



CASE STUDY

Techin Process Technologies switches to Octave's Forte 3DWorx solutions to gain accuracy and ease of use

Key facts:

Company: Techin Process Technologies Pvt Ltd

Website: www.techinpro.in

Employees: 500

Industry: Chemicals & Petrochemicals

Country: India

Octave products used: Forte 3DWorx (*CADWorx Plant Professional*), Aspect Pipe Stress (*CAESAR II*), BricsCAD

Identifying goals

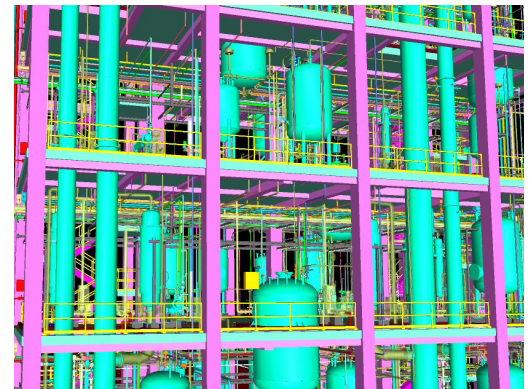
Techin Process Technologies Pvt Ltd, based in Mumbai, India, is a design and engineering services company supporting the delivery of various types of process plant design projects for its clients. The company was selected for a brownfield project to design a distillation complex for a chemical plant in India.

Techin required solutions that would enable it to produce highly detailed designs while supporting collaboration between civil, piping and mechanical design teams working on the project. The client emphasized the need for safety to be engineered into the design and a wish to avoid construction errors that would impact the cost and delivery time frame of the project.

The project's goal was to create a detailed 3D design of the distillation complex, including distillation columns, a cooling plant, heater exchangers and reactors, all within a nine-month time frame. This upgrade would allow Techin's client to increase chemical production at the plant.

Overcoming challenges

The key challenge for the project was ensuring that the safety standards of the design were maintained, and that the project would be completed with minimal errors. With this in mind, Techin needed software solutions that would enable it to produce

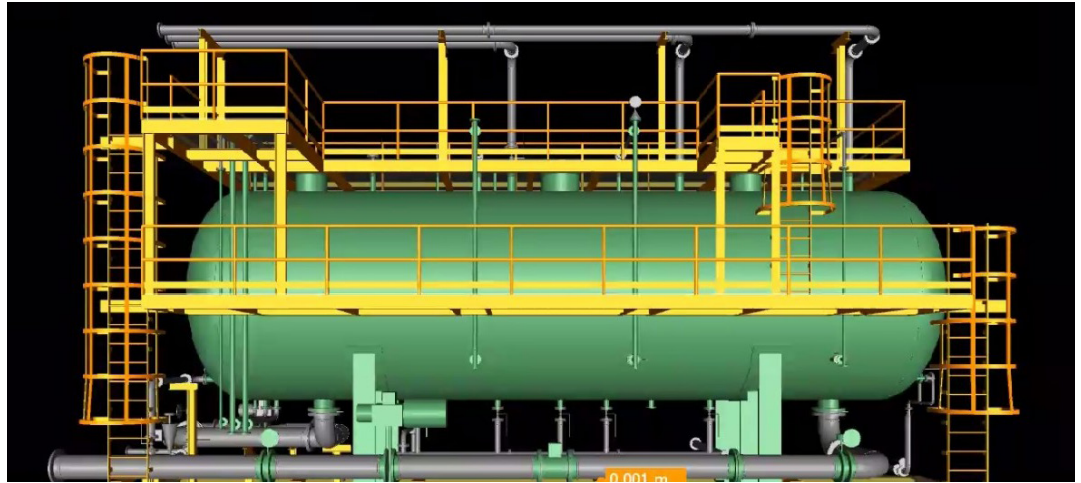


accurate, high-quality designs. Because of the tight time frame, Techin needed solutions that would easily interface and work together, thereby increasing productivity and enabling on-time project delivery. User-friendliness and cost were other key considerations that affected its selection process. After evaluating different solutions, Techin felt it was time to make the switch from other CAD solutions to Forte 3DWorx from Octave.

Already being familiar with other CAD software, switching to Forte 3DWorx was a smooth and swift transition. Techin's designers and engineers attended short, tailored training courses to gain initial familiarization. The team found that it was able to quickly adopt Forte 3DWorx as a replacement solution and begin its work in a matter of days. The ease of use, broad capabilities offered and flexibility of the Forte 3DWorx software also helped save both time and resources during the project.

Key benefits:

- Completed the database and 3D model independently
- Translated the 3D model of pipelines to Aspect Pipe Stress to conduct the piping stress analysis
- Made detail design reviews more intuitive and efficient
- Increased accuracy from 90% to 95%
- Reduced modeling labor hours by 20%



An example of chemical equipment and structure platform designed in Forte 3DWorx.

Realizing results

The project began with the conceptual design. This involved using Forte 3DWorx and BricsCAD to develop the initial 3D design. Techin's client required a design with minimal construction errors that also met safety and industry standards. These factors were taken into consideration for the distillation complex design.

