

CASE STUDY



CADWorx & Analysis Solutions



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Donna Burroughs, CAD/Engineering
Technical Instructor at Lee College

PRODUCT INDEX

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Lee College students develop detailed as-builts for Pilot Plant using Intergraph CADWorx Plant

Established in 1934, Lee College (Lee) in Baytown, Texas was founded to provide comprehensive technical/vocational education. Today, over 5,000 students are enrolled in academic, technical, and continuing education programs each semester. As one of the fastest growing community colleges in the nation, it ranks sixth nationally in degrees in science and technologies.

Training future engineers with Pilot Plant

Constructed in the early 1990s by Kellogg, Brown & Root (KBR) and used to train hundreds of process technology and instrumentation students, the Pilot Plant facility at Lee is used to give students field experience in process technology, field bus, instrumentation, electrical, process piping design and engineering technology programs. The Process Piping Design Program has been using CADWorx Plant and P&ID Professional to develop and integrate challenging real-world experiences into the classroom.

Revamping the Pilot Plant with partner ExxonMobil

Lee's Process Technology Pilot Plant had been in serious need of repair for some time. The school's industry partner and neighbor, ExxonMobil, first needed a set of drawings of the existing plant to begin the engineering phase, yet no current drawings existed. The Process Piping Design faculty decided to use Intergraph CADWorx Plant Professional to do the task in 3D. Originally begun as a classroom field experience, the project expanded. "Our Process Technology Department initially asked us for an accurate and current set of P&IDs, but the request grew into involvement in the overall plan to upgrade the pilot plant," said Donna Burroughs, CAD/Engineering technical instructor at Lee. The project included eight pieces of equipment including a distillation tower, re-boiler, exchangers, and tanks plus over 800 feet of pipe. The facility revamp required a full-set of as-built drawings, requiring many man-hours, yet no student was ever paid or given class credit for the project.

Challenging students with real-world tasks

Students, all new to the task, first had to ensure the model was correct and current. The task took the students additional weeks due to their other school obligations. "CADWorx allowed us to easily integrate information gained from outdated blue-line drawings, laser-scanned point cloud data, and on-site field dimensions," Burroughs explained. "The process produced a model that was much more accurate than we thought possible."

Using Intergraph CADWorx Plant and P&ID Professional the students developed accurate P&IDs, piping plans, sections and details, and isometric, instrument, electrical and structural drawings, plus an outstanding 3D model of the facility.

The group found that extracting drawings from the model was a much smoother transition compared to using just AutoCAD. "We loved the CADWorx annotation features and the ease and efficiency in which we were able to extract the drawings," Burroughs added. "With CADWorx, we eliminated all annotation nightmares. When doing the piping plans and sections, CADWorx helped tremendously with identifying line numbers, elevations and equipment names," Burroughs concluded.