HEXAGON
PPM

CASE STUDY

STRATEGIC PROJECTS INC., CALGARY, CANADA

Key Facts

Company: Strategic Projects Inc.

Website: www.strategicprj.com

Industry: Oil & Gas

Country: Canada

Products Used:

- CADWorx® Plant Professional

Benefits:

- Ensured 3D models generated are aligned with industry standards
- CADWorx software was widely used as a 3D plant design tool in the Canadian oil & gas industry
- Native DWG files were used as a communication medium between engineering and fabrication
- Perpetual licensing was also available, not just a subscription

STRATEGIC PROJECTS INC. (SPI) REALIZE A 12% GAIN IN PRODUCTIVITY BY SWITCHING TO CADWORX®

IDENTIFYING GOALS

SPI is a Canadian Engineering, Procurement & Construction Management (EPCM) company with focus on oil & gas facility and pipeline projects.

Prior to the conversion, SPI's design process consisted of generating the 3D model of the facility. Then, from the model, it generated traditional drawing packages such as layouts and piping isometrics for use in fabrication. As part of its cost-saving measures, SPI was tasked to simplify the workflow between the engineering and fabrication teams.

One of the methods identified was to maximize the use of 3D design tools and minimize the number of traditional format drawings required to complete the fabrication, which reduced the overall project cost. The challenge was to ensure that the 3D model generated by SPI was in a format that could be utilized by multiple third-party fabrication shops without the need of a data conversion or optimization. AutoCAD® Plant 3D did not fit this requirement and a different 3D plant design software was needed.

OVERCOMING CHALLENGES

SPI replaced AutoCAD Plant 3D with CADWorx Plant Professional and kept other software the same, so it was easy to implement the change. As it was more difficult to convert the spec file it had in Plant 3D than start from scratch, all piping and structural steel specs were regenerated in CADWorx.

Once the 3D model was developed in CADWorx, the file was checked for quality against the P&ID, by generating a BOM and verifying against the specification. The model was then reviewed by the client using Navisworks for constructability and operability. Once approved by all parties, the 3D model was finalized (frozen for a hard revision) and ready to be sent out for fabrication.

The native files (DWG) were then sent to the fabrication shop where they generated the necessary fabrication deliverables directly from the model, including layouts, piping isometrics and a snapshot of the model.

REALIZING RESULTS

Implementing CADWorx and eliminating isometric drawings reduced mechanical design and drafting hours by approximately 12%, which positively impacted both the project cost and schedule.

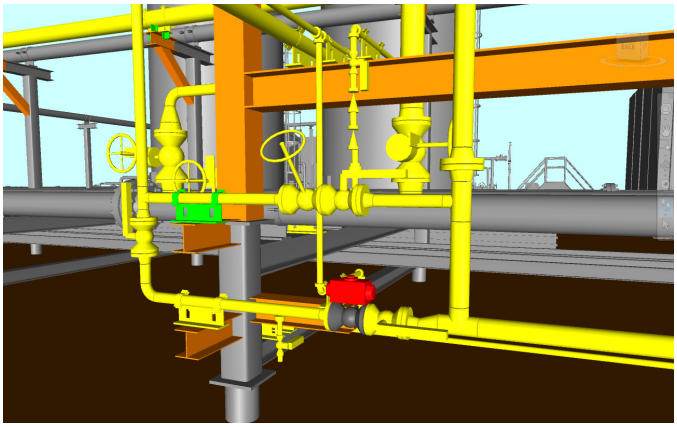
The use of CADWorx Plant Professional software was critical in achieving the above savings, as it was the most widely accepted 3D plant design tool in the Canadian oil & gas industry. Most of the fabrication shops in Western Canada were familiar with the software, and it is easy for them to find additional designers trained on CADWorx when the need arises.

In the end, SPI's goal was to provide a fit-for-purpose solution to its clients. Minimizing the project cost while maintaining the highest quality is key in making these projects successful. By automating the data handling between different software SPI could eliminate the risk in missing or duplicating materials, which reduced not only the engineering hours, but also the procurement and construction costs. SPI uses the 3D model generated in CADWorx as a reference point for integration of various project tasks.

MOVING FORWARD

SPI started multiple research projects to further utilize the 3D model. One of the projects is to develop a VR tool from the 3D model that operators can utilize. This way the 3D model will not only be the design tool during the construction, but also can become a 3D virtual twin that will live on for the life of the facility.

It has been using 3D laser scans to increase the accuracy of the model, especially for brownfield projects where locating the tie-in points is critical. SPI has recently completed a facility expansion project and was able to increase the accuracy of the model to within a few millimeters by performing a 3D laser scan of the existing facility at the beginning of the project and incorporating point cloud data into the 3D model. The scanner used was a Leica P40, which provided both cost effectiveness and accuracy.



ABOUT HEXAGON

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at hexagon.com and follow us @HexagonAB.