

CIVIL CONTRACTORS NZ / HIREPOOL

CONSTRUCTION EXCELLENCE AWARDS 2017

Z People Awards 2017

Connexis Company Training
Development Awards 2017



in association with **CONTRACTOR:** New Zealand's civil contracting magazine

“Proudly fuelling the Z People Awards”



We understand that there are literally thousands of talented Kiwis working away behind the scenes to improve the country's infrastructure, which is why we sponsor the Z People Awards. Enough about us though - here's to this year's finalists.

Congratulations, from all the team at Z.



CCNZ / HIREPOOL CONSTRUCTION EXCELLENCE AWARDS 2017



PUBLISHER

Contrafed Publishing Co Ltd
Suite 2.1, 93 Dominion Road,
Mt Eden, Auckland
PO Box 112357, Penrose,
Auckland 1642
Phone: +64 9 636 5715
Fax: +64 9 636 5716
www.contrafed.co.nz

EDITOR

Alan Titchall
DDI: +64 9 636 5712
Mobile: 027 405 0338
Email: alan@contrafed.co.nz

CONTRIBUTING EDITOR

Richard Silcock

ADVERTISING / SALES

Charles Fairbairn
DDI: +64 9 636 5724
Mobile: 021 411 890
Email: charles@contrafed.co.nz

ADMIN / SUBSCRIPTIONS

DDI: +64 9 636 5715
Email: admin@contrafed.co.nz

PRODUCTION

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Civil Contractors NZ established the Construction Excellence Awards in 1978 as a means of recognising excellence in the civil engineering, construction, maintenance and contracting industry.

Hirepool has been a proud sponsor of the awards since 2003.

Civil contractors who are members of CCNZ compete for the awards annually. The winners are presented with their award at a gala awards dinner held in conjunction with CCNZ's annual conference.

In 2017 the annual conference and awards were held in the Dunedin Centre, Dunedin.

Celebrating Construction Excellence



We thank the awards judges: Category 1, 2 and 5, Dave Macdonald and Paul Bishop; Category 3 and 4, Steve Hart and Alan Powell. Their comments on the winning entries are summarised below.

Category 1A: Projects with a value of less than \$5 million (Company turnover less than \$10 million).

WINNER: CCL – Jackson Street Wastewater Renewals

The majority of this project was within private property, with steep terrain and limited machine access. Four different construction methods were used for pipe laying sections including hand digging some trenches. A strong relationship was developed and maintained with the property owners whose acceptance of the on-site work was absolutely necessary.

CCL collaborated with MWH and Wellington Water to obtain approvals for these. The outcome was a happy client from a very well thought through and constructed project that met environmental, quality and safety requirements and left the site in a better condition than when they started.

Category 1A: Highly Commended

Seipp Construction – Beachville Road Seawall



Category 1B: Projects with a value of less than \$5 million (Company turnover more than \$10 million)

WINNER: Waiotahi Contractors for Aniwhenua Dam Head Wall Remediation Works

The project to repair a leak from the Aniwhenua Power Station Head Pond was considered a particularly difficult and interesting job by the judges.

The work entailed a degree of uncertainty in that exploratory works were unable to determine exactly what conditions existed around the area of the leak, with accumulated debris on the floor of the head pond making planning difficult.

Deadlines were strict, and a progressive approach to the design of the repair was required which, in turn, required confidence in the contractor from the client and the engineer.

The parties involved worked together to develop solutions to problems that were uncovered as the project progressed, and while significant technical difficulties were encountered, these were worked through "on the job" to the satisfaction of the client.

Both the client and the consultant commended Waiotahi on their ability to work closely and collaboratively, and the end result was an excellent project, delivered on time and to budget.

Category 1B: Highly Commended

Downer NZ – Le Roy's Lookout

Category 2: Projects with a value of between \$5 million and \$20 million

WINNER: Fulton Hogan – SH3 Vickers to City Upgrade

This project doubled the capacity of two kilometres of live highway into New Plymouth, and with walking and cycling improvements. This required detailed planning and delivery staging to minimise impacts with road users, adjacent residents, business and utility owners. Service relocations within the route were complex, requiring a focused and thorough collaborative approach to ensure these were integrated.

Two major bridge widenings along with seven intersection upgrades were carried out seamlessly with the main corridor upgrade. Environmental aspects, health and safety and quality delivery were a major focus and achieved very high outcomes during the project delivery.

During works a very strong team culture and relationship was developed with the NZTA and New Plymouth Council, and all parties were proud of the completed works.



Category 3: Projects with a value of between \$20 million and \$100 million**WINNER: Goodman Contractors – MacKays to Peka Peka**

The Earthworks Subcontract undertaken by Goodman Contractors for the MacKays to Peka Peka Alliance is a great example of the outstanding outcome that can be achieved by utilising the knowledge of conditions a local contractor brings.

In this case Goodman's were involved through the early phases of the project, including tendering and consenting when they demonstrated to all members of the main alliance the benefits of utilising their skills in undertaking project earthworks through sand, peat and swamps, minimising impacts on the environment and enhancing the visual experience for road users.

The M2PP project is an 18 kilometre four lane expressway taking SH1 along the Kapiti coast requiring the earthmoving subcontractor to shift some 3.5 million cubic metres of material, much on the critical path for the project, while ensuring the many local roads intersecting the new expressway alignment at grade remain in use.

All participants can be very proud of the success of this project which started with a community hostile to the proposal, and finished with the local authority, client and stakeholders effusive in their praise of the project. The judges were also very impressed by Goodman's commitment to development of further cloud based business systems and congratulate the team on their winning entry.

**Category 4: Projects with a value greater than \$100 million****WINNER: Well-Connected Alliance – Waterview Connection**

The Waterview Connection Project is arguably the most complex infrastructure project undertaken in New Zealand. It is an outstanding example of what can be achieved when a diverse group of constructors, designers and the client work together collaboratively to achieve a single goal, being the delivery of exceptional facilities for the public.

The project, for the NZ Transport Agency, delivered not only two of the nation's longest road tunnels at 2.4 kilometres each, but also a complex motorway to motorway interchange at Great North Road, five kilometres of pedestrian/cycleway paths, skate parks, BMX track, sports fields and an environmental upgrade of the Oakley Creek.

The Well-Connected Alliance, which won the project in a competitive tender, consisted of seven organisations being the NZ Transport Agency, Fletcher Construction, McConnell Dowell, Obayashi, Beca, WSP and Tonkin & Taylor plus two sub-alliances. The judges were impressed with the Well-Connected Alliance's focus and investment in gelling this diverse cultural group from New Zealand, Australia, Japan and Spain into a single harmonious team.

It is hard to fully portray the extent of the complexity and risks in this project and the achievement of the team that successfully delivered it in this short citation. The judges congratulate the Well-Connected Alliance on its winning entry.

Category 5: Excellence in the maintenance & management of assets including routine maintenance**WINNER: Downer NZ – Maintenance Dunedin area traffic signals network**

This year's finalists were all smaller maintenance contracts, but a consistent theme was the development of a strong relationship between client and contractor resulting in the generation of trust between the parties.

Over the past four years the Downer team has had a strongly collaborative approach to working with the parties involved which included both NZTA and Dunedin City Council. As a result of this collaboration they developed innovative practices which reduced costs and improved services for the residents travelling in their area of influence.

Downer took a previously manual data collection system and established an electronic asset database which has proved to be efficient and effective, and suggested improvements to the system have been readily taken on board by the clients.

Training of apprentices is also a feature of the contract and this practice is to be applauded.

The Dunedin City Council Traffic Signals Maintenance Contract is a great example of a smaller project, well executed, providing innovation and client satisfaction.





CAT 1A
CONSTRUCTION
EXCELLENCE
AWARD 2017
WINNER

CATEGORY 1A: Projects with a value of less than \$5 million (Company turnover less than \$10 million)

PROJECT: Jackson Street Wastewater Renewals. **CONTRACTOR:** Construction Contracts

Difficult realignment recognised

An old earthenware poorly aligned sewer pipe along part of Jackson Street, which dated back to 1910, was showing signs of severe tree root infestation and collapse. The pipe also passed beneath a private house.

Construction Contracts (CCL) was contracted to replace and realign the sewer pipe in what was one of the most difficult and complex projects undertaken of this nature.

CCL rose to the challenge and showed innovation in proposing a new alignment design which significantly minimised the environmental impacts to private property compared to a design previously submitted.

The project also required diplomacy in liaising with the owners of affected residences and utmost care in implementation so as to minimise disturbances to land and gardens. A process of regular communication and consultation was established with CCL taking the lead in instigating and maintaining a good working relationship with homeowners and other stakeholders. Issues were carefully considered and by working with residents solutions found.

Ninety-five metres of HDPE pipe was laid by open trenching

along the new alignment, 45 metres was installed by directional drilling, while a further 75 metres was laid by hand in areas where machinery could not be used due to access limitations, necessitating the use of modified tools and barrows. This required a significant amount of stamina and physical hard labour digging through weathered and solid greywacke on steep terrain in wet and extremely cold conditions.

To minimise disruption to residents, sewage and wastewater services were maintained throughout the project via overland pipes and pumps connected to the sewer downstream of the work area.

The project was completed within budget and timeframe with the sewer installed to contract specifications and all affected residential properties reinstated to best trade practice standard.

The complexity of this project was recently recognised with the contractor receiving the 2017 CCNZ local branch Wellington/Wairarapa Construction Award, Category A, and it was also successful in gaining the ACC Workplace Safety Award at the 2016 Wellington Gold Awards. ●



CATEGORY 1A: Projects with a value of less than \$5 million (Company turnover less than \$10 million)

PROJECT: Stormwater Upgrade Otaki Beach. **CONTRACTOR:** Action Civil

Flood water mitigation

The Otaki Beach Stormwater project was constructed to mitigate a significant flooding issue for low-lying properties in and around Moana Street, Otaki Beach. Inundation regularly affected the area and residential properties were at risk of significant damage from large flooding events.

This upgrade contract was awarded to Action Civil in July 2015 following a tender process, and was finished in January 2017.

