



"I want to use this as an opportunity to express my tremendous satisfaction with the program as it has saved a lot of time and frustration both in the design office and in the field."

Tony Fernandes, Chief Piping and Layout Engineer at BBS

## PRODUCT INDEX

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# Bilfinger Berger Services reduces project costs 60% using CADWorx

Bilfinger Berger Services (BBS) Pty Ltd, Australia, a specialized engineering and asset management contractor, was chosen as a designer for the third phase in the Botany Port Terminal Expansions project for Vopak Terminals in Sydney's port Botany expansion project. Formed in 1975 with the merger of three construction companies, BBS has a history that dates back to 1880. Today, the company offers engineering, construction, operations, maintenance, asset management services, automation systems and electrical switchgear products for power, mining and minerals, chemical and process, telecommunications, oil and gas and other industries.

## Australia's largest port project in 30 years

The Botany Port project, said to be one of the largest port undertakings in Australia in the last 30 years, is expected to double its current US\$50 million volume during the next 20 years. BBS was selected to provide the design, supply and installation of the Botany Terminal B3A expansion for five additional fuel storage tanks, each 24m high with a capacity of 78,300 cubic meters, that will be used for a variety of fuel products.

## Automation and intelligence addressed challenges

Prior to this project, BBS had used the CADPipe piping software, which required them to depend heavily upon the experience of its piping drafters to drive the program. The company lost a few of these experienced drafters in quick succession and was thus exposed to potential failure due to the program's limitations. "That's when we decided to acquire a few packages of CADWorx software," said Mr. Fernandes, Chief Piping and Layout Engineer at BBS, "and this saved us because it could be loaded and used easily by any of our piping design engineers to fill in the gaps, something that was not possible with CADPipe." CADWorx allowed BBS to successfully customize piping isometrics using Isogen, without the need for any manual input. All of the service information on the isometrics was automatically extracted from the piping database.

## Improving project collaboration speeded design and review processes

The complexity and workload of the Botany project called for an improvement in project collaboration. CADWorx Equipment, CADWorx Steel and CADWorx Plant tools helped BBS to prepare collaborative plant modules for easy internal reviews among the various disciplines and the client. "These modules were not only convenient to pass on information for civil and structural detail design but also to issue piping isometrics for shop fabrication and site installation," explained Fernandes. "We could then issue bills of material for procurement as required, such as for field run piping." And, by leveraging the CADWorx interface with CAESAR II for pipe stress analysis, BBS was able to perform pipe support modeling and detailing, develop piping arrangement drawings from the model and export piping model for stress analysis.

## Reducing project costs by 60% without loss of accuracy

Overall, CADWorx allowed BBS to reduce the piping engineering and drafting budget without any loss in the accuracy of details. "Unlike the situation with CADPipe, CADWorx helped us model all pipelines on a project in one drawing file or a few sub files, reducing the number of x-refs (cross-reference files)," added Fernandes. "For this Botany Port project, piping isometrics were issued two months ahead of schedule and project costs were reduced an estimated 60%, without any loss of accuracy."