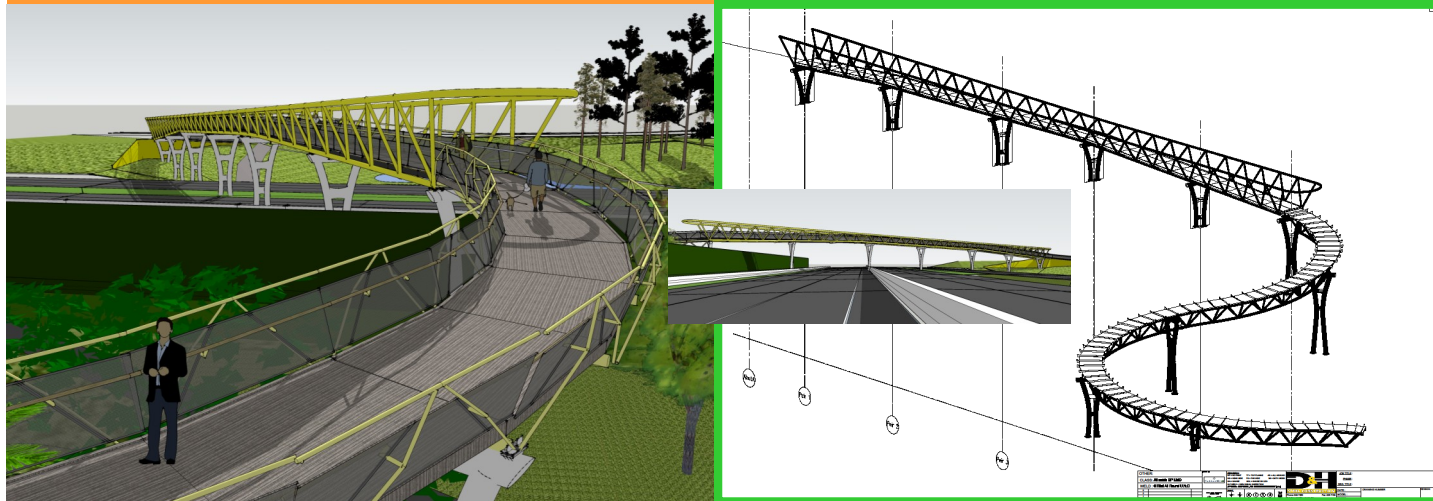


The Westgate Footbridge over SH16



This tubular truss structure is a Design/build project in which HEB Structures is the main contractor, with Aurecon providing design services. D&H Steel is fabricating the steel; Wayne Peachey is responsible for the detailing.

"Fortunately, I have experience with helical structures," says Wayne, "and can keep a close watch on each stage in the workshop. The bolt array for the pier base plate connections required precision, which even satellite surveys wouldn't ensure. We have a

circular array of 32 bolts with only 3mm tolerance in a 70mm thick steel plate, and the bolts are cast in concrete.

"To pinpoint the exact centre of each bolt, we advised HEB to mark a Perspex template on site, brought this back to our drawing office and relayed the offset dimensions into our detailing model, customising each hole. We then laser-cut a steel template, took this back to the site to check before giving it to our fabricators for use in the final assembly.

"The bridge truss spans were assembled in our workshop on a 10-tonne jig that could be adapted for each of the 20m spans. This facilitates the accuracy of the development cuts at both ends of the brace pipes and cross members, and ensured that the cords and the end-plate splice connections all fitted perfectly."

Update. . . will revisit this project in our next issue when HEB completes the erection. Meanwhile see pp 2-3 for the inside story.