The stormwater network upgrade consisted mainly of a new 1200 dia RCRRJ gravity stormwater line; 900 dia GRP rising stormwater main; all inclusive of manholes; sumps carriageway and berm reinstatement and reinstatement of other associated civil works; together with the outlet into the Otaki Beach dune area.

Also included was the construction of an in-situ concrete pump station to six metres deep complete with pumps, valves, draft tubes and all other associated works. A precast concrete electrical switchroom was also required to house the complete electrical works associated with the three pumps. This pumping station has been designed to mitigate a Q100 (one-in-100-year) flood risk. Each pump is capable of pumping

1034 litres per second. This equates to over three cubic metres of water being moved per second if all three pumps are activated at once.

At the highest draw times, up to 1,555,200 litres of ground water was extracted per day to get the water tables low enough for the pump station and pipe laying excavations to be carried out and construction take place.

Over 600 metres of gravity 300mm to 1200mm concrete stormwater pipe was laid along Moana Street. This pipework contributed to the storage retention of the overall pump station.

A further 185 metres of 900mm GRP pumped rising main pipe was laid along Moana Street and up Koromiko Street to the pump station outlet.

In addition, the contract included, but was not limited to – setting out of all works, temporary trench shields, sheet piling, off-site/on-site cartage and carriageway reinstatement, together with concrete driveways and footpaths, berm reinstatement and works within protected sand dunes. Action Civil's total contract value was \$3,146,000 – undertaken over 17 months. ●



CATEGORY 1A: Projects with a value of less than \$5 million (Company turnover less than \$10 million)

PROJECT: Seismic Strengthening of St Mary of the Angels. CONTRACTOR: Multi Civil Contractors

Cultural heritage strengthening

St Mary of the Angels is an iconic Catholic Church in the heart of the Wellington CBD.

The church is classified as a Category I Historic Place by Heritage NZ. Opened in 1922, it was closed following the 2013 Seddon earthquake because a seismic assessment deemed it earthquake prone.

This project involved seismically strengthening a building of outstanding cultural and heritage significance that contributes hugely to the identity and vibrancy of Wellington.

Local contractor Multi Civil Contractors was awarded the demolition, excavation and backfilling, drainage and siteworks package by LT McGuinness, which approached Multi Civil pre tender to work through methodology and the best way to commence the high risk demolition works for the structural re-strengthening of St Mary of the Angels.

Onsite works were started in May 2015 with the project spanning two years to the completion date of March 2017.

Demolition work involved structural demolition to existing portal frames which required intensive saw-cutting methods; demolition of existing slab for new ground beams and anchors; demolition of existing portal columns for new shear

walls; demolition of existing tower foundation for new ground beams; demolition of existing tower sections for new high level anchor beams; and demolition of existing plaster mouldings, windows and decorative pieces for new seismic works.

Excavation work involved: Excavation and backfilling for new ground beams; a new column and anchor pads; new tower foundations; and four metre deep tower raft slabs using small machinery and conveyor belts.

Drainage work involved: Installation of new stormwater; a new sanitary system; and new water main.

Site works involved: Installation of new landscaping to the northern church garden area and included resurfacing and shape corrections of the existing car park to the southern area.

The client was extremely pleased with the overall appearance of the finished church and says the project was completed to a high standard of workmanship. Multi Civil Contractors says it was very proud to be part of a project that involved the future of an outstanding part of this country's cultural heritage that is important to the identity of the capital city. ●

**HIGHLY
COMMENDED**
CATEGORY 1A



CATEGORY 1A: Projects with a value of less than \$5 million (Company turnover less than \$10 million)

PROJECT: Beachville Road Eastern Seawall Rehabilitation. CONTRACTOR: Seipp Construction

Working below sea level

During the Christchurch earthquakes the area around Beachville Road suffered lateral spreading and liquefaction. Impacted structures included the Beachville Road eastern seawall with sections of the wall collapsing during the initial shaking and sinking due to the increased weight loading.

The wall was initially constructed to prevent erosion along the coast, and to protect an area enjoyed by the public for recreational purposes and housing situated on the western side of the road. The seawall forms a part of the Christchurch Coastal Pathway.

The project to reconstruct the seawall along a half-kilometre section was awarded to Seipp Construction (formerly Connell Contractors South) based on its submission of an innovative construction methodology and ability to provide the specialised plant and expertise associated with working in a tidal marine environment.

Work involved removing the damaged seawall, stabilising the shoreline and constructing the new seawall. This required significant work below sea level – both for the removal of the damaged wall and to construct the lower sections of the new structure.

The new 500-metre seawall was built in layers and required sequential logistical scoping of the project. This included ‘trimming’ the seabed to the design profile, the placement of reno-mattresses to prevent under-scouring by the sea, construction of the new seawall core – which was done in 23 metre to 35 metre sections, with each section constructed inside a ‘dry-cell’ created by sheet piling and dewatering. Revetment was achieved using multiple layers of geotextile material, gravel and rock. Ethically designed precast panels were also installed along the top of the wall.

Additional complexities encountered in the project included the poor visibility while working four metres under water. As components of the wall had to be completed with a high degree of accuracy to ensure levels and slopes adhered to the design specifications a DGPS survey system was installed in the main excavator to enable the exact placement of rock.

Safety was paramount and a process of ‘de-risking’ the physical hazards was observed at all times.

The client was extremely pleased with the result, citing it as an outstanding and brilliant piece of engineering that surpassed the Council’s requirements. ●



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Aniwhenua Dam Head Wall Remediation Works. CONTRACTOR: Waiotahi Contractors

Design-on-the-go approach

Remediation of a serious leak in the dam forming the Aniwhenua Power Station head pond in the remote Kaingaroa Forest presented unprecedented challenge, complexity, urgency and risk.

In September 2015 a leak was discovered through the lining of the dam which needed to be repaired with urgency due to the associated risks of flooding and damage plus a daily revenue loss of \$60,000.

Repairing the leak, deep under water amongst 30 years of debris, required a 'design-on-the-go' approach to drain the head pond and canal and construct significant and complex flood protection before the onset of high rainfall in late autumn and winter.

Nova Energy, reliant on the dam for hydro-electricity production, selected Waiotahi Contractors and consultants Tonkin & Taylor to design and undertake the complex works, with a value of \$2.78 million, within an extremely tight timeline.

Waiotahi Contractors is a family owned business that started out in 1957 draining the boggy farmlands of Opotiki. Over the years the company has grown to a diversified civil construction, quarrying and trucking company with a turnover

of around \$20 million.

The company says the key to winning the tender was its initiative to work openly with Tonkin & Taylor during pre-tender to devise workable methodologies with many unknowns. Work started in February 2016 and was completed 58 days later.

The hydro-electric dam was decommissioned to allow the repair, with high loss of generation costs for the client. Works also needed to be completed before the high winter rainfall. Accordingly, Waiotahi, at one stage of the works, planned and resourced a seven-day-a-week, two-shifts-per-day schedule to ensure this project was completed according to the demanding timeline.

Suffice to say, this project was far from a run-of-the-mill project for many reasons. A lot of the technical detail was unknown at the outset as the problem was under water, so it involved complex and technical work under 'almost impossible' deadlines. The project was also high risk, requiring close collaboration to allow for shared innovation and IP with all works carefully taking into account health and safety needs.

A design-on-the-go approach had to be taken, as the problem area (the leak) was deep under water and amongst



years of accumulated debris.

The high rainfall due in late autumn and winter would have made the project extremely difficult to complete if project 'milestones' were not met.

Before pond remediation works could start, a decant pond system had to be built to enable sediment control. A stream also needed to be diverted temporarily.

It was found that the canal head pond sealing layer had failed. All overlying material including protective riprap had to be removed in stages to enable a repair in the dry. This task was exacerbated by the fact that a substantial stream entered the head pond from the west, so early works included the removal of material to be salvaged or otherwise carted to waste. A cut off bund and weir system was constructed. This required installation of pipe support pads for a large diameter glass fibre bypass pipe, necessary for remedial works to be carried out in the dry.

After assessing the extent of damaged embankment material it was replaced with compacted new, low permeability, ash fill and filter material.

Project challenges were overcome through a close working

relationship with Tonkin & Taylor and the juggling of multiple subcontractors.

Despite technical challenges and rain events, Waiotahi Contractors completed the contract within budget and on time, which was essential to allow Nova to resume full production of hydro-electricity. Contract bonus awards for meeting construction and quality of work targets saw Waiotahi picking up two \$10,000 bonus payments.

Due to the technical complexity, Nova Energy expected there would be a need for re-work of some sort. However, the repair was done, the leak was fixed, the liner in place, and the power station recommissioned on time and operational, with no defects and all minor omissions sorted as per the Certificate of Practical Completion.

This excellent project performance was acknowledged by the client, who praised the Waiotahi team, led by Shane Robertson (site manager) and Aaron McCormack (site supervisor), for the high quality of their work, and the management of their team and the subcontractors.

Additional work for Nova and Southern Energy continues to be awarded to Waiotahi, the most recent being in May 2017. ●



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Hamilton Water Treatment Plant. CONTRACTOR: Brian Perry Civil

‘Excellent’ health and safety rating

The city of Hamilton abstracts raw water from only one source – the Waikato River. In recent years, lower river levels and climate change have threatened water supply.

The project involves a floating platform and pump system that pumps water into the Waikato’s intake structure if river levels get too low. This has the benefit of not only dealing with present supply challenges, but can be used during the future \$26 million project to lower and rebuild the city’s intake structure.

The Hamilton community gets the financial benefit of not having to spend \$26 million now, while still managing current risk and building a piece of infrastructure vital to the long-term rebuild project.

The resulting \$1.5 million design and build programme was awarded to Brian Perry Civil (Fletcher Construction).

BPC deployed the floating platform into the river using design and methodologies very different from what had been tendered. A complex project, health and safety drivers led to an overhaul in the construction methodology as parts of the

project were fraught with safety risks.

The client had to make that a huge priority in its planning – turning a weakness into one of the project’s successes. For health and safety aspects, it scored a 92 percent ‘Excellent’ rating by the Hamilton City Council health and safety assessments.

