BILFINGER HEIGHT SPECIALISTS
INDUSTRIAL ROPE ACCESS

ROPE ACCESS FOR VISUAL AND NDT INSPECTIONS AT SHELL MOERDIJK

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Shell Moerdijk called on Bilfinger's new expertise for the rapid and efficient inspection of its T-jetty – and also benefited from significant financial savings. This inspection work is part of a special Shell programme focused on the prevention of corrosion. The use of rope access together with supplementary inspection expertise yielded considerable benefits.

Bilfinger has been a contractor at Shell Moerdijk for many years. Bilfinger, in its role as a permanent scaffolding, insulation, painting and steam tracing contractor, always has hundreds of employees at work on the maintenance of the Shell plants and installations. This Shell plant, which produces chemical products from mineral oil, is one of the largest chemicals complexes in both the Netherlands and Europe. The base chemicals and products are delivered and dispatched by pipeline, by train, by truck and by sea. Shell Moerdijk has what is referred to as a 'T-jetty' for vessels calling at the plant, a loading/unloading jetty that is equipped with pipelines for different chemical products which can be coupled to the vessels' tanks.

Corrosion

Shell Moerdijk is carrying out a large-scale maintenance programme designed to prevent leakage. 'Shell assumes its responsibility for the prevention of incidents and environmental damage', Kees Krijnen (Maintenance Supervisor external corrosion Shell Moerdijk) explains. 'This is the reason why we devote a great deal of attention, time and funds to the appropriate maintenance of our equipment and pipelines. They must retain the liquids and gases passing through them: they may not leak. Corrosion is one of the culprits that allows leaks to develop.

CASE STUDY
ROPE ACCESS & INSPECTION

Client: Shell Chemie Nederland
Site: Moerdijk
Period: 2021

The challenge: Shell, in the context of its large-scale maintenance programme, required an inspection of the condition of all the pipelines and their supports on its loading/unloading jetty, the T-jetty. This made it necessary to gain access to the T-jetty. Erecting a scaffold around the jetty would be time-consuming and complicated due to the limited amount of space available. Scaffolding would also impose a significant extra wind load on the T-jetty, and implementing measures to reduce this load would make the scaffold very expensive. Moreover, the results from the inspections needed to be available very quickly. In addition, extra assistance was requested for the inspections.

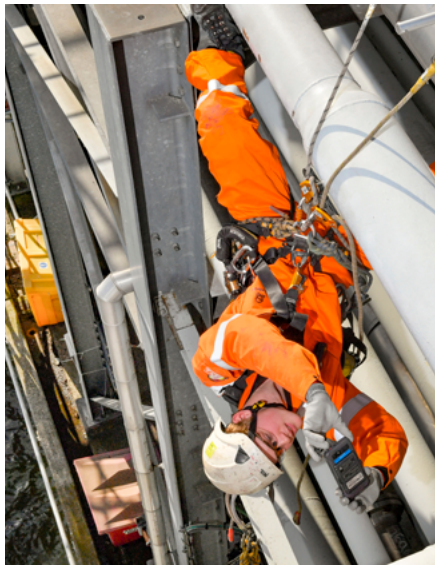
The solution: Bilfinger deployed a team of eight of Bilfinger Height Specialists' in-house rope-access technicians for this specific assignment. We gave these technicians additional training in carrying out thorough visual inspections. We also provided supplementary services for the inspection reports in conformance with the requirements of the Shell system.

We avoid this by having regular inspections of our equipment and pipelines carried out by our special Secure External Corrosion organisation. We make a distinction between various types of corrosion, such as CUI, Corrosion Under Insulation, which can occur at pipelines, and CUPS, Corrosion Under Pipe Supports, which can develop at the points where steel pipelines rest on steel supports. Shell Moerdijk has many of these support points.'

'Avoiding the need to erect scaffolding around the entire T-jetty to carry out the inspections saves us a great deal of time and budget'

Classification

'As we are unable to inspect all of the many kilometres of our pipelines in one go, we have classified them by risk', Michel Huibregtse (Team Lead external corrosion Shell Moerdijk) says. 'We have classified all pipelines by the probability of leaks and their impact. We use this classification to determine the sequence in which we inspect the pipelines and supports and carry out any necessary repairs. The first on the inspection list was our loading/unloading jetty, the T-jetty, in part because this T-jetty also passes over the wide Hollands Diep river – which means that we can't allow any leakage at that point.'



Rope access technician carries out inspection work.

Limited amount of space

Normal practice would be to erect a substantial scaffold so that the jetty can be inspected from up close. However, a number of specific aspects make this location so special. Kees Krijnen explains that 'vessels moor throughout the day, so the jetty must provide ready, rapid and safe access to the auxiliary services and Customs. There is a limited amount of space on and around the T-jetty. Erecting scaffolding around it would take up a lot of the space and there would be an even smaller amount of space available. It would also be necessary to take account of a significantly increased wind load on the T-jetty, due to its location over the Hollands Diep river. We'd already tried using a camera to carry out a remote inspection of the jetty, but it didn't provide the results we wanted.'

The solution

'We asked Bilfinger to help us and come up with a solution', says Krijnen. 'Bilfinger proposed using rope access, a method based on the use of rope, climbing techniques and safety equipment to work safely at heights without needing to erect a scaffold. Bilfinger gave their rope access technicians additional training in the inspection work. In addition, Bilfinger trained an employee of another contractor so they would be able to carry out non-destructive testing at locations where this was necessary. Bilfinger also has the in-house expertise required to identify CUI. They cooperated with our inspection department in sharing their findings and data in our system. In so doing, they assist our inspectors and we now know precisely where we will need to carry out repair work later this year.'

Benefits

Kees sees that this approach offers great benefits. 'Avoiding the need to erect scaffolding around the entire T-jetty to carry out the inspections saves us a great amount of maintenance budget. Moreover, we can carry out everything much quicker: I think that we save at least four months' time.' Furthermore, Shell Moerdijk now has just one contact point for all this work. 'Obviously, Bilfinger also benefits', Kees continues. 'By offering increasingly broader services, they are more frequently awarded the whole assignment. I think that involving Bilfinger Height Specialists and Bilfinger NDT Services was a wise move. We've learnt some useful lessons from these experiences. We're certainly going to make more frequent use of rope access, especially at locations where a regular scaffold would be a great obstruction. I'm pleased to see Bilfinger making increasing use of innovations.'

Benefits in this project

- Great financial savings.
- Total time required reduced by as much as four months.
- One Bilfinger contact point for all the work.

More information

Do you have any questions about this case study or would you like to receive more information?

If so, you are welcome to contact: Henri Hoogenes, Managing Director, Bilfinger Height Specialists, at henri.hoogenes@bilfinger.com, or Quido Vos, Bilfinger Site Manager at Shell Moerdijk, at quido.vos@bilfinger.com

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