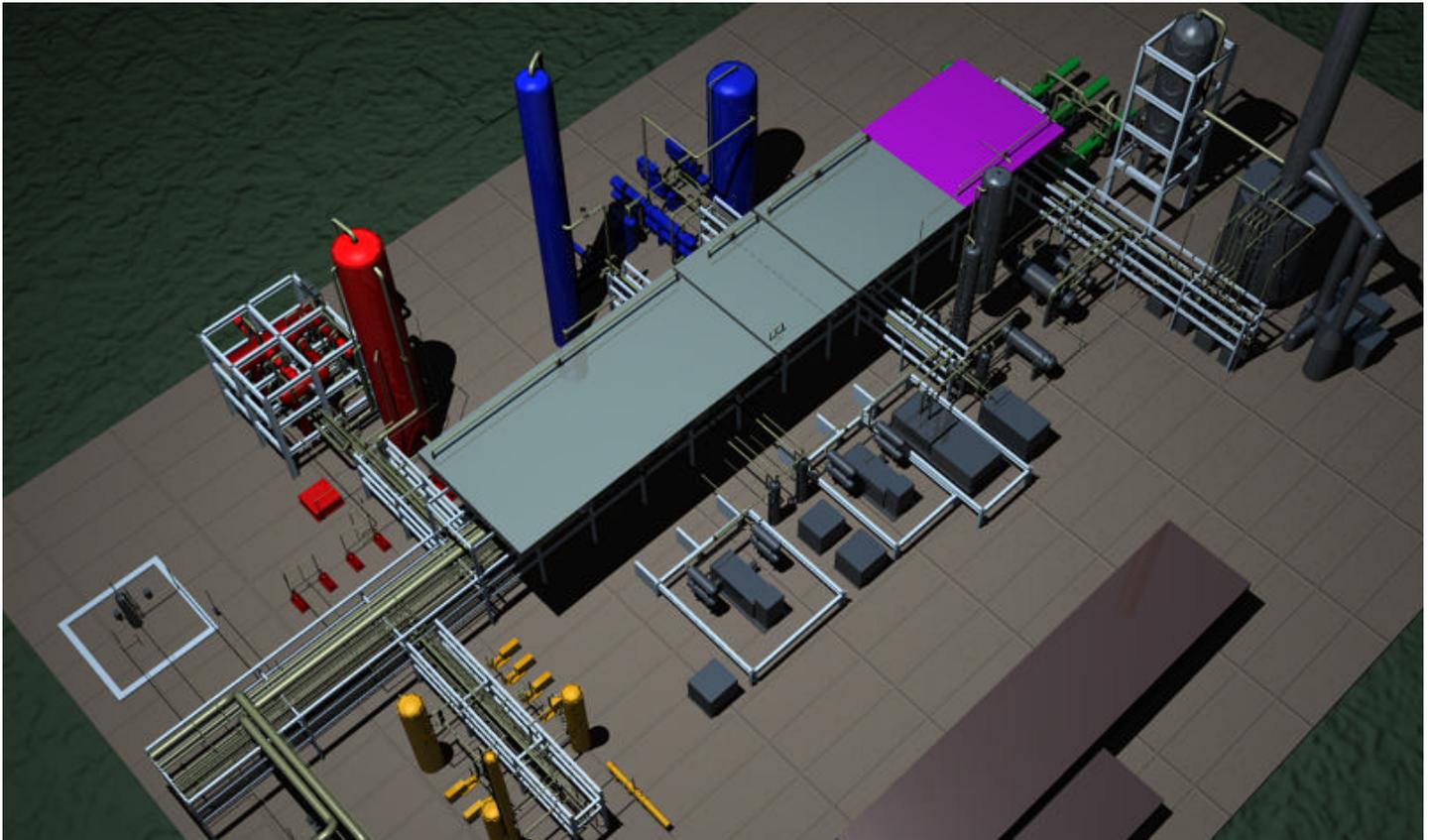


Design Power Success: *Fluor Corporation*



This Fluor Corporation 3D plant model was created in record time by automatically routing pipes.

Re-engineering the Work Process

Fluor Corporation, one of the world's largest engineering, procurement, construction and maintenance firms, contracted Design Power, Inc. to develop a software package that would re-engineer significant parts of its front-end engineering and plant design process.

PlantWise™, Design Power's software solution, was chosen and integrated into Fluor's front-end design work processes.

The Solution

PlantWise captures plant knowledge and provides:

- Rapid plant concept modeling with automatic pipe routing.
- Immediate "What-If" layout evaluations to generate the most optimal design.
- Early plant visualization to secure client buy-in.
- Improved cost estimates.

PlantWise is a key component to the Fluor front-end workflow process, and is used in offices worldwide to generate bid packages, optimize layout and produce accurate material take off reports.



John McQuary of Fluor provided management direction

Partners in Productivity:

Fluor Corporation

and



Plant Conceptualization

Of plant costs, 80% are committed within the first 20% of total design time. To avoid huge cost penalties, front-end engineering needs to be quick and accurate.

With this in mind, Design Power created a solution that would compress the front-end time needed to find the “optimal” plant layout. The implemented solution, **PlantWise**, greatly improves the speed of conceptual plant modeling and the accuracy of the cost estimates—in a fraction of the time previously required.

Fluor integrated the software and their work process into a package and branded it **OptimEyesSM** to highlight the solution's optimization and visualization capabilities.

Leveraging Experience

Senior layout engineers have the knowledge and experience to visualize a plant layout with only a minimal amount of information. To capitalize on their expertise, Fluor's implementation of **PlantWise** gives these engineers the tools necessary to visually generate conceptual layouts with little more than PFD data.

Optimal Design—Less Detail Time

Before the software revolution, the front-end work process consisted of time consuming “paper-doll” layouts and hand calculation of pipe routes. **PlantWise** accelerates the old process by creating 3-dimensional models and using piper's rules to automatically route pipe and generate material take-off reports. This allows engineers to focus on plant functionality in a model that can be modified now, not in hours or days.

Once an initial layout is generated, variations can be quickly created and evaluated based on pipe quantities, steel costs, the ability to operate and maintain, etc. Additionally, model data can be directly exported to other software packages, including costing or stress analysis programs.

The final **PlantWise** model results in an optimal layout that will reduce detail design hours caused by costly change requests.

Customization

PlantWise's value increases as its knowledge base expands. With the ability to customize equipment libraries, input data, and report output, Fluor has been able to put together front-end models that win design competitions.

Global Endorsements

“We have over 100 **PlantWise** licenses in offices world-wide and **OptimEyes** has become one of our reference systems used on the majority of capital projects.” Frank Schultz, **OptimEyes** Program Manager, Aliso Viejo, California.

“It was absolutely a successful project and it led to a win in the design competition for this client. We produced a number of layout options and produced the material take-offs from the optimized plot in a very short time.” Mike Gibson, Piping Department Manager, Camberly, UK.



OptimEyes users in Fluor's Houston office: Kelly Walker, Ann Tran, Jimmy Do, Jaime Alanis, Gene Kunkel, William Brod, Larry Werland, Kevin Cox, Peter Ho, and Joel Strang.

Design Power, Inc.

With its Design++ technology, Design Power is the only knowledge based engineering solutions provider to capture mission-critical expertise.

The PlantWise suite of products is an integrated piping design tool that allows designers to rapidly layout and model plant equipment, nozzles, pipeways, and pipe routes, all in 3D.

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