

■ Eastlink Bridges

Steel solution plays key role in Australia's largest urban road development

Victorian company GVP Fabricators has added the fabrication and supply of trough girders for Melbourne's massive Eastlink project to its impressive portfolio of projects.

Eastlink will provide 39 kilometres of motorway and six kilometres of untolled bypasses connecting Melbourne's eastern and southern suburbs between Mitcham and Frankston. The new roadworks start at the end of the existing Eastern Freeway and will link up with the Frankston Freeway on the Mornington Peninsula.

The project is Australia's largest urban road development and will involve the construction of a 39 kilometre roadway of predominantly three-lane capacity, 17 interchanges, over 78 bridges and 1.5 kilometre twin three lane tunnels under Mullum Mullum Creek. Joint venture partners Thiess and John Holland Group will also construct the non-tolled Ringwood and Dandenong Southern Bypasses, which are designed to enhance traffic flows and growth in the region. Eastlink is expected to open before the end of 2008.

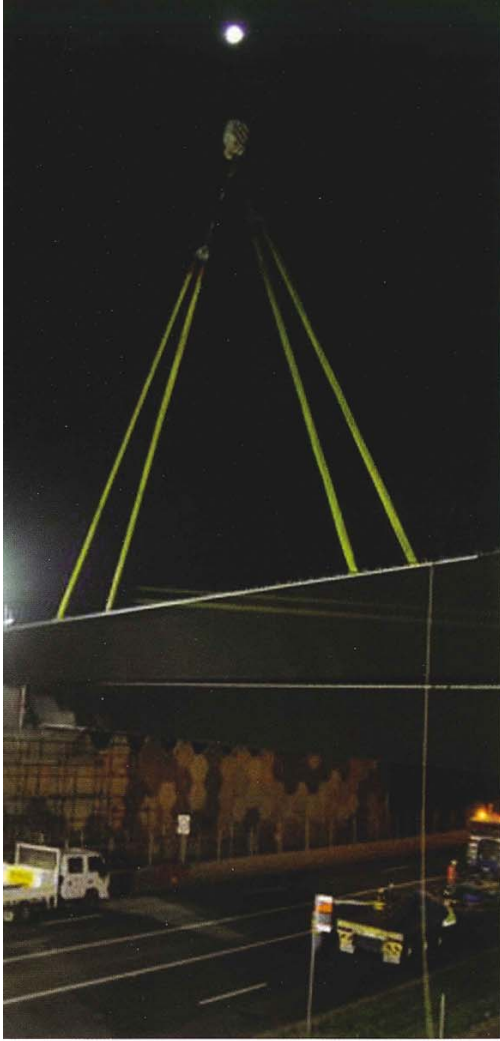
Nick Palamaras, GVP General Manager said, "GVP Fabricators has been associated with many major projects in Melbourne and we have done some civil work before, but now we have really jumped into it with Eastlink's larger bridges and a rail bridge at Ringwood.

For Eastlink we have been fabricating and supplying the trough girders for the main road overpasses."

The trough girders are pre-assembled on site and then transported into position with steerable jinkers as some are over 60 metres long once assembled. They are placed into position using a 600 tonne crane called 'Snow White', purchased by Thiess John Holland for this project.

The steel trough girders will carry the new motorway over the Princes Highway at Heatherton Road and over Cheltenham Road, Dandenong. Once in position they are topped with pre-cast concrete panels and a road surface. The Princes Highway and Cheltenham Road girders were painted in Dandenong by DH/DPC Coatings and Heatherton Road girders were painted by Action Blast Cleaning in Laverton.

The trough girders are up to 37 metres in length and up to 58 tonnes in weight require specialised transport with steerable trailers. The project involves a large amount of submerged arc welding making it 70 per cent welding and 30 per cent fabrication. All welds are tested ultrasonically and must meet very high specifications with very high traceability and documentation requirements.





The girders have a 60 millimetre thick bottom flange with 16 millimetre side webs. The top flanges range 20 to 32 millimetres thick.



"I understand that steel trough girders were selected over concrete girders because of a combination of factors including spanning capability and cost," Nick said. "We were given design drawings by the Thiess John Holland joint venture project engineers. They did the original design and then passed them on to us for costings."



"For the Eastlink road bridge trough girders we are using 350L15 Grade XLERPLATE® steel, supplied by BlueScope Steel distributor Smorgon Steel," Nick added. "The girders just for the Heatherton Road bridge will require over 1300 tonnes of XLERPLATE® steel and another 1200 tonnes has gone into the girders for the Princes Highway and Cheltenham Road overpasses."



"This is the first time we have fabricated trough girders and the size of the project is up there with our largest, but we haven't had any difficulties," Nick Palamaras said. "The bridge spans have all required multiple sections. For instance the Princes Highway overpass spans 95 metres, which comprises of five-piece girders in six rows. That's three rows for the north carriageway and three rows for the south carriageway."



The Cheltenham Road bridge spans 42 metres and requires three piece girders in eight rows. The trough girders for Heatherton Road will be supplied in eight pieces per 225 metre span with four rows required. GVP Fabricators will produce the sections at its Mordialloc workshop from where they will be moved on steerable jinkers to D.H Corrosion-D.P.C Coatings for painting and then to the Eastlink site.

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There are 32 different segments. GVP have made one highly flexible jig with the capability of handling all. Two new cranes were purchased to handle the high loads and six extra welders were employed as a result of the high welding content.

**Nick Palamaras,
GVP General Manager.**