

Barajas Airport, Madrid

Complete	Area	Client	Architect
2010	Europe	Barajas Airport	Richard Rogers Partnership Estudio Lamela

Adolfo Suarez Madrid-Barajas Airport is the main international airport in Madrid and Spain's busiest.

The fourth terminal, which opened in 2006, covers 76,000 sq. metres and builds on many of the concepts developed for London Heathrow's Terminal Five.

The design uses glass panes in place of a number of walls and the inclusion of domes in the roof mean natural light can enter the building. It is estimated that the airport can handle an extra 35 million passengers annually thanks to the addition of Terminal Four.



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Services provided

Sandy Brown was commissioned to provide the acoustic design for the new fourth terminal building, together with the associated satellite rail and road connections. Some key considerations for the project were:

- façade sound insulation
- control of reverberation within the terminal building
- public address and voice evacuation systems
- building services noise and vibration control.

Special acoustic features

To reduce external noise ingress from both aircraft and road traffic, the sound insulation performance of curtain walling / cladding systems needed to control both high frequency and low frequency sounds. In the design of Barajas Airport, three performance grades were assigned according to the activity, anticipated noise level and the sensitivity of neighbouring internal areas.

To improve the conditions for the public address and voice evacuation systems, reverberation times in large areas of the terminal needed to be reduced. The design of the roof helped to achieve this by using perforated metal and absorbent mineral fibre to absorb internal sound. In addition, sound absorbent finishes were used strategically on walls and soffits.



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