



Badger Company B.V. selects CADWorx® to assist growth

Risky business.

Starting of a design and engineering firm based in Western Europe in the current economy may seem like a risky business especially with many companies looking to outsource their design work to low cost engineering areas like India or China. This assumption might be correct if the fledgling engineering company did not think that it could also compete on price and win on quality against those markets. The ability to deliver at the right price and provide the quality that would ensure repeat business, were the goals, and the eventual reasons, for the current success of The Badger Company B.V., the subject of this success story.

A fresh solution.

The Badger Company knew what it needed to compete – a unique proposition that it alone could offer its potential clients. They also knew that price pressures had forced engineering costs down (causing some companies to even take on business at a loss) and that outsourcing was now being seen as an option. But, even though outsourcing was considered, it was not viewed as ideal due to the difficulty of day-to-day managing of those projects through multiple time zones, large distances and tight project timescales. It seemed for outsourcing to work effectively, each company would have to run a subsidiary in these low cost centres – an unwanted overhead and burden for the company. To win business in the market The Badger Company, decided to that its unique proposition to the market would need to be formulated in a special way that would deliver the price, quality and flexibility that the market demanded. The company decided to set up an integrated operation consisting of two offices, one in The Netherlands and the other in Romania. The head office in The Netherlands was to handle project management, engineering and sales, and the Romanian office was to be staffed with high quality engineering and design disciplines. The scene was now set for a Western European company with proven project skills combined with excellent design and engineering capabilities of Eastern Europe, to service owner operators and support large engineering companies in the oil and gas, petrochemical, fine chemical, pharmaceutical and food and beverage markets. And, they could do this at a price that would eliminate the need for potential clients looking outside of Western Europe.

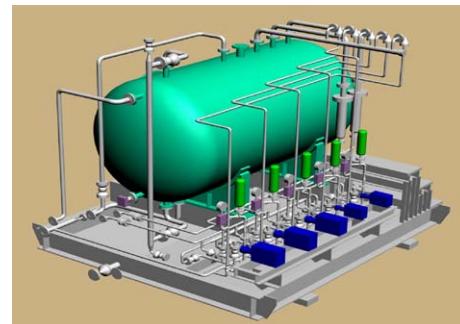
Making the right impression.

The Badger Company realized that as a new kid on the block, they had one chance to make an impression with a new client and one chance to grow a new client into a regular one. "If we are to do this right, then working without plant specific engineering and design tools was not an option," explained Robert-Jan Dubbeldam, The Badger Company's owner and Managing Director. He continued, "The basis of our operation is to produce speedy but error-free engineering and design projects and to work on those projects as if we were sitting next to one another or, worst case, just down the hall!" The people employed at The Badger Company had many years of experience in some of the worlds best known engineering design firms, so they knew what they wanted but, just as importantly, they also knew what they did not want. "The idea of having a complex plant design system that needed to be treated with kid gloves would not fly," said Dubbeldam, "therefore, our needs were for a multidisciplinary solution that our designers could use and one that was suitable for small to medium-sized projects that entailed mechanical, civil-structural and piping components." The company needed a solution that would give them the quality of output that they required but would be easy to implement and use. It also had to remove the need for a dedicated administrative staff to keep it up and running. The Idea was to save money and not make managing the tools a job in itself. Just as their clients needed the bottom line in efficiency and quality, so too did the company if they were to deliver on their promise.

Ensuring that the solution is not the problem.

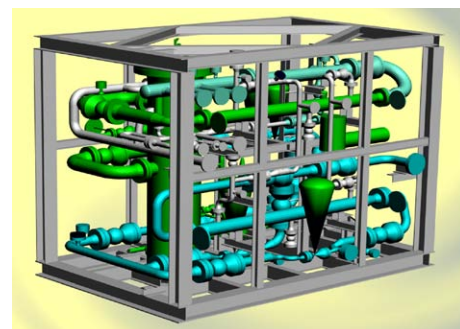
"We looked at many systems," said Dubbeldam, "with none of them really meeting our needs. In Romania our search led us to an enthusiastic and skilled local representative of the Intergraph® family of products. He and his team took the time to show us what CADWorx Plant Professional could do-which was impressive-but what really was surprising was its trouble-free installation, setup and ease of use. We were sold within an hour." What also helped in the selection of CADWorx was that everything needed for effective plant design was included in one integrated bundle. Piping, structural steel, equipment and automatic fabrication isometrics, plus walkthrough and collaborative tools were all included.

