

Imported Fabricated Steelwork: Case Study #3

# Countdown Supermarket

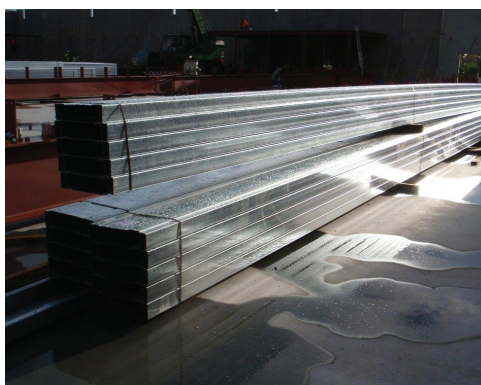


## Project

### Supermarket – Pukekohe

The \$6.1 million, 4,200sqm supermarket in Pukekohe was completed in 2011. The building is a portal frame construction: seven portals spanning 28m, made from welded rafters and columns. All external steelwork is galvanised, the remainder is primed as per the project specification.

The winning bid for the portal frame structure was based on the import of 227 tonnes of prefabricated structural steel from China, which promised to deliver a 30% cost saving to the project. The construction programme was designed to accommodate the six-eight weeks it takes to ship product from China to New Zealand.



## Take outs

- 6-8 weeks for prefabricated product to travel from China to NZ
- Shop drawings created in China were incomprehensible to NZ engineers
- Imported prefabricated steel arrived out of sequence
- Engineers had to revisit all design calculations and drawings to accommodate non-standard structural steel
- Extensive product testing was required to confirm the product quality met AS/NZ standards
- The use of imported prefabricated structural steel led to substantial time delays and cost overrun

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### Issues

Structural engineers on the ground in New Zealand were confronted with a series of challenges when dealing with the imported prefabricated structural steel.

First, the shop drawings were created in China and were initially provided in the language of the country of origin – in other words, illegible to New Zealand engineering consultants. These had to be reissued in English.

Second, the imported product arrived out of sequence, causing significant delays to the construction programme. Third, the structural steel supplied was a different grade to that used locally; the thicker gauge product forced the New Zealand engineers to re-examine the design – every drawing, detail and calculation.

Full testing was completed in China, both before and during construction. But because the prefabricated steel was imported from China, the Council required additional tests be completed when the product arrived in New Zealand, specifically x-ray of the welds and coatings to assess the joints. The testing regime added even more time and cost to the project.

**“At face value the cost savings that imported prefabricated structural steel from China offered were considerable. The reality, however, was very different: additional product testing, consultant time and the poor performance of the subcontractor who managed the import process for us resulted in a substantial cost overrun.”**

— — *Rob Murphy, Construction Director, Watts & Hughes Construction*