Furthermore, in developing design and construction solutions around crane lift and platform, costs were controlled.

Intensive testing and modelling of the structure, environmental management, and close collaboration with the client led to a successful delivery, and to a safer and more productive build, and reduced the risk to Hamilton City’s water supply from low river levels.

The project began in July 2015, and was completed in August 2016, falling within the revised deadline. It also came in under budget by \$750,000 and immediately opened further opportunities for the Brian Perry Civil team, which has since been awarded the contract to deploy the pump platform over the next four years for the client. ●

HIGHLY
COMMEDED
CATEGORY 1B



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Le Roy's Lookout. CONTRACTOR: Downer NZ

Lookout centrepiece

Le Roy's Lookout (Kaimataara-o-Wai Manawa) and café was an Auckland Council and local community revitalisation project that involved the design and construction of a new open space overlooking Le Roy's Bush in Birkenhead – one of Auckland's largest remaining urban bush areas.

The lookout was constructed on a steep, narrow site in the heart of Birkenhead, Auckland. The two-level, 20-metre steel framed timber viewing deck structure and café was built to extend out over the bush canopy, providing visitors with uninterrupted views over the bush and beyond to Auckland's Waitemata Harbour.

Included in the design element is a colourful balustrade and bleachers sandblasted with several Maori motifs relating to the ecological richness of the area, in particular the water and bush balancing in nature.

Logistically, the project presented a number of challenges, all requiring comprehensive planning and mitigation to ensure delivery of a high quality and safe public facility within a tight timeframe. Risks involved in working at often considerable

height and in a confined working area were mitigated through prudent health and safety adherence, while a management plan ensured a limited impact on traffic and pedestrians by the construction activity.

Communication with nearby shop owners, advising of the work and likely impacts, was maintained throughout the project. Where native bush (pongas, etc) had to be cleared to allow for construction this was kept to an absolute minimum.

Downer's commitment to industry development was evidenced during this project with cadet/graduate engineers' training actively managed, with a strong focus on leadership, career mapping, summer internships, regular mentoring and regular appraisals.

The completed project has provided an inviting, open space that provides not only excellent views, but also a facility that has been designed to be used for performances and other public activities, while providing a connection to the Birkenhead urban town centre. This space has effectively become a centrepiece for the people of Birkenhead and visitors alike. ●



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Half Moon Bay Ferry Pier. CONTRACTOR: Downer NZ

Ferry reflections

The new **Half Moon Bay** Ferry Pier was designed to improve the existing ferry service by providing an aesthetic and pleasing structure that reflected the surrounding environment and gave the commuting public a modern, quality-built ferry boarding and disembarking facility with protection from the weather and views of the bay.

Architecturally designed, Downer was contracted under a construct-only contract to work with the architects and the client to bring the project to fruition. In so doing Downer worked closely with the design team, suggesting build improvements where feasible while ensuring a quality structure was delivered.

Downer applied a number of innovative solutions to the build, including the temporary works design to maximise off-site fabrication. This minimised exposure to safety risks and allowed the construction team to maximise opportunities around tides and inclement weather.

Due to the complexity of the project and budget constraints a robust set of controls and measures were put in place during the construction planning stages, which included detailed construction methodology, the logistics of long lead times for fabrication and the appointment of key subcontractors.

The new, 96-metre long pier was constructed in stages, and replaces the old pier. It sits on 33, 500mm diameter concrete piles, precast concrete beams and pre-stressed concrete slabs. The superstructure features stainless steel, glulam timber and glazing.

A floating landing pontoon, 21-metres long is stabilised by six, 600mm diameter steel piles, while the gangway itself is 24.5-metres long and provides the connection between the pier and the pontoon.

A rigid safety plan was adhered to throughout the construction, with particular emphasis put on working at a height, over water and in often extreme wind conditions. In one instance, and to facilitate the safety requirement, a special frame for lifting entire roof modules of up to six metres long was developed.

The Downer team also worked with Auckland Transport to communicate to all stakeholders and the commuting public through both leaflet drops and traditional and social media outlets.

The pier was funded by Auckland City, NZTA and the Howick Local Board through its Auckland Transport capital fund. ●



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Mystery Island Tender Jetty, Vanuatu. CONTRACTOR: Downer NZ

Tropical isolation challenges

Mystery Island is a remote, uninhabited Pacific island situated at the southern-most tip of the Vanuatu archipelago, approximately 300 kilometres southeast of the main island and capital at Port Vila.

Royal Caribbean Cruises, through its agents South Seas Shipping (Vanuatu), and in conjunction with the local government, required a new landing jetty so that passengers could be safely tendered and disembarked on the island to enjoy its tropical isolation, pristine beaches, swimming and snorkelling activities.

Downer NZ was contracted to provide the site investigation, project design, off-site fabrication work and the physical construction.

The prefabricated aluminium superstructure for the jetty which was constructed to within an 80mm tolerance, was mounted on 36 steel piles driven into the coronous substrate of the seabed, with the precast head stocks then fitted into the pile heads. To ensure the piles were driven to within the 80mm tolerances of the superstructure and to allow for the wave motion of the barge-mounted crane a survey setup on the beach recorded each pile position and relayed this

information to the piling supervisor on the barge. The landing platforms and stairs were fitted into the concrete headstocks and the fibreglass reinforced plastic (FRP) non-slip decking, with mooring bollards and fenders affixed and aligned along the jetty fascia.

The remote site brought a number of challenges in logistics: for example, equipment including the 80-ton crane and prefabricated sections of the jetty had to be shipped from Auckland in parts, reassembled at Port Vila and barged to the site.

Weather was also a factor with unpredictable wind and tides. There was also a requirement to keep the old existing jetty operational while construction was taking place, and to observe protocols associated with working in the marine-protected area.

As Downer staff were living on-site and working in high humidity and heat, a midday 'down-time' for all personnel, including the local workers, was adhered to throughout the project with strict health and safety policies followed.

There were no injuries or incidents and the project was delivered on time, to budget and to an exceptionally high professional standard. ●



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Kopupaka Reserve – Timber Crib Pond Structures. CONTRACTOR: ICB Retaining & Construction

Aesthetic appeal

The Kopupaka Reserve, near the Westgate Town Centre in northwest Auckland, forms an integral part of the commercial and shopping hub and acts as a green space for public enjoyment. The reserve features walkways and water-retaining areas over the 50-hectare site.

As a part of the development ICB Retaining & Construction (ICB) was contracted to construct the feature walls for the retention of the stormwater ponds, the inlet and outlet structures, public viewing platforms and various other backfilled retaining walls. The design of the walls, which was inspired by the flax woven baskets of early Maori, was completed by the Isthmus Group and required the construction of curved, lattice-like, timber crib retaining walls. This was both challenging and innovative by the very nature of the curvature of the walls – believed to be a first of its type in New Zealand.

Due to the complexity of the design, ICB first built test walls to gauge the strength of the timber curvature, cambered footings and the effect this was going to have on the higher sections of the walls.

Actual construction comprised the creation of curved and

cambered concrete footings, installation of 24 timber piles between the box culverts and within the timber crib, compacting GAP65 at the base, installing 24,000 timber crib stretches and headers, placing gabion basalt rock within the crib cells and steel strapping within the crib to prevent twisting and warping. In addition there was the challenge of accurately fitting 350mm SED poles in between the timber crib cells.

To comply with the ecological requirements, the outlet structures feature fish ladders to ensure that the vitality of the catchment is maintained.

The highest standard was achieved in the construction, with materials and performance monitored throughout the project. This included geotechnical investigations, maintaining drilling logs, testing and certification of materials used in the construction – all of which were documented.

The completed project has stunning aesthetic appeal and has added another dimension to the reserve. The quality and delivery of the project was recognised by the client, with the design winning the Landscape of the Year Award at the 2016 World Architecture Festival in Berlin. ●



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Access to Water Construction Works. CONTRACTOR: HEB Construction

Safe waterfront access

Cities worldwide are reinventing their hearts and Tauranga is no exception.

Tauranga City Council is working hard to plan how its city centre will look and feel to be competitive in the future, and is investing \$8 million over the next five years to improve the streetscape, waterfront and open spaces in the heart of the city to make the city centre a “vibrant and attractive place to live, work, learn and play”.

In December 2015, following feedback from the community, Tauranga City councillors gave the green light to the \$2.8 million project to construct new tidal stairs, a pier and a pontoon at Tauranga’s waterfront. The main goal of this was to enhance the public space and connect the public with the Tauranga waterfront by physically gaining safe access to the water.

In January 2016, the detailed design stage of the project began and in October Tauranga City Council appointed HEB Construction (HEB) as civil works contractor for the construction of the new tidal stairs, pier and pontoon. HEB’s Structures Division was headquartered in Mount Maunganui.

The tidal stairs needed to stretch about 50 metres along the downtown harbour waterfront and the project also involved a walkway and surrounding parks; a 30-metre long pier into the harbour; and the design and construction of a 24-metre long, three-metre wide floating pontoon accessed via a 16-metre long aluminium gangway.

HEB’s role as main contractor involved all piling works, installation of the pier, pontoon and precast units, concrete and timber works, precast concrete manufacture, transportation of oversized loads and all associated earthworks.

Construction of the Access to Water Project began in October 2016. HEB and the council worked closely during the construction phase.

On April 11, 2017 the completed new tidal stairs, pier and pontoon were ‘blessed’, followed by a free community event and official opening on May 6, 2017.

HEB is also the civil works contractor on Tauranga’s Marine Precinct project. These two projects are well aligned and have significant synergies, enabling HEB to achieve economies of scale. ●



CATEGORY 1B: Projects with a value of less than \$5 million (Company turnover greater than \$10 million)

PROJECT: Tug Berth Structure at the Waitemata Seaport. CONTRACTOR: HEB Construction

A new tug boat berth

In December 2015, HEB Construction was awarded a \$4.3 million contract by Ports of Auckland (PoAL) to construct a new tug berth structure at the Waitemata Seaport.

