NZILA RESENE PRIDE OF PLACE
LANDSCAPE AWARDS 2019

INFRA

Landscape Design:
INFRA Infrastructure
Waterview Connection

Submitted by
Boffa Miskell

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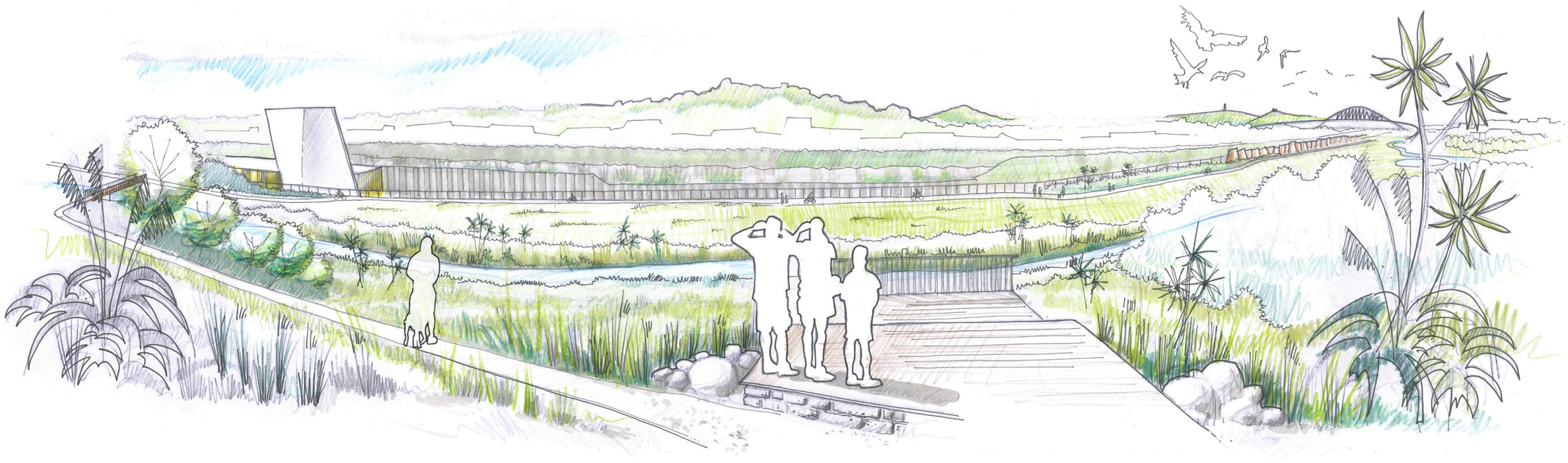
Waterview Connection

Opening Statement

At the time of construction, the Waterview Connection was the largest budget construction project ever undertaken in New Zealand. The site is in urban Auckland and the project had the potential to have a profound impact on the local residents and wider communities in the area.

As a result of the severance caused by the above-ground works associated with the tunnel project, the Board of Enquiry made the determination that the large open space areas within the motorway alignment were able to be revitalised and new public amenities, including both passive and active recreation assets, were able to be delivered. In conjunction with the public space impacts, the infrastructure itself had to deliver a world-class design outcome due to the prominence of the project in the local environment.

The public had an enormous effect on the design outcomes through the extensive consultation and design workshops that were held in order to give the community a voice in the profound changes, long-term upheaval, and eventual amenities occurring in their neighbourhoods.



History

Under the Roads of National Significance programme, the Waterview Connection was promoted as the final section of the Auckland Motorway network. This Auckland wide network was first mooted by De Leuw Cather in 1956 and the Waterview Connection, a tunnel system and interchange with the North-Western Motorway would complete the picture.

However, the process of getting to the start line for construction was difficult. The first schemes proposed an overland route or a combined overland/tunnel system (different route) that removed large swathes of residential land and severed communities. There was vigorous opposition from all quarters to this plan that eventually saw the NZTA (then Transit New Zealand) consider the alignment that is the Waterview Connection. The eventual scheme progressed to a Board of Enquiry process in 2010 and in June 2011 the final decision from the BOI was released.

During the BOI process, the NZTA commenced the procurement process to find Alliance partners to design, construct and operate the project. In mid-2011, the Well-Connected Consortium of Fletcher Construction, McConnell Dowell, Obayashi Corporation, Parson Brinkerhoff New Zealand, Beca Infrastructure and Tonkin+Taylor were confirmed as the preferred Alliance partners. Sub-Alliance and sub-consultants included SICE, Wilson Tunnelling, Downer EDI Works, and Boffa Miskell.

