F Tower in Abidjan, Ivory Coast

In the Plateau municipality, in the heart of Abidjan (CI)

Complete stability mission

Onwer
Ivorian ministry of Construction, Housing and Urbanism, and in partnership with PFO Africa, the project developer and designer

Klant
Besix

Architect
Pierre Fakhoury

Cost of the works
Unknown

Studies
2016 - 2021

Execution
2021 - 2024

ST CM BIM

Part of the urban development plans since 1970, Tower F, designed by architect Pierre Fakhoury, is the sixth tower in the city's administrative district. To date, it is also the tallest tower in Africa.

With its symmetrical, chamfered geometry, the F Tower evokes the power of an African mask, bringing an artistic dimension to the urban landscape.

Entrusted by Besix, greisch is carrying out optimisation and execution studies for the concrete structure and steel frames, and is participating in the project synthesis.

With a height of 421 metres, the tower has 77 floors, mainly comprising offices and an auditorium with over 200 seats on the first floor.

The foundation system consists of a 3.5 m thick raft resting on 80 m deep bars. Bureau greisch participated in the soil-structure interaction studies.

The superstructure, a combination of cast-in-place and precast concrete, is braced by a central core. Studies conducted by bureau greisch have resulted in a significant optimisation of wall thicknesses.

The peripheral columns follow the edges of the outer shell's facets and therefore have varying inclinations. At the foot of the tower, steel deflection structures limit the number of columns and maximise access to the building.

The comprehensive study of the tower involved complex interactive models incorporating the dynamic properties of the structure, interacting with the response of the foundation system under the effects of wind. A sensitivity analysis of the model (cracking, stiffness of connections, etc.) was carried out in order to validate the calculation assumptions. All studies and synthesis were carried out using an advanced BIM process.