AUTODESK Construction Cloud | Port of Antwerp Bruges

Connecting Transport Routes Globally with Port of Antwerp-Bruges' Digital Twin

Belgium-based Port of Antwerp-Bruges is a seaport in the heart of Europe, accessible to some of the largest ships in the world. With an inland location more centralised than most of its North Sea counterparts, Port of Antwerp-Bruge's docks are connected by rail, road, river, and canal waterways. Smart technologies are at the helm of the port's successful strides, and among them, Autodesk Docs from Autodesk Construction Cloud™ has been instrumental in the port's digitalisation efforts.
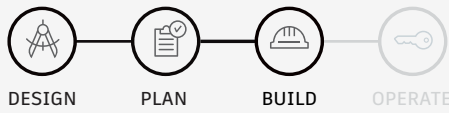
A Digital Twin for the Future

The port's end goal is to create a 'digital twin' of its assets including sensors, autonomous drones and smart cameras to use for inspections and oil spill detection. Being able to permanently detect what is going on in the port means the team can manage the activity happening at any one time and create proactive maintenance schedules for the future.

As a longstanding user of Autodesk's AEC collection solutions for planning and designing, the port is familiar with implementing digital workflows. But for Peter Rollier, BIM Office Manager for the port, understanding how processes are working can optimise the entire construction lifecycle for better asset management in the future.

Previously, the team struggled with sharing information across multidisciplinary project collaborators on improvement projects. "We struggled ensuring we had the latest and most up-to-date information. And we struggled with making sure contractors were providing the data we needed for operational maintenance," says Peter.

Centralising Data

In 2019, Peter embarked on a new journey—he returned to university to discover how Building Information Modelling (BIM) could support efficient collaboration practices. "We were already using

Autodesk Construction Cloud's BIM 360 platform to make all available project information accessible anytime, anywhere," says Peter.

But for the port, being able to unite data and on-site activity became an increasing priority. By introducing Autodesk Docs as the common data environment (CDE) for Port of Antwerp-Bruges, the extended team have one central repository for all project information and a shared understanding of where data must be stored.

And with the availability of Autodesk Build, the port has started transitioning projects from BIM 360 to take advantage of the solutions more robust field and project management capabilities.

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> **-Peter Rollier**
> BIM Office Manager,
> Port of Antwerp

A BIM Evolution

With Autodesk Docs, extended teams can share models and other project information with consultants, partners, and employees across any project at the port. Using BIM workflows, which are certified to BS EN ISO 19650-2:2018, means that all projects are set up using the same core principles for folder structure, file naming, and information sharing when setting up new projects.

"The accessibility of data makes decision-making much easier," Peter explains. And the teams can communicate clearly in a more time-effective way. "We use the model as the centre of our discussions in weekly meetings. Our team members can visualise what is happening much more clearly, and we can collectively make decisions earlier, rather than last minute changes after elements have already been installed."

The port leverages the software's centralised model to share with the data analytics team with the goal of creating predictive maintenance schedules. Being able to offer a designated space for information exchange replaced the need to waste time gathering information fragmented across the port's supply chain. Such an environment also makes model-based clash detections possible, enabling collaborators to foresee and address problems long before they occur at the port.

The Creation of Transparency and Speed

Autodesk Docs has also opened the doors to an invaluable level of transparency, amplifying the project's overall quality. A pre-emptive reduction of errors means fewer issues for the port to navigate during its construction projects and offers Peter added reassurances. And the addition of critical workflows like the issues management function only adds to the project's transparency and yields quicker resolutions.

"We use the approval workflow so communication is completed through our digital platform, meaning it's very clear who is accountable for what," Peter explains. But some of the biggest challenges for the port have been ensuring people adapt to the new processes. "We have to bring our people on the transformation journey and overcoming resistance to new ways of working takes time," reflect Peter.

For Peter, being able to clearly outline the port's policies when it comes to data sharing from the outset has been very beneficial. Now, the port's wider supply chain understand how to adhere to information sharing practices, a find that can be incorporated into work contracts too. For the team, merging their current assets at the port into 'as is' models is imperative as these are then linked into the port's wider digital twin initiative.

Digital Drives Sustainability

Another benefit to embedding digitalisation into the port's operations is the sustainability goals that can be realised. By capturing all asset information throughout the entire project lifecycle, the port can also create proactive maintenance and inspection schedules that factor in environmental considerations as well as design for disassembly. This means the design teams can explore how they can create assets that do not harm the environment when they come to the end of their lifecycle, but also explore what materials can be used to reduce the port's overall carbon footprint and also creates a more circular economy for the port of the future.

"Our goal is to ensure we can understand the impact of the infrastructure on the environment, the local people living near the port and the wider world," reflects Peter. "Meaningful data sits at the heart of this and breaking down information siloes helps us to work together for better outcomes for everyone which is a fantastic motivator," asserts Peter.