References

Extension of the district cooling station seawater intake in Helsingborg, Sweden



Uponor involvement

- Weholite and pressure pipes, DN630 – ID3,500mm

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The district cooling system in Helsingborg involves the streamlining of current production. By means of seawater and using heat from the district heating network to power an absorption cooling unit, district cooling provides much better environmental values than electric cooling units. The district cooling station is an efficient source of cooling for buildings, industrial facilities and shopping centres.

Project Facts:

Location	Completion
Sweden	2018
Building Type	Product systems
Industrial	Heating and cooling, Tailor made constructions
Project Type	
Renovation	

Partners

Main contractor: Uponor Infra
Subcontractor: BCA, SSE

The largest prefabricated structure in Sweden

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The new modern district cooling station should be completed during the spring of 2018. It is located in Helsingborg's harbour and uses seawater from the Öresund channel to produce district cooling. A fully developed district cooling system of this kind can reduce electricity consumption and emissions by about 65–70%, compared to cooling from local cooling units. However, use of seawater requires caution with regard to the environment, durability and maintenance, due to the installation conditions in the sea, the effect of seawater on materials, and fouling from shells and barnacles.

Initially, there was no guarantee that Öresundskraft would choose Uponor Infra and Weholite. The initial plan involved creating an in-situ cast concrete structure. However, the choice became easy when Öresundskraft considered the advantages of Weholite: the huge savings to be made and no risk from concrete disintegrating through exposure to seawater. The pump station is the largest prefabricated structure in Sweden, at 23 metres long and with dimensions of ID/OD3,500/3,900mm. Weholite enabled the pump station to be prefabricated at Uponor Infra's factory in Fristad, transported to Helsingborg, and lowered into place in a water-filled sheet-piled cofferdam. This method hugely rationalised the work and would not have been possible on the basis of concrete construction.

Choosing Weholite for the intake pipes was more self-evident. Compared to other materials and piping systems, Weholite is the most costeffective material with the highest durability and is the easiest to maintain. Öresundskraft required that neither the pipes nor the pump station would need chemical cleaning, but could be cleaned by pigging, a method that works well with PE pipes. Uponor Infra's overall contract consisted of detailed engineering, project management, marine dredging and backfilling work.

Creative support throughout the project
The pump station made by Uponor Infra is the largest prefabricated structure in Sweden, at 23 metres long and with dimensions of ID/OD3,500/3,900mm.

Uponor Infra's overall contract consisted of detailed engineering, project management, marine dredging and backfilling work; the underwater installation of intake and outfall pipelines; land-based sheet piling; excavation, backfilling and asphalt works; the welding and installation of the intake pipes; the supply and installation of a prefabricated pumping station including sluice gates; filtration units; two pumps with a capacity of 3,600m3/h; and the circulation of water to the heat exchanger and outfall pipeline and then back into the sea chambers and poly pig devices.

The entire process – from the first drawing and calculations to the groundwork, complicated installation process and land restoration – was conducted by Uponor Infra and subcontractors. In 2017, the project was awarded the CCAC international environmental prize at the UN's climate conference COP23 in Bonn.

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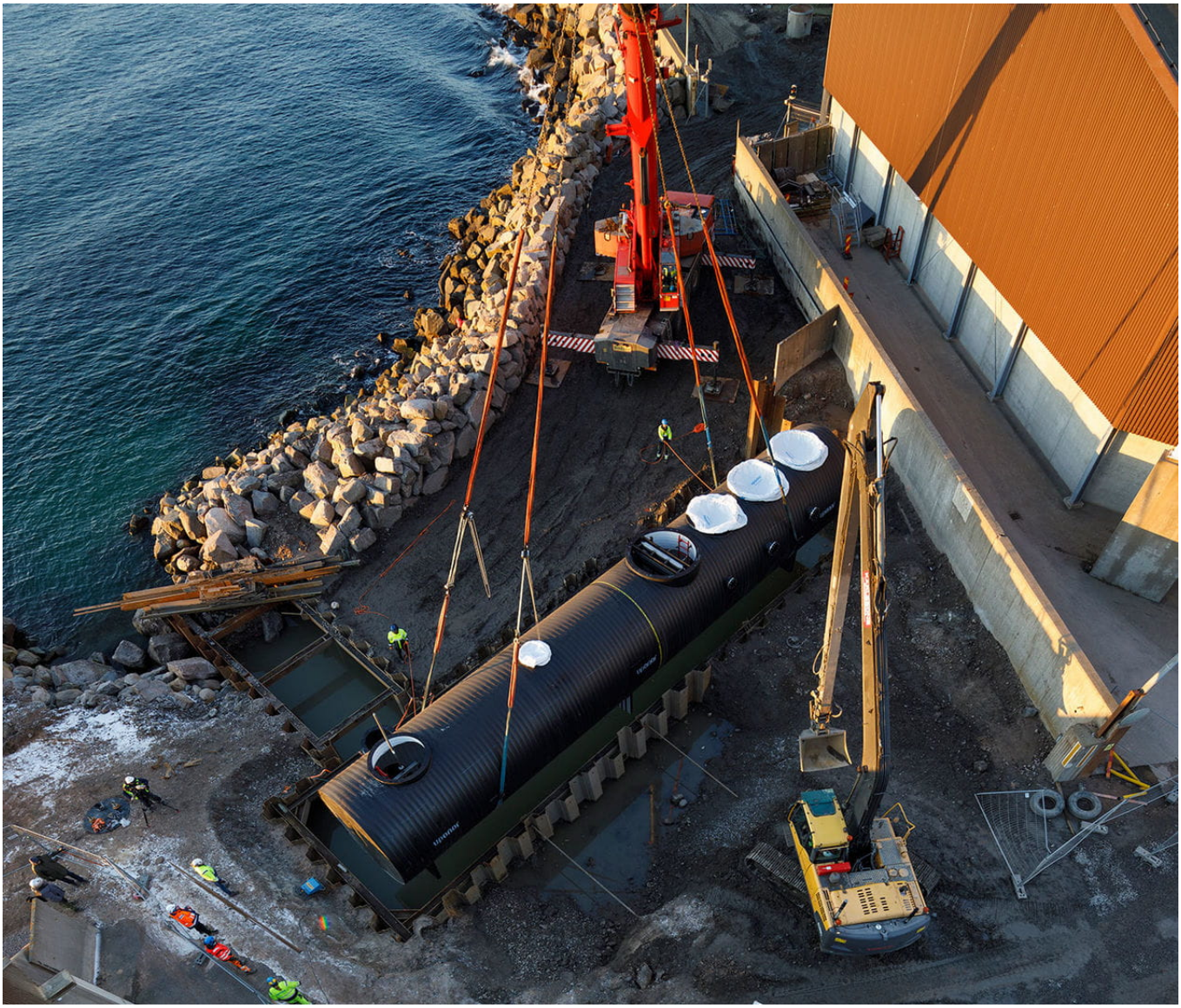







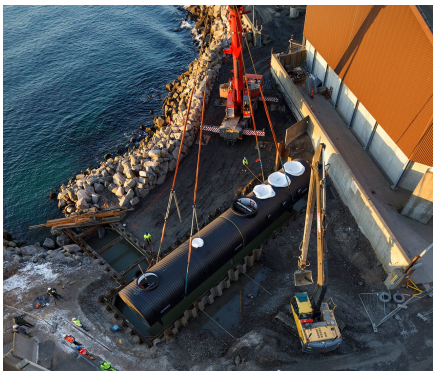







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