



San Mamés Football Stadium

Bilbao, Spain / 2014

Structural type
Owner
Constructor
Scope
Architect

concrete slabs with pre-slabs supported on the radial perimeter frames
San Mames Barria, S.L
Inbisa - Acciona - Altuna y Uria - Murias
construction support
CÉSAR AZCÁRATE ACXT-IDOM



The stadium is located in Calle Felipe Serrate and will seat some 53,500 spectators. The plan shape is practically oval measuring 220 x 174m. The stadium is to be constructed in two phases to allow the use of the current stadium until the end of the phase of the new one. It is divided into twelve sections connected by expansion joints.

The stadium has three basement levels and five storeys above ground level. The heights between floors vary between 2.5 and 6.5 meters in the levels below ground level and 4.4m above except for the ground floor which is 3.3m. The eave height of the roof is set at 28.30m.

The frames are the structural elements which are in charge of supporting the roof, slab, stand, façade and enclosure structures. There are some 80 portal frames altogether which are set 8.5m from the longer sides of the stadium, 8.0m from the ends and at varying distances at the corners. The spans between columns vary between 4.6m and 13.71m.

The frames have a direct foundation set on isolated footings in most cases, except in the internal area where combined footings are employed. The stadium has a perimeter diaphragm wall founded on an eccentric strip footing

The horizontal structure is, overall, composed of lightweight 0.24m deep pre-slabs with a 0.06m compression layer set on 0.70m wide, reinforced or composite beams with depths varying from 0.80m to 1.0m. To support the first stand, 0.70 x 1.40m reinforced concrete beams have been employed.

The roof is composed of an interlinking truss system which supports the roof enclosure.



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