

We team with Macrennie to make a Hellmann Landmark



Auckland Airport always knew this 2.5Ha site had landmark quality because of its frontage to three roads: George Bolt Memorial Drive to the east, Landing Drive to the south and Airpark Drive to the west. But it was not until Hellmann Worldwide Logistics Limited expressed interest in becoming a tenant that plans were drawn for this unique facility, which reinforces the company's commitment to many of New Zealand's leading exporters and importers. In a nutshell, it's an investment in environmentally friendly and energy efficient temperature-controlled infrastructure.

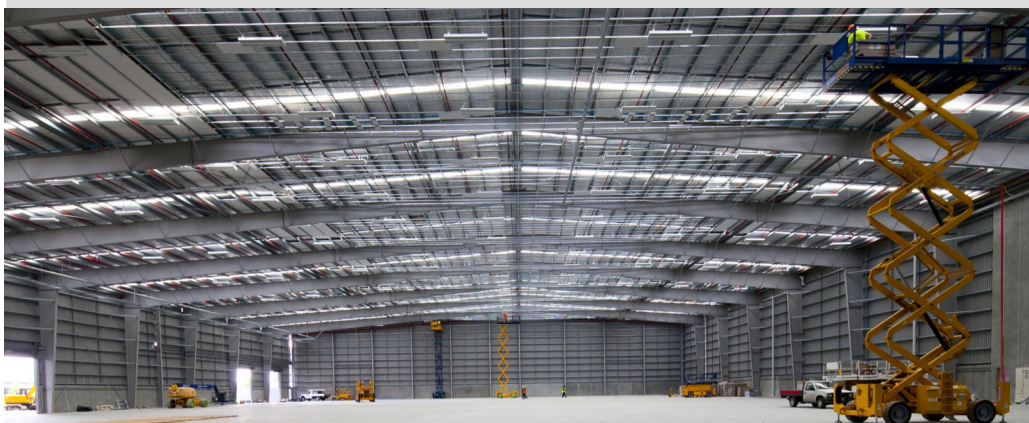
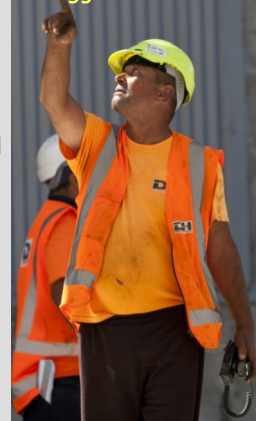
The tenant brief called for 1500m² of office on two levels; 7500m² of warehouse storage; 3000m² of cold store; an open breezeway between warehouse and cold store, plus canopies to other walls; through-site truck access (Landing Drive to Airpark Drive) and parking for 90 cars. The design, by Ben Hayes of RTA Studio, was for one contiguous building form that merges all tenant activities, an industrial building that expresses sea waves and suggestions of flying.

As the main contractor, Macrennie Commercial Construction Ltd was quick to sub-contract D&H Steel for the steelwork. "We've worked on many projects together," says Project Manager Tim O'Leary, "and have confidence in each other. Sure

enough, right from the start, D&H Steel's detailer, Wayne Peachy, applied his expertise to enable everyone, including the engineer, to understand the architect's concept. Wayne's drawings gave us the vision we could share. Any issues that arose were resolved quickly in a team approach. From fabrication to erection, it all went together very well. All deadlines achieved. Tenant in early."

Macrennie's Site Manager, Bruce Green, was also impressed by D&H Steel's Site Supervisor, Eric Birch (right). "He's quietly very impressive," says Bruce, "ever mindful about what's coming next and making sure everyone is ready. I've always found Eric able to build good relationships in which we all become part of a team dedicated to ensuring the project runs smoothly. But in addition to being consistently successful, Eric can be relied upon to make the safety of the people on site his priority. When you work with someone who shares your own priorities, it's great."

D&H Steel's Site Supervisor Eric Birch directs his riggers.



D&H Steel delivered 250T of CWBs, 310T of other steel, and 160T of purlins. Completion is scheduled for the third quarter 2015.

Captions:

Top: two-level office, warehouse to left, breezeway & cold store; Right: the dramatic angles suggest waves and flight.

