J. de Jonge Flowsystems ^{Customer Success Story}

AutoCAD[®] Plant 3D Autodesk[®] Navisworks[®] Simulate

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Roel Kremer
Engineering Manager
J. de Jonge Flowsystems

Hassle-free 3D.

Switching to AutoCAD Plant 3D for 3D design helps J. de Jonge Flowsystems to save time and improve training efficiencies.



Project Summary

Founded in 1954, J. de Jonge Flowsystems got its start designing, manufacturing, and constructing pipe systems for loading and unloading liquid cargo, such as oil, at ports in the Netherlands. The company has since expanded to offer a broad array of services, including heat-exchange design and installation, pump sales, and piping for a range of industrial uses. Commitment to efficiency and quality has helped J. de Jonge to compete and thrive, and the company's engineering department looks to software to help it contribute to those goals. AutoCAD[®] Plant 3D software enables the company's engineers to design complex pipe systems in 3D without the need for expensive, cumbersome module-based software, while Autodesk® Navisworks® Simulate software helps enhance design constructability. With assistance from Autodesk solutions, J. de Jonge has been able to:

- Reduce the risk of clashes among pipes, equipment, and structural systems
- Enhance the design review process with clients and win new work
- Move away from expensive and difficult-to-learn design tools
- Coordinate construction more proactively

The Challenge

As J. de Jonge has grown, it has remained a leading provider of piping systems to northern Europe's marine terminals. Its current commission to expand an oil terminal for the Port of Amsterdam involves adding nine storage tanks and building three new hose towers, a pump room, and four truck loading bays. From the outset, the project presented a key challenge: design and construct new facilities without interfering with current ones. Port directors needed to understand exactly how everything from pipe racks to tanks would fit with existing port structures.

J. de Jonge has long relied on 3D design software to help design complex projects like the oil terminal expansion. Designing in 3D helps the company's engineers to see how piping comes together while avoiding conflicts. Clients reviewing the 3D designs can just as easily visualize the results. But J. de Jonge's software was causing inefficiencies for the company. Engineers had to use different modules for key tasks, and each module had to be purchased and maintained separately. The software's extensive learning curve imposed an additional hurdle.

According to Roel Kremer, engineering manager for J. de Jonge, the company realized it was time to switch to software that could deliver 3D design power without maintenance, cost, and training headaches: "Each module had to be purchased and upgraded separately. It was time consuming and expensive. We are an engineering and construction

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Enhancing the design review process with 3D models.

company. We want to focus on designing and building effective flow systems—not on supporting our software. At about the point the oil terminal project started, we decided it was time to adopt new design software from Autodesk."

The Solution

J. de Jonge chose AutoCAD Plant 3D software. Unlike the module-based software it replaced, AutoCAD Plant 3D offered core 3D design functionality in a single package, without the need to purchase, upgrade, and test individual modules with each software release. Based on the familiar AutoCAD[®] platform, AutoCAD Plant 3D has proved to be easy for the company's engineers and designers to learn.

"From a maintenance and support perspective, AutoCAD Plant 3D is a huge asset," says Kremer. "We no longer worry about how upgraded modules will behave with each other because the modules are gone. We realized a training time and cost advantage, too. An engineer familiar with plant design and AutoCAD can start using AutoCAD Plant 3D almost immediately. Our former solution required significant training time."

Preventing Clashes

The oil terminal was among the first projects J. de Jonge designed using AutoCAD Plant 3D software. The team used an old CAD drawing of the existing terminal as a base layer, making it easier to take existing conditions into account as they worked. Using AutoCAD Plant 3D, designers then began modeling the new pipelines and components. Integrated standard part catalogs streamlined equipment selection and placement. When it came time to produce construction documents, the team used AutoCAD Plant 3D to generate isometrics and other documents automatically.

"AutoCAD Plant 3D enabled us to model the whole project in 3D," notes Kremer. "Designing piping and

plants in 2D takes much longer because you must shuffle between views to prevent interferences. We could always visualize how each component and pipe fit with the whole project. The overlay made it easier to integrate the new with the old."

Enhanced Reviews

J. de Jonge reviewed the design with the client throughout the design process. To review piping and component models in detail, the design team used AutoCAD Plant 3D software to produce 3D renderings. The client could visualize how the pipeline and components came together to support oil unloading, storage, and transfer to ground transportation. Then, when the client needed a whole-project view, the team turned to Autodesk Navisworks Simulate software. They used Navisworks Simulate to aggregate all project design files with CAD files of the existing terminal and generate a single coordinated model. By navigating through the model, the client could visualize and explore the relationship of the new terminal with the existing facility.

"AutoCAD Plant 3D models and Navisworks Simulate support a very clear and complete review process for clients," says Kremer. "On the oil terminal project, the software helped the client to understand the intent of the design and provide constructive feedback more easily. High-quality reviews provide a great deal of value for clients. Seeing a detailed model of the end result can help generate and sustain enthusiasm for a project."

Navisworks Simulate software served as more than just a review tool, however; in the next phase of the project, engineering and construction teams used the Navisworks model to help coordinate and plan construction. The teams reviewed the model together, using 4D scheduling to link the construction schedule with specific aspects of the 3D model.



Kremer explains, "Navisworks Simulate structures and stimulates collaboration across the whole project team. Viewing the model together, we share ideas about how to make projects better and more constructible. And after construction begins, construction teams can always refer to the model to reinforce their understanding of the design intent."

The Result

J. de Jonge now views 3D software as essential to the way it designs projects and delivers value to clients. The shift to AutoCAD Plant 3D software has enhanced the benefits the company realizes from model-based design. Explains Kremer, "The advantage of working in 3D is simple: you see what you are designing with a single view. For our company, the benefits of AutoCAD Plant 3D are just as clear. AutoCAD Plant 3D is easier to support and more cost-effective. It helps us to design intuitively, avoid errors, and support high-quality design reviews. We're more efficient, which helps us maintain our competitive edge and win work."

Learn More

Turn to AutoCAD Plant 3D and Navisworks Simulate to streamline your plant design processes. Visit **www.autodesk.com/autocadplant3d** to learn more.



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–Roel Kremer Engineering Manager J. de Jonge Flowsystems

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