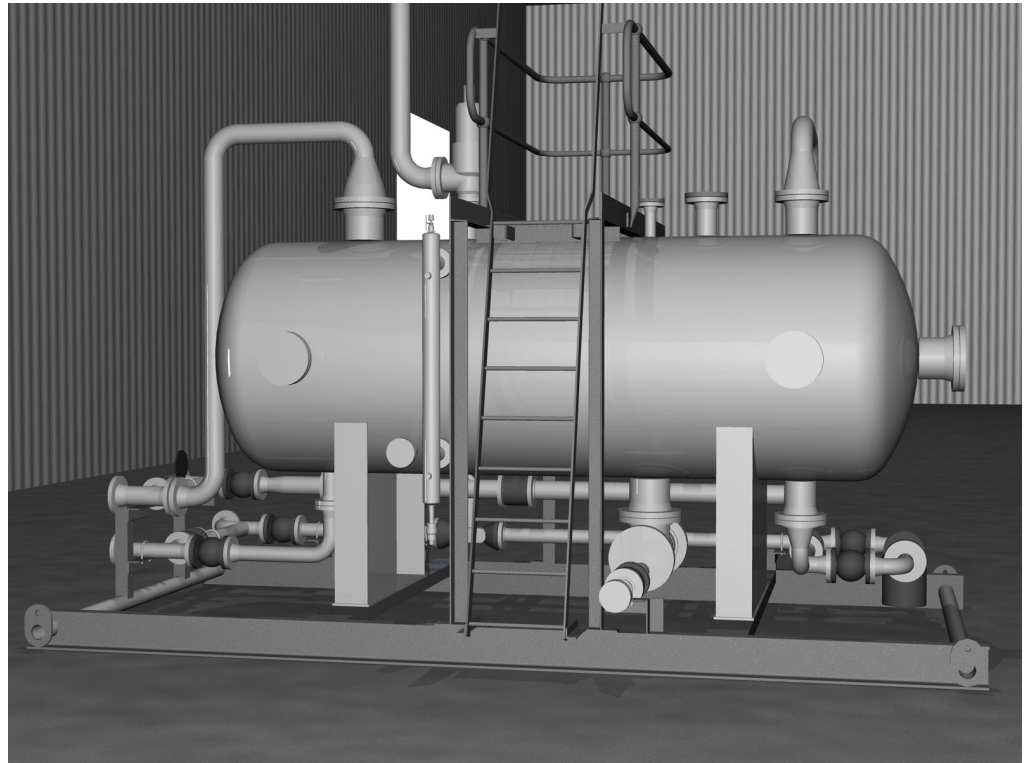


We're now generating construction documentation about 50 percent faster than before, and we hope to realize even greater timesaving in the future.

—Mark Dayman  
Managing Director  
Fyfe Engineers & Surveyors

# Drilling for speed.

Fyfe sees timesaving on the design of a gas pad drill with help from AutoCAD Plant 3D software.



## Project Summary

Based in Adelaide, Fyfe Engineers & Surveyors delivers surveying and engineering services to land developers and oil and gas companies in Australia. The firm got its start offering surveying services; impressed with its can-do attitude and efficiency, Fyfe's oil and gas clients encouraged the firm's expansion into engineering. Today, Fyfe's team of 250+ planners, engineers, surveyors, and drafters takes projects from inception through to construction documentation—quickly. To make its design process even more efficient, Fyfe recently expanded its engineering toolkit to include AutoCAD® Plant 3D software. The firm's designers used AutoCAD Plant 3D to help complete the Pickanjinie Pad Drill for Santos, a major Australian gas producer. With AutoCAD Plant 3D software on the project, Fyfe was able to:

- Review and optimize the design with the client more easily
- Spot and address interferences more easily using a 3D model
- Produce construction documentation faster

## The Challenge

The Pickanjinie Pad Drill provides a single pad for four wells to extract coal seam gas (CSG) in the Pickanjinie area of Queensland, Australia. It's Santos's first CSG multiple-well pad drill. By using a single pad for multiple wells, Santos can save money on leasing and by sharing well support facilities, including gas/water separation, flow metering, and gas flaring. The shared processing facilities require more intricate piping and instrumentation diagrams (P&IDs) than single wells, increasing the risk of design interferences.

