

LEGION

Project Title: Gatwick Airport Station Optimisation

Date: 2005

Client: Network Rail (UK)

Project Objectives:

- Increase rail passenger capacity by 60% (min. 16mppa by 2012)
- Increase track capacity to accommodate Brighton Main Line RUS, plus:
 - A Gatwick Express service free of conflict from the fast lines
 - A 30-minute interval terminating service from Guildford

Legion was appointed as sub-consultants to the Parsons Brinckerhoff (PB) GRIP 2 design team; PB Architects provided Design, PB provided Permanent Way, Signalling, Mechanical & Electrical and Civil Engineering. Legion provided Pedestrian Modelling expertise using Legion Software and Pedestrian Planning advice to the design process.

To allow for long-term future changes in ridership through the station, Legion assessed the performance, at both platform and concourse levels, of different:

- Platform widths
- Proposed station designs
- Circulation plans
- Demand scenarios

Areas of congestion above the design criteria were identified, the cause determined and potential solutions recommended. In one case, an extra metre's width over the SPSG guideline width was found to confer a 14.4% improvement in passenger experience on the platform.

Legion also collaborated with PB Architects in the design development process. This produced designs that permitted a centralised paid area in the main station concourse and at the same time encouraged better distribution of demand at platform level.

The process also identified a preferred design to carry forward for further development in subsequent GRIP stage planning. This design was tested under more than twice the demand found in a survey of the existing station and performed extremely well.