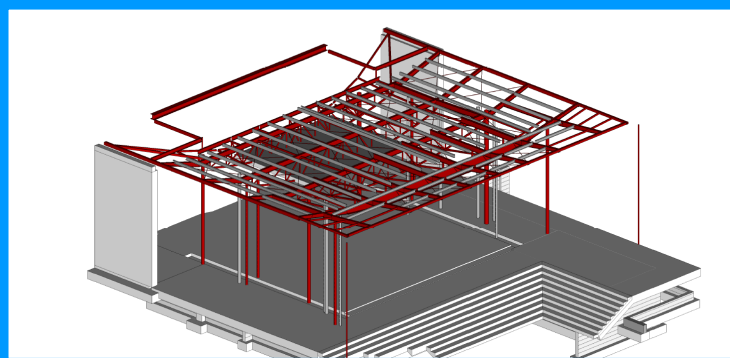
Bottom: the 7500m² warehouse being prepared for racking.

Photographs by Chris Hoessly and Austin Langford.

Key D&H People: 09 839 7250

Wayne Carson	General Manager	Ext 205	Mark McKeown	Estimating	Ext 206	Rob Purchase	W'shop Super	Ext 227
Dean Pouwhare	Operations Manager	Ext 217	Jamie Moxon	Estimating	Ext 215	Kevin Thomas	Procurement	Ext 210
Dave Gulland	Contracts Manager	Ext 222	Colin Ross	Project Manager	Ext 237	Adele Hikuroa	Accounts	Ext 212
Mike Thompson	Detailing Manager	Ext 204	John Frederickson	CWBs & BRBs	Ext 219	Amy Knowles	Doc. Controller	Ext 221

The Completion of the Cathedral of Holy Trinity



Fearon Hay Architects won the competition for the best architectural design that would complete Auckland's Trinity Cathedral with the Bishop Selwyn Chapel. As the architect, Stephen de-Vrig, commented, his inspiration came from the landscape. "It was a continuation of the journey begun by Bishop Selwyn when he landed in New Zealand in 1842 and set about establishing the Anglican faith," says Stephen. "The chapel concept was of a roof framed in steel lattice and an enclosure of frameless, insulated glass that connected with the garden."

Liam Taylor of Holmes Consulting Group gives his engineer's perspective: "The steel roof is supported laterally by two 400mm thick cantilever concrete panels that sit back against the existing building and brace the structure against wind and seismic action. The steelwork supports a complex timber ceiling created as an inverted boat hull. The architect's vision of 'a forest of posts' meant that support conditions were somewhat random and varied across the roof. Beneath the roof is a series of extremely sensitive glazed panels some five metres high with large sliding doors. The roof needs to hover above these yet provide lateral support and separation. There were challenges in balancing deflections."

Dave Gulland, D&H Steel's Contracts Manager, reviews the company's support for the main contractor, Greg King of Aspec Construction. "Fabrication presented some complex-



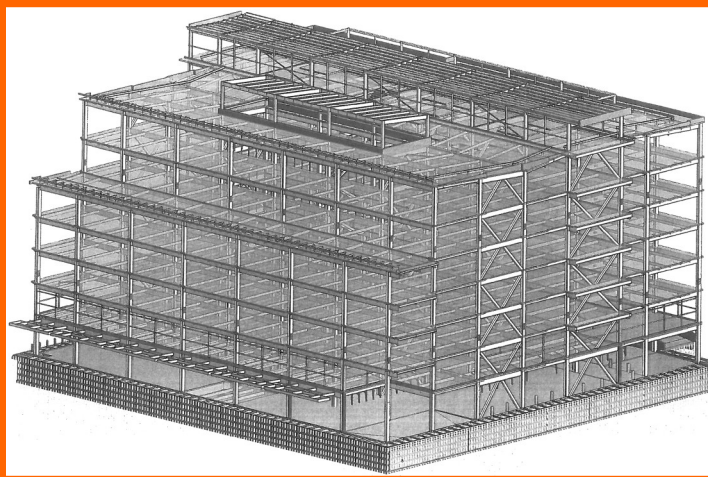
ity but our workshop team enjoyed the challenges. Assembly of the roof in the carpark adjacent to the cathedral was supervised by Jimmy Noble, who made a fairly complex task look easy. Then Hugh Brown did some excellent fine-tuning to meet the architect's preferences regarding the roof edges. After that it was Eric Birch's job to rig and lift the roof in one piece into its final position.

"It's sometimes thought that the technical challenges associated with this final task deserve the greatest credit, but at D&H Steel it's teamwork that gets the job done. Everything we need to do on a project has been thought through well in advance by the detailer, in this case Guy Jamison.