Easy to use



"...The idea of having a complex plant design system that needed to be treated with kid gloves would not fly."

Integrated software



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This meant there would not be any hidden costs in deploying what they needed to get the job done. Another key factor in the selection of the CADWorx line of products was its compatibility with Intergraph's engineering products such as CAESAR II for pipe stress analysis and PV-Elite for pressure vessel analysis. The Badger Company saw this link between design and engineering as a vital piece of the puzzle in the creation of a seamless information backbone between their two offices. "Of course these great features would not be worth much to us if the package did not come complete with easily customizable US and European fitting libraries, this helped us greatly in being able to use the product straight out of the box," said Dubbeldam.

Getting their first start.

The Badger Company had barely gotten office furniture and phone systems installed when they landed their first contract for a fuel gas skid that was destined for installation on an offshore platform in the North Sea. The company's plant design system was now going to get its first taste of action, and, even though this was not a large initial job, getting it right was of paramount importance as The Badger Company knew that doing so would lead to repeat work. The project deliverables seemed like a perfect fit for CADWorx, including a 3D model; layout and detail drawings of piping, structural, equipment and support systems and fabrication isometrics – all on the AutoCAD platform-plus bills of material/material take offs (BOM's/MTO's). The client's conceptual package included P&ID's, basic specifications and 2D layout drawings. One thing that became immediately apparent was that the proposed piping and equipment would be a very tight fit into the allotted space. It was obvious that 3D was the way

to go and that there would be many design revisions along the way. This small skid consisted of structural steel and 3 pieces of equipment. The piping was to six different piping classes and five different sizes all of which were stress sensitive. As this was going to be a tight design and the finished skid was to be shipped offshore, it had to be right the first time. Just squeezing everything in was not an option Maintenance, operations and existing equipment at the installation location all had to be taken into account. "We now knew what we had to do, so the biggest challenge was to get up to speed and become productive. The participation of Intergraph's Romanian representative was key," said Dubbeldam. "They became part of our team for initial hand holding at the start of the project, and, within a few days, we were up and running."

First delivery.

The conceptual model to prove the design was completed in only two weeks along with a preliminary BOM for estimation purposes and a stress analysis of all lines. "The fact that all of the skid lines had to be analyzed for stress did not make our task any simpler," said Dubbeldam. "If it had not been for the bi-directional link between CADWorx Plant Professional and CAESAR II, we would never have finished this job so quickly. To be able to seamlessly pass the piping design to the stress engineer and then pass changes or recommendations back to the designer saved us untold hours and, I am sure, many errors." As the project progressed past the conceptual stage, changes and refinements to the design remained a regular feature of the process. The Badger Company thought this project was a good test of their people and the CADWorx package. Dubbeldam

says "CADWorx allowed our designers and engineers to handle project changes quickly and accurately. In many cases we could return a revised model with updated drawings to the client in less than a week and sometimes even shorter." All in all, the way that the project progressed helped us convince our client of our capabilities and quality of work by consistently delivering on time and by supporting them from conceptual design all the way to manufacture."

Proof of the pudding.

Now that the module was complete and material orders placed, the project moved to the manufacturing stage. This is the time where the capabilities of the engineering and design group and the tools that they had placed their faith in would prove themselves. The skid was contracted to be built in two sections with the steel and the piping fabrication going to different construction firms after which they would be delivered to a workshop at a third location for final assembly. Except for some undocumented equipment changes everything went in smoothly with zero clashes. As a result of this project's successful outcome, The Badger Company still does contract work for this client and now has many more successful projects under its belt, therefore meeting all of the goals this fledgling company set for itself at its inception.



Fern is a leader in CAD/CAE solutions for the Power, Process and Petrochemical industries. It offers its customers progressive business solutions through powerful technology products and services. Fern distributes Intergraph® engineering software, including CAESAR II®, the world's foremost pipe stress analysis software, throughout Western Europe.

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