

CASE STUDY



BELFAST AIRPORT | AIRPORTS

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Like many other airports, Belfast has been extended on several occasions over the years, resulting in a complex fire strategy with different elements developed by different organisations. Utilising the company's wide-ranging experience of airport developments, FDS Consult provided expert fire engineering consultancy for Belfast Airport to create a cohesive strategy that will enable easy integration for any future developments.

The two primary objectives of the fire strategy were to maximise life safety whilst focusing on addressing business continuity/disruption issues. The existing terminal building featured a large open area with retail units and a fire in any of these could have caused the whole terminal to be shut down and evacuated. By completely remodelling the retail area, optimising existing compartmentation and introducing new compartmentation, FDS Consult's expert team was able to ensure that business interruption issues will be kept to a minimum in the event of a fire in the terminal building.

The evacuation strategy was also key to business continuity and the existing airport had a simultaneous evacuation philosophy for the entire terminal, which could potentially create significant disruption even if an incident was relatively minor. FDS Consult's understanding of the commercial requirements in an airport environment led the team to introduce a 'double knock' fire alarm system which, when combined with a clearly-defined management strategy, will reduce potential false alarms. The FDS Consult team also coordinated the evacuation strategy with the compartmentation layouts to minimise the number of occupants and areas that need to be evacuated in the initial stages of any incident. As a result, evacuation procedures were simplified, land-side and air-side crossovers were removed and the zones of evacuation were limited.

Thanks to FDS Consult's innovative approach and expertise in the airports sector, the company was able to:

- Highlight areas of business continuity risk in the existing fire strategy and use the company's solutions-driven approach to reduce these risks in the new strategy
- Demonstrate that the introduction of a sprinkler system was not necessary during the temporary stages of the airport's development
- Reduce potential disruption of any evacuation with an air-side/land-side approach to compartmentation
- Devise an integrated evacuation strategy that ensures downtime following small, localised incidents will be minimised
- Use CFD (Computational Fluid Dynamics) modelling analysis to understand the means of escape and

compartmentation issues and to demonstrate that they have been fully addressed by the new strategy

- Deliver total cost savings of £500,000
- Ensure the long-term success of the fire strategy by devising an ongoing management plan which includes assistance in maintaining fire risk assessment documentation, ongoing upkeep of the fire strategy and evacuation management process maps.

Thanks to FDS Consult's creative approach, the team was able to devise a fire strategy that combined physical, active and virtual compartmentation to implement a robust, practical and cost effective solution.

Type of project:  
Retained consultancy contract –  
refurbishment

Client:  
Belfast International Airport

Architect:  
MAP Architects

We have worked with FDS Consult for several years on airport projects and have found them to be a valuable member of the design team. Their expertise and willingness to think outside the box is refreshing and opens up many design solutions that otherwise would not be considered.

MAP Architects



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