AZ Zeno hospital

Natiënlaan / Kalvekeetdijk, Knokke-Heist (BE)

Complete stability mission, in association with bureau SCES

Owner
Algemene Ziekenhuis ZENO

Architects
Buro II & Archi+I - Aaprog - Boeckx & Partners

Cost of the works
€ 90 M excl. vat. of which
€ 18 M for the structure

Studies
2007 - 2015

Execution
2013 - 2015

ST

This new building, with a surface area of more than 40,000 m², includes a hospital with more than 360 beds, a rehabilitation center, a care hotel, a polyclinic, an auditorium and a public event space. The building hovers above the landscape and fits into the surrounding countryside.

The basement level includes logistics functions and parking spaces, the revalidation center open onto large English courtyards and the emergency room. The foundation slab is subjected to an underpressure due to the water table with traction piles where the weight of the upper structure is insufficient. Concrete piles are used locally under heavy loads to reduce differential settlement.

The ground floor, very open with a façade of 300 m of entirely glazed outline, houses the reception functions. Apart from the vertical circulation cores, only columns are present at this level.

The three floors of the four wings are based on a complex structure with a large span with support points 30 to 40 m apart. It consists of two slabs and a grid of concrete walls. The main walls, in the different directions, are prestressed (from 9C15 to 2 x 37C15 and 4 x 31C15) with certain curved lines in plan. The interior walls are provided with openings for the passage of techniques. The lower slab is fully curved (non-developable surface) to give an impression of lightness like a cloud in the sky. The 13 fulcrums of the wings consist of sets of 18 to 20 inclined metal tubes arranged in two concentric circles.

In the technical level of the central part of the building, large metal trellises make it possible to reduce the number of columns on the ground floor.