Topcon's total stations speed up rail project in Belgium

Advanced total station solutions from Topcon Positioning were chosen to support a project to renew the railway switches and crossings at a site in Belgium. By providing accurate real-time data, the total stations helped guide the machinery to ensure efficiency, safety and quality during the project.

As Belgium's government-owned company in charge of looking after the rail network, Infrabel's priority is to keep railways across the country moving. To do this, the company recently needed to renew the switches and crossings at the Kinkempois site, located in the Liège region of the country. In order to ensure an efficient, safe and high-quality changeover, Infrabel partnered with construction specialist Jérouville, and when it came to choosing technology to help guide its machinery, the contractor turned to Topcon Positioning and its advanced total station solutions.

Based in Libramont since the 1970s, Jérouville carries out various railway works for Infrabel throughout the Walloon region. With a wealth of experience from similar projects, the team at Jérouville knew how important it was to keep the project on schedule and avoid disruption to the rail network.

Stéphane Lemaire, Equipment Manager at Jérouville, said: "For any project involving national railways, it's vital that the work is conducted quickly, safely and to the highest possible standard, which is why we rely on Topcon's technology."

"At Kinkempois, we first dismantled and removed the previous set of foundations and the sub-foundations. From there we installed new foundations, as they are the bedrock of the new switches and crossings, and will ensure the new switches have a good grounding for years to come. For the earthworks involved in this process, we used two Komatsu crawler dozers, a D37 and a D51 PXi, in conjunction with the Topcon total stations, which provided us with incredibly accurate data in real-time, helping teams operate as efficiently as possible."

Next generation of positioning technology

With traditional GPS technology unable to function due to interference from the overhead lines, two of Topcon's total stations were used at the site; one for each crawler dozer. The GNSS technology used in the stations was then able to provide accurate readings for each dozer, despite the challenging circumstances.

Before the dozers could progress with earthworks, surveyors used the data from the total stations to create three-dimensional models of the finished project using Topcon's MAGNET software. These models were then able to be easily shared with all stakeholders on the project which meant that the machinery could level the desired area with maximum accuracy and speed. The use of MAGNET meant complete oversight of the project was also available to the entire team, whether they were on-site or back in the office.

Stéphane explained: "Thanks to Topcon's total stations, we were quickly able to level the terrain where necessary, with the advanced technology playing a key role in getting the job done perfectly, and on the first try. Traditionally, this has been a time-consuming process for projects like this, with a tracker on site who would manually ensure that the levels were correct. However, with total station technology, the process only took three shifts across two weekends, compared to six shifts across two weekends."

"Not only has the technology increased the accuracy and speed of the work we are doing, but since using the Topcon solutions, we have virtually doubled the operating hours of our teams," he concluded.

Topcon's total stations, in collaboration with two Komatsu crawler dozers, the D37 and D51 PXi, ensured real-time, precise data, greatly enhancing team efficiency during the earthworks. (Image courtesy: Topcon)