D&H's Role at new MIT campus

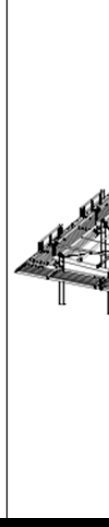
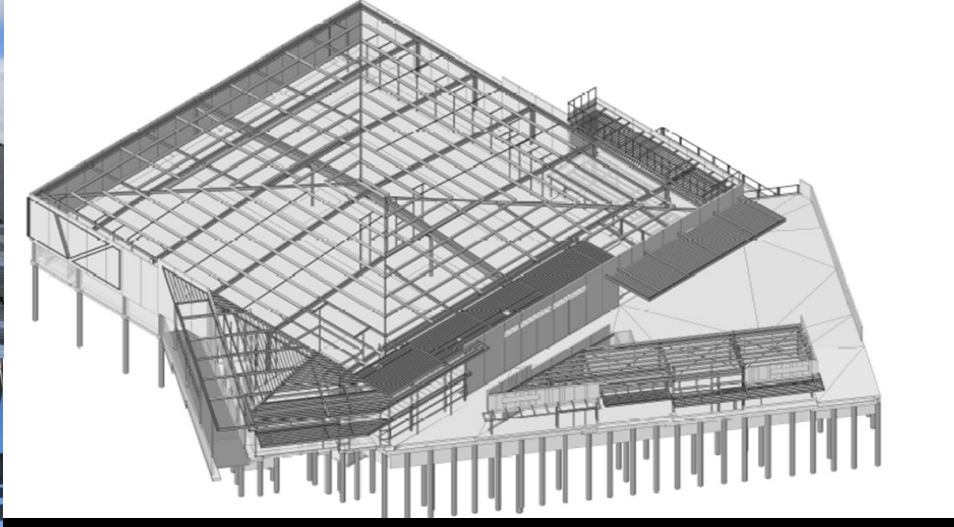
Subcontracted to supply MJH Engineering with Custom Welded Floor Beams, D&H also carried out the finishing fabrication of the heavy EBFs (Pic. 1) and the Y, X and inverted V nodes (Pics 2, 3 & 4) of the diagrid (see top picture). Project Director Jeremy Austin of Holmes Consulting Group says heavy steel plate and full penetration welds were required to transfer the

forces. All welds were subjected to independent X-ray tests.

Workshop Manager Dave Gulland said: **"It takes great depths of skill to produce consistently good welds with a high level of finish."**



Countdown expands to Warkworth



ASPEC Director and Project Manager Mike Barltrop: "A tough site but once again D&H proved they're good to have on the team."

The new Countdown in Warkworth has floor-space of 3,720m² and 4,565m² of basement parking for 150 cars. Going underground was necessary because of the dimensions of the site. A D&H team led by Dean Rafferty addressed the challenge of sequencing the steel erection when craneage weight and reach were constrained by the underground parking. "Once we reached agreement with the

main contractor on the micro-logistics," says Dean, "ASPEC proceeded with the post-tensioned concrete slab, which had the high strength needed for the crane to mount safely and all went smoothly."

Meanwhile, a second new Countdown in Manurewa had sufficient space to have its car park surround the store. Architect John Sofo of ASC Architects, who designed both

