

# Triomphe 172 in Auderghem

Boulevard du Triomphe, Auderghem (BE)

Complete stability mission

Owner  
Galika

Architect  
51N4E

Studies  
2023

ST



The project involves the construction of a new 20-storey above-ground mixed-use building comprising housing, offices and shops, with a total floor area of 18,337 m<sup>2</sup>.

Our ambition is to design a high-rise building in an urban context with a limited carbon footprint. This is the result of in-depth study of the building's structural stability, based on 3 key words: **rationality, flexibility and sustainability**.

The structural grid is rational and adapted to the different functions of the building (car park / offices / housing). The use of post-tensioned slabs on the upper floors means that the spans between the facade and the central core can be bridged without the need for any intermediate columns or walls, and without any girders in the interior spaces. This absence of intermediate load-bearing elements ensures long-term flexibility for future uses of the building.

On the façade, the use of high-strength concrete columns, in addition to non-load-bearing architectural elements, ensures the durability of the structural elements. The concrete structure

has an impact on the project's grey energy values. The results of the LCA study prove that the efforts to rationalise the structure explained above have a positive impact on the Triomphe tower's carbon footprint.

Its dismantling potential and durability also partly offset the emissions generated by the production and initial assembly of the structure. The building's perimeter structure is located outside the heated volume. It forms an exoskeleton of round prefabricated concrete columns that define the vertical grid of all the building's floors.