The structure was designed to provide better berthing and mooring facilities for PoAL's expanding tug boat fleet, as well as improving tug safety and security. The more central location of the new tug berth structure also offers greater efficiency and fuel savings for tug operations.

The finger type berthing structure, built between Bledisloe and Jellicoe Wharves, is made up of four tug berths suitable for modern tugs, plus a separate berth for work boats.

Each of the berths is formed by a piled reinforced concrete finger.

A further 550 square metres of new piled wharf deck was also constructed to provide access to refuel and service the tug boats.

The project was negotiated on the back of HEB's successful completion of the Ferguson FZ Wharf Extension, and further strengthens HEB's excellent working relationship with PoAL.

Initially intended as a variation to the Ferguson FZ Wharf Extension Project, HEB was awarded the Tug Berth Structure

under a separate NZS 3910: Measure and Value Contract (Contract PJ-2239-AA).

The scope of works included the construction of a 50 metre by 11.2 metre reinforced concrete main deck structure and four 30.4 metre by two metre "fingers" running perpendicular to the main structure to form three internal berths and an external berth along the western edge of the structure.

HEB was principal contractor for this project, which was completed on time, within budget and to PoAL's satisfaction.

PoAL wanted a top-class structure and that is what HEB delivered. The company says the overall success of the project, and the high quality workmanship outcome, was due to the high standards of the team involved in the project and their desire to see the completion of a facility that they and PoAL could be very proud of.

The project required a tremendous amount of planning and programming. The project manager prepared a weekly report to reflect progress and challenges and this was submitted to PoAL and discussed at weekly meetings. These meetings were critical in engaging with PoAL and ensuring that the project was on track. ●

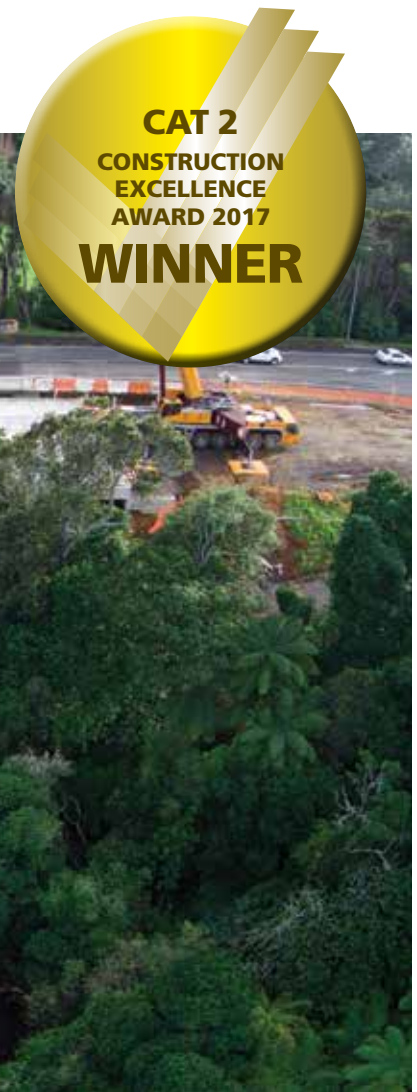


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CATEGORY 2: Projects with a value of between \$5 million and \$20 million

PROJECT: SH3 Vickers to City Upgrade. CONTRACTOR: Fulton Hogan

Critical planning required

State Highway 3 is a critical link in New Plymouth and Taranaki's transport network. Improving capacity on SH3 from Vickers Road to Hobson Street was at the heart of the SH3 Vickers to City Upgrade awarded to Fulton Hogan.

To achieve this, changes were made at seven locations on this approximately two kilometre stretch of state highway. Alongside the existing Waiwhakaiho and Te Henui bridges, two new bridges were built and the road widened to four lanes for the majority of the route.

The project was constructed in a collaborative manner and embraced high levels of stakeholder involvement to ensure the best possible results for the Transport Agency and New Plymouth District Council, as well as the people and industries of New Plymouth and the broader Taranaki community.

Fulton Hogan says the ultimate success of the project was due to strong planning to enable ongoing movement of 29,000 vehicles through the site every day while constructing within a brown-field environment, which was dense with existing and new utilities.

Central to the success of the project, which was procured for \$17.4 million, was a complete and detailed programme, continual monitoring and adjustment as the works progressed.

Fulton Hogan applied consistent analysis of progress that helped to identify opportunities or threats as early as possible. The project involved construction within a live roading environment, so construction methodologies were strongly influenced by erosion and sediment control methodologies and flood contingency.

All erosion and sediment controls and environmental methodologies were constructed and maintained in accordance with the guidelines for earthworks in the Taranaki region.

The objective was also to deliver 'no surprises' financial management and reporting to the Transport Agency.

To achieve this objective Fulton Hogan established an effective cost control and reporting system to provide the Transport Agency with transparent, accurate and timely claims and forecast final claim. ●



CATEGORY 2: Projects with a value of between \$5 million and \$20 million

PROJECT: Christchurch Town Hall Conservation. CONTRACTOR: Brian Perry Civil

An inside job

As a result of the 2010/11 Canterbury earthquakes, the highly and acoustically acclaimed Christchurch Town Hall sank 300mm and rotated 600mm laterally towards the adjacent Avon River.

While the building itself held up comparatively well, lateral spread of the ground towards the river and liquefaction undermined the foundations.

Jet grouting was identified as the best solution to address the issue and to stabilise and mitigate further movement. The remedial work, including the complete renovation and strengthening of the building itself and the surrounding exterior patios etc was awarded to Hawkins Construction, which subcontracted the grouting work to Brian Perry Civil and Keller Ground Engineering in a joint venture (JV) contract. Geotechnical consultants Tonkin & Taylor were responsible for concept design and specifying performance requirements, with the JV responsible for construction design, column layout and physical works.

The upmost in careful detailed planning was required from the outset, with the logistical constraints identified as being key to the success of the project.

The design called for a reinforced, stabilised and encapsulated block of soil underneath the building. This was successfully achieved by inserting 1097 two-metre in diameter interlocking jet grouted columns to a depth of eight metres capped with a thick concrete slab. Over 15,000 tonnes of cement was used in the grouting and associated work.

This was a high risk project in terms of design, construction and safety. It also had constraints and logistical challenges associated with working inside the building which is heritage listed.

Close collaboration and integration with both the client, Hawkins and the consultant demonstrated the benefits of working together as a team in this project with regular meetings and liaison maintained throughout the design and construction period.

The Brian Perry Civil and Keller Ground Engineering team not only developed solutions that were both innovative and cost effective, they also raised the bar in terms of construction process and safety standards. The completed project complies 100 percent with new building standards and since completion has withstood further after-shocks and a 5.7 magnitude quake in 2016. ●



CATEGORY 2: Projects with a value of between \$5 million and \$20 million

PROJECT: Tauranga Memorial Park Pump Station Upgrade. CONTRACTOR: Brian Perry Civil

State-of-the-art facility

This pump station upgrade was a key component in the Tauranga City Council's Southern Pipeline infrastructure strategy to manage wastewater in a more effective manner given the projected population growth of the city.

Brian Perry Civil (BPC) was contracted to provide a mechanical and electrical upgrade so that wastewater could be diverted from southern areas of the city to the treatment plant at the underutilised Te Maunga, thus mitigating future pressure on the system.

The scope of the upgrade included ground improvements for the building foundations and valve chambers, construction of buildings to house new electrical and generator equipment, installation of electrical cabling and ducting, the supply and installation of submersible wastewater pumps within the 10-metre deep pump house, upgrading of pipework, installation of stormwater and wastewater drainage, relocation of existing utility services, and site works entailing landscaping, fencing and pavements.

There were a number of construction challenges. These included the proximity to several public amenities and the number of known and unknown 'live' utility services. Other constraints

emerged as work progressed as there were discrepancies with the 10-year-old design plans, which did not always match what the construction team was physically seeing.

The electrical upgrade presented particular challenges and a number of solutions were developed including how to 'import' power from the network grid, and then when required, 'export' it back to the grid. This was achieved by adapting the system for a variable site load. There were also issues of working at depths within confined spaces, and the testing of pumps and electrical systems due to delays in other sections of the Southern Pipeline.

Innovation during the construction brought about efficiencies, ie, changing the construction methodology for ground stabilisation around the chambers brought advantages in ground improvement and vibration impact.

BPC overcame challenges in a proactive manner through extensive consultation, innovation and a willingness to work with the client to deliver a highly successful outcome, on time and within the budget.

This project demonstrates the significant impact of a highly collaborative client/contractor relationship in delivering a state-of-the-art wastewater facility. ●



CATEGORY 2: Projects with a value of between \$5 million and \$20 million

PROJECT: Canterbury Earthquake National Memorial. CONTRACTOR: Brian Perry Civil

National significance

The Canterbury Earthquake National Memorial project assigned a high level of responsibility to the Brian Perry Civil team, with a high level of care and innovation required in both the planning and construction of this unique structure.

Chosen from over 300 designs submitted in a worldwide architecture design competition, the memorial features a 112.5 metre long by 3.6 metre high reflective marble wall inscribed with the names of the people who died as a result of the earthquake.

The memorial spans both sides of the Avon River, with the wall located on the sunnier south bank and a remembrance garden on the north bank.

The project was constructed in an extremely tight timeframe as it was essential it was completed for the official unveiling and opening on the seventh anniversary of the tragedy. The construction also brought unique challenges associated with the environmentally sensitive location, and the sensitivities of families who had lost loved ones.

Over the course of the construction BPC was able to bring improvements to the design, such as the piling, drainage and

concrete slab methodology. This led to a more cost-effective and higher quality end result, which impressed the client, as did the level of knowledge and 'can-do' attitude and solutions focus displayed by the BPC team.

BPC was also able to maintain a high environmental standard during the build by taking a range of steps to ensure the river, its banks and the aquatic life were not unduly disturbed, that noise levels during the piling were minimised and the site was kept tidy at all times.

