CASE STUDY 01: BEIJING SOUTH RAILWAY STATION

Background Information

From the architect. The Beijing South Station is not only a key rail link for China’s new high-speed intercity network but it is also a major urban building and master plan. Situated on a 31 hectare site the Station creates an urban link with the surrounding cityscape and acts as a “Gateway to the City” whilst the station itself is designed for a passenger turnover of 105 million passengers annually by the year 2030, with a peak hour flow of 33,280 passengers per hour, and a total of 286,500 passenger movements per day. This integrated design encompasses a multi-modal transport interchange facility with a vertical separation strategy designed so that the passenger traffic flows are direct, convenient and highly efficient.

Design strategy.

As the station is immense in scale, the architectural form and structure are clear, simple and people oriented and take into consideration the different operational and management of the various rail lines, station entrances, waiting areas and interchange zones taking place within - the station takes a simple ellipse form that accommodates 3 principle floor levels with two mezzanine floor levels for car-parking and two ancillary gateway office buildings. With such large volumes of passengers it is essential to separate the incoming and departing passengers. One of the main design objectives was to have the passengers board and alight trains with the shortest distance and as possible.

Lessons from this case study

1. The architectural form and structure are clear, simple and people oriented
2. Separate zones catering for seamless integration and transition to different types of vehicular traffic eg. drop off points, bus spaces, pick up bays etc.
3. With such large volumes of passengers it is essential to separate the incoming and departing passengers. One of the main design objectives was to have the passengers board and alight trains with the shortest distance and as possible.

There are a total of 11 island platforms and 2 side platforms with 24 platform edges for High-speed trains (450 metres long), Express trains (500 metres long) and Intercity trains (450 metres long); 2 island platforms with 4 platform edges for the Metro trains (120 metres long) in the basement levels.

The design strategy also incorporates separate zones catering for seamless integration and transition to different types of vehicular traffic eg. underground basement car-parking spaces, 28 taxi drop-off bays, 24 taxi pick-up bays with 138 queuing spaces and 38 bus spaces as a comprehensive transport hub. The elliptical plan form is effective in providing an innovative solution to the station’s vehicular traffic flow.