



BRIELPOORTBRUG

Deince

Construction of a movable bridge for slow traffic
The Brielpoort bridge has a length of 38m and is 4m wide. The Brielpoort bridge is a mechanical bascule bridge with a gradient of 4.5%.
Detailed design of the concrete bridge abutments.



Status

2019 - 2021



Services:

Civil Engineering



Sectors:

Civil works: Bridges



Client:

De Vlaamse Waterweg nv



General

At the Brielmeersen, the Leie splits into a navigable section that flows fairly straight towards the Ghent-Bruges canal and a tourist section that meanders through the center of Deinze further towards Sint-Martens-Latem and Drogen. It is over that latter section that De Vlaamse Waterweg, in collaboration with the city of Deinze, is constructing a new bridge for slow traffic. To allow larger pleasure craft and limited commercial shipping to pass through, the bridge can open on one side. The opening section of the 4-meter-wide bridge has a length of 22 meters. The bridge normally opens on 2 screw jacks, but 1 screw jack is sufficient to continue functioning in case of a possible defect or during maintenance.

Abutments

BM Engineering was appointed by the main contractor to further develop the stability of the plans for the concrete abutments. On the left bank, the abutment contains the basement in which the electromechanical and hydraulic equipment for opening and closing the bridge is installed. The abutment on the right bank is solely intended to support the bridge when it is lowered.

To produce the execution plans, we started from the 3D models of the concrete elements and the steel bridge structure that the main contractor had received from the client. In consultation with the main and subcontractors, we merged them into one model. This allowed us to create detailed formwork and reinforcement plans without clashes and ensure that the steel bridge connects perfectly to the concrete structures. For the stability and strength of the latter, the forces of the moving bridge had to be taken into account, but they are also reinforced against accidental collisions.

To safely place the steel bridge in position, BM Engineering was also asked to calculate where on the bank the crane had to be positioned. After placement, the concrete cover above the machine room still had to be poured. This was also taken into account in the execution plans.

The steel bridge was brought to the site on 21/09/2020 and if everything continues to run smoothly, the bridge will be operational by early March 2021.

Construction partners:

- De Vlaamse Waterweg nv (Hasselt) in collaboration with the city of Deinze – client
- Herbosch-Kiere (Kallo) & EGD (Gavere) – main contractor(s)
- B-Line Metaalconstructies (Veurne) – subcontractor steel construction bridge
- Vandezande (Diksmuide) – subcontractor EGD regarding electromechanics bridge
- Bosch-Rexroth (Brussels) – subcontractor EGD regarding hydraulics bridge
- BM Engineering (Kortrijk) – stability, exchange and coordination of 3D plans