

Frankston Hospital Extension

300PLUS® STRUCTURAL STEEL – THE IDEAL CHOICE FOR EXTENDING EXISTING BUILDINGS IN ANY DIRECTION



FRANKSTON HOSPITAL IS A FIVE-STOREY BUILDING THAT HAS BEEN EXTENDED WITH BARE STEEL CONSTRUCTION. THE UPPER FLOORS HAVE BEEN COMPLETED WITH THE LOWER TWO FLOORS LEFT INCOMPLETE. IN THE FUTURE THESE LOWER FLOORS CAN BE CONVENIENTLY IN-FILLED IN THE SAME MANNER AS THE TOP FLOORS.



OneSteel's **300PLUS®** hot-rolled structural steel sections were the material of choice for this project due to the ease with which steel frame construction can be used to extend an existing building.

Upon completion of the construction, new space will have been provided for wards, birth suites and other procedural rooms, dining areas, day surgery areas and minor plant.

A fire-safety engineering assessment was undertaken for this building with part of the assessment focussing on the extent of fire protection required for the steel columns and beams associated with the extended parts of the building.

In Victoria, all hospitals are required to be sprinklered. This is not the case in other parts of Australia and is not required by the Building Code of Australia (BCA) - unless the building exceeds 25m in effective height or is a large isolated building. This is not the case with this building

It is reasonable to suggest that it will be almost impossible to deal successfully with a fully developed fire in a hospital given the potential condition of the occupants and the difficulty in evacuating them. Evacuation times are likely to be long.

The best way of managing the risk in these buildings is to minimise the likelihood of a fire. This can be done in various ways. One of the best ways is to incorporate sprinklers and manage them so as to achieve the high levels of effectiveness that are possible.

The statistical record shows that sprinklers are more effective than compartmentation in limiting the spread of fire. It also shows that fatalities are correlated with the size of the fire. It follows that the extended building is safer with sprinklers than if it had been designed to the BCA - Deemed to Satisfy provisions.

In hospitals, it is critical to avoid a severe fire because the smoke and heat would result in major loss of life.

The optimal risk management strategy is to take particular steps to minimise the fire size. It is really too late once the fire reaches major proportions. Management strategy should include staff training on fire awareness and response and the management of the sprinkler system.

Bare steel construction utilising OneSteel's **300PLUS®** range of hot-rolled sections were used throughout the hospital extension with the exception of columns within the health-care parts, which were fire protected with plasterboard.



CLIENT
Peninsula Health

PROJECT MANAGERS
John Wertheimer
Consultants Pty Ltd

ARCHITECT
Silver Thomas
Hanley Pty Ltd

BUILDER
Hooker Cockram
Projects Limited

STRUCTURAL & CIVIL ENGINEER
Meinhardt Consulting
Engineers Pty Ltd

BUILDING SURVEYOR
Stokes Building
Surveying Pty Ltd

FIRE SAFETY ENGINEERING
Meinhardt Consulting
Engineers Pty Ltd & Cesare (VUT)

PHOTOGRAPHY
Martin Saunders

FRANKSTON HOSPITAL EXTENSION – FIRE RESISTANCE REQUIREMENTS SUMMARY

BUILDING ELEMENT	ELEMENT REQUIREMENT	
	DTS#	Alternative Solution
columns	120/-/-	60/60/60
beams	120/-/-	ESA/M ≤ 30m ² /tonne
floor slabs	120/120/120	120/120/120
Sprinklers	no	yes*

Type of construction: A

Classification of building: 9a

* required by local Victorian regulations only