

# TERMINAL FLOOR PASSENGER OCCUPANCY & LIFT PROVISION ANALYSIS



Birmingham Airport



United Kingdom



Process optimisation, 3D fast-time simulation



2022



## KEY OUTCOMES:

- Identification of passenger floor occupancies
- Definition of lift provisions
- Mitigation of operational and safety risks

## THE NEED:



- EBEA Consulting was tasked with assessing expected ground and first-floor passenger occupancies to support the phasing of the planned development program at Birmingham Airport.
- Emphasis was placed on understanding the performance of a newly developed vertical circulation core connecting the ground floor (check-in) to the first floor (security).
- The analysis provided an overview and summary of the fast-time simulation analysis findings, focusing on occupancy levels and the lift's influence on passenger flow.

## THE APPROACH:

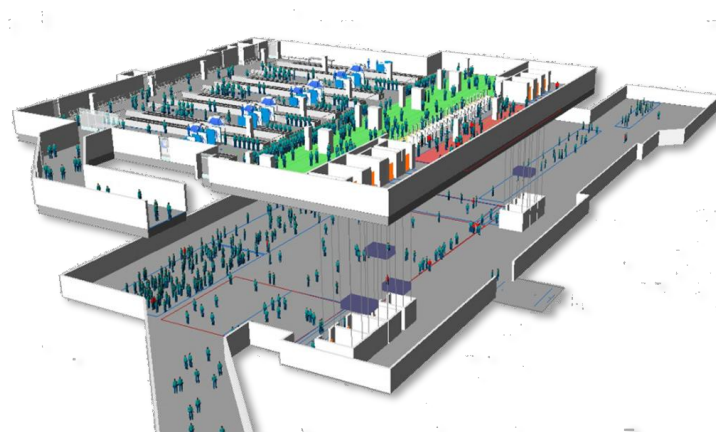


- EBEA developed a 3D dynamic models of the ground and first floor to analyse the flow of passengers using various lift provisions.
- The models considered the interaction between the security area, boarding card readers, security preparation area, lifts, and check-in hall.
- The developed model provided insights on various scenarios, including expected occupancies, lift provisions, and passenger journey time.

## THE SOLUTION:



- Identified minimum and optimal lift provisions to meet forecasted demand and performance targets for all phases of the development.
- Ensured passengers occupancies within set targets (IATA LoS).
- Mitigation of operational risks.



EBEA Consulting's deep knowledge and experience in airport operations were extremely valuable in creating designs for our Airport Client's future facilities. They brought a flexible, knowledge-based approach combined with iterative analysis of proposals to ensure the needs of the development and transition program were carefully considered and tested to produce the best solutions for the future security checkpoint. EBEA Consulting consistently delivered on time, responded quickly to changing project requirements, and paid attention to detail throughout the review process. I highly recommend EBEA Consulting to any business looking for high quality and efficient solutions.

**Ian Saunders**

Partner  
D5 Architects