The most pressing and common issue on oil and gas projects—time—added to the challenge. Mark Dayman, managing director of Fyfe, explains, "After a company signs an extraction lease, they want to begin realizing value from their investment as soon as possible. Piping interferences, inaccurate bills of materials (BOMs), and miscommunication can delay projects. It's essential that our design tools help us work quickly and avoid issues."

# Fyfe addresses interferences more easily using a 3D model.

## The Solution

Work on the Pickanjinnie Pad Drill project coincided with Fyfe's adoption of AutoCAD Plant 3D software. A longtime user of another 3D plant design tool, Fyfe decided to switch for several reasons. The prior tool proved to be less user-friendly, leading to extended training periods for new staff. It took longer to make changes within the tools. But most importantly, the software developer supported the tool with a very small team of programmers. The developer did not correct issues with the program in a timely manner, and the program's functionality was not advancing rapidly.

"We served our clients well with our prior solution, but we believed that switching would better prepare us for the future," says Jeffrey Tapfield, principal designer with Fyfe. "Autodesk has more resources devoted to enhancing AutoCAD Plant 3D software. We also liked the fact that Plant 3D is based on one of the most widely used CAD platforms, AutoCAD. The interface seems familiar to anyone who has used AutoCAD software."

According to Scott Reid, Fyfe's design drafter on the pad drill project, AutoCAD Plant 3D software's ease of use quickly factored into the Pickanjinnie project. "After a brief training session with Autodesk, we began using Plant 3D software on the project," he says. "Getting started took almost no time at all."

## Clear Communication

When Fyfe began using AutoCAD Plant 3D software, the firm already had the initial P&IDs. AutoCAD Plant 3D software's easy-to-use and comprehensive equipment modeling and pipe routing capabilities helped Fyfe to quickly develop the 3D model from the P&IDs. The model made it easier to identify and resolve interferences, and the firm found that its designers could make changes more quickly to the model.

The model proved to be an even bigger asset during design reviews with the client. "It's much easier for clients to understand a design when they see it as a 3D model," notes Tapfield. "Our client more quickly grasped the design intent, and made suggestions to optimize equipment and valve locations for constructability and long-term maintenance. Editing the model to include the changes was simpler and faster in Plant 3D software."

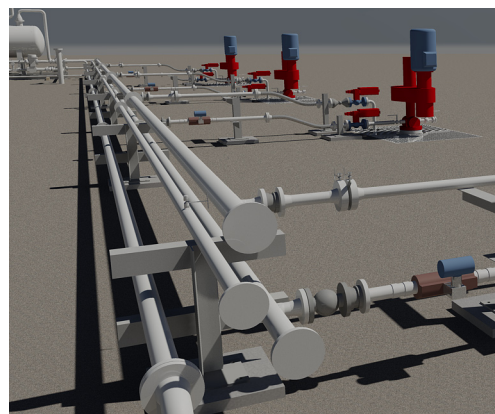
## Supporting Construction

As the design moved to completion, Fyfe turned to AutoCAD Plant 3D software to help prepare the construction documents. Using the built-in isometric extraction capabilities of AutoCAD Plant 3D, all isometric drawings with more accurate BOMs were automatically generated from the 3D model. Since this was the first time they had used the software, the firm's engineers were concerned they might lose significant time mastering the process. They were pleased to find their concerns unfounded.

"Even though we had never used AutoCAD Plant 3D to help generate construction documents, we completed the process about 10 percent faster than before," says Reid. "With construction in a remote location like Pickanjinnie, getting the right materials and quantities to the site is just as important as clear isometrics. Plant 3D supported the generation of highly accurate BOMs."

## The Result

Since completing the Pickanjinnie project, Fyfe has more fully integrated AutoCAD Plant 3D software into its workflow. Dayman reports seeing even more benefits on subsequent projects: "We're now generating construction documentation about 50 percent faster than before, and we hope to realize even greater timesaving in the future. Though we have only used AutoCAD Plant 3D for a short time, it's clear the software supports the essentials for



successful projects: fewer interferences, more accurate takeoffs, speed, and clear communication."

## Learn More

Find out how you can enhance the way you design, model, and document plants while taking advantage of the familiar AutoCAD software platform. Visit [www.autodesk.com/autocadplant3d](http://www.autodesk.com/autocadplant3d) to learn more.



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—Jeffrey Tapfield  
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