

STRIKING STRUCTURE WILL HOUSE GEELONG'S HISTORIC STEAM CAROUSEL

The latest striking building addition to Geelong's revitalised waterfront on Corio Bay recognizes that environments close to the sea require optimum protection against a naturally corrosive environment.

The building is sited on the sea wall of the recently redeveloped Steampacket Place Quay of the Geelong waterfront.

Known as the Carousel Building the new structure which is nearing completion will house a 19th century steam driven carousel valued at \$1.5 million.

The Carousel Building with its six distinctive umbrella framed roof sections, each measuring 12 metres by 12 metres and positioned in a sequence of three by two abreast was designed by Melbourne architects McGlashan Everist.

The City of Geelong, which is the creator of the project, set the overall dimensions which included a tight budget allocation of \$650,000 for the construction of the building together with maximum use of local construction resources.

Local Geelong companies, Wycombe Constructions is the principal contractor while North Steel undertook the complex steel fabrication.

Consulting Engineers, Meinhardt (Vic) prepared the structural design, recognizing how steel can cost-effectively form the basis for a visually striking structure.

However due to its location, very high wind loadings were anticipated requiring detailed wind pressure analysis under the Australian Wind Code.

Due to the unusual and complex frame shape the consulting engineers elected to create a complex 3D computer model of the structure, an assignment undertaken using the Spacegass software developed by a local Geelong company Integrated Technical Software.

This process also generated bills of quantities of the steelwork for each design permutation which aided significantly in assessing the cost effectiveness of each structural option.

One of the cost benefit outcomes of the computer

design phase was the choice of grid mesh cladding for the overhanging roof sections.

This achieved the desired sun shading and offered significantly less wind resistance than the originally proposed solid cladding.

A total of 40 tonnes of structural steel was fabricated by North Steel and all structural components are bolted together rather than welded on site.

This enabled trial assembly in the fabricators workshop and resolution of any likely difficulties before all the structural components were delivered to the site.

Galvanizing was selected as the optimum protection over painting given the exposed seafront location of the Carousel Building.

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Geelong's new waterfront Carousel Building will house the operating historic 19th century steam powered carousel adding another dimension to the revitalised Corio Bay precinct. A distinctive galvanized steel frame with six umbrella like frames is exposed to the elements and helped achieve both the cost budget and architectural presence desired for the structure.

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Editor.

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Cover:

The corrosion of steel reinforcing bar is one of the most insidious and costly forms of corrosion. The cover shows the severe damage caused by rusting rebar.

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