



1 Aerial photograph of the site 2 Internal view 3 A section of the internal hydrant system.

Foodstuff SI Hornby Distribution Centre

Project Location: Christchurch

Cosgroves for Foodstuffs (SI) Ltd

Disciplines: Fire Protection Services & Fire Engineering Services



Cosgroves Ltd were the fire protection and fire services engineers for the \$45 million Foodstuffs (South Island) Hornby Distribution Centre expansion project.

Innovation was needed to optimise the storage capabilities of the facilities while maintaining compliance with the NZ Building Code and relevant standards. New sprinkler technology was introduced to enable an increase to the maximum storage heights, beyond the NZS4541 allowance. The resulting outcome for the client was an increase in their storage capacity of 20%.

Protection of 'dangerous goods' posed a challenge in achieving a practical design solution within the constraint of NZS 4541:2007. Consultation between the sprinkler designers, rack manufacturers, installers and the client achieved a practical outcome including designated hazardous goods storage areas, specific caged protection for racked aerosol goods, and retention of a roof based (suppression mode) sprinkler system. The roof based system removes the restriction of in-rack sprinkler protection, and allows flexibility for the warehouse layout.

The fire engineering design was presented as an alternative solution due to the high combustible loading, large travel distances, and size of mezzanine floors. CFD fire modelling was applied to the space to determine the location of the exit point, and prove that the building layout met the performance requirements of the NZ building code. Consultation with the NZ Fire Service (NZFS) helped inform an innovative in-ground fire hydrant system that provides fire hydrant outlets around the transport dispatched area, through the NZFS changing to a closed network at a fire hydrant inlet system located at the sprinkler valve house.

Cosgroves knowledge and expertise resulted in innovative project solutions for the client, featuring increased storage capacities and operational flexibility.

Judging & Copyright Statement

This project is a Finalist entry in the 2016 INNOVATE NZ Awards of Excellence competition. The winners will be announced on Friday 2 September, 2016.

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