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Iberdrola Tower

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Bellapart, S.A.U. Edifici Free Minds  
Ctra. de la Parcel·lària, 32 - 17178 Les Preses  
(Catalonia) Spain T. + 34 972 27 50 01  
[www.bellapart.com](http://www.bellapart.com) [bellapart@bellapart.com](mailto:bellapart@bellapart.com)





## LOBBY TORRE IBERDROLA

The Torre Iberdrola is located in the new Abandoibarra district, which is the symbolic source of Bilbao's regeneration and a new cultural and business focal point. The office skyscraper is the tallest building in the northern Spain with 165 meters of height and 41 floors and has a shape of a triangular prism with slightly curved sides.

One of the defining features of the tower is the imposing and elegant lobby, entirely enclosed by an sculptural glass pavilion constructed by Bellapart.

The variable curvature of the wall façade is achieved by means of cold bent insulating

glass units composed of two 6.6 high strength laminates and supported by vertical glass fins. The glass pane, with a typical dimension of 3.5 mx1 m, is simply supported on the two short edges by the transoms via a cover capped system and on the two long edges by the fins via a toggle system.

The fins, with heights ranging from 8 meters to 17 meters, are designed as hybrid elements which combine the use of glass and steel. The structural solution adopted comprises two solid steel flanges joined to a fully tempered heat-soaked laminated glass web with a

SentryGlas® interlayer by means of a high-strength friction grip connection. To overcome the problem of interlayer creep relaxing the bolt tension, a stiffer material was inserted between the layers of glass, limited to the area of load transfer. The brittleness behaviour of the glass together with the high forces exerted by the connectors poses several challenges with regard to design, fabrication and safety and appropriate testing is required to assess the behaviour of the whole structural system.

The roof structure is trapezoidal in section and consists of a tapered steel lattice designed with circular hollow sections ramped from

Ø273 to Ø139.7 mm. This spaced frame is fully supported at one end to the main concrete structure and by two columns 23 meters apart which define the main entrance to the building. After this point, the lattice is extended 15 meters as a cantilever to form the entrance pavilion. The roof enclosure is composed of a skylight and an opaque zinc cladding.

**Owner**  
Iberdrola

**Architect**  
Pelli Clarke Pelli Architects

**Facade engineering consultant**  
Buro Happold

**Structural engineering consultant**  
Idom

**Project manager**  
Technical Office Iberdrola

**Design and construction**  
Bellapart, S.A.U.