Kraftanlagen Heidelberg

Customer Success Story

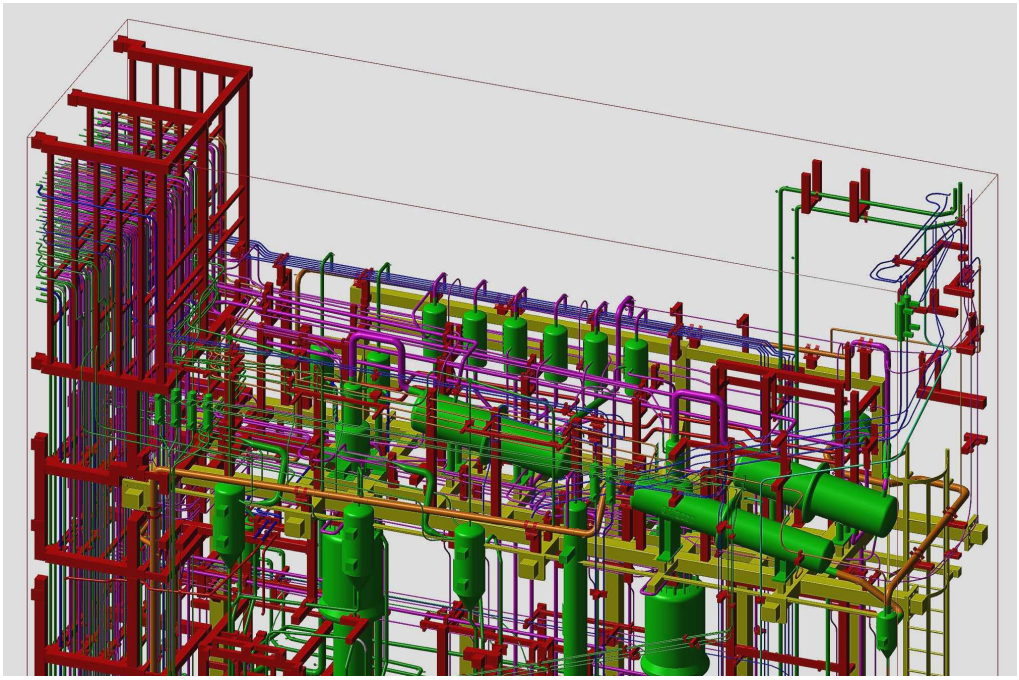
Autodesk® Plant Design Suite
AutoCAD® Plant 3D
AutoCAD® P&ID
Autodesk® Navisworks® Manage
Autodesk® Inventor®

Getting started with AutoCAD Plant 3D was fast. We loaded the relevant Inventor equipment models into AutoCAD Plant 3D and started routing pipes almost immediately. The time-consuming and imprecise conversion process was a thing of the past.

—Eric Hoffman
Director of Technical IT
Kraftanlagen Heidelberg

Model nuclear facilities.

Kraftanlagen Heidelberg turned to Autodesk Plant Design Suite to connect its plant design and equipment design processes using 3D models.



Project Summary

Established in 1923 as a provider of conventional power plant engineering to the German market, Kraftanlagen Heidelberg began serving the global nuclear technology sector in 1973. Today, it is one of the world's leading suppliers of nuclear technologies, including nuclear power and waste disposal plant designs and equipment. Because safety is a top concern with any nuclear facility, Kraftanlagen Heidelberg always applies great care and precision to its plant and equipment designs. The emergence of 3D design technology in recent years has helped the company to more efficiently deliver the quality that distinguishes its work.
To better integrate its 3D equipment and plant design processes, Kraftanlagen Heidelberg recently turned to AutoCAD® Plant 3D software, part of the Autodesk® Plant Design Suite. The company uses AutoCAD Plant 3D to model plants, which then connect more seamlessly to equipment designs created in Autodesk® Inventor® software. Since turning to AutoCAD Plant 3D and the Plant Design Suite, Kraftanlagen Heidelberg has been able to:

- Link its plant and equipment design processes
- Save more time as it prepares detailed permitting and safety calculations
- Prepare bills of materials (BOMs) more quickly
- Identify and address interferences more easily

The Challenge

Kraftanlagen Heidelberg has relied on 3D software to design equipment and model plants for several years. The software allowed the company's engineers to visualize designs as they worked, but in other ways, the software caused challenges. Neither the software used to design equipment nor the software used to model plant piping readily supported the complex calculations needed in the nuclear regulatory process. Additionally, the company's plant design software did not integrate seamlessly with its equipment design software.

