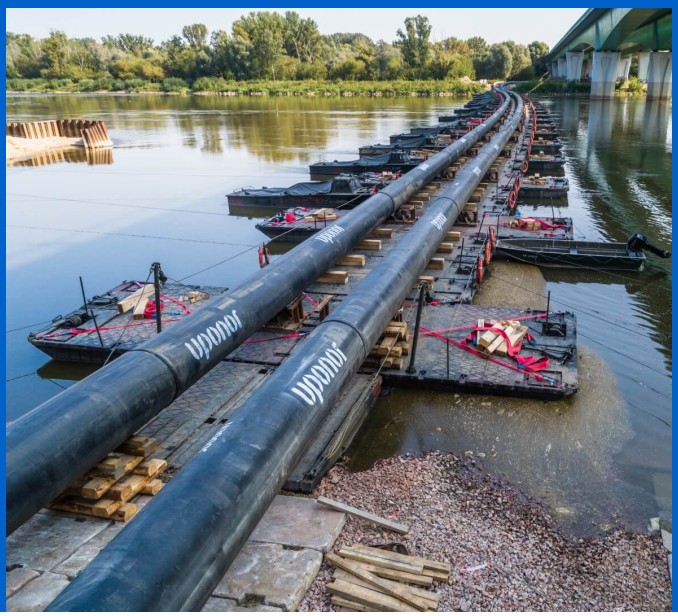
Referenssit

Emergency pipeline on a pontoon bridge



Uponorin osallistuminen

- PEHD pipes dn1000 - 3200 m
- Turnkey solution

Emergency bypass on a pontoon bridge

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Projektin tiedot

Sijainti	Valmistuminen
Warsaw, Poland	2020
Rakennustyyppi	Tuotejärjestelmä
Verkostorakentaminen	Jätevesiviemärit

Yhteistyössä mukana

Investor:
MPWIK w m.st. Warszawie SA

General Contractor:
Uponor Infra

A high-speed emergency task for Czajka treatment plant

In 2019, Uponor did an outstanding job of installing an emergency pipeline on a pontoon bridge in just eight days after an underground GRP sewage collector failed in Warsaw, the capital of Poland. A year later, there was another malfunction, and Uponor was called upon to repeat the task as a turnkey project. This time, the job had to be carried out on an even faster schedule due to heavy rainfall.

In August 2019, a wastewater collector transferring sewage from seven city districts to the Czajka wastewater treatment plant in Warsaw failed – resulting in the emergency discharge of raw sewage into the Vistula River at 3,000 litres per second. To avert an ecological disaster, a decision was made to build a temporary pipeline on a pontoon bridge across the river. The new pipeline was designed to take over the functionality of the damaged collector running under the Vistula riverbed in order to stop the sewage discharge and buy the time required to carry out repairs.

Usually, projects like these take months to complete but in this case speed was of the essence. In an amazing feat, Uponor Infra was able to deliver and join the pipes required for the emergency pipeline in only eight days. The total length of the two lines of the DN1,000mm pipes was 2,200 metres, with two 250-metre sections resting on a pontoon bridge built by the Polish Army. To meet this unique challenge, Uponor mobilised all its resources: the production schedule at the company's factory in Kleszczów was adjusted to meet the urgent demand for pipes, with around-the-clock deliveries to the installation site, six service teams were delegated to the project and extra welding machines were brought in from other building sites from all over Poland. Thanks to the expertise, experience and tireless work of the Uponor crew, the new pipeline took over the functionality of the damaged collector after just 12 days, stopping the discharge of sewage into the Vistula River.

PE-HD pipes – versatile and reliable

The success of the project provides yet more proof of the benefits and versatility of PE-HD technology. PE-HD pipes are resistant to corrosion and chemicals, damage by abrasive transported media and adverse environmental factors such as acid rain, extreme temperatures or wind. Their light weight and easy handling enable swift and cost-effective assembly while installation by means of extrusion butt welding results in 100% leak-proof joints and a homogenous pipeline surface. These qualities make PE-HD pipelines extremely robust and durable with a life expectancy of over 100 years. That is why they are well-suited not only to municipal sewage systems but also to demanding applications such as slurry-carrying industrial networks. While the emergency pipeline to Czajka was intended to serve for months rather than years, the pipeline's durability, resistance to adverse factors – including hydraulic shock – as well as flexibility provided a quick and efficient solution to the serious problem caused by the broken collector. The PE-HD emergency pipeline operated on the pontoon bridge for two months until the repairs on the damaged underground pipeline were completed. Elements of the disassembled lines were disinfected and placed in storage by the project investor, the National Water Management Authority.