Boffa Miskell were engaged as sub-consultants and in turn we engaged Warren and Mahoney as sub-consultants on the project.

Boffa Miskell were charged with all aspects of the Urban Design and Landscape design works. This included:

- Re-interpreting the Specimen Design that went through the BOI process to meet the Conditions of Consent,
- Preparation of the Urban Design and Landscape Framework document which included works within the motorway corridor, the affected adjacent active and passive open space areas, walking and cycling connections, all associated structures (ventilation buildings and stacks, bridges and noise walls)
- Development of full construction documentation to deliver the works.

The first public workshop held was a disaster. The Agency had underestimated the level of angst in the community and local politicians were in the audience. The proposal to relocate the northern vent stack was met with horror, with Cr. Mike Lee, proclaiming “..there will be blood on the streets…” should the proposal be taken any further. This was the starting point from which we had to build from!

Boffa Miskell soon become the leaders of the public consultation which included fortnightly Design Workshops with anyone from the community, Public Open Days, providing information for newsletter drops and design sessions with the students from Waterview School for the Waterview Park design.

The outcomes of the consultation greatly influenced the design outcomes as the project team sought to provide enhanced environments as a legacy of the motorway project. Through the extensive consultation and the design workshops, the local community members developed a sense of ownership, not of the highway, but of the mitigation works in the public open spaces.

Outcomes

This section of SH20 route was envisaged as the ‘Volcanic Highway’ as it passed through the Pukewiwi (Mt Roskill) and Owairaka (Mt Albert) volcanic fields. The Specimen Design recognised this design direction and developed responses appropriate to that theme. These were largely unseen by the wider community and once they were made public, there were some strong reactions, namely to noise wall designs, ventilation building concepts and the lack of suitable mitigation to the loss of public open space. The Alliance had to quickly address the concerns of the community as this was achieved through developing modified designs that we were able to have signed off as appropriate by the Auckland City Council (as the Requiring Authority).

Two of the strong drivers that influenced many of the design outcomes related back to the volcanic environment. Strong angular forms taken from the columnar basalt and the iron stained basalt rock colours influenced design elements such as the noise walls, the ventilation stack on the Southern Vent Building and the basalt was used wherever possible for landscape elements. The form of the volcanic cones was a strong influence in the design of Te Whitinga Bridge, crossing SH20, connecting otherwise severed communities.

Te Auaunga (Oakley Creek) was required to be relocated as it sat directly over the motorway alignment. The stream has been channelised and rock lined as a drain in the 1930s and this was an opportunity to deliver a restored waterway (Auckland longest) in a new alignment but naturalised. Columnar basalt flows were uncovered and left as features, runs, riffles and pools were introduced and the stream given a wide channel to meander and provide better habitats for eels, birds and invertebrates. In undertaking this work, a rare local species of a previously unknown native geranium was discovered. It was under significant threat from the construction work and quite possibly would not have survived the works. The plants were recovered and protected off site, additional plants grown on and special planting areas set aside within the stream planting works. This geranium is now well established in this restored environment.

Of equal importance was the unique cultural heritage, both from tangata whenua and for earlier European habitation of Auckland. Within the Waterview Reserve area (at the time a residential street), the remains of one of Auckland’s early tanneries and brick works plants (that supplied the brick to build Carrington Hospital as it was then) were identified to the project team by a local historian resident

in a house built on the site of the heritage finds. This become an important part of the site for the project team to recognise the heritage and without making a ‘Disneyland’ type of feature. This is now the location the ‘heritage bridge’ crossing Te Auaunga near the original bridge crossing. The boiler and other items have been kept near the locations where they were found and protected on display.

Tangata whenua were contributors to the design story through a number of elements. The pedestrian bridges over Te Auaunga where designed in part by Henriata Nicholas and Mark Lenton.