Completed in February this year, the memorial is of national significance – a fitting tribute and place to reflect and remember the tragic events of the 2011, 6.3 magnitude Canterbury earthquake, the 185 people who lost their lives and those who were injured.

The success of the memorial and completing it on time was dependent on BPC creating a robust construction programme, developing an excellent relationship with the client, designers, consultants and subcontractors, showing mindful leadership and having a team who were totally committed to the project. ●



CATEGORY 2: Projects with a value of between \$5 million and \$20 million

PROJECT: Lake's Edge Kawarau Village. CONTRACTOR: Civil Construction (Special) Projects

From the bottom up

The Lake's Edge Kawarau Village project in Queenstown was completed in November 2016 by Civil Construction (Special) Projects, a wholly owned subsidiary of Civil Construction.

The project was physically challenging as the site fronts on to Lake Wakatipu, adjacent to the Hilton Hotel. It consisted of lake sediments and at the rear of the site, 45 metre vertically higher, was R2 rock – two of construction's most challenging materials.

Very visible to anyone entering Queenstown from the south and via the air, work started in in September 2015 on a NZS 3916 contract, where Civil Construction was responsible for design as well as construction, leading the project and managing all consultants and subcontractors including the design team and all onsite works.

Work included design, site clearance, earthworks, ground improvements, services, roading, landscaping, and retaining work.

Civil Construction removed 28,000 cubic metres of lake sediment to make way for 1400 15.5 metre deep stone columns. The equivalent height of Mount Everest (21,700 metres) of stone columns were installed.

A substantial investment was made in equipping machinery with 3D GPS machine controlled technology. To undertake rock extraction a new 50-tonne rock breaker was flown in from Italy.

Attracting great public interest, Civil Construction also successfully managed the preservation and relocation of a 150-year-old meat shed belonging to the Rees family who farmed the Queenstown area in the 1860s.

The Lake's Edge Kawarau Village project was undertaken by subsidiary company Civil Construction Special Projects (CCSPL), set up due to the nature of the high profile and technical challenges of Lake's Edge.

Detailed project work included earthworks, civil works, drainage and services, roading, lighting installation, ground



improvements and rock anchors, shotcrete installation, road surfacing, landscaping, power supply and installation, dry and mortar stacked stone wall installation and fencing.

The project's major challenges were not only the physical access to the site (350 metre long and a 45 metre vertical rise), which presented many access issues. Careful planning was also needed to position haul roads in the right locations taking into consideration the neighbouring 5-star hotel and residential complex.

The project could have used an old access site for the Hilton Hotel complex off SH6 at the Kawarau bridge which was due for replacement. Using the longer and higher (45 metre) access meant waste material had to be carted to the top of the site via dump truck to a stockpile area. From here it was reloaded onto road trucks. Tonkin & Taylor was able to minimise the impact on the already congested roading network by minimising truck movements. This also meant that back loading could be used.

The same process was followed with material that had to be carted back onto site and used for construction eg, scalping for pipe bedding and AP65 and M4AP40 aggregate material for road construction. This was all brought back in via the top access and then taken down the hill onto the site using dump trucks.

Adopting a 'work from the bottom up' strategy paid off as it proved easier, more convenient, less disruptive to bridge traffic and a much better fixed point to work from.

All staff, including labourers, had a two-way radio with them at all times. This enabled instant communication with onsite staff and eliminated down time and ensured that each staff member always knew what was happening onsite. All staff also held the appropriate licences and adequate training to operate construction machinery and equipment being used. They all held site safety passports, first aid, fire extinguisher training and handling and had attended approved lifting and slinging courses.

Some 32,000 hours were worked on this project with zero accidents.

Many of the suppliers on this project, eg, Hynds and GeoFabrics, were those that CCSPL had long-term relationships with. This project required significant collaboration as CCSPL not only headed the project, but also managed all consultants and subcontractors. They were all considered part of the CCSPL team.

The idea of using a design and construct contract for a residential subdivision was innovative, and drove the company to achieve more technical innovations. The collaborative relationship between the contractor and the wider design team led to several technically innovative solutions that saved money throughout the project.

The project was completed on time and within budget. The client was very pleased with the finished project. The client complimented the company on its competitive pricing and on its demonstration of problem solving using innovative solutions.

The consulting engineers on the project also commended CCSPL on its "enthusiasm" for a number of technical innovations, its collaborative approach to problem solving, its excellent project leadership around health & safety and community communications and management. ●



CATEGORY 2: Projects with a value of between \$5 million and \$20 million

PROJECT: Whareroa Water Treatment Plant. CONTRACTOR: Fulton Hogan

A skilled workforce

Fulton Hogan was awarded a design and construction contract from client Fonterra for a new water treatment plant on a greenfields site adjacent to the Whareroa Plant in Hawera, South Taranaki, capable of producing 28.5 million litres of water per day.

The \$17 million project was completed following 11 months of build in what was a tight time scale and a complex environment.

Fulton Hogan brought to the Whareroa project comprehensive water and wastewater infrastructure experience, such as the Hunua 4 Watermain project, in addition to the expertise of subcontractors with proven track records in their respective fields.

Prior to the build, a detailed Gantt chart was produced on CCS Candy. This program is structured around Fulton Hogan's strategic picture program and encompassed all construction activities including the control system software writing.

Of particular importance to the critical path of the project was the timely completion of the clarifier and filter structures, both constructed in precast concrete panels with in situ concrete 'stitches' tying the panels together. To best control the supply of the precast panels the decision was taken to cast these on the site using Fulton Hogan's own skilled workforce, providing the quality and timing control demanded for the build.

Proactive environmental management was aimed at exceeding compliance requirements and encouraging employees to improve environmental outcomes. The company's environmental management system has been certified to ISO 14001 since 2003.

On the Whareroa project the safety, quality and environmental advisor, Craig Morris, collaborated with the project managers and Fonterra on the site-specific Environmental Management Plan (EMP). The comprehensive plan detailed all environmental procedures, such as sediment control. The EMP, relevant permits and Resource Management Act consents were put in place prior to construction.

The project was a lump sum fixed priced contract with several variations awarded for the scope changes directed by client, the largest being the design and construction of the new raw water intake at Tangahoe River.

Monthly reviews, including analysis of actual cost against budget and cost forecast were completed. Information summarised in a job status report to give reviewers an overview of the project's financial health variances in actual versus budgeted was investigated and mitigation plans put in place where possible.

The project was completed on 22 December 2016. ●



CATEGORY 3: Projects with a value of between \$20 million and \$100 million

PROJECT: Portland Cement Plant – Silo 9 Project. CONTRACTOR: Brian Perry Civil

Collaboration key to success

The Silo 9 project was an EPC contract for a 6000-tonne cement storage silo with associated in-feed and out-feed equipment to enable the client, GBC Winstone, to use the supply chain advantages provided by a newly-purchased, larger-capacity coastal ship.

The client supplies half of the country's cement from its 100-year-old plant in Whangarei and distribution is via this ship to numerous transfer terminals at provincial ports around the country and thence by road to customers.

The project was carried out by Brian Perry Civil and conducted on a partnering basis between sister companies within the Fletcher Building empire as it proved impossible to find international vendors prepared to offer a turnkey solution.

Scope included major civil works (piling, structures and wharf modifications), silo, mechanical and marine works, electrical and control systems. Technical and performance requirements were demanding for the in-house design team.

The contract was awarded in August 2015 and the plant successfully commissioned in April 2017, within the original cost estimate.

The job was conducted on an estimated-cost, pain-share/gain-share basis in a true collaborative, partnering

relationship between sister companies within the FBL empire.

This model had been tried before, often unsuccessfully, as sisters tend to fight or run to mother rather than sort things out themselves. The programme was tight, driven by the benefits to be gained from the new ship. Here was a chance to prove the benefits of a true partnering arrangement.

Technical and performance requirements were demanding and made even more difficult by experienced international vendors not prepared to accept any design or performance contracts for the project. They were content to be plant suppliers only with all the design and performance risk carried by the client/contractor.

This appears to be a trend as turnkey contracts are inherently very risky especially if the project is not in the vendor's country of origin. The situation called for the best of New Zealand's technical expertise and practical, can-do approach.

The keys to success were the collaborative aspect, which fostered teamwork and a best-for-project approach together with Brian Perry Civil's strengths, complemented by the engagement of the right calibre process, mechanical and electrical expertise including many local consulting and contracting companies. ●



CATEGORY 3: Projects with a value of between \$20 million and \$100 million

PROJECT: MacKays to Peka Peka Expressway – Earthworks. **CONTRACTOR:** Goodman Contractors

Significant savings

The 18 kilometre Mackays to Peka Peka section of the Kapiti Expressway is the first section to be completed, having opened earlier this year. It was constructed under an alliance model with NZTA, Fletcher Construction, Higgins and Beca. Goodman Contractors was engaged as a sub-alliance partner for the purpose of providing the earthworks and drainage.

Goodman was involved with the project from the early pre-consenting phase and worked with the designers, construction and compliance teams to develop conceptual design, construction methodologies, programming and costings. It also provided expert advice to gain consents and assisted with the final design.

Goodman did all enabling works including site clearance and disposal, and the pre-construction trial excavations. Due to areas being associated with Maori and early European settlements a lot of this work involved working closely with iwi and archaeologists.

The earthworks along the 'greenfields' development exceeded four million cubic metres and included extensive peat removal and replacement, sand excavation and excavation of

14,000 cubic metres of solid rhyolite. The contractor was mindful of minimising the impact on the environment and independent site audits were extremely favourable.

Goodman Contractors' 'value engineered' alternatives for a range of earthmoving and construction opportunities and invested in GPS machine control systems which resulted in significant savings both in cost and time associated with survey set-out and quantification of volumes.

The Goodman team also drove significant innovation in construction methodology specifically in mining additional material to balance the mass haul shortfall and together with their local knowledge of the ground conditions were able to achieve considerable cost savings.

