

OEVERRENOVATIE GROBBENDONK

Grobbendonk

Upgrading of the quay wall at the level of Kerkstoel Beton over a length of nearly 300 meters including the design of prefabricated L-elements.

Status
2020 - 2021

Services:
Civil Engineering

Sectors:
Civil works: Quay wall

Client:
NV BESIX S.A.

Area:
300 m

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General

Along the Albert Canal in Grobbendonk, the quay wall at the level of Kerkstoel Beton is being upgraded over a length of nearly 300 meters. To avoid jeopardizing the continuity of the company, work is carried out in phases. Prefab elements are combined with concrete cast in situ. A method with advantages and additional challenges.

The existing quay wall was outdated and weathered, and in some places not suitable for loading and unloading activities. To increase capacity, 293 meters of new sheet piling is being placed in front of the existing one. The new quay structure is then built on top of it.

Capping beam incorporated in prefab element

Under normal circumstances, the concrete of the entire head of the quay is poured in one go after the preparatory work on site. However, because Kerkstoel Beton had to remain accessible via the waterway, the work is tackled section by section here. First, the new sheet piles are placed in the water, one to one and a half meters in front of the existing quay wall. The space in between is then filled with underwater concrete.

The prefab L-shaped wall – in sections of 7 meters – is then attached to both the new sheet pile and the existing capping beam (concrete cap beam). Each prefab section is equipped with reinforcement, anchor recesses, the metal curved finishing profile (coping stone), and steel connectors that are anchored to the existing quay wall. Afterwards, the intermediate space is filled in two stages. Once the entire new quay wall is in place, a finishing slab is cast on top.

More attractive, safer, and more complex

Because the front face (on the water side) of the new quay wall is part of the prefab elements, and is therefore produced under ideal circumstances, this ensures a uniformly attractive appearance. Moreover, the work can mainly be carried out from the existing quay wall itself, which is safer and more convenient than working from the water.

The study and design work, however, is considerably more complex. When converting the contractor's main plans into concrete execution plans (formwork and reinforcement), each new segment must be measured very precisely each time. The prefab L-elements are perfectly straight, but the sheet piles driven into the water and the existing quay wall naturally are not. By ensuring each segment fits neatly, a perfectly straight end result is still achieved.

The works started in August 2020. The new quay wall should be fully completed in the spring of 2021.

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