



## FACTS AT A GLANCE

**Company:** L&T Haevy Engineering IC.

**Description:** Larsen & Toubro's Heavy Engineering IC (L&T) designs, engineers and manufactures equipment and systems for clients in the oil and gas, refinery, cracker, coal gasification, petrochemical, fertilizer, and related sectors.

**Employees:** 38,000

**Industry:** Chemical & Petrochemical, Refineries & Fertilizers

**Country:** India

## PRODUCTS USED

- Intergraph PV Elite

## KEY BENEFITS

- Data accuracy
- Time saving
- Integrated workflow
- Improved safety

## L&T'S HEAVY ENGINEERING IC SUCCEEDS WITH INTERGRAPH® PV ELITE® IN THEIR MULTI-PROJECT ENVIRONMENT

The flexibility and accuracy of Intergraph® PV ELITE® helps L&T Haevy Engineering IC to successfully complete many international projects with ease and confidence.

## IDENTIFYING GOALS

Headquartered in Mumbai, India and serving clients in 40 countries, Larsen & Toubro's Heavy Engineering IC (L&T) designs, engineers and manufactures equipment and systems for clients in the oil and gas, refinery, cracker, coal gasification, petrochemical, fertilizer, and related sectors. This includes thermal and mechanical design, engineering and stress analysis, procurement, project management, logistics and specialized services. Leveraging Intergraph PV Elite, L&T has successfully designed pressure vessels and heat exchangers for refineries and fertilizer and petrochemical plants plus of related equipment and facilities.

## OVERCOMING CHALLENGES

L&T has found PV Elite to be versatile on a wide range of projects, including designing the largest ACN Reactor for a petrochemical project in Thailand, an ammonia converter vessel with 250 mm shell thickness for a fertilizer plant in Thal, India, and a 460 mm thick tubesheet for the synthesis loop waste heat boiler for a fertilizer plant at Sohar, Oman.

To ensure an efficiently designed project, L&T customers often specify non-code-requirements. "With PV Elite, we can complete full vessel designs, even those including custom codes, eliminating the need of other supporting software or custom spreadsheets for the calculations," explained Dhanaji Jadhav, manager of the Design and Analytical cell at L&T HE. "PV Elite provides everything, including the design of non-pressure parts such as trunnions and base rings."

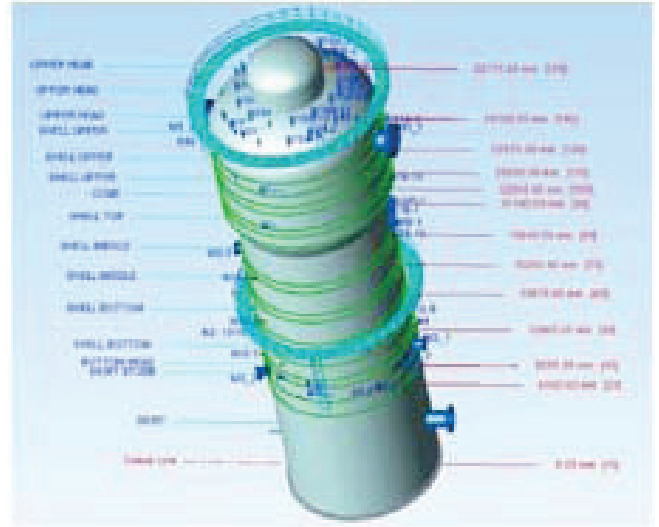
Estimating weight and center of gravity accurately are critical for transportation and handling. "We found that PV Elite calculates actual weight and center of gravity more accurately, which allows us to eliminate the time-consuming practice of manual calculations," said Jadhav.

## REALIZING RESULTS

In order to complete projects on time, bills of material must be placed as early as possible. This requires preliminary design approval from the client and third-party inspecting agencies. Because PV Elite is accepted across wide industry sectors, L&T can share the same files with both customers and inspecting agencies, expediting these approvals and speeding up the orders.

## MOVING FORWARD

PV Elite's user-friendly interface allows new engineers to learn and become productive within one week, with the department working at peak capacity. This allows L&T to evaluate 400 or more designs annually, and accurate calculations and quick iterations during design has helped them reduce the design cycle time substantially. When developing proposals for a competitive bidding, timing is also critical. "Our engineers are able to carry out iterations quickly and submit the bids on time," added Jadhav. "Faster design helps us submit more bids and increase our client orders."



## ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data to make processes and infrastructure better, safer and smarter. The company's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation and data management of plants, ships and offshore

facilities. Intergraph SG&I provides geospatially powered solutions to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is an independent subsidiary for SG&I's U.S. federal and classified business.

Intergraph is a wholly owned subsidiary of Hexagon AB, (Nordic exchange: HEXA B) and (Swiss exchange: HEXN). For more information, visit [www.intergraph.com](http://www.intergraph.com) and [www.hexagon.com](http://www.hexagon.com).

