

Iris Tower

Boulevard Saint-Lazare - Saint-Josse-Ten-Noode, Brussels (BE)

Complete stability mission

Owner
Silver Tower sa
c/o Ghelamco Group

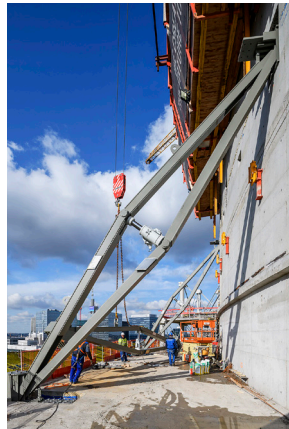
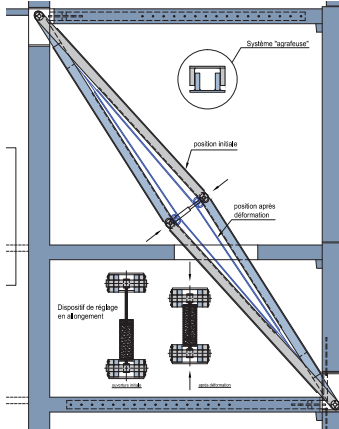
Architects
Atelier d'architecture de Genval -
Accarain-Bouillot

Cost of the works
€18 M excl. vat for the structure

Studies
2008 - 2018

Label Breeam : Excellent

Execution
2014 - 2020



Office tower with a global surface area of nearly 53 500 m² consisting of seven underground levels (+/- 10 000 m²) for parking of 168 cars and archive rooms, a ground floor and thirty-three office levels (+/- 43 500 m²). On a narrow site, surrounded by public spaces and railway lines, the geometry of the building is characterised by an elliptical lens 28 m wide and 69 m long. With a height of 128 m high (137 m including the façade structure), it qualifies as a high-rise building.

The structure of the building is essentially of reinforced concrete, mainly on grounds of cost (use of prefabricated elements, reduction in site formwork, incorporation of safety features, etc.), but also in order to guarantee the necessary fire safety rating of 2 hours. The overall stability and rigidity of the structure is provided by a reinforced concrete core and system of metal braces half-way up the tower connecting with certain façade columns.

The thickness and quality of concrete in the various walls of the core have been optimised to withstand wind and earthquake loading, take up the horizontal forces resulting from deviations in the columns on the different floors, limit deformation of the tower and ensure the comfort of the occupants of the top floors.

The choice of prefabrication for the construction of this type of building is very important in order to meet speed, construction, quality and efficiency targets.

The typical floors are composed of prefabricated beams with flanges to support the prestressed slabs. These beams sit on columns that are also prefabricated. As with the core, the dimensions and quality of the concrete of the columns have been optimised over the height of the tower as a function of the load they have to support.

The foundations of the main loadbearing elements (columns, core) are provided by diaphragm wall panels or box piles sitting directly on a layer of loadbearing soil at a depth of 54 m (Landenien).

Waterproofing of the basement is provided by a peripheral enclosure comprised of diaphragm wall panels 80 cm thick and a watertight raft 100 cm thick. To allow for "up-and-down" construction, a part of the central core underground is formed directly of diaphragm walls. Some of the panels are concreted directly up to level Ground -1, while others, for reasons of tolerance, are filled with gravel between Ground -7 and Ground -1 for concreting of the walls in a second phase.

Bureau greisch was awarded an Innovation Award of Excellence by the CTBUH (Council on Tall Buildings and Urban Habitat) for the design of the developed Adaptive Outriggers.