



**CTICC East** Steelwork was the only practical solution for the large spans carrying very heavy loads on this project

## WINNER IN THE COMMERCIAL CATEGORY

**CTICC East**, winner in the Commercial category, is an extension to the Cape Town International Convention Centre. It comprises two convention halls of approximately 5 000 m<sup>2</sup> each, a larger concourse area, as well as smaller meeting rooms.

Steelwork was the only practical solution for the large spans carrying very heavy loads on this project. Universal column sections were used for many of the primary and secondary girders to benefit from the heavy profiles available, while

tubular sections were used to achieve the most slender possible sections for the support of glazing elements, as well as the saw-tooth roof.

The following are a few of the numerous unusual elements to the steelwork on this project:

- Triple-ply girders, 3.5 m deep, with universal column chords up to 167 kg/m per ply supporting the second floor hall, and carrying a live load of almost 300 kN/m; connection design,



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KEY PLAYERS (CTICC East)	
<b>Client/Developer</b>	CTICC
<b>Architect</b>	Convention Architects Joint Venture
<b>Structural Engineer</b>	Sutherland
<b>Main Contractor</b>	Aveng Grinaker-LTA
<b>Project Manager</b>	Target Projects
<b>Steelwork Contractor</b>	Anchor Steel Projects
<b>Quantity Surveyor</b>	Mbatha, Walters & Simpson
<b>Cladding Manufacturer</b>	Bluescope Steel
<b>Cladding Supplier</b>	Macsteel
<b>Cladding Contractor</b>	Scheltema and Company



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precambering, transport and erection were all a challenge due to the size and weight of the sections.

- A 23 m high curtain wall supported by external steel wind girders to keep the internal spaces as clear as possible.
- A saw-tooth structure rotated 45 degrees relative to the supporting structure and lifted 2.6 m above that supporting structure, with a minimum of vertical members; the saw-tooth structure was also kept as light as possible using tubular sections to keep the roof space uncluttered.

Due to space constraints, the mobile mill had to be hoisted by crane onto a scaffold tower built next to the roof so that sheets could be rolled directly onto the roof.

The connection between steel and concrete elements was particularly challenging, especially where forces were very high. Cast-in plates were used as far as possible, some weighing as much as 1 000 kg.

Steel connections in girders were carefully workshopped to result in something that could transfer the massive internal forces, while not being too difficult to assemble on site.

Meticulous planning was also required regarding the erection methodology of the hall floor and roof, as girders had to be temporarily supported due to the distance between supports and the weight of the sections. □