

BEDEV Office Development

**SIMPLIFY THE PROCESS AND REDUCE COSTS
USING BARE STEEL CONSTRUCTION**



THE BUILT ENVIRONS DEVELOPMENT, LOCATED AT THE CORNER OF FROME AND FLINDERS STREETS IN ADELAIDE, SOUTH AUSTRALIA, PROVIDES CAR PARKING IN A BASEMENT, PLUS 4 LEVELS (EACH 1280M²) OF OFFICE CONSTRUCTION WITH A PLANT ROOM ABOVE.

With the exception of the reinforced concrete basement, the building was constructed using a bare steel frame incorporating OneSteel's range of **300PLUS**[®] structural steel sections.

A fire safety engineered solution was employed to reduce costs and provide a more flexible solution to accommodate the architects requirements. The methodology adopted, as with most fire safety engineering designs, was to demonstrate that the alternate design has an equivalent or better level of fire safety than required by the appropriate Deemed-to-Satisfy (DTS) provisions of the BCA.

For this development, the DTS required the building frame to have an FRL of 120/-/- and the floor slabs 120/120/120 but did not require the building to be sprinklered. However, the developers required sprinklers for

other reasons, namely, to offer the office to A-grade tenants that require sprinklers for property protection.

An alternate fire safety engineering solution was developed consisting of sprinklers in combination with the inherent fire resistance of unprotected 300PLUS[®] steels (bare steel). This alternate solution provided a higher

level of fire safety than the steel frame protected to the FRLs required by the BCA. As a result of the bare steel solution being adopted, significant cost savings were realised and the construction process was greatly assisted.

In addition, the presence of sprinklers allowed some additional architectural flexibility for the arrangement of the exit doors at ground level. Although the number of exits remained the same and are fire isolated from each other and the rest of the floors, the doors from these exits were located next to each other instead of the minimum distance apart as required by the DTS provisions.



OWNER
Built Environs Developments Pty Ltd

ARCHITECTS
Matthews Architects

STRUCTURAL ENGINEER
Meinhardt PT Design

QUANTITY SURVEYOR
Rider Hunt Pty Ltd

BUILDER/PROJECT MANAGER:
Built Environs

STEEL DETAILER / FABRICATION / ERECTION
Samaras Structural Engineers

BUILDING CERTIFIER
Katnich Dodd

FIRE SAFETY ENGINEERING
Cesare (VUT)

PHOTOGRAPHY
Kevin O'Daly

BEDEV OFFICE DEVELOPMENT – FIRE RESISTANCE REQUIREMENTS SUMMARY

BUILDING ELEMENT	ELEMENT REQUIREMENT	
	DTS#	Alternative Solution
columns	120/-/-	ESA/M ≤ 26m ² /tonne
beams	120/-/-	
	ESA/M ≤ 30m ² /tonne	
floor slabs	120/120/120	60/60/60
sprinklers	no	yes *
#	Type of construction: A	
#	Classification of building: Class 5	
*	requested by client for property protection irrespective of form of construction.	