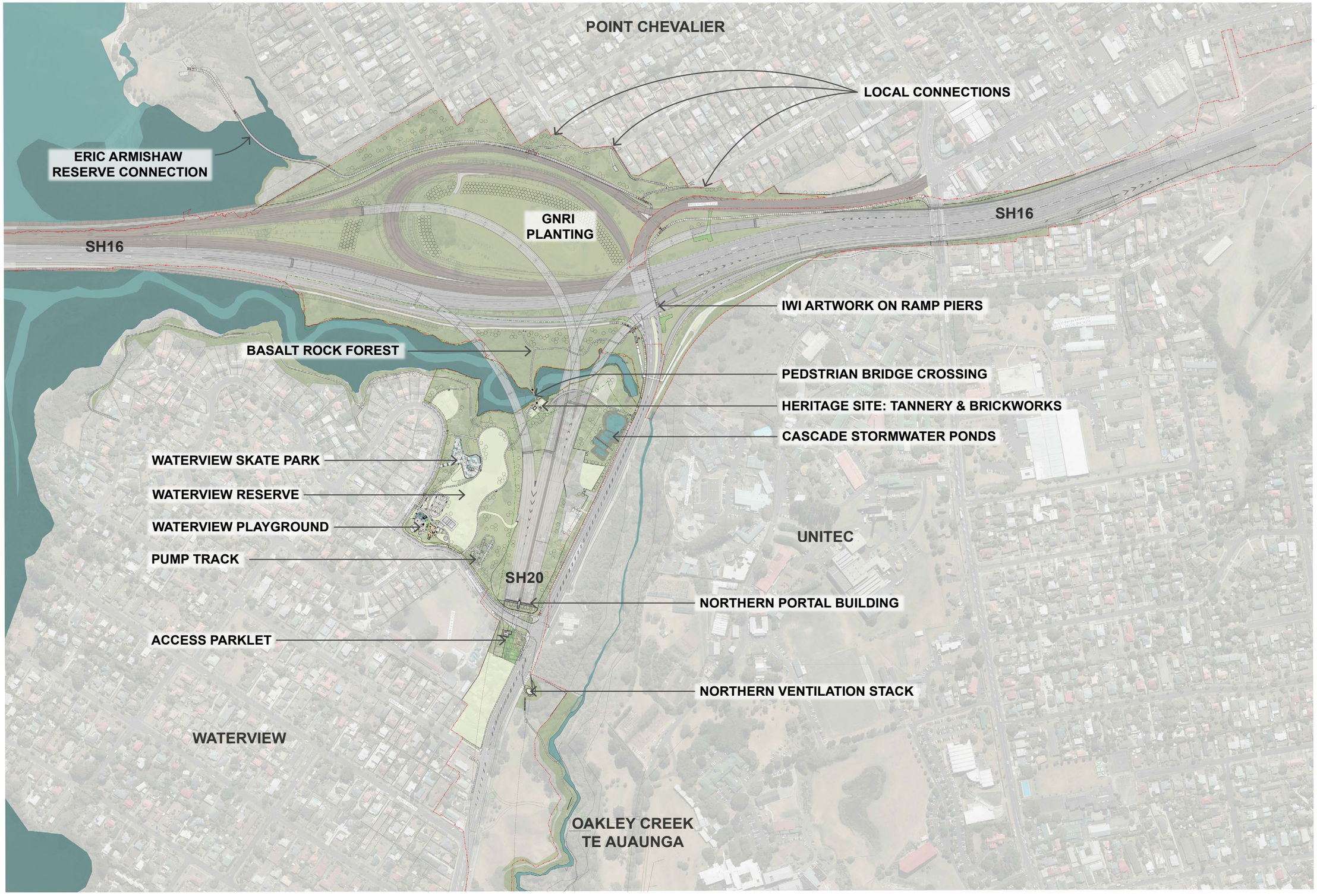
Graeme Tipene (Ngati Whatua Orakei) was invited to provide an art piece at the entrance of the northbound tunnel. Graeme interpreted the story of Hinemairangi and Tamaireia, two lovers escaping a tribal conflict by travelling through the lava caves under Owairaka to freedom. Graeme also decorated the cutting face shield with an art piece called *Te Haerenga Hou*, that covered the Tunnel Boring Machine during transit.

