

Tocumen Airport, Panama

Complete	Area	Client	Architect
2019	North America	Foster and Partners	Foster and Partners

Tocumen Airport is the international airport of Panama. In 2012, a project to build a new south terminal began, designed to provide a further 20 gates with full check-in, arrival and baggage handling facilities.

By 2022, it is anticipated that the new gate will have increased the airport's capacity from 5.8 million to 18 million passengers.



Services provided

Sandy Brown was appointed by Foster and Partners to provide acoustic advice on the design and development of the new airport terminal through the design and construction phases. The primary acoustic considerations for the project included:

- acoustic performance of the building envelope, including noise ingress, flanking sound transmission and self-noise
- internal sound insulation, including airborne and impact sound insulation of floors and airborne sound insulation of partitions
- room acoustics and finishes
- public address and voice alarm design
- building services noise and vibration.

Special acoustic features

A major consideration within the acoustic design was ensuring that sound reverberation and ambient noise levels were controlled to an extent that that public address (PA) and voice alarm (VA) announcements could be clearly heard. As the airport areas are largely open and interconnected this involved defining the area of coverage for each PA / VA, for example, the area a PA system to a specific gate needs to cover.

Achieving an appropriate level of reverberation to allow speech transmission in such large open spaces can be hard to achieve. To allow for this our design included for well-distributed, highly directional speakers and incorporated a significant amount of sound absorptive treatment to soffits and ceilings.

Adding to the complexity of this were a number of features in the design of the airport. Curved roofing areas, glazing that surrounds the central garden and a curved façade at the end of the zone one wings all increased the risks of sound focussing and variations in sound levels.

Extensive 3D room acoustic and PA/VA modelling was used throughout the design to assess and develop the shaping of surfaces, the selection of finishes, and the selection and positioning of PA/VA loudspeakers which are integrated into the architectural design.



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