The client in its letter of recommendation supporting this application described Goodman Contracting as "the most significant subcontractor in both scale and value"... "the shining star" ... and ... "driven by their ability to resource up and take on additional scope and variations, while still delivering to an agreed cost, programme and compliance standards. They were an integral part in the overall success of the project." ●



CATEGORY 3: Projects with a value of between \$20 million and \$100 million

PROJECT: Shotover Waste Water Treatment Plant Upgrade. CONTRACTOR: Downer NZ

Under pressure

Located on the right bank of the Shotover River Delta, the existing Queenstown Wastewater Treatment Plant was under significant pressure due to the expanding population, booming tourism industry and ever more stringent discharge conditions. Queenstown-Lakes District Council responded to this pressure by embarking on one of its largest and most strategic upgrade projects.

Downer was engaged through an EOI process followed by a short-listed tender to undertake the first stage of the planned three-stage upgrade to the existing facility.

The first stage was the cornerstone in Queenstown-Lakes District Council's three-stage development plans, involving the design, construction and commissioning upgrade to the existing Shotover wastewater treatment plant and disposal facility, and the subsequent operations and maintenance of the works for a 60-month period.

The design, build and operate contract involved over 100,000 man-hours, and the efforts of more than 160 subcontractors, consultants and suppliers to complete. The project was truly multi-disciplinary encompassing every engineering discipline

to deliver a technologically cutting-edge treatment plant for Queenstown-Lakes District Council.

There were a number of challenges including the site's close vicinity to Queenstown, which meant accommodation was in short supply and there was a risk around the availability of skilled labour and subcontractor procurement.

The location of the project also presented risk with the required continuous supply of concrete for large pours. This was mitigated by making contingency arrangements with other batching plants in the area.

The intersection at site access was a safety issue, with the team witnessing many near misses with vehicles turning right on to the state highway. To mitigate this risk, Downer added a recommendation to the inductions on site, for people to turn left at the intersection using the nearby roundabout instead.

The contract for Project Shotover was awarded to Downer in May 2015. By January 2016, construction was complete and the facility was producing compliant wastewater.

Downer will continue to operate and maintain the facility until 2021. ●



CATEGORY 3: Projects with a value of between \$20 million and \$100 million

PROJECT: Fonterra Lichfield Plant Upgrade (Civil Works). CONTRACTOR: Fulton Hogan

Seamless integration

Fulton Hogan was one of the key partners in this upgrade and expansion of the Fonterra Milk Treatment plant at Lichfield, in the southern Waikato. It was engaged to undertake the civil works, which included preparing the site for construction of a new milk powder plant, construction of a new wastewater treatment plant and the civil works associated with running the plant.

The project was set up with an 'open door' policy, with the designer working for the contractor, resulting in a 'best for project' approach.

The civil earthworks involved extensive site levelling and contouring, trenching for the instalment of treatment and utility services, providing rail corridor access to the site, creation of a new slip road to SH1, and a parking facility for milk tankers and staff.

The wastewater plant required construction of two aerobic treatment ponds of 30 million and 15 million litres respectively, a 100 million litre treated water storage pond, and a 135 cubic metre clarifier along with the treatment systems required post clarification.

This work required a detailed construction programme, excellent communication with all site staff and the other contractors, and a thorough understanding of the impact the earthworks and drainage work could have on a site where strict hygiene was required due to food processing and bacteria testing. It was also imperative not to impact on the critical site services.

The drainage work was complicated by the maze of existing service pipes and the need to install new pipe work around and into the existing pipes and services.

Due to the proximity of Transpower grid lines, a main gas line, a railway line and 33 kilovolt power cables, the upmost care was required at all times by the construction teams, especially during the earthwork component of the project.

As one of the main construction partners to this project Fulton Hogan worked seamlessly with the client and the other partners involved, integrating all aspects of construction. It delivered, often under extremes in weather conditions, on time and to specification and was seen by the client as being one of the key players in the successful outcome of the project. ●

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CATEGORY 4: Projects with a value greater than \$100 million

PROJECT: Waterview Connection. CONTRACTOR: Well-Connected Alliance

A complex project

The five kilometre Waterview Connection is to date the largest and most complex road infrastructure project undertaken in this country. The most significant feature is the two tunnels which are the longest road tunnels in the country.

Feasibility work started in 2000 with geotechnical investigations undertaken in 2008. Following a period of consultations, consents and financing, the design and construction was awarded to the Well-Connected Alliance* in late 2011, with construction commencing in early 2012. It opened to traffic in July this year.

The two 2.4 kilometre tunnels are each three lanes wide, with an outside diameter of 14.41 metres and were constructed using a specially designed German tunnel boring machine (TBM) which bored at a rate of eight centimetres a minute under densely populated residential suburbs, a number of roads and the western rail corridor at a depth of 45 metres through a variety of ground materials, including hard rock. Some 800,000 cubic metres of rock and soil was excavated.

As the tunnels progressed, precast concrete 'rings' were attached to the wall to form the lining facia, with each ring

being two-metres wide and weighing 10.5 tonnes.

The tunnels are equipped with the very latest in operating systems to ensure fire and safety regulations are met – including 4000 lights, 62 ventilation fans, 400 kilometres of cabling, and five deluge storage tanks each holding 250,000 litres of water.

Along with the road paving, tunnel entry/exit portals were constructed at each end, and a large interchange at the northern end links with the Northwestern Motorway.

Taking just over five years to complete, the Alliance worked diligently to deliver this complex project to an extremely high standard and set the bar throughout the cycle of consultation, design and construction.

The completed project forms the 'final link' to connect two of Auckland's busiest highways – the Northwestern (SH16) and Southwestern (SH20) Motorways and is an integral part of the city's Western Ring Route. ●

* WCA was a consortium of Fletcher Construction Infrastructure, McConnell Dowell Contractors, Obayashi Corporation, Beca Infrastructure, WSP, Tonkin & Taylor, and NZTA.



CATEGORY 4: Projects with a value greater than \$100 million

PROJECT: Mackays to Peka Peka Expressway. CONTRACTOR: M2PP Alliance

Embracing a community

Mackays to Peka Peka (M2PP) is the first of section of the Wellington Northern Corridor projects to be completed and is a new four-lane expressway taking State Highway 1 traffic along the Kapiti Coast.

The new 18-kilometre route features local connections at interchanges along the expressway route. It separates local and highway traffic and is already delivering safer and shorter trips to and through the Kapiti Coast – with local and national economic and social benefits.

Valued at \$630 million, the project was built by the M2PP Alliance made up of the NZ Transport Agency; Beca Planning & Engineering; Fletcher Infrastructure and Higgins Contractors (Higgins becoming a business unit of Fletcher Construction in August 2016); and supported by principal subcontractors Goodman Contractors, Incite and Boffa Miskell.

It has been the first project of its kind to work so early and directly with a local body – the Kapiti Coast District Council, which is actively involved as part of the Alliance model arrangement and has representation at the highest level of its governance structure.

Despite many site and community challenges, the main alignment was completed four months early, with the road opening to traffic on February 24 2017, following a series of official and community opening events.

Key features of the project are: Two traffic lanes in each direction separated by a median safety barrier; 18 new bridges including a new crossing over the Waikanae River; local connections with two full and two partial interchanges; safety improvements on many local roads in the vicinity of the expressway; and substantial environmental protection and enhancement including 140 hectares of new planting and landscaping, creation of 9.5 hectares of new and restored wetland and 1.4 million locally eco-sourced plants.

The M2PP Alliance faced significant challenges – environmental and the community through which the route traverses. Construction only started in 2013 after several years of community consultation and objections, taken as far as the High Court.

That community is now largely supportive and has welcomed the new road. ●



CATEGORY 4: Projects with a value greater than \$100 million

PROJECT: Stronger Christchurch Infrastructure Rebuild. CONTRACTOR: SCIRT

Creating a stronger Christchurch

After the devastating earthquakes in 2010 and 2011, Christchurch was faced with a rebuild of immense scale and scope. The government sought value for money, a quick, effective and flexible response, and probity.

By September 2011, SCIRT [Stronger Christchurch Infrastructure Rebuild Team] had been set up. Its vision statement was to: "Create resilient infrastructure that gives people security and confidence in the future of Christchurch."

Within five years, and funded by the government and the Christchurch City Council, the team had repaired Christchurch's severely earthquake damaged, publicly owned horizontal infrastructure (wastewater, freshwater, stormwater, roads, retaining walls and bridges).

The SCIRT programme delivered a remarkable \$2.2 billion worth of projects on time and to budget. It also created a 'learning legacy' that highlighted the importance of a strong, sustainable approach to a post-disaster rebuild.

Head contractors were: City Care; Downer NZ; The Fletcher Construction Company; Fulton Hogan; and McConnell Dowell Constructors.

The rebuild was really a 'programme of hundreds of projects'. Delivery teams were concurrently delivering 20 to 30 projects at a time. A detailed programme was required for each project and these were coordinated into a master milestone programme that also coordinated with stakeholders outside of SCIRT, including other earthquake recovery programmes.

The programme of projects approach was one of the reasons for the SCIRT alliance structure comprising a central Integrated Services Team (IST), led by the executive general manager and the Alliance Management Team (AMT), and separate Delivery Teams, provided by the NOPs.

Arranged under 12 headings, Alliance objectives set out the direction and client expectations as SCIRT tackled the biggest civil construction rebuild programme in the country's history. Some objectives were politically and economically driven by the government. Others were aspirational, such as throwing down the gauntlet to an industry with an unenviable safety record to lift its game.

Cost was \$2.22 billion, the project began May 4, 2011, with an interim alliance agreement, and was completed June 14, 2017. ●



CATEGORY 5: Excellence in the maintenance & management of assets including routine maintenance

PROJECT: Dunedin City Council Traffic Signals Maintenance. CONTRACTOR: Downer NZ

In the interest of public safety

The client is the Dunedin City Council and the NZTA and the contract, handled by Downer NZ, is for the essential maintenance and upgrade of the greater Dunedin area traffic signals network – including proactive and reactive maintenance, and installation.

Since 2013, Downer has provided traffic signals operations and maintenance services for Dunedin City, Mosgiel, Oamaru and NZTA's State Highway network in the Otago area. The contract serves an urban population of over 150,000.

