

KAAI CITY



Date	2021 - 2026
Architect	Goedefroo architecten
Services	Structural Building Services
Code	20.080
Client	NV CAAAP
Sectors	Residentiële gebouwen Residential
Size	31 265 m ²
Location	Kortrijk



General

With Kaai City, a versatile urban project is rising, featuring a university college, student housing, retail, offices, residences, and a spacious underground parking facility. The project comprises 202 student rooms, 80 apartments, 27 studios, and 6 stacked dwellings. In addition, there will be around ten commercial spaces ranging from 60 to 200 m². Underground, 147 parking spaces and no fewer than 650 bicycle parking spaces are provided.

Approach

The building owner wanted a sustainable solution for a multifunctional site (residential, education, retail, student facilities). BM Engineering Group investigated what sustainable options were available for cooling and heating the buildings at Kaai City.

Concept

Due to the proximity of the Leie river, it was investigated whether using Leie water was possible as a supplement to geothermal energy. Due to the limited building surface area and the large building volume, geothermal energy alone is insufficient, and a combination with aquathermal energy is the ideal solution to achieve a sustainable whole.

Use of aquathermal energy

Consultations were held with the Flemish Environment Agency to determine the conditions for water extraction from the Leie. At the location of the site, there were few restrictions regarding the pumping flow rate and temperature fluctuations caused by our heat exchange.

Capacities

The total aquathermal capacity on the site is 210 kW; the geothermal capacity is 420 kW.

Surface area

23,467 m² (above ground)

7,798 m² (underground)