"Guy spent many hours on coordinating the architectural requirements with the structural details so that the gelled in his drawings. This must be done without compromising the architecture. As the detailer works on his drawing, he has to keep in mind each subsequent task. To be a good detailer, you need to know the sequence of tasks to be done and follow it, because in the end, it's good teamwork that results in success."



John Jones Steel/D&H Steel : A Joint Venture that builds Grand Central

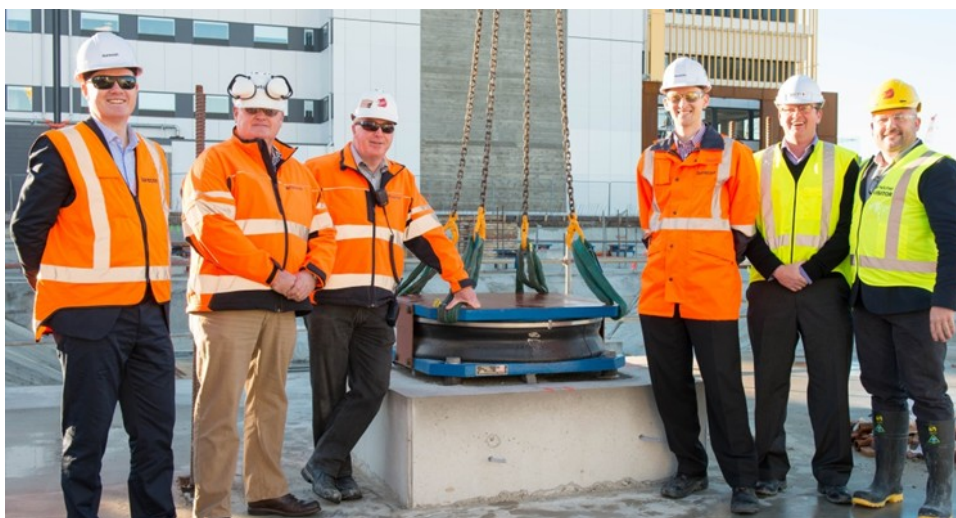


The new seven level building will have ground floor retail and offices for the Ministry of Business Innovation and Employ-

ment, the Ministry of Social Development and the Department of conservation. The total floor space is some 30,000m².

Having experienced a near collapse and subsequent deconstruction of their hotel on this site, the client—GC(NZ) Limited—wanted to provide its Government tenants with a building capable of high levels of seismic resilience. The decision was taken to design for base isolation using Triple Pendulum Friction Bearings made by EPS in San Francisco.

The lateral resisting system consists of moment resisting frames on all grids running in the east-west direction. Concentrically braced frames provide lateral resistance in the north-south direction and are located at the perimeter, the core and the atrium.



The design team, led by Aurecon's Project Director, Sean Gledhill (left), Fletcher Construction's Operations Manager, Jack Harris, and Project Manager Eugene Duggan (leaning on the Triple Pendulum Friction Bearing™), Bradley Hubbard, Aurecon's Lead Structural Engineer, Mike Jeffery, Senior Project Manager RCP, and Fletcher's Area Manager, Aaron Muir.

Construction Captions: Left: The first of 61 column bases is welded at D&H Steel, with Quality Assurance. Below: John Jones Steel erecting—another example of co-operation with D&H Steel in a major Christchurch project.



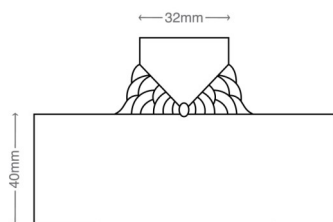
Case study: Cost Saving—Multi-run Fillets v Butt Welds

Grand Central New Zealand was originally designed to have 400HCC 313 columns that have 9mm Fillet Welds. During design development there was a suggestion that the Fillet Welds may need to be increased to Full Penetration Butt Welds (FPBW), adding more than \$1-million to the welding costs.

D&H Steel decided to work on an alternative solution. HERA and others had carried out numerous tests on welded sections under cyclic inelastic loading. The results demonstrated that a double-sided fillet weld, with sufficient strength and quality, could be more than adequate for an inelastically responding steel section.

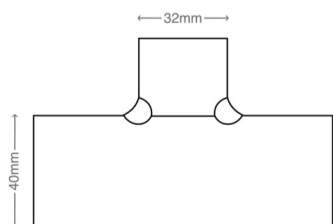
Full Penetration Butt Welding is labour intensive, as these diagrams illustrate.