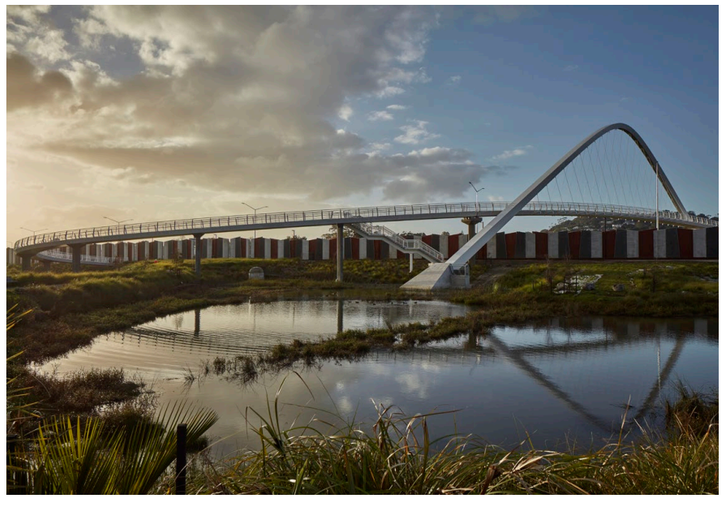
At the Great North Interchange, the entrance to the North-Western Motorway, two motorway over pass legs were selected where there would be safe public access close by. These two pier legs are sheathed with back lit, laser cut corten steel artworks, one each from Ngati Whatua and Ngati Paoa. The pier legs are in close proximity to the basalt lava forest area that is being managed by Ngati Whatua as part of a cultural revegetation project using non-toxic and a natural systems approach to weed control and revegetation. This a rare forest type within the Auckland region with nearly all other examples having been removed in the early days of European occupation.

Community ownership of the design process, working closely with the Alliance design team, primarily Boffa Miskell, ensured that the mitigation elements to be delivered as compensation for the loss of public open space were what the community needed. We had to ensure the design outcomes were place based and as such, the two skateparks that were delivered are strongly founded in either the volcanic landscape theme (Valonia Reserve skatepark) or reflecting the former built heritage (Waterview Reserve skatepark). The Waterview Reserve playground was developed through design workshop sessions with students from the adjacent Waterview Primary School. Although ideas such as a lolly-dispensing ice cream monster and the girls-only treehouse didn’t make the cut, the playground is very much a reflection of the desires of the free minds of the school children!

Within the motorway corridor itself, Boffa Miskell oversaw the development of the architectural response to the built forms (ventilation buildings, vent stacks and service building working closely with Warren and Mahoney Architects. Boffa Miskell were also instrumental in removing the requirement for vertical precast concrete walls inside the tunnels and exposing the form and construction of the tunnels i.e. the exposing of the concrete tunnel segments to show tunnel users the construction technique and allow the honest tunnel fabric to be shown. This approach was endorsed by Gordon Moller after the Alliance sought a peer review of the proposal.

The Waterview Shared Path that runs from the Great North Interchange area, right through to Valonia Reserve is a significant piece of pedestrian and cycling infrastructure. The alignment connects to the local communities and provides routes through the surrounding suburbs. The path is a major recreation resource as well as a significant connection in the commuter network for Auckland.





Essential Criteria

1. Clarity

The Waterview Connection project demonstrates how an infrastructure project was utilised to leverage enhanced landscape and ecological outcomes. The infrastructure component of the project, the motorway had the potential to sever communities. The landscape concept sought to connect the communities through shared landscape outcomes that greatly enhanced the public open spaces whilst providing improved ecological outcomes for Auckland's longest urban stream.

2. Sense of Place

The Waterview Connection landscape passes through the volcanic environment of Pukewiwi and Owairaka. Apart from the volcanic cones themselves, the lava fields are largely hidden from sight yet they have a profound impact on the local environment. This project was able to expose and express that character of the volcanic environment through the use of form, colour and the plant palettes ranging from riparian treatments to Auckland Basalt Rock forest associations.

3. Performance

NZTA and the partners in the Well-Connected Alliance sought for the project to enhanced their mutual reputations as world-class deliverers of infrastructure. The project has received numerous engineering and architectural awards, and is recognised worldwide.

Early on, the public consultation -- which began from a point of opposition, and was turned around -- won the NZTA Gem Award. Since then, aspects of Waterview have been recognised by the NZIA, the World Architecture Festival, the Designers Institute of New Zealand.

Most telling, the landscape works were significantly less than 5% of the total budget yet these spaces have had a profound impact on the perception of the project from the public. Opponents of the scheme are now strong advocates for the community landscape outcomes.

4. Value

NZTA has the mandate to deliver transport infrastructure including for the best use of money. The landscape component of the project was a departure from the business as usual aspect of the NZTA work streams. The value (both in terms of capital input and also social benefit) were underestimated initially however once the project was underway, the level of support for the landscape works was enhanced as the community feedback was received.

