



## Terminal 4, Madrid Airport - Project Overview

### THE TASK

Madrid is one of the fastest growing airports in Europe and is a hub for links with Spanish speaking territories in the Americas, provides transfers to Spanish holiday destinations as well as serving the hinterland of Spain and its 40 other airports.

Traffic is expected to double in the next 30 years, and AENA (the Spanish Airport Authority) took a major decision to double the capacity of the Airport to 70 million passengers per year. The existing facilities handle approximately 30 million passengers per year.

Specific challenges for the new Terminal Complex were to:

- ensure compliance with Schengen rules of immigration
- design a facility to effectively handle the unique traffic patterns of Non Schengen (International including UK) and Schengen Traffic (an intra European treaty).
- utilise a modular design
- produce a facility which can handle more than 12,000 passengers in a peak hour
- integrate major transport interchange features, such as People Mover, Systems, Metro, Heavy Rail, Coach, Taxi and Private Car
- build provision for handling the new A380 aircraft
- ensure that the major commercial revenue streams were generated.

It should also be noted that Madrid Barajas is the home base of the national carrier Iberia, and as such the facilities serve the One World Alliance. Although the building was initially planned with no knowledge of the anchor tenant (Iberia), on confirmation the building was slightly adjusted to serve some specific requirements.

The project competition was won following a major design competition for short-listed companies, was held following a pre-qualifications process.

### PROJECT PROFILE



#### CLIENT

AENA

#### PROJECT VALUE

£1bn

#### SERVICES

- Brief preparation
- Airport terminal planning
- Structural engineering
- Building Services engineering
- Civil engineering
- Baggage system concept design
- Design management

#### TYPE

Aviation

#### START DATE

October 1997

#### COMPLETION DATE

February 2006

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## THE DESIGN

The design of the Terminal 4 complex consists of 4 Main Elements; a multi-storey car park; the core terminal; interconnecting tunnel; satellite building. These are described in more detail on a separate profile.

## THE OUTCOME

Having been the biggest construction project in Europe, this superb facility opened on February 4th 2006 and has since received glowing tributes in terms of operational efficiency – passenger experience and revenue generation.

## BENEFITS TO CLIENT

- Collocated team generated unique innovative solutions
- UK/Spanish team ensured design reflected an ability to construct in Spain
- TPS's wide experience of airport projects allowed many options to be considered
- Passenger flow routes were supported by the building configuration – clear way finding
- Modular design which allowed some cost savings and streamlined construction
- Clear floor areas provided which aid passenger movement and allow airport management flexibility, this being achieved through the structural engineering and building services design together with the Architectural concept.

## FACTS

### Terminal Complex

- 35 million passenger per annum (2010)

### Terminal Building

- Built Area, 470,000m<sup>2</sup>
- Pier 1.142km long x 39m wide

### Satellite Building

- Built Area 315,000m<sup>2</sup>
- Pier 0.927 km long

### Connecting Tunnel

- 2 storey high
- 6 chambers
- Road, APM and Baggage Handling, 2.1km long

### Car Park

- Built Area 335,000m<sup>2</sup>
- Car Parking spaces 9,000

## AWARDS

The completed project has won several international awards including:

- Winner, IStructE Award, Best Commercial or Retail Structures, 2006
- Winner RIBA Stirling Prize, 2006



### JV DESIGN TEAM

- TPS
- Estudio Lamela (Spain)
- Richard Rogers
- Initec (Spain)

### FURTHER DETAILS

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