Fig.1—FPBW



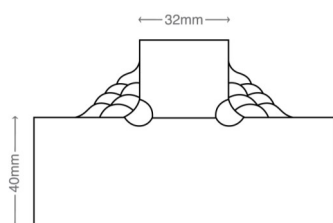
The FPBW has 23 weld runs. The root run needs to be back gouged and the plate bevelled. This requires 60 times the labour input of a single 9mm weld pass. . .

Fig.2— 9mm Submerged Arc Weld



. . . and more than twice the labour input of the double-sided 19mm Multi-run Fillet Weld.

Fig.3—19mm Multi-run Fillet Weld



Ron Brabant, Senior Technician at X-Ray Laboratories Limited, testing a T-section.

D&H Steel ran a series of tensile tests with a range of different size Fillet Welds and engaged X-Ray Laboratories Limited as an independent third party to conduct the tests according to the AS/NZS3679.2 standard. T-sections, each made with a 40mm flange and a 32mm web, were joined by fillet welds, starting with the small fillets and testing each to destruction. Senior Technician at the company, Rob Brabant, explains: "At the outset, as expected, the smaller fillet welds broke, but when we got to the 19mm thickness, the web yielded. In other words, this size of weld and its quality proved stronger than the parent metal."

The photograph, which appears on the X-Ray Laboratories Ltd Tension Test Report, shows the failure of the web, not the weld.



The results of this testing were presented to Aurecon who were able to customise the location of three weld types at specific points along each column length: **1) 19mm Multi-run Fillets** were selected for use in the column base to allow for a plastic hinge to occur when the base isolation system is overloaded. This would occur in a seismic event that exceeds the MCE (Maximum Credible Event) design loading; **2) 12mm Multi-run Fillets** located in the upper level beam/column joint regions where ductility in the moment resisting frames is required for seismic events exceeding MCE and are sized for the over-strength loading; **3) 9mm Single-pass Fillets** with 3mm penetration were used at other locations as simple, double-sided welds. The standard Submerged Arc Weld is all that's needed for shear transfer. Between each weld type along the column, a transition zone prevents stress concentration.

The alternative welds developed during the value engineering process generated savings in excess of \$1-million and eliminated 14,000 man-hours of welding; they also shortened the lead time — all benefits from getting D&H Steel on board early in the project.

Long Service Awards

Friday the 13th of March, 2015, was not regarded with much superstition at D&H Steel because it was this year's date for our Long Service awards. Our company record reads like a family history and speaks volumes about respect for the individ-

ual who gives his or her talents and time. We applaud each one, starting on 10 years' service where 11 people are named on our Board of Honour. At 15 years we have five, at 20 years another five and five more at 25 years. Then we have our exceptionals:

10 YEARS		15 YEARS		20 YEARS		25 YEARS		30 YEARS		35 YEARS		40 YEARS		
Tofa Tapu 2001	Rick Walker 2001	Eric Birch 1995	Dean Pouwhare 1993	Mike Sullivan 1987	George Leefe 1984	John Ahvui 1981	Laurie Leefe 1972							
Adele Hikuroa 2002	Guy Jamison 2002	Sunil Prakash 1995	Tom Heather 1994	Yakub Kadir 1987		Dave Drollet 1981	Joe Cowan 1975							
Mohammed Saheen 2003	Kevin Deane 2003	Abdul Munif 1999	Vince Nairne 1994	Jake Faafua 1988										
Shabbir Rajkotwala 2003	Dean Rafferty 2003	Sean Galvin 1999	Mike Thompson 1994	Teau Arakua 1988										
Jordan Brown 2004	Wayne Peachey 2004	Bruce Gemmel 1998	Sue Lemmens 1994	Karl Muller 1990										
Paola Juul 2005														

30 years—George Leefe, joined 1984

35 years—John Ahvui and Dave Drollet, both joined 1981

40 years—Joe Cowan, joined 1975, and the late Laurie Leefe, father of George, joined 1972.

They all add value to our experience and help us to make experience our strength.



Detailer **Sue Lemmens** has 21 years with D&H Steel and was pleased to hear managing director Mike Sullivan say that the strength of the company is a function of the commitment and dedication of its employees. "The years of service are appreciated and recognised," said Mike. "You and I can smile at being old hands!"

