

FACTS AT A GLANCE

Company: Temco

Website: www.temco.be

Description: Temco is an independent Belgian company offering engineering, maintenance, and consultancy services. Its activities cover the whole engineering project line from design to construction. With a team of professional consultants, engineers, and designers, Temco works on monodisciplinary and multidisciplinary projects in different industries, such as chemical, petrochemical, pharmaceutical, energy, and metals, among others.

Employees: 65 employees

Industry: Engineering

Country: Belgium

PRODUCTS USED:

- CADWorx®
- CAESAR® II
- Navigator

KEY BENEFITS:

- A clear 3D presentation, easy to understand even for technically unskilled people
- Very good assistance by Intergraph before, during and after implementation
- Save time by
 - o Short training period
 - o Easy to use
 - o Rapidly produce isometrics, layouts, and bill of material

DESIGNING A TANK STORAGE TERMINAL IN ONE OF THE LARGEST PORTS IN EUROPE

Intergraph® CADWorx® flexibility and user-friendly interface provided Temco with all needed engineering data in a short time frame



IDENTIFYING GOALS

SEA-Tank Terminal Antwerp, a member of the SEA-Invest Group, opened a new terminal for the storage of fuel oils, gasoils, gasoline and biofuels. The terminal, built at quay 254-312 at the 6th Harbour dock in the Port of Antwerp, includes 511,000 cubic meters (18,045,794 cubic feet) of storage capacity in 30 liquid tanks ranging from 1,000m³ up to 48,000m³. The project was proposed for competitive bidding.

Temco is an independent middle-size Belgian company offering services to the industry, including engineering, maintenance and consultancy, from design to execution. Temco had used CADWorx in smaller projects, but it was the first time it was going to be used in such a large project. The flexibility and user-friendly interface to sketch enabled the company to present 10 different layout proposals of a pumping plate within one week. This way Temco could make a very good first impression. The project ran from the beginning of 2009 to September 2010 and included 6,000 hours of engineering. The average crew comprised of four people, with peaks being handled by 10 experts.

OVERCOMING CHALLENGES

The timeframe of the project was critical and engineers needed to get up to speed quickly. This was possible thanks to the CADWorx interface being very easy to learn, particularly for those with a basic knowledge of AutoCAD.

The basic engineering schedule was an excellent example of a fast track development. That's the reason why the basic study appeared to be unfinished at the moment Temco started the detail design. Vendor information of appendages and equipment came in very slowly. The design suffered several changes through the project, including dimensions of valves and actuators, nozzle orientations of pumps, type of filters, pipesizes, and pipespecs. However, those changes were easy to implement "thanks to CADWorx being such a flexible tool," explains lead designer Maaïke Mertens.

- With one command you can change the pipe spec for all selected components
- It's easy to copy sections of the design and renumber everything

- Material take off on isometrics is changed automatically
- Standard AutoCAD commands like copy, move and stretch also work in CADWorx
- Thanks to routing lines, it's less work to change the pipe size

REALIZING RESULTS

In addition to managing the project, cost control and planning, the engineering work comprised 3D design, the creation of PIDs, isometrics, layouts and bill of material, in addition to the interference with the civil and structural design.

All preparations made for 3D design determine the result and timing needed to get a better result in generating isometrics and layouts. "Once the 3D-model was complete, generating the documentation for construction was much easier with CADWorx, as the tool includes the set-up of equipment and piping layouts from automatically generated sections with automatic annotation functionality", says Mertens. "We also saved time in extracting materials and making bills of material, in a way that we could do in half a day what normally takes a week".

Another functionality Temco experienced as an advantage was the compatibility with CAESAR II, with which Temco performed stress analysis and stress isometrics. The EPC could export and transfer data easily from one tool to another.

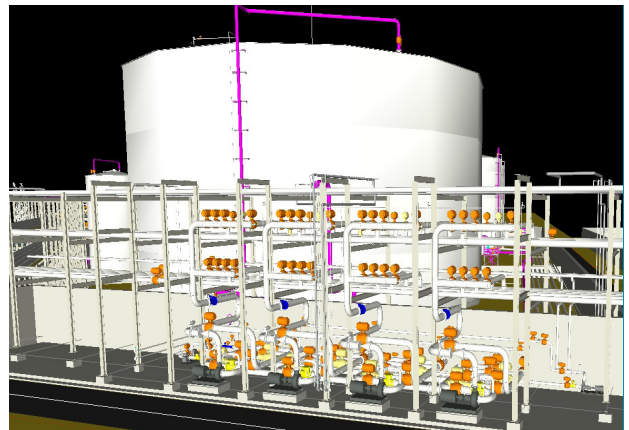
The company developed some tool customization to create its own pipe specs and added some appendages that were not standard in the catalogue. During the construction phase, the biggest advantage became clear: The contractor confirmed that even with a minimum of field welds and a lot of prefab, there were no clashes concerning piping design.

MOVING FORWARD

Temco is expanding the use of CADWorx and increasing the number of engineers trained in the tool. Temco has currently

65 employees, 10 of which have been trained to master CADWorx and were up to speed in five days. Currently, the company is using CADWorx in two of its larger projects and four trained engineers have been outsourced to customers.

The company is currently looking into expanding its knowledge of other Intergraph software like CADWorx FieldPipe, which enables the use of laser-scan and laser-trace technology to capture the real as-built, in addition to SmartPlant SPOOLGEN for automatic generation isometric spool drawings for construction.



ABOUT INTERGRAPH

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Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation and data management of plants, ships and offshore facilities.

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