The network contains 89 signalised intersections, with over 700 structures and greater than 1600 lamps; 24/7 operation is a must-have criterion for operations with an attendance time of 30 minutes required.

The team is made up of two electricians, two apprentice electricians, an IT technician and contract manager, all working part time on the network, attending to other duties when not engaged fully on this contract.

Four years ago this team inherited this long running contract with many of the assets having been in place for over 20 years with limited information about the infrastructure being recorded.

Traffic signals are a critical road safety feature of any city. The Downer team undertook a review of 89 intersections and established an electronic asset database that contains all known information about each intersection. Previously a manual system was operated and the data available was limited.

Maintenance records were not consistently updated necessitating a step change in system knowledge to improve performance.

Downer instigated a bespoke sharepoint extranet site to build up a comprehensive asset management system to record all information about each location. This is regularly updated whenever work takes place at the location and allows the client and the team to quickly understand how the signals operate at the specific intersection and importantly what other services are present.

The Downer team also represents both Dunedin City Council and NZTA when working on the city's traffic signal infrastructure, and recognises this high degree of autonomous trust and responds to this by keeping its clients informed of activities performed and planned. ●



CATEGORY 5: Excellence in the maintenance & management of assets including routine maintenance

PROJECT: Coastal Southland State Highway Maintenance. CONTRACTOR: McDonough Contracting

High quality service

McDonough Contracting, following a 'weighted' tender process, was awarded the Southland State Highway Coastal contract by NZTA for the maintenance of signage, edge marker posts and roadside furniture along the 350 kilometre+ Southland Highway network, and the Invercargill City Council contract was awarded for the maintenance of both urban (303 kilometres) and rural road signage (180 kilometres).

Having been involved with both contracts and the respective clients on previous occasions, McDonough Contracting was known for providing a high quality service at a reasonable price.

The two projects were completed in tandem with each other to minimise cost and save time.

The State Highway Coastal contract called for inspections, reporting, programming, planning and maintenance in partnership with Opus consultants. This work was carried out on a two-week cyclical basis with the exception of SH1 and SH6 which were travelled daily. In addition to the above, electronic speed indication signs, warning signs around schools, chevron signage on curves, ice/grit signs, and threshold and tourist

signs were installed.

For the Council contract the area was divided into six urban and six rural zones, with each inspected every six months over the course of the contract. The inspections were recorded on RAMM with missing, damaged or faded signs reported and a RAMM management system put in place to prioritise the maintenance work and ensure it was done. Speed humps and pedestrian safety barriers were also included in this programme. Where alloy poles required replacement a recycling programme was developed, reusing short repainted sections for chain fences etc – another cost saving. New bus shelters were developed and some 60 existing ones cleaned.

Adherence to safety practices and working at times of least traffic volume was strictly observed by the teams, who were at times hampered by snow and wind, with snow often impacting on the reflective raised pavement markers.

The Southland State Highway Coastal contract was completed in April last year and the Council 'signage' contract in August of the same year. Both clients were extremely pleased with the outcomes. ●

Outstanding achievements within the

The **Z People Awards** were developed by **Civil Contractors NZ**, with support and sponsorship from **Z**, to recognise the outstanding achievements of individuals within the civil construction industry.

Z People Award – Emerging Leader

Sean Walsh

Project manager, Isaac Construction



Z People Awards
Emerging Leader
Category
**JOINT
WINNER**

A qualified civil engineer, Sean joined Isaac Construction in early 2015 as a project engineer. Since then, his natural ability in planning, leadership of people and care for all stakeholders has allowed Sean to exceed industry standards in the delivery of two key successive CBD roading projects for Christchurch City Council (CCC).

These two projects then directly contributed to Isaac Construction being selected as a Tier 1 Contractor for the CCC in the Major Cycle Routes (MCR) five-year programme with an expected spend of over \$200 million.

Sean is now seen as a senior project manager and right-hand man to Isaac's construction manager. He coordinates all of Isaac's involvements in the MCR programme, which is now a major secured source of work for Isaac Construction.

Sean says going forward, the workload is expected to double then triple on these cycle routes over the next year and he has successfully promoted a vision to the company CEO for how Isaac should structure that.

"I would like to be the overall programme manager for major cycle route projects with Isaac's supervisor Jake Isaac MacGregor as my assistant, and have two to three young project managers and supervisors under us that we would mentor. Jake and I have built a strong culture on this project of doing things well, keeping a very tidy site, maintaining high productivity and good team morale.

"We hope to use this great culture as a testing and training ground for new and current employees to encourage growth and the Isaac core values to everyone who works on our projects."

Harley Haywood

**Managing director/contracts manager/quantity surveyor,
Utilities Infrastructure NZ**



Z People Awards
Emerging Leader
Category
**JOINT
WINNER**

Harley always knew where he wanted to end up and at 16 he was given his first job as a directional driller.

In the years to follow Harley pursued his passion and gained invaluable experience both in NZ and internationally while working for local councils and the larger construction companies throughout Australia. During this time Harley applied his experience and knowledge and became a drilling supervisor at the age of 20. He continued to follow his dream and through hard work, commitment and determination Harley began his own pipeline company Utilities Infrastructure.

Highly experienced at many aspects of the field, he works both on-site and internally within the company and has gained key leadership skills that are the reason for his success.

"I pride myself on creating an environment in which others enjoy being involved. My character and personal attributes influence others to see me as a leader who delivers success.

"Sharing knowledge, skill and experience between our team gives us the ability to offer solutions as well as create new procedures in the day-to-day operation of the company.

"Every member of the team is crucial to the success of any project and is always given the recognition which is deserved. I have found that when individuals are appreciated they will always do more than what's expected."

civil construction industry



Z People Award – Training Development

James Dawson

Cadet quantity surveyor, Johnstone Construction



Z People Awards
Training Development
Category
RUNNER UP

James started his professional career as a recruiter for the construction industry, working for five years for Hays Recruitment.

While this developed his network of contacts and business acumen, James eventually decided that he preferred a seat closer to the action.

"So, in March 2016 I enrolled in the Bachelor of Construction, majoring in Quantity Surveying at Massey University.

"Fortuitously, two weeks after enrolling I received a phone call from Hugh Johnstone, a former client and managing director of Johnstone Construction, looking for a quantity surveyor.

"Needless to say the rest is history!

"I jumped at the opportunity and am loving the career shift. While it's been a steep learning curve, I'm fortunate to be surrounded by a great team, in an awesome work environment."

James' qualifications include a Bachelor of Commerce (University of Concordia, Nebraska); Site Safe Passport #265091; and he has enrolled in Bachelor of Construction (Massey University, Albany).

Liam Woodmass

Renewals engineer, Waikato District Alliance, Downer NZ



Z People Awards
Training Development
Category
WINNER

Liam began working for Downer in 2010 as a labourer in the Hamilton asphalt crew over the Christmas break during his music studies.

Within a week, he was placed in the asphalt paving crew as the paving machine operator under direct supervision of the foreman and stayed in this role for the next two years after deciding to no longer pursue music as a career.

"In that time I gained my wheels, tracks and rollers endorsements, a class 2 licence, received first aid and basic bitumen safety training and completed the National Certificate in Paving (Application) all while gaining practical skills. I then moved into a quality assurance role where I further developed my knowledge of asphalt surfacing.

"In 2013 I joined the Downer Cadet Programme and spent the next four years rotating through various departments while studying part time.

"In January this year, I was awarded the renewals engineer position within the Waikato District Alliance."

Being part of the Downer Cadet Programme, the early stages of Liam's training were planned as all cadets are enrolled in the National Diploma in Engineering (Civil), partake in rotations spanning four years through various Downer departments and are assigned a mentor.

"Towards the end of my cadetship, I was given the opportunity to select rotations which aligned with my study content and which also gave me the necessary skills to apply for the role I desired."

PATHWAYS THROUGH TRAINING

The CCNZ Company Training Development Awards

sponsored by Connexis aim to recognise those employers that believe in providing opportunities for their staff to gain skills and knowledge through a nationally recognised qualification.

These employers invest across all levels of their business, embedding training as a matter of course in everything they do, and creating pathways for their people to move up. They understand the importance of building their business by building their people. This award is to highlight the importance of these types of companies in creating a skilled and safe nation.

All Site Safe accredited

Connexis Award: Turnover up to \$10 million

Johnstone Construction specialises in delivering petroleum retail sites, working on all facets of the construction process from demolition through to seismic strengthening on existing builds, remediation of contaminated sites, all civil works, multi-storey construction and fit-outs.

"Johnstone Construction employs 12 fulltime staff across various facets of the business in roles such as carpentry, civil engineering, quantity surveying, operations management, financial administration and project management.

"We encourage and support training with 25 percent of our staff taking up the opportunity to be enrolled in some form of external training. They are either gaining a new qualification or furthering an existing one. All of them are able to apply their training to their current roles which is having a positive impact on the business and reinforcing engagement in their roles. We put at least \$3000 per year toward each person's ongoing training so they can keep abreast of developments in the industry and have confidence in their abilities.

"Qualifications that those who are enrolled in external training are working towards are: Diploma in Civil Engineering; Trade Certificate in Carpentry; Bachelor of Construction Majoring in Quantity Surveying; and Corporate Governance



Professional Education Programme – gateway to membership of the Institute of Chartered Secretaries and Administrators (ICSA).

"As members of the CCNZ, BP Accredited Contractors Forum, and National Association of Women in Construction all staff at Johnstone Construction take an active role in keeping abreast of the latest in health, safety and environmental regulations.

"All staff are Site Safe accredited and time is put aside each year for staff to undertake ongoing health and safety training. Johnstone Construction's average Site Safe audit results are 95 to 98 percent – well above the industry average." ●



Retaining wall 101

Connexis Award: Turnover \$10m–\$20 million

As one of the country's top retaining wall construction companies, **ICB Retaining & Construction** currently employs 70 workers and regularly has around 30 subcontractors working for it.

"We conduct competency assessments before any new staff start and we have an external assessor who assesses our excavator operators once a year.