The real value of this project, other than any transport benefits, lie in the landscape and ecological outcomes that have hugely benefited the local communities that would otherwise could have been severely impacted by the project.

5. Innovation

A new concrete stain technique was developed and used for colouring the Valonia noise walls. The rust colour stain was specifically developed for this project and based on the iron stained basalt seams within the site. The stain will change colour over time as it weathers as will the exposed basalt.

The related Te Auaunga Awa/Oakley Creek restoration project is the most accomplished bioengineering project in New Zealand to date, providing for naturalised and diverse stream meander and profiles across 1.5km of stream channel and several daylit streams.

6. Execution

Due to the complex staging of the project, a linear landscape implementation programme was not possible. The landscape contractors had to be flexible and have very strong relationships with the nurseries supplying the project as timeframes and staging lines moved.

As the landscape works generally occur at the end of the main construction activity, any significant landscape movements had to be programmed early to ensure civil contracting personal and equipment were available on site.

7. Plantsmanship

A fine balance between ecological enhancement and public amenity had to be achieved throughout the project. A complex structured ecological response is not necessarily appropriate in a public recreation area.

The rare local species of a previously unknown native geranium (geranium *aff.retrorsum Oakley Creek*) was discovered. It was under significant threat from the construction work and quite possibly would not have survived the works. The plants were recovered and protected off site at the Auckland Botanic Gardens, additional plants grown on and special planting areas set aside within the stream planting works. This geranium is now well established in this restored environment.

8. Environmental Stewardship

Within the larger revegetation areas, the planting is designed to be self-sustaining and successional, through the mix of eco-sourced pioneer plant species at initial planting and climax species planted in the mix that will emerge over time. The enhanced Te Auaunga condition has provided a much improved habitat for aquatic species and also for foraging birds, now seen in and around the waterway.

9. Significance and Influence

The Waterview Connection landscape projects contributes significantly to the mitigation of a large infrastructure project that cuts through public open space. The infrastructure project itself has received international recognition.

The public open space and ecological benefits along the route mean that the local environments are much enhanced now than existed prior to the works. New recreation facilities and pedestrian/cycle access routes have been established and communities have been re-connected. The Waterview Connection is a world-class infrastructure project. The client – and most importantly, the community – are pleased.

Project Information

Client:	The Well-Connected Alliance
Boffa Miskell Team:	Alex Smith Alistair McCullough Caroline Patton Kieran Dove Mark Lewis Matt Henderson Sarah Collins Peter Whiting
Project Partners:	Warren and Mahoney (sub-consultants to Boffa Miskell for Architectural work) The Well-Connected Alliance, comprising The NZ Transport Agency, Fletcher Construction, McConnell Dowell Constructors, Parsons Brinkerhoff, Beca Infrastructure, Tonkin & Taylor and Obayashi Corporation
Project Date:	2012 - 2017
Awards:	GEM Awards 2016 – Supreme Winner NZPI Best Practice Award - Consultation and participation strategies and/or processes Best Awards 2018 - Gold Pin and Purple Pin for Built Environment

"THIS IS A GREAT DAY FOR OUR COMMUNITY. SKATE PARKS AND BMX TRACKS JUST DON'T COME AROUND VERY OFTEN... YOU'RE ALL LEGENDS, YOU'VE MADE THIS HAPPEN, BECAUSE THE MOTORWAY IS A BIG PROJECT, BUT THIS IS A LOCAL PARK, AND THIS IS OUR COMMUNITY.

WE DIDN'T REALLY LIKE ALL THE NOISE, AND THE DESTRUCTION, AND ALL THE ORANGE ROAD CONES, BUT WE'VE PUT UP WITH THEM. AND I BELIEVE YOU REALLY SET A NEW BENCHMARK IN WHAT MAJOR INFRASTRUCTURE PROJECTS NEED TO LOOK LIKE, AND WHAT NEEDS TO BE DELIVERED ON THE GROUND.

WE AS A COMMUNITY ARE TRULY APPRECIATIVE, BECAUSE WE'RE THE LUCKY RECIPIENTS OF WHAT YOU DESIGNED AND BUILT. SO IN SOME WAYS WE'LL BE REALLY SAD WHEN YOU GO."

Margi Watson, Albert Eden Local Board