Inside story of the Westgate Footbridge

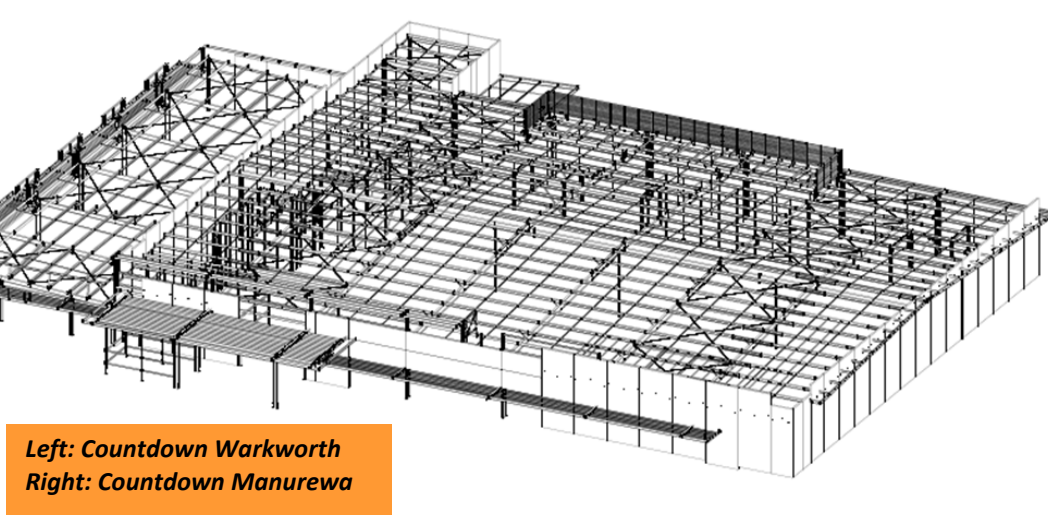


The 10-tonne jig on which each tubular truss is precisely formed.

A D&H welder wears breathing apparatus to protect him from the fumes.

Detailer Wayne Peachey (left) and Works... the finer points of the Westgate Footbridge.

Warkworth and Manurewa with D&H Steel



**Left: Countdown Warkworth
Right: Countdown Manurewa**

buildings, says: "As a large format retailer, Countdown is constantly seeking to improve the customer experience and make it as positive and easy as possible. These principles drive the planning of all the Countdown sites."

Both of the Warkworth and Manurewa plans included additional retail outlets for the convenience of shoppers. At Ma-

nurewa, these outlets are contiguous with the main store. "For mainly architectural reasons," says Eric Birch, D&H's Rigging Foreman on the job, "we had a couple of weeks of on-site welding in order to achieve the right finish for the canopies. Bolted joints would have been quicker, but there are some exceptions worth making when a particular look is what's wanted."

Legacy Construction's Project Manager Nick Herangi: "Three-quarters through, ahead of schedule. Have to say D&H did all right!"

Over SH16 at Hobsonville (contd from p.1)



Shop Manager Dave Gulland discuss

Vince Naime raises a smile as he finishes welding another 20m span.

Prepped and painted, the finished truss is about to leave Brick Street for the site.



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Key D&H People:

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Managing Director
- Wayne Carson**
General Manager
- Dave Gulland**
Workshop Manager
- Rod McIntyre**
Commercial Manager
- Mike Thompson**
Detailing Manager
- John Frederickson**
Custom Welded Beams
- Tony Smith**
Chief Estimator
- Dean Pouwhare**
Site Manager
- Adele Hikuroa**
Accounts
- Kevin Thomas**
Purchasing Officer
- Megan Aitken**
Document Controller
- Colin Ross**
Project Manager

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Colin—ext. 237
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Wayne—ext. 205

"First-class welding is specialised work," says Heath Johnston, Welding Supervisor at D&H. That's him talking to welder George Leefe, who's been with the company for 27 years. "This is one of the inverted V nodes for the new MIT campus. We treat each node as if it is a compound joint," explains Heath. "With full-penetration welds, adjacent angles can be affected. We pre-heat the steel to eliminate cracking and discontinuances. The desposition rate will depend on the gas mix, in this case argon and CO₂, and the metal core of the weld-wire. The fluxes and alloys also help us to achieve a 10mm fillet in one pass. It's all about knowing how the various gases work with the different metal cores. We allocate one man to complete the entire node. This way, each welder can take pride in his craftsmanship."



Right: Suresh Kumar grinds off a local project, while Upendra Jeeru uses a semi-automatic BUGGO on an export job.



Left: Suresh drops in beside Vince Naime for a tea-break. Suresh comes from the ship-building and repair yards of Singapore. He joined D&H in 2008. Vince has 19 years with the company. "Before welding it was sand-blasting, then painting. I like welding best," says Vince. "It makes you think. My workmates are my second family!"

D&H attracts detailing talent from UK



Daryl Cornelius worked for Strucad in the UK before launching his own detailing company in his native Dorset. Of the many projects to his credit, the International Airport of Bournemouth has pride of place. He'd never worked abroad until a friend told him about D&H Steel; he started with the company in November 2010. "One of the best moves of my life," says Daryl, pictured on Mt Ruapehu. "So much to enjoy outdoors! I'm blown away by the scenery and all the opportunities to keep fit. I'm even adapting to steak and cheese pies," he jokes.