"We currently have three trainees enrolled with Connexis in the Level 4 Civil Works programme working towards Civil Trade Certification by the Recognition of Current Competency Process.

"We have another trainee enrolled with MITO in their apprenticeship programme working towards the National Certificate in Motor Industry (Automotive

Culture of excellence

Connexis Award: Turnover up to \$10 million

Construction Contracts (CCL) is a medium sized civil, drainage and water contractor based in Naenae, Lower Hutt City which employs around 38 full time staff.

This is an award-winning company. In May 2017 it won the Wellington/Wairarapa CCNZ Construction Award for the Jackson Street Wastewater renewals project.

"The awards showcase industry excellence and we are proud to have won the award and of our culture of excellence. We are also the proud winners of the Connexis Company Training Award in 2015 and 2016.

"All of our staff are doing training. Qualifications our people are working towards include: National Certificates with Connexis, and National Certificates in Drainlaying through the Plumbing, Gasfitting, Drainlaying and Roofing Industry Training Organisation.

"Since winning the Connexis award in 2016, CCL has continued to invest heavily in training, development and innovation.

"Training and development manager Steve Scrimshaw has continued to manage CCL's training activities with the help of Jo and PeopleSafe. We are also developing our own software and apps to help us work smarter to achieve our goals.

"The company looks forward to moving into new purpose-built facilities later in 2017. These include a new yard, building and workshop. The new building includes dedicated training facilities with a smart board and projector where we can finally have all our own people in one space.

"We have continued our training, helping our guys get driving licences, first aid, Site Safe and temporary traffic management training. We continue with our weekly in-house 'Smarten Up' training. We have signed up to new training qualifications with Connexis and receive great support from our training rep, Karewa.

"CCL has always been committed to training and



qualifications. Thanks to our ITO Connexis, our people are being trained in skills that are useful across the business.

"The qualifications we have gained are recognised and have standing within the industry. We understand that industry training is a partnership between the ITO, the employer and the trainees, and we do everything we can to help our guys succeed.

"We have received great feedback from our ITO Connexis for all our guys who are completing unit standards and we will continue to support our guys to be the best they can be." ●

Heavy Engineering) Level 3 and 4 with a strand in Plant and Equipment.

"We are currently identifying some of our aspiring leaders to attend the Mana Whakatipu and Tane Toa programmes for First Line Management Level 3 and 4 that Connexis will be running over winter in Waiouru. We have eight of our foremen who are enrolled in a leadership training programme to prepare them for further NZ Certificates because they have never been involved in adult education.

"These staff members have the on-job skills and experience to enroll into the proposed drilling/piling qualification Connexis is currently developing. The existing NC in Civil Works Level 4 with a strand in Earthworks only covers a few unit standards in retaining wall construction and is not currently fit for purpose for our staff. We will be involved in the development of the new

qualification once this development starts.

"We have small three person teams that normally consists of a foreman, an operator and a labourer. We have identified that our biggest need is for foreman training. These men have moved up through the ranks and we realised that they needed further training because they need the tools to step up into a leadership role.

"These men were split into two groups – those who needed preparation before they moved into formal qualifications and those who are ready and who have done adult education before. We have engaged a trainer who trains them on Saturday mornings once a month in things like communication, project planning, time management and lean management.

"We have internal training workshops where our staff go through what we call 'Retaining wall 101'. ●



CATEGORY
RUNNER UP
Turnover \$25 million
plus

Showing the way

Companies turnover \$25 million plus

Higgins Contractors currently employs about 1500 staff across the country and around 30 percent of them are completing some form of training. This includes qualifications, compliance training and in-house development programmes.

"Training programmes continue to be developed. In some ways we believe we are beginning a new journey with the Civil Trades programme. We fully support the CCNZ and Connexis vision for Civil Trades. And, like the rest of the industry, we recognise the need to develop competent staff to meet the future demands in the infrastructure construction industry.

"The Civil Trades framework is being used to design and upgrade our processes for developing the skills and capability of our staff in a systematic way and with a more professional approach.

"We have added to this a wider framework that we are currently implementing as the company's learning and development strategy. The primary goal is to improve the skill level across the company."

Each year since 2013, Higgins has run a camp for under 25 year olds. This is an intensive two-day induction into the industry. It sows the seeds for developing a career in the company and industry and the model will be extended for engineering cadets.

"Our vision is for our supervisors and foremen to take a more active role in training staff to be competent operators and apprentice trades people.

"We have our own in-house training specialists who are implementing a programme to develop the on-the-job training capability of our own staff. We are also looking to transition a number of our retiring supervisors to become trainers and verifiers. We are also supporting the development of our own qualified verifiers. At the same time using external assessors.

"In 2017, we are introducing several new training opportunities including a Fletcher Building Leadership Development course and a Project Managers Forum." ●



Dedicated ground

Companies turnover \$25 million plus

All **Fulton Hogan** employees complete a Personal Development Plan, which is part of the annual performance review process.

"This identifies where employees and managers see an area for development, and training is organised around this. All employees have the opportunity to complete a national or trade certificate through these conversations.

"The number of people attending training for the Canterbury region fluctuates from 300 per month in summer, to 600 per month in winter. Four Christchurch staff have recently completed Level 4 National Certificates through Connexis, with an additional eight working through Level 2 and 3 qualifications.

"All internal trainers and assessors complete a unit standard qualification to provide them with the capability and skills to train and assess others. Fulton Hogan's internal trainers complete a Personal Development Plan with their manager and from this



areas of further development or areas where there is new or more current training available are identified.

"A 10,000 square metre area of Fulton Hogan quarry land was set aside, levelled, and developed into a space that consists of multiple training areas. Since it was opened in 2015, over 1200 staff have undertaken training or assessment at the training ground.

"To further improve this innovation, we are currently planning to extend its use to include heights and confined spaces training, while also extending all training to subcontractors.

"The training ground is also being used for team safety days, induction tours for new employees, winter refresher training, internally and externally provided practical training, 'Back to Work' programmes to safely restart our people back to work after the Christmas period, Career Pathway sessions for high school students, and more." ●

Where people matter

Companies turnover \$25 million plus

Isaac Construction is a Christchurch based vertically integrated civil contractor that currently employs 210 staff with a further 50 temporary, or casual staff, employed to assist with a recent short-term increase in workload.

"Isaac has an intense focus on the training and development of our staff. We base our company training and development plans around the core value 'a place where people matter'.

"This is a recent addition to our values and reflects the strong belief that developing our people needs to be at the foundation of the company. We believe very strongly that if we provide an opportunity for everyone, people will generally take the opportunity provided to improve themselves and in turn they will be more engaged, make better decisions and ultimately make the company a safer, more productive and enjoyable place to work for all.

"We firmly believe that money spent on well directed training is an investment in both our people and the company. Regular and focused training will build a strong competence base over time, producing a fly wheel effect, where the positive effects will be slow to start with but exponential into the future.

"Isaac currently has 100 percent of our people undertaking, or having recently completed, some form of training or another. Over 50 percent of our staff have or are undertaking training in personal and/or professional development courses. These include diplomas, trade certificates and targeted leadership and management qualifications and courses. We spend over \$500,000 per year directly on training and development for our staff.

"We currently have 52 staff working on (or very recently completed) Connexis qualifications alone. These qualifications range from Level 2 to Trade Certificate qualifications.

"By the end of this year a minimum of another 30 staff will be on the Trade Certificate qualification path as all of our foremen are expected to complete this qualification.

"We are also driving a large uptake in the Level 2 and 3 qualifications as ground staff start on a pathway towards Trade Certification and becoming an Isaac Foreman. To be classed as an "Isaac Foreman", achieving Trade Certification will be a prerequisite. This is one of Isaac's biggest training initiatives to improve our people and the performance of the company.

"We are in an exciting time at Isaac Construction and our people are embracing and leading this change." ●



Training projects

PROJECT: Shotover Bridge Gas Pipeline Project

CONTRACTOR: Fulton Hogan Alexandra

Fulton Hogan was able to develop a concept design through to the construction of the 200mm gas pipeline that now connects the eastern reticulation system to the Queenstown reticulation system via the Shotover Bridge.

As a participant in the Fulton Hogan Next Generation Graduate Programme, engineers were given the opportunity to gain skills, experience, knowledge and relationships that will provide them with significant advantages for career advancement.

The objective of this Graduate Programme is to help develop practical skills and behaviours that will enable managers to become highly competent in project delivery and engineering management.



PROJECT: Waikato Expressway Huntly section

CONTRACTOR: Fulton Hogan HEB Joint Venture

Fulton Hogan HEB Joint Venture is committed to ensuring professional development of its staff at all levels during the life of the Huntly section project.

The NZ Transport Agency's Waikato Expressway Huntly section is a 15.2 kilometre, four lane expressway with nine bridges, two interchanges, 3.5 million cubic metres of earthworks and is being constructed through very steep terrain.

Fulton Hogan HEB Joint Venture (FHHJV) has 150 staff and its sub-contractors have another 100 staff working on the project.

The project runs for nearly five years, which is 10 percent of a person's working life, hence personal development is considered essential and consequently 100 percent of the company's staff have received training during their time on the project by attending over 35 different training courses.



PROJECT: Lynmore Junction Development – SP2

CONTRACTOR: Johnstone Construction

While Johnstone Construction was building a new petroleum retail site at Lynmore Junction in Rotorua in mid 2017, it was approached by Holmes Group which was looking for a construction company to undertake the build of its retail section at Lynmore Junction Development – SP2.

The scope of the works was such that work would engage the company's human resources to a maximum given a timeframe of eight months to complete.

It required the company to scrutinise existing skills and extend those employees into new fields. In particular, a leading hand (aged 23) was given the opportunity to lead site, organise trades, liaise with the client and experience some of the duties normally handled by a foreman. This coincided with starting his training in a diploma in civil engineering.

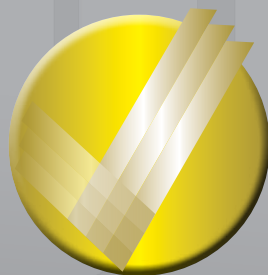




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