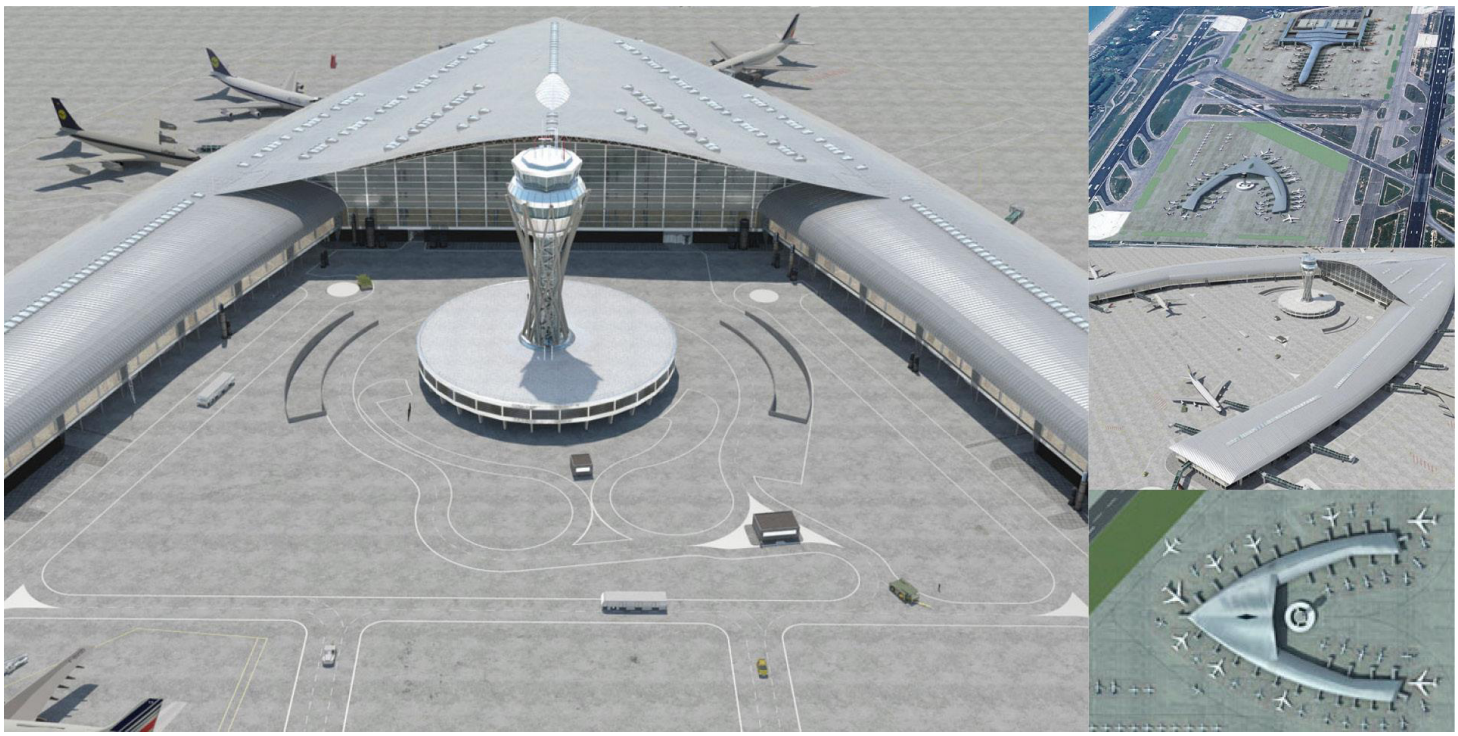
Barcelona - El Prat Airport Satellite Building

Barcelona, Spain / 2011

Structural type	composite concrete slabs. concrete and steel columns metal roof
Owner	AENA
Client	AENA
Scope	detailed design
Architect	Ricardo Bofill



The Satellite Building at Barcelona Airport is V-shaped and is located in front of the Terminal Building on one side and next to the existing Control Tower on the other. The shape of the terminal was so decided as to receive the maximum number of airplanes established by AENA leaving the flight paths with the taxiways and the necessary remote parking as far as possible from the Control Tower.

The building has three levels:

- Basement PS1, where the main installations are located and the People Mover which connects with the existing T1 Terminal.
- Floors P00 and P10, which are the main Airport areas; Passport Control, Preboarding areas, baggage reclaim and shopping precinct.
- Mezzanine Floors P20, P30 and P40, where the VIP areas and installations are located.

The Satellite Building has a span layout of 9.0m x 9.0m which adapts to the curved geometry of the slabs and the openings which are necessary for installations.

Continuing with the criteria established for Terminal T1, a Project also fulfilled by Fhecor Ingenieros Consultores, the structure projected for the Satellite Building has circular concrete columns and 0.45m deep reinforced concrete slabs on floors p00 and p10. To withstand seismic actions the structure has the accumulated stiffness from all the columns, stairwells and liftwells.

From level p10 the columns are steel cylinders upon which the upper slabs rest (P20, P30 y P40). These are 0.12m deep composite slabs which are supported on a system of steel tie-beams which form frames with the columns to withstand seismic action along with the vertical cores.

The foundations are direct, employing slab-on-ground which is considered the best option against subpressure produced by a high existing water level. Also, the employment of a slab-on-ground has a better distribution of the tensions to the soil when its bearing capacity is reduced, as is the case in the Satellite Building.

The roof is curved, similar to that of the Terminal T1 Dock. The design has taken overall care of the curve at the ends to guarantee the greatest visibility possible of the aircraft.

FHECOR

C/ Barquillo 23, 2° | 28004 Madrid | España
T. (+34) 917 014 460 | F. (+34) 915 327 864
www.fhecor.com | fhecor@fhecor.es