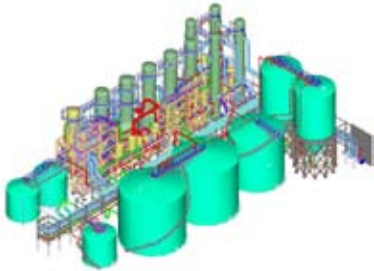


# CASE STUDY



## CADWorx & Analysis Solutions



"CADWorx helped us reduce engineering man-hours by 50% while also eliminating the need for independent support modules for pipe support or structural design."

Thiagarajan Arunachalam, CEO at  
Mech-Tech Projects

### PRODUCT INDEX

Intergraph® CADWorx® Plant  
Intergraph CADWorx Steel  
Intergraph CADWorx Equipment  
Intergraph CADWorx Design Review  
Intergraph CAESAR II®

### INDUSTRIES SERVED

• Pulp and Paper



### CADWorx and Analysis Solutions, Intergraph Process, Power & Marine

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## Mech-Tech reduces man-hours by 50% using Intergraph CADWorx Plant Professional

### About the company

With offices in India and the U.S and operations worldwide, Mech-Tech Projects (Mech-Tech) provides design and engineering services to diverse sectors such as pulp and paper, water treatment, power, petrochemical, and oil and gas. The firm's engineering disciplines encompass piping, civil and structural, electrical, and instrumentation for such well known clients as Metso, Babcock, Acciona, Isolux, and Sener.

### Designing black liquor evaporation plant expansion

HPD Process Engineering S.A., Spain selected Mech-Tech for a black liquor evaporation plant expansion project in Indonesia. Black liquor is an energy bi-product of the pulp and paper process that these facilities often use to augment their energy requirements. It is an environmentally desirable carbon-neutral biomass-based fuel that produces no net increase in carbon dioxide. The plant has a 900-ton-per-hour, multistage evaporation capacity that applies steam through three parallel process final evaporators. The system then feeds spent steam backwards through the system through five evaporator stages, a process that reduces the steam and energy use by up to 80%. During the 16-week project, Mech-Tech provided complete detailed engineering including for mechanical, piping, cable trays, pipe racks, operating platforms, walkways, and control and instrumentation. Piping involved 400 pipelines with a length of 5000 meters, with 500 supports. The project also included design and related work for tanks, structure, foundations, civil works, and electrical.

### Addressing complicated piping

A major challenge was to fit the large diameter pipes, operated at high temperatures, within a small space in the evaporator bodies. Pipe diameters ranging from 15mm to 2,100mm, had to fit within a 105m by 74m space.

### Producing project deliverables faster with CADWorx and CAESAR II

Using Intergraph CADWorx Plant for this project, Mech-Tech successfully developed piping layout plans and sections of piping isometrics; bills of material for pipes, pipe supports and pipe fittings; and drawings for nozzles, tanks, vessels, platforms, walkways, ladders and stairs. For flexibility analysis, Mech-Tech used Intergraph CAESAR II which has bi-directional links with CADWorx. This coordination between design and flexibility analysis ensured the optimum design for the available space.

### Enjoying ease and flexibility of CADWorx

"CADWorx is very user-friendly and requires less lead time for engineers to become productive," explained Thiagarajan Arunachalam, CEO at Mech-Tech. Using CADWorx, Mech-Tech modeled supports and output deliverables directly in .dwg format. The integration between CADWorx Steel and CADWorx Plant Professional made modeling of pipe supports easier and also provided quick and export to and import from CAESAR II without any additional interface.

"CADWorx helped us reduce engineering man-hours by 50% while also eliminating the need for independent support modules for pipe support or structural design," he added. "We were able to provide a cost effective solution to the client by using Intergraph CADWorx Plant."

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