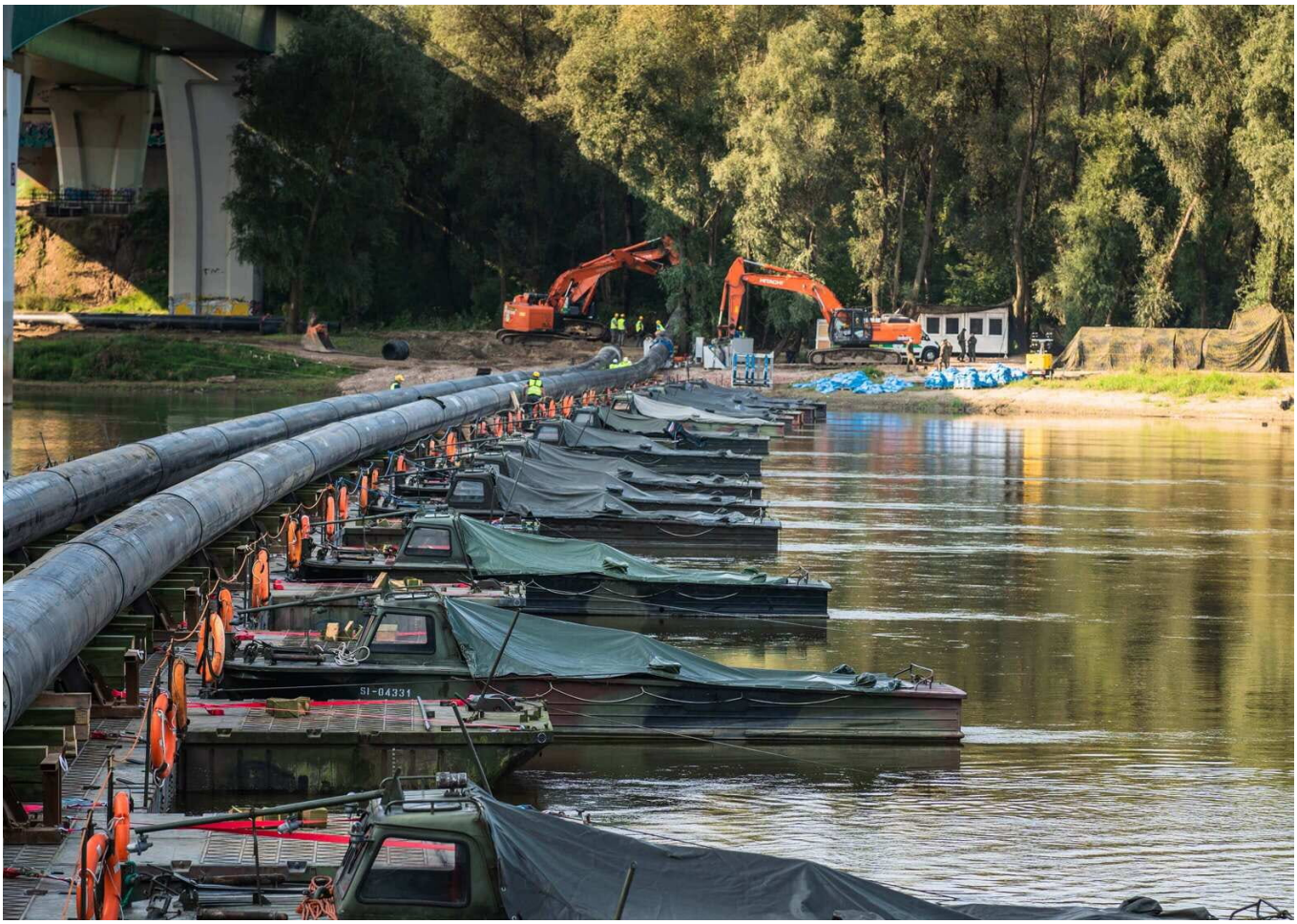
History repeating itself

A year after the first malfunction, the sewage collectors transporting waste from left-bank Warsaw to the Czajka wastewater plant failed once again. The municipal authorities considered many options to rectify the situation, including installing a new line on the North Bridge, submerging it across the Vistula River or building an entirely new underground pipeline by means of horizontal directional drilling. Once again, emergency discharge of untreated waste into the river was necessary – at an even

greater rate than the year before due to heavy rainfall. Finally, a decision was made to use the well-proven solution of setting up a temporary PE-HD pipeline over a pontoon bridge. In recognition of its first-hand role in the successful installation the previous year, Uponor was chosen as the general contractor and commissioned with handling the project from beginning till end.

This time, the total length of two DN1,000mm emergency lines was 3,200 metres. Extending the pipeline by 900 metres in total made it possible to connect it directly to the Farysa treatment facility, enabling the pipeline to operate even if water levels increased on the Vistula River. The project used the same pipes as in 2019 with additional sections delivered as a matter of priority from Uponor's factory in Kleszczów. Before work began, Uponor conducted comprehensive lab tests – checking the pipes for surface scratches – as well as weld rupture strength tests. All pipes were found to be fully suited for reuse. As before, thanks to the determination and dedication of Uponor's personnel and service crews, the pipeline was fully operational within 13 days of the commission. Due to the excellent properties of the PE-HD technology, as well as failsafe installation by means of butt welding, the pipeline had the potential to operate for years. It functioned without issues and was only disassembled again when the pontoon bridge had to be removed due to risk of damage from ice sheets forming on the river in October 2020.

Emergency pipeline on a pontoon bridge













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