Infrastructure

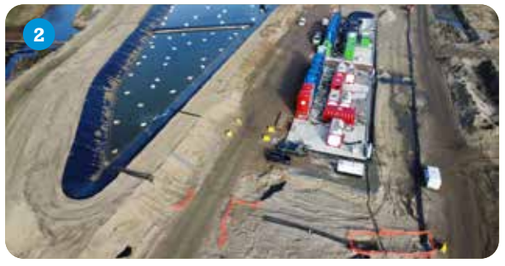
Towards a liveable Antwerp

BESIX Group leaves its mark on the Oosterweel junction works

Anyone going to Antwerp will notice: the works on the Oosterweel junction are in full swing. What started out as an idea to reorganise the Antwerp Ring Road with a viaduct, has transformed over the years from an infrastructure project to a mobility project, to a quality-of-life project. A referendum, countless debates, a project consultant, and unparalleled levels of citizen participation later have resulted in a widely supported Oosterweel project that will make Antwerp an accessible, healthy and above all liveable city. BESIX Group is enormously proud to help build this site of the future.

Three contracts, one goal

Of the five sub-projects that make up the Oosterweel junction, three are co-managed by BESIX Group. BESIX, united in the JV COTU with Stadsbader Contractors, DEME, and Jan De Nul, is building the Scheldt Tunnel, which will link the Left Bank to the Right Bank. Via the Oosterweel link, the Scheldt tunnel flows over into the Channel Tunnels and the sunken ring road, a sub-project being carried out by JV ROCO, consisting of BESIX, BESIX Infra, Cordeel, DEME Infra, Dredging International, Denys, Franki Construct, Jan De Nul, Van Laere, and Willemen Infra. Finally, BESIX Unitec also plays a significant role through a third contract for traffic and tunnel technical installations. To realise this, client Lantis relies on JV Ocotech, consisting of BESIX Unitec, Equans, Jacops, and Deckx Elektromechanica. Most of their work is still taking place behind the scenes during this design phase.



2022 brought first challenges

2022 marked the real beginning of both the Scheldt Tunnel and the Channel Tunnels. The 1.8 km long Scheldt Tunnel is being built using the «immersed tunnel» method. This involves building 8 tunnel elements in Zeebrugge and then towing them afloat to Antwerp. There, they are immersed in a previously dredged trench in the Scheldt. This technique is one of the most ingenious construction methods in concrete and marine engineering. The Zeebrugge construction dock immediately presented the teams with their first challenge, when in early 2022 it turned out that the soil layer of the construction dock contained unexpected leaks which meant that the groundwater levels outside of the construction pit were lowering too quickly. To solve this as efficiently as possible, JV COTU called on Franki Foundations, which quickly installed a cement-bentonite wall no less than 28 meters deep down to the watertight soil layer, so that in the fall of 2022 the final drainage of the construction dock could begin. Thanks to the efficient teamwork between the client Lantis and the COTU teams, construction of the first two tunnel elements in the construction dock could begin in 2023. Back in Antwerp, the teams started to work on the entryway of the tunnel. However, the area on the Left Bank where the tunnel ramp is to be constructed was heavily contaminated with PFAS. To purify the groundwater that will be pumped up during the drainage works, a water purification plant with activated carbon was built next to the site. Thanks to this treatment, purified water can now be discharged into the Scheldt and the adjacent Blokkersdijk nature reserve. Interventions such as these make Oosterweel a real liveability project.

Channel tunnels and a transformed R1

Improved liveability and mobility are also at stake in the next sub-project BESIX is involved in: the Channel Tunnels and the sunken Ring Road. This double-deck tunnel goes partly under land but mostly under the Albert Canal to flow into the existing Ring Road, both to the north and east. That Ring will look completely different, however, which is precisely why this section is known as the biggest metamorphosis of the Oosterweel project. Groenendaallaan, where the Ring lies at ground level, will be fully deepened and covered. Eastward, the Merksem viaduct will disappear, and the Ring will once again go under the Albert Canal and then disappear to underground level at Schijnpoort until the junction with the E313. The covered parts of the Ring provide breathing room for parks and pedestrian or bicycle crossings.

An innovative contract type

It should come as no surprise that JV ROCO is working amid challenging circumstances. The subproject is complex, and the scope is also volatile, as ongoing changes are made to maximise the project's viability. To work as sustainably as possible in such a reality, an innovative collaboration model was needed. It was therefore decided to work with a NEC-4 contract, a form of contract brought over from the UK, based on cooperation, mutual trust, and risk sharing. Moreover, it offers the necessary flexibility. In 2022 the JV could start the preparatory works: the rerouting of the many utility lines and sewers, as well as the installation of silt walls in the sandy area. The next step is the construction of the bypass to divert traffic from the Merksem viaduct, so that its demolition can begin in 2024.

Together as one

BESIX Group's strength as a one-stop shop contractor comes into its own on huge projects such as the Oosterweel link, where different areas of expertise must apply innovative methods in ever-changing conditions. Both for the Scheldt tunnel as well as for the Channel tunnels and the sunken ring road, different entities join forces: BESIX as civil contractor and main partner in JV ROCO and JV COTU, Franki Foundations for the foundation works, the iron braiding plant supplies the reinforcing steel, Belasco delivers the asphalt and BESIX Infra handles the road works both in Antwerp and Zeebrugge, as well as supplies the concrete. Besides the tunnel technical installations as part of JV Ocotech, BESIX Unitec is also responsible for the automation of the Royers lock. All BESIX Group entities involved are working as one to deliver this site of the future and to improve Antwerp's liveability.

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1. Construction dock Zeebrugge (JV COTU) (Belgium)
2. Water treatment plant, Left Bank, Antwerp (JV COTU) (Belgium)
3. Construction of temporary jetty, Right Bank, Antwerp (JV COTU) (Belgium)
4. Excavation works for diaphragm walls, Right Bank, Antwerp (JV COTU) (Belgium)
5. Lifting of rebar for diaphragm walls, Right Bank, Antwerp (JV COTU) (Belgium)