"We decided to adopt new equipment and plant modeling software from Autodesk," explains Eric Hoffman, director of technical IT for Kraftanlagen Heidelberg. "On the equipment side, we chose Autodesk Inventor. For plant modeling and piping, we chose AutoCAD Plant 3D. We like the way the two solutions work together to help us produce the detailed documentation needed in our industry."

Autodesk®

AutoCAD Plant 3D helps save time on permitting and safety calculations.

The Solution

With few new nuclear plants being built today, many of Kraftanlagen Heidelberg's recent projects have focused on either existing facilities or nuclear waste disposal solutions. One recent project illustrates this trend. A nuclear plant operator in China chose Kraftanlagen to design a new nuclear waste processing facility. Located in central China, the plant will process highly dangerous nuclear waste for long-term storage.

The project was under way as Kraftanlagen Heidelberg made the transition to AutoCAD Plant 3D and Autodesk Inventor software. Having already created the basic P&IDs for the plant in its prior solution, the company's engineers were ready to design the equipment in Autodesk Inventor. The software allowed Kraftanlagen Heidelberg to create more accurate, 3D models of the equipment, with Inventor's simulation capabilities streamlining the formerly cumbersome calculation process.

Compatibility between Inventor and AutoCAD Plant 3D made it easy to move between the equipment and piping design processes. Hoffman explains: "Getting started with AutoCAD Plant 3D was fast. We loaded the relevant Inventor equipment models into AutoCAD Plant 3D and started routing pipes almost immediately. The time-consuming and imprecise conversion process was a thing of the past."

Specifying and Creating Pipelines

The engineers at Kraftanlagen Heidelberg established project-specific specifications within AutoCAD Plant 3D software. These specifications helped them create and edit pipelines that adhere to the necessary design parameters more quickly. As the team worked, the underlying project data was exchanged directly between the 3D model, P&IDs, isometrics, and orthographics.

"We created a 3D model of pipelines," says Hoffman. "AutoCAD Plant 3D allowed us to route pipes, edit lines of pipe, and manage systems of connections and component elements more intuitively. The specification-driven process helped keep each aspect of the design aligned to project requirements. Direct exchange between the model and other aspects of the design helped to promote both data accuracy and consistency, which are essential when designing nuclear projects."

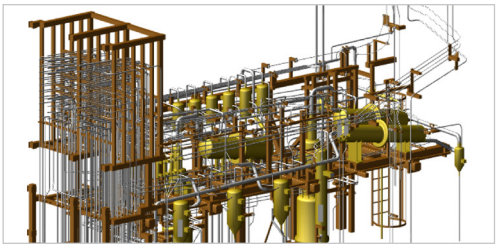
Faster BOMs and Construction Documentation Generation

In the past, Kraftanlagen Heidelberg's engineers spent countless hours maintaining and updating component lists used to generate BOMs. They were pleased to find that AutoCAD Plant 3D includes standard parts catalogs and automatically tracks materials. When it comes time to generate BOMs, the process is much faster.

"Before, we spent valuable time manually maintaining spreadsheets of materials and quantities," reports Hoffman. "Now, we do not. I cannot quantify the timesaving, but I know the process is significantly faster—and much less error-prone. Generating construction and regulatory documents from the 3D model in AutoCAD Plant 3D also takes much less time."

Getting the Most from the Plant Design Suite

To date, Kraftanlagen Heidelberg has focused on incorporating AutoCAD Plant 3D into its workflow, but the company is beginning to use the other software included in the Autodesk Plant Design Suite. The company plans to use Autodesk® Navisworks® Manage software to help its team detect and address clashes between elements in designs. Navisworks aggregates design files, such as structural, equipment, and piping, into a single 3D model, making it easier for multidisciplinary teams to coordinate their efforts. On projects where



customers do not provide P&IDs as a starting point, Kraftanlagen Heidelberg will use AutoCAD® P&ID to develop P&IDs for plants.

"The Plant Design Suite made sense," says Hoffman. "It includes the plant design and engineering functions we commonly need in a single package, and gives us the integrated tools we need to help us meet a variety of customer requirements."

The Result

Kraftanlagen Heidelberg sees its Autodesk solution as successfully helping to overcome the challenge that inspired the company to embrace new technology. "The most important factor for us in choosing Autodesk solutions was integration between our equipment and the plant design process," says Hoffman. "Autodesk Inventor and AutoCAD Plant 3D software work very well together, so we achieved our goal. This integration helps us deliver the quality customers expect more efficiently. In other areas, such as BOMs and documentation, we are seeing timesaving as well. The move to Autodesk Inventor and the Autodesk Plant Design Suite has been highly productive for our company."

Learn More

Integrate your equipment and plant design processes with the Autodesk Plant Design Suite. Visit **www.autodesk.com/plantdesignsuite** to learn more.

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