

Luton Airport Case Study

Airport type: Public

Owner: Luton Borough Council

Operator: London Luton Airport Operations Ltd
(Abertis: 90%; Aena: 10%)

Website: <http://www.london-luton.co.uk/>

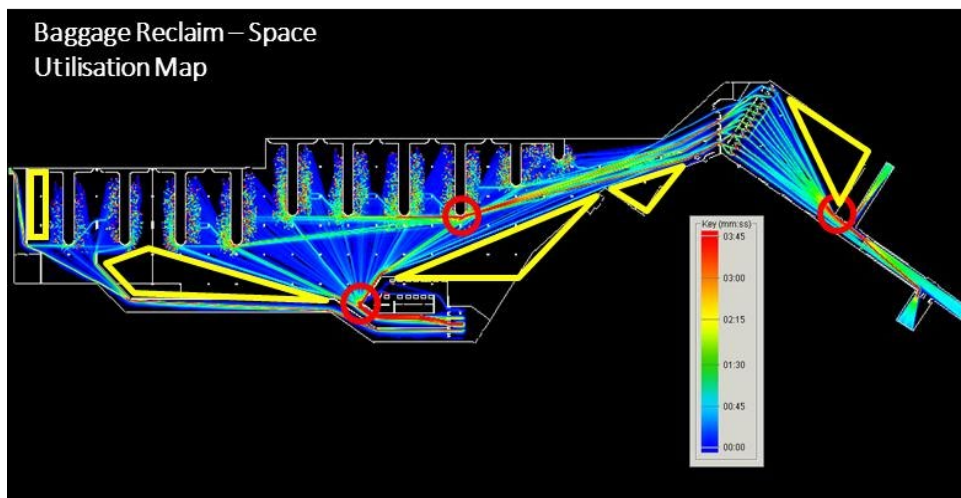
Coordinates: 51°52'29"N 000°22'06"W

Passengers (2015): 12,263,505

Aircraft Movement (2015): 114,083

In light of its expansion plans and the expected increase in demand at the time of the London 2012 Olympics, the operator of Luton Airport needed to understand levels of service and other conditions experienced in the main pedestrian areas of the airport. The key pedestrian areas to be simulated and analysed were:

- the check-in
- the stairwell leading to the 'Central Search'
- the 'Central Search'
- international arrivals' immigration and passport control desks
- the domestic and international baggage reclaim halls
- and Customs



Legion built and simulated two models: one for departures and one for arrivals. In the departures model – using the projected peak demand for 2012 – we found that the security and passport control areas of the airport could not cope with demand when all the check-in desks were open. Better management of the check-in desks, including strategic closures of desks, reduced the demand in the affected areas to acceptable levels.

Simulations also identified areas of unused space within the airport, which could accommodate services and functions without interfering with the check-in process (e.g. retail, smoking areas, security, toilets). The arrivals model confirmed that all queuing and waiting times for inbound passengers would fall within International Air Transport Association (IATA) standards.

The outputs used for the study included:

- 2D/3D simulation visualisation
- Space Utilisation Maps
- Cumulative Density Maps
- Evacuation Time Maps
- Multiple Cumulative Graphs

