

# Norwood Plaza

THE STEEL-FRAMED SOLUTION PROVIDES THE SPEED REQUIRED TO MEET THE CHRISTMAS RUSH.



THE SPEED OF CONSTRUCTION PROVIDED BY THE STEEL-FRAMED SOLUTION OFFERED THE TENANTS THE POSSIBILITY OF PRE-CHRISTMAS TRADING. THE \$24.5MILLION PROJECT WAS COMPLETED IN JUST 12 MONTHS FROM START OF DEMOLITION TO THE FIRST RETAIL SALE.



Norwood plaza consists of varying numbers of levels throughout. A basement carpark is provided throughout the building with the number of storeys above this varying from one to three floors at the eastern edge of the building. Ground floor is retail and includes a major store. The other levels incorporate carparking, commercial and plant areas.

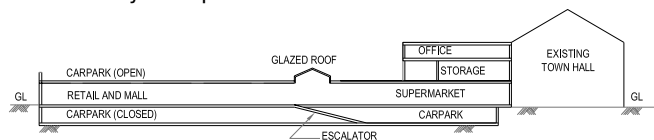
The building has an escalator link between the basement carpark and the ground floor retail.

A structural steel framing solution was utilised for this building and a fire-safety engineering evaluation was undertaken to determine the extent of fire protection required for the structural steelwork and this was done in accordance with the references discussed in the introduction. The structural steel framework incorporated a variety of OneSteel 300PLUS® Sections including welded columns and tubular columns and transfer, primary and secondary beams ranging in size from welded beams (for transfer beams) to 310UB40 sections (for secondary beams).

With the exception of transfer beams, no beams within the project were fire protected and this led to significant economies in construction. Intumescent coatings were used to achieve enhanced fire-resistance for the columns and transfer members although the report concluded that a lesser fire resistance was required, and that in some cases, the columns and beams had a sufficiently low exposed

surface area-to-mass ratio to achieve the required performance without additional fire-protective coating.

The fire safety engineering report relating to the structural steelwork produced by OneSteel's fire engineers Ceasre VU, emphasised the need for development and implementation of fire-safety management plans within this shopping centre.



NORWOOD PLAZA - EAST-WEST SECTION

**OWNER/DEVELOPERS**  
Parkade Pty Ltd

**ARCHITECTS**  
Hardy - Millazzo

**STRUCTURAL AND BUILDING SERVICES ENGINEER**  
Kellogg Brown Root (KBR)

**BUILDER/PROJECT MANAGER**  
Hansen Yuncken

**BUILDING CERTIFIER**  
Katnich Dodd

**PHOTOGRAPHER**  
Kevin O'Daly

NORWOOD PLAZA – FIRE RESISTANCE REQUIREMENTS SUMMARY		
BUILDING ELEMENT	ELEMENT REQUIREMENT	
	<b>DTS</b>	<b>Alternative Solution</b>
<b>beams in carpark</b>	$k_{sm}^* \leq 30m^2/tonne$	
<b>columns in carpark</b>	60/-/-	60/-/- but report considered that $k_{sm}$ sufficiently low and no protection required
<b>columns in retail</b>	180/-/-	60/-/- but report recommended 30/-/-#
<b>transfer beams</b>	180/-/-	60/-/- but report considered that $k_{sm}$ sufficiently low and no protection required
<b>beams in retail</b>	180/-/-	$k_{sm} = 30m^2/tonne$
<b>sprinklers</b>	YES	YES

\*  $k_{sm}$  is the exposed surface area-to-mass ratio  
# also applies to connections between primary beams and columns