

## Technum-Tractebel Engineering

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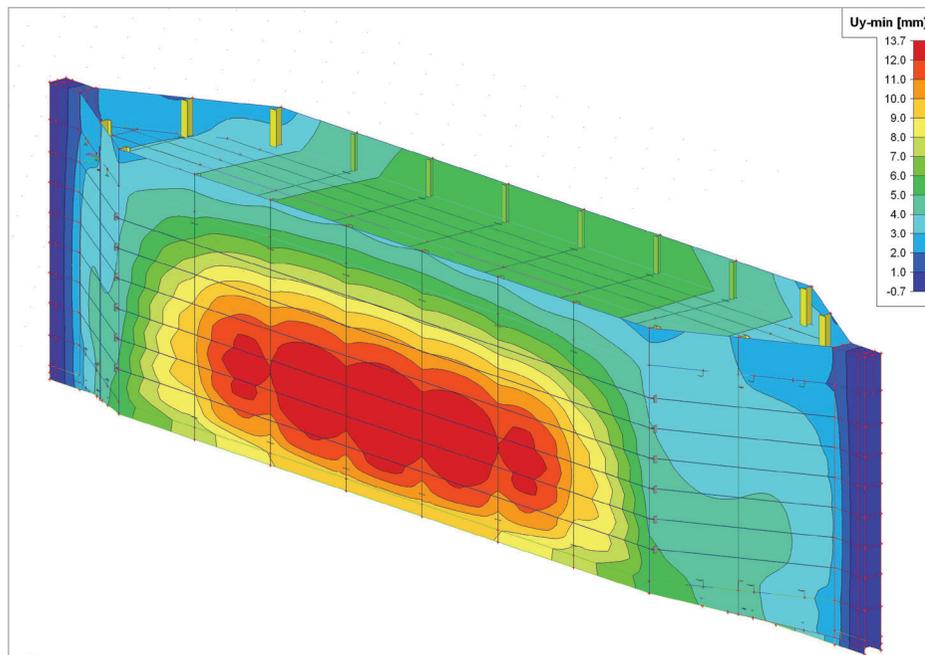


Technum-Tractebel Engineering is a multi-disciplinary engineering and consultancy provider with international ambitions.

Our services include project management, studies, design and consultancy in: buildings, port & hydraulic engineering, transport infrastructure & urban development and strategic consultancy & analysis.

The combination of our strong position in Flanders and GDF SUEZ through our mother company, Tractebel Engineering provides international players with extraordinary support.

Efficiency and innovation are the keywords in our offer focused on providing you with a sustainable solution to your project.



## New lock at Ivoz Ramet - Flémalle, Belgium

### Background

The new lock at Ivoz Ramet (a municipality of Flémalle) on the Meuse River near Liège is part of the project to develop a network of trans-European inland waterways. The new lock is 225 m long and 25 m wide, allowing the passage of class VI b vessels.

The river traffic at this location increased by 83% in 20 years and reached 11.5 million tonnes in 2008. The largest tonnage in the entire Walloon Region passes through this hydraulic lock. The large lock, in addition to being run down, is not big enough to fulfil both current and future requirements. Thus, in 2004, the General Directorate for Mobility and Waterways began designing a new chamber measuring 225 m by 25 m. These dimensions are similar to those of the locks on the Albert Canal, which constitutes part of the downstream reach, to those of the Andenne and Grands-Malades locks built in the upstream during the last third of the 20th century, and to those of the future Lanaye lock. The lock lies on the Rhine/Meuse - Danube trans-European priority water transport corridor. The various studies conducted prior to the construction of the new

lock therefore benefited from financial aid from the European Union. In the field of river transport, this project, as well as those regarding the fourth Lanaye lock, the Seine-North and Seine-Escaut links, the Ampsin-Neuville lock and port development throughout the network, such as the Trilopiport project (Liege), are closely connected.

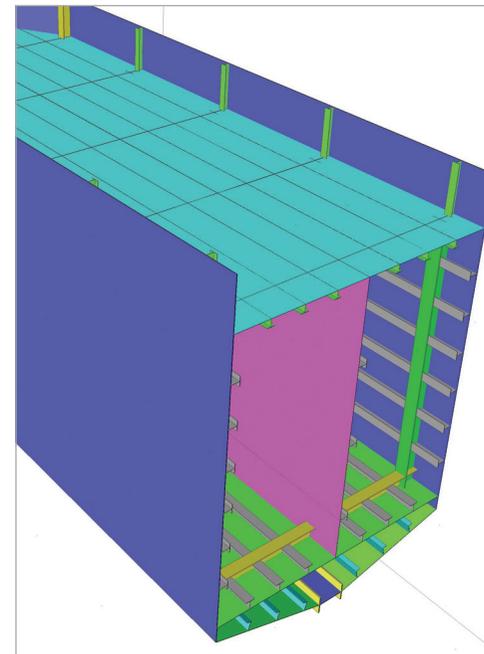
### Mission

Technum-Tractebel Engineering and the Greisch consultancy were awarded the two contracts for studies (and execution follow-up) relating to civil engineering and electromechanical equipment for the completion of the new lock, including the incorporation of new equipment alongside the existing installation at the Ivoz Ramet locks. For each of the two contracts the mission consists of full studies of works and facilities as well as the establishment of contracts for works and completion follow-up. The studies also include a landscaping study designed to integrate the facilities into the environment as well as the installation of a hydroelectric production unit to meet the facility's energy needs.

The works must be conducted in such a way that the existing facility can continue to operate during the construction, in particular the 136 x 16 m lock contiguous to the new lock, the dam and the associated hydroelectric power station.

### Use of Scia Engineer and ESA-Prima Win

Three models were elaborated for the three different gates: two traditional gates and one moveable floating gate. This floating gate can be used to inspect and maintain the other gates. The first two gates were modelled in ESA-Prima Win. The last one was modelled in Scia Engineer. Scia Engineer made it easier to model the different plates and to check the correct orientation and location of different stiffeners. Visualizations of results can be quite hard for complex plate models. Again Scia Engineer proved to be easier to use and more powerful.



# New lock at Ivoz Ramet

Flémalle, Belgium

## Project information

Owner SPW  
Architect SPW  
Engineering Office Technum-Tractebel Engineering and Greisch  
Location Flémalle, Belgium



## Short project description

*The new lock at Ivoz Ramet (a municipality of Flémalle) on the Meuse River near Liège is part of the project to develop a network of trans-European inland waterways. The new lock has a length of 225 m and a width of 25 m, allowing the passage of class VI b vessels. Scia Engineer (and ESA-Prima Win) was used for the design of the two types of lock gates and a floating moveable gate to close the lock for repair purposes or inspection of the doors.*

