

OrbiPlate™

Harvey Norman, Blenheim, New Zealand

The Project

Project: Harvey Norman
 Product: 20mm OrbiPlate™
 Specifier: Structural Design Lab
 Contractor: Robinson Construction
 Subcontractor: HML Engineering

Ramset™ OrbiPlate™ helps a New Zealand construction team save time, money and reduce risk in the rollout of new Harvey Norman stores.

Creativity is not just confined to the arts – plenty of creative solutions can be found in construction. The structural engineer working with Harvey Norman's new retail centres in New Zealand says that it was a chance conversation with a colleague that helped him solve a construction problem – using Ramset™ OrbiPlate™ as the creative solution.

The stores, all new builds, are being constructed throughout the country, starting with the Masterton store. Each facility includes two sections – the new retail store, and an attached warehouse.

Ramset™ OrbiPlate™ was used to connect the steel frames of the building to the precast concrete in each section.

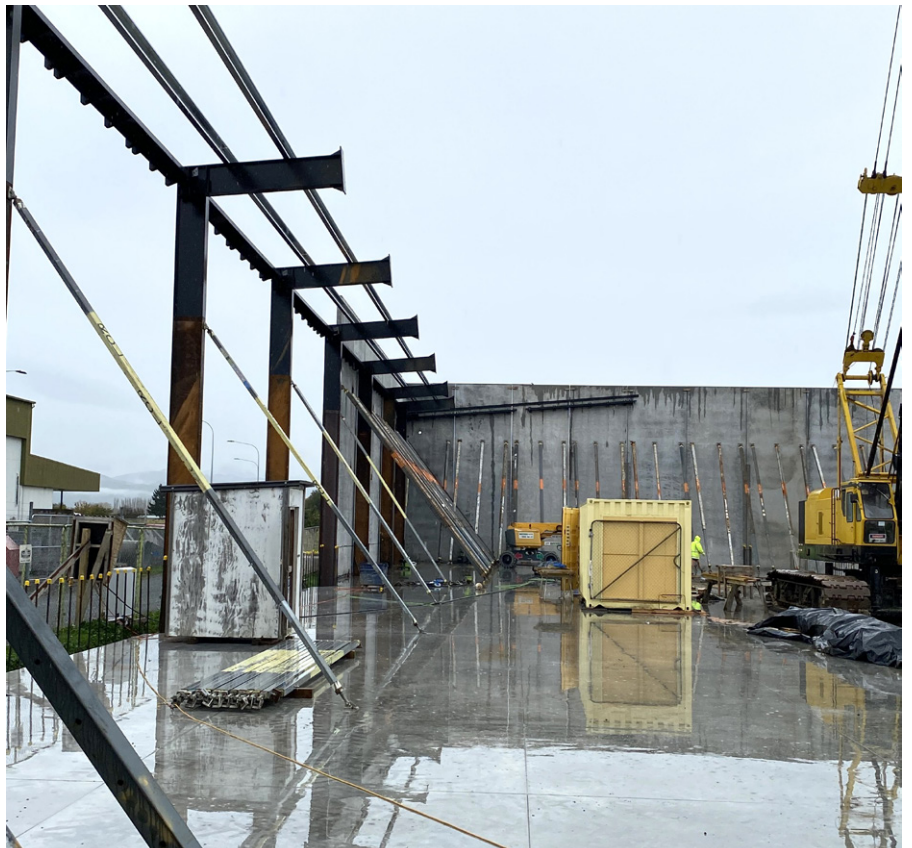
"The buildings generally are precast concrete around the perimeter with the concrete separating the warehouse storage area from the main retail space," explains the engineer. "The separation is designed from a fire and security point of view."

"Because the retail spaces are large open spaces we are using steel portal frames and OrbiPlate™ is the best way of connecting that steel structure to the concrete structure."

Alternative to onsite welding

Now just finishing up the new Harvey Norman project in Blenheim, which again uses Ramset™ OrbiPlate™, the engineer says that it is the ideal solution to fixing the structures because it avoids onsite welding, often an issue of contention in New Zealand.

"In New Zealand there is a great hesitancy to weld onsite; it depends on the contractor," he explains. "Some contractors don't mind it; others don't want to weld onsite. And when you design a building, you are trying to cater for every contractor."



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"Masterton has got quite high seismic loads and conventional sort of fixings – what I'd term drilled in epoxy, or basically drill glue – couldn't manage the capacity for the loads we were dealing with. So, the option was site welding, which was something we wanted to avoid because it might restrict us in choosing contractors."

A colleague and steel fabricator in Christchurch suggested OrbiPlate™ – and it was a huge success. OrbiPlate™ was used for Masterton, Blenheim (still under construction) and is now on the schedule for the next Harvey Norman store in Ravenswood.

Inbuilt tolerances

The patented OrbiPlate™ system delivers connection tolerances of up to 20mm in structural connections. Quick and easy to install, it delivers fine locational accuracy when positioning steel members.

"What we found was that it gives you that tolerance of plus or minus 20mm and they'll line up," says the engineer. "We're proud to say that in Masterton every single one lined up. Unfortunately, in Blenheim they got four wrong, but that tolerance is built in, and the contractors are saying they are just brilliant."

"With the Blenheim build they put up the steel frames, they just dropped the precast panels in, bolted them up and they are done. There was a lot less temporary propping. We are still in the ground at the moment for the Ravenswood store, but I've seen some of the construction programming plans, and they're talking of not propping panels because they can bolt straight to the steelwork."

Efficient in time and money

The efficiencies offered by OrbiPlate™ created savings in both time and money, says the engineer, making them popular with the onsite team.



"Another reason for using them is that if you are drilling epoxy fixings, you've got to get up on a knuckle boom, glue them in, come back down, and the next day you have to return and tighten them up," he says. "There are two stages to it. What we've found with the contractors is that they just love them from that point of view."

"The recommendation from a steel fabricator led us to OrbiPlate™ and basically I use them on every project I do now."

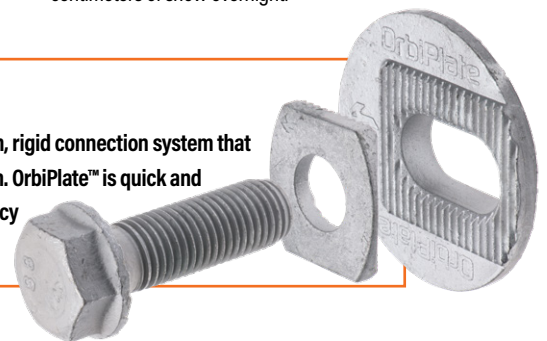
The Queenstown climate was another consideration during the build, with the team facing challenging weather conditions throughout, which in turns puts pressure on them to do the work as quickly as possible.

"We work year-round, says the engineer.

"We continue to work through rain, snow and ice and rain – it's just another day. Today we've got torrential sideways rain, and we are expecting 30 to 40 centimeters of snow overnight."

About OrbiPlate™

Ramset's patented OrbiPlate™ is a high strength, rigid connection system that delivers tolerances up to 20mm in any direction. OrbiPlate™ is quick and easy to install, delivering fine locational accuracy when positioning steel members.



For further information, please contact Ramset™
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