

Auto housing hits new heights

Fifty metre high twin steel and glass towers in Wolfsburg, in the Lower Saxony region of Germany, function as the intermediate storage for Volkswagen's newly completed cars prior to delivery.

These towers form part of the VW Autostadt or Motor City, a complex combining a hotel, restaurant, museum and other attractions with the core business of selling cars.

Each of these steel-framed parking garages can hold 400 vehicles which are transported via lifts in the centre of the structure into the free bays on 20 storeys.

Every 40 seconds a new car arrives in the basement of the cylinder from the production plant via an automatic underground transport system, while another leaves the tower in the direction of the Car Distribution Centre. Over 1000 vehicles are parked and retrieved daily by a fully automated system.

The constant activity through the inside of each tower symbolises the pulse of the motor city. The towers provide a perfect showcase for the cars through a glass curtain wall, well lit by night, affording a clear view of the product and the activity of the enterprise from the outside.

Each tower comprises a steel skeleton constructed from galvanised ST52 T-sections, stiffened with cross-bracing on the perimeter of the building. ST52 is German structural carbon steel with tensile strength of 52kg/square mm or 510 MPa.

The technically advanced Round-Palis 2-180 automatic parking system is used to park and move the cars as required. Each tower has two independent vertical elevator systems reaching one half of the tower each and travelling up to 47 metres.

Time was of the essence with this project so steel was the obvious choice for the frame, allowing maximum offsite fabrication and minimum dependence on favourable weather. A steel frame also provided the lightness and grace desired by the architect without needing to compromise on strength.



Project Team

Client: Volkswagen AG, Autostadt, Wolfsburg
 Architects: Henn Architekten, Munich, Berlin
 Structural Engineers: Windels, Timm Morgen, Hamburg
 Steel contractor: Krupp Stahlbau Hannover GmbH
 Lifting system: Palis Technology, Gersthofen
 Conveyor system: Mannesmann Dematic Engineering
 Cost: 11 million Euro (A\$18 million)