Securing protection through service

Regular service and inspection to ensure continued reliability

Storm surge barriers play a vital role in protecting the coast of the Netherlands from flooding. Hartelkering is part of the barrier of Europoort which closes the Hartelkanaal in the event of high tides and flooding, and VHT engineered the drive and control system which opens and closes the gates. These systems are essential, and because they are exposed to the elements, they need to be serviced and inspected regularly to ensure continued reliability.

VHT was the original provider of the drive and control systems for Hartelkering back in 1996, and at the time the cylinders were the largest the country had ever seen. After 20 years of continued, reliable service, it was time to carry out a full overhaul in order to modernize the system, and ensure another 20 years of efficient operation.

This overhaul presented a real challenge for all stakeholders, as the barrier itself is a huge structure. To dismantle it involved floating cranes, large transport trucks and significant amounts of scaffolding, and everything had to be done in a relatively short amount of time which added to the logistical challenges.

The Dutch government and Rijkswaterstaat, the government's water board, are responsible for ensuring that Hartelkering is fully operational when it needs to be. VHT carries out regular maintenance on the barrier, but in 2016 it was due for a full overhaul. This meant that VHT had to remove the drive and control systems, refurbish and replace certain technology, and reinstall

everything in the space of around twelve weeks. The time frame was critical as everything had to be back in place before storm season.

Preparation is key

The tight time frame for this extensive service operation meant that efficient preparation was absolutely essential, as was the coordination with the other stakeholders involved in the project. VHT took several essential steps before taking the cylinders and systems back to its headquarters in Boxtel to ensure there were no delays.

One of the first steps was to pre-order new piston rods. This was to prevent a late discovery that they couldn't be used for much longer, ordering at that point would take another nine months. So VHT spoke to Rijkswaterstaat and explained the potential issue, and agreed to order them in advance so VHT could replace the existing piston rods quickly and efficiently.

The rods still worked as intended, but with the replacements Rijkswaterstaat benefit from newer, more durable technology. With the overhaul of the cylinders, VHT replaced the old ceramic coating with Enduroq 2200. This was pre-approved and already complied with the necessary regulations, so there were no delays there, and it's the ideal coating technology for this application. It's designed to maintain its efficiency in these harsh environments.

Long-lasting reliability

In addition to the new piston rods and the overhaul of the cylinders, VHT also replaced the hydraulic oil, resealed piping and renovated the power units. Together, all of this work ensures another 20 years of the Hartelkering operating exactly as it should, and protecting the hinterlands in the area. The key success factors were excellent preparation and project management, but also a really good cooperation with Rijkswaterstaat and the other subcontractors on site. Overall it was the perfect example of a very well-organized, successful project.

Positive experience

A project of this scale always has its own unique challenges, but at the same time provides excellent learning opportunities for all involved. The strict time frame, logistics and scale of the project were all handled in the best possible way, and gave the results that the customer needed. VHT delivered a system that will keep Hartelkering operating smoothly and reliably for a long time to come.

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