Operations Manager **Dean Pouwhare** is congratulated on 22 years' service. He was driving piles for a wharf on Waiheke Island when Mike recruited him. "Are you up for it?" Dean was, and soon went rigging and running jobs while their friendship matured out of mutual respect. Mike bought into Dixon & Haddon and they

never looked back. And already employed by the company in 1989, **Teau Arakua** has been a steel rigger, an onsite welder and a submerged arc welder in the workshop. He's had a knee reconstruction op and joked with Mike that when fully recovered he's going back to rigging. At 61 unlikely, but 30 years' service? Very likely!



The Long Service recognition event is always followed by a hearty lunch, a few beers and a chat with some mates—and the rest of the day off.





'Experience Our Strength'

- Project Management
- 3-D & Shop Drawings
- Fabrication
- Protective Coatings
- Site Management & Erection



ISO 3834 Part 2
Certificate No. 001NZ/2014

D&H was the first steel constructor in NZ to be awarded this International Quality Accreditation. We comply with ISO 3834 for the benefit of our clients.



We were also the first to acquire Steel Fabricator Certification - a quality management system under the auspices of the IIW (International Institute of Welding).



We manufacture all the commonly specified welded beam & column sections and provide a free design service for optimised, tapered portal frames. Our CWBs are made from G350 steel and welded on both sides.



The leading brand for Buckling-Restrained Braces made in New Zealand by D&H Steel Construction to calibrated & certified seismic ratings.

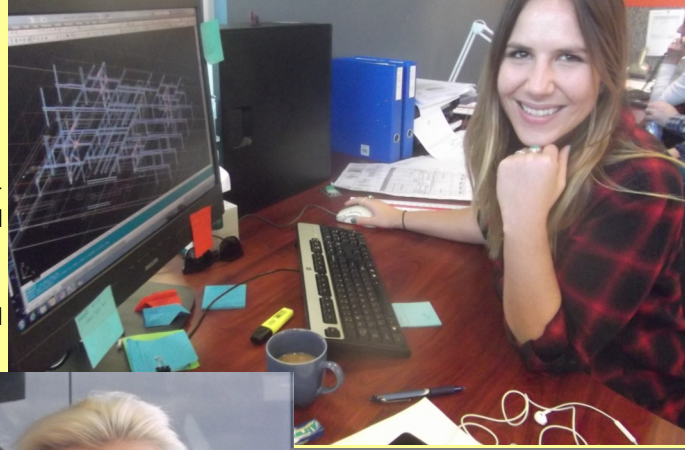


Introducing some new members of our team:



Amy Knowles started at D&H Steel in the second half of February. She'd been working for a small company specialising in Quantity Surveying. "It was quite a challenge to take on the document management of a large company, drawings for pricing and detailing, out for approval, into the workshop, the RFIs, the always critical JIT factor and knowing who's working on which project. It's like dancing— I love it!"

Alisha Groves came back to New Zealand from Australia and joined D&H Steel in March. She has worked as a steel detailer for eight years in Brisbane, Melbourne and Perth. "It's nice to feel part of a New Zealand team that places a strong emphasis on quality while encouraging individual responsibility. If I look ahead a year, I'm sure I'll still be smiling and enjoying my job." In her leisure time, Alisha has joined the D&H Steel boxing classes. "It's great for keeping fit but also for team building."



Rachel Davies is the new D&H Steel Construction receptionist. A little shy of being photographed, she realised that people calling the company would like to be able to put a pretty face to



the name. "I started five months ago and was impressed by how friendly D&H people are. My favourite sport? Have to say shopping," and she laughs readily, "and going out with friends and family. After nine years in hair-dressing, I'm really enjoying helping a much wider range of people."



Ron Blok first came to New Zealand in 1969 with his Dutch parents when he was 10. A decade later the family returned to Holland, Ron got married and worked for seven years in radar and sonar, changed to metals, then plastics, and after becoming a fitter and turner, went on-site rigging before going back to school to study Mechanical Engineering. Through it all, including divorce, he never stopped wanting to return to New Zealand. "I'm an advanced diving instructor, and an experienced detailer. I'm pleased to be back, at last, and very pleased to be employed by D&H!"

Andrew Curtis joined our Workshop Quality Assurance team in December last year. "Because D&H Steel is ISO 3834 accredited, I have systems and processes in place that help me to stay focused on ensuring consistent high quality work. Of course, personal discipline is essential, and I have that, but D&H Steel's company policy requires us to follow all the procedures that drive us towards guaranteeing quality products."

