investment in developing these processes, which they're now making available for sharing."

Anyone with a council email address can access the Local Government Shared Process Library NZ by requesting access from Promapp (see below). Council staff can use the library to search

for and view processes in map and procedure form, print, share, download and deploy them. "Councils can assess the quality of their existing processes against those of other councils. They can find, adapt and adopt proven processes faster, saving time and money," Mr Seselj says. "And if their council already uses Promapp, they can export the process and import it into their own Promapp system, improving efficiency and service."

SIMPLE AND EFFECTIVE

Library champion Jamie Dale of Taupo District Council says they were happy to share their entire building consent authority quality assurance process with other councils. "We've invested heavily in trying to keep it simple and effective, which allows us to focus on delivering building control services to our customers," he notes.

"IANZ has reviewed the complete process and accredited it as meeting the requirements of the Building (Accreditation of Building Consent Authorities) Regulations 2006. Local government has a remarkable history of cooperation. Sharing proven, valuable resources is a natural extension of that culture," Mr Dale adds.

promapp.com/lg-shared-process-library