Techin had regular meetings with the client to talk through the process, requirements and to review the conceptual design, to gain feedback and refine details.

Detail design of equipment and piping was created in Forte 3DWorx. The client provided the process design and piping specifications to Techin's design team. The design detail included modelling of small-bore piping down to 1" in size. Civil graphical design electrical cable trays and instruments were also included in the 3D design.

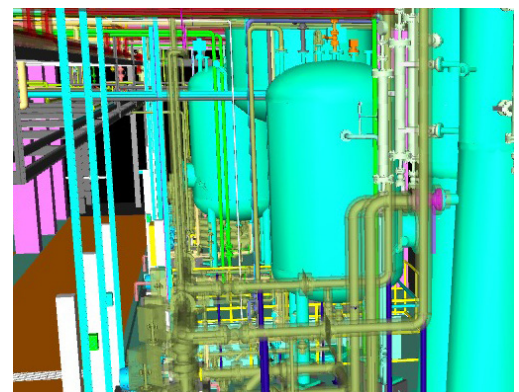
Stress analysis was the next stage of the project. The detailed analysis was carried out in Aspect Pipe Stress, with files seamlessly transferred from Forte 3DWorx for analysis.

By using Aspect Pipe Stress, Techin could run the tests in accordance with more than 35 international piping coding standards and

equipment guidelines. After the stress analysis, some route changes were required, and remodeling was performed in Forte 3DWorx Plant. The finalized piping design met safety and code stress requirements.

Post-construction, based on site mark-ups, Techin raised the 3D design model to 'As-Built' status for the client. The distillation complex's design was completed on schedule, meeting the deadline and the client's demand for an accurate and safe design to be produced for their plant.

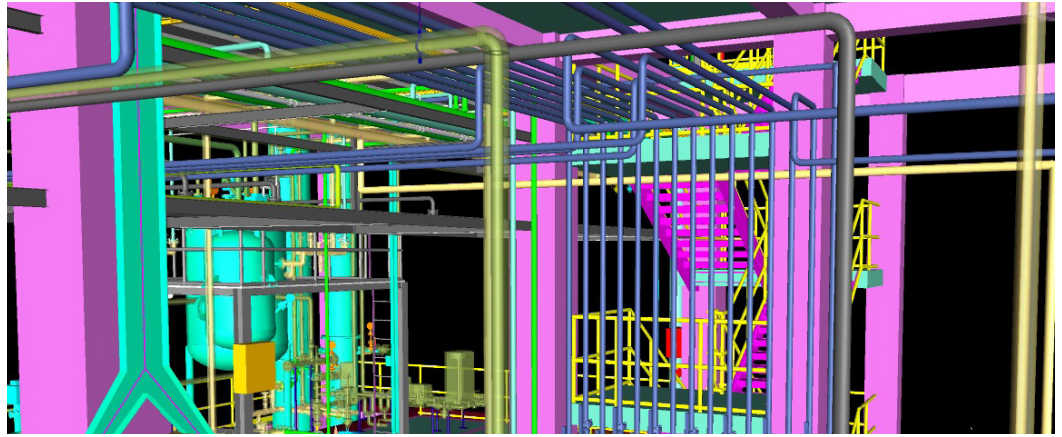
Without Forte 3DWorx, more collisions in the design can occur, adding to expenses, and the bills of material would be less accurate. The design review meetings would typically uncover more errors resulting in costly rework, causing customer satisfaction to suffer.



An example of the chemical process 3D piping designed in Forte 3DWorx.

“The ability to produce highly detailed designs combined with a short learning curve enabled our team to hit the ground running and start working immediately. Efficiency and accuracy are key to our clients and utilizing Octave solutions enables us to fulfill this requirement.”

Johnson George
Director, Techin Process
Technologies Pvt Ltd



An example of a 3D model with multiple disciplines designed in Forte 3DWorx.

Moving forward

Techin chose Octave solutions because of their user-friendliness, ability to create detailed, accurate designs and integration capabilities of Forte 3DWorx and Aspect Pipe Stress. It was able to carry out the detailed design of the client’s chemical distillation complex quickly and accurately, minimizing errors and ensuring safety compliance.

By creating error-free designs, Techin reduced re-work required in the design and construction phases of the chemical distillation complex project. This ensured the clients’ satisfaction by meeting deadlines and providing an economical design.

The most significant benefit has been time savings achieved through the optimization of work processes during the project. The integration and flexibility between Octave solutions ensured the accuracy and productivity of processes for the team and Techin’s client. During the project, Techin found that when it did require additional support, Octave Support answered quickly.

Moving forward, Techin will continue using Octave’s Forte 3DWorx, Aspect Pipe Stress and BricsCAD solutions in its upcoming projects to produce cost conscience projects with accuracy and ease.

“Switching from other CAD solutions to Octave’s Forte 3DWorx and Aspect Pipe Stress was an easy decision. Integration, productivity and user-friendliness are three key benefits we gained by making the change to Octave solutions.”

Johnson George

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we’ve partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what’s possible from day one onward.

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