

ZIN in No(o)rd

Boulevard du Roi Albert II 30 - Brussels (BE)

Complete stability mission

Owner
Befimmo

Architect
A.M. Jaspers-Eyers – 51N4E

Cost of the works
€ 375 M excl. vat

Studies
2018 - 2023

Execution
2019 - 2023



The project (Surf.: 110,000 m² - Vol. 346,000 m³) consists of the conversion of the WTC I & II towers, for which our teams are carrying out a complete stability and study mission and circularity consultancy, in collaboration with the architects Jaspers-Eyers and 51N4E.

The new building, which is 128 metres high, connects two existing towers by means of a large volume made up of double-height storeys, which means a significant increase in wind load and stress (wind tunnel tests). The structural connection of the two cores means that they behave together, taking advantage of the maximum capacity of each core and limiting the amount of reinforcement needed.

The structure of the «capable» volume has spans of 15 m between columns to offer total flexibility in the use of the building, and metal deviation structures are planned on the first levels in order to make use of the existing foundations.

The building rests on 5 existing underground levels, requiring the reinforcement of columns, walls, and foundations.

The complex includes 70,000 m² of office space, 5,000 m² of coworking space, 127 flats, 240 hotel rooms, as well as sports, leisure, restaurant, and retail facilities and 1,185 underground parking spaces (837 car spaces and 348 bicycle spaces).

Sustainability at ZIN

Circularity is an integral part of the project, and the GRO tool has been used at every stage.

The stability mission included the rehabilitation of structural elements and the conservation of materials in place. The exhaustive diagnostic phase of the existing structure and the in-depth study of the elements maintained enabled the foundations of the project to be laid.

The existing structure has been preserved as much as possible, even though it was changing use and was going to be subject to significant increases in constraints.

Following a detailed analysis, it was decided to deconstruct the existing floors to meet current comfort criteria (acoustic, technical) and modularity/flexibility requirements.

Maintaining the 2 cores means leaving 2 x 8,000 m³ of concrete in place. The same applies to the underground structure, which will contain 50,000 m³ of concrete.

To reduce the impact of the project, a **Cradle to Cradle** certified circular concrete process has been set up.

In total, 65% of the buildings in the ZIN project will be rehabilitated and 30,000 t of dismantled concrete will be reused in the new concrete.

