



Escondida Copper Ore Stockpile Enclosure, Chile

Toroids for 200' x 500' enclosure

Span: 60m (200ft), Rise: 30m (100ft)

Owner: Minera Escondida Limitada (MEL)
Project Partners: BHP Billington/Duke Power
Fluor Daniel Chile S.A., Bechtel, Yolles
Montayes Delta Limitada, Santiago Chile



Ore is deposited from a train above the roof gantry. These severe line loads are transmitted to the foundations via lateral steel arch trusses. Triodetic framing between the trusses is designed as a series of shells (toriods) spanning 200ft x 50ft and rising to 100ft at the roof apex. The frame sections were all pre-assembled at ground level & sequentially positioned with curved decking & translucent panels then attached to a purlin system. The end walls are designed as vertical space frames & were installed as two pre-assemblies. The walls require no intermediate foundations & can be re-located in their assembled state as the stockpile length is increased.

