



Syrup System

Intelligent plant design drives efficiencies at Holland Applied Technologies

Holland Applied Technologies drives industry trends

Holland Applied Technologies designs and builds turnkey skid-based processing systems as well as process subcomponents primarily for the biopharmaceutical manufacturing industry. The company has taken advantage of and helped drive a trend in this industry to buy and install processing systems in the form of pre-built modular building blocks that can be bolted together. This eliminates the need to assemble complete systems at the manufacturing site.

Need to improve on AutoCAD design capabilities

In the past, Holland used native AutoCAD to design these modules. The AutoCAD drawings had no intelligence, so isometric drawings (ISO) and bills of material had to be created item-by-item, which added a considerable amount of time to the design process. Routing pipe in AutoCAD was difficult because it required piping engineers to imagine elevations and maintain consistency with other drawings. Frequent errors created the need for rework during manufacturing, which drove up costs. Bills of material were not reliable, which meant that extra material had to be ordered, and sometimes scrapped, when the job was done.

Single 3D model helps design coordination

"We looked at several different 3D plant design solutions and selected CADWorx Plant Professional because it was so much easier to use and less expensive than the other alternatives that we looked at," said Dan Gratie, Project Engineer with Holland Applied Technologies. "With CADWorx, we still have the ability to insert our own blocks, but now they have intelligence built in. Their intelligence enables us to later produce ISO's (isometric drawings) and bills of material that perfectly match the original plant model, and do so with a minimum of additional effort," Gratie explained, "so instead of revisiting the design once for the layout, a second time for the ISO's and a third time for the bill of materials, we just create a single model."

Design times cut by two-thirds

The key advantage of the modular approach is that the process equipment is built at the same time as the building, which greatly improves the plant production process. "Streamlining the design process makes it possible for our designers to do in one month what used to take two to three months," Gratie continued. "The ISO's and bills of material are accurate though sometimes will require some modifications, particularly to meet the special requirements of the biopharmaceutical industry," Gratie added.

Accurate designs and bills of material cut fabrication costs by 10%

"We also use CADWorx to visualize the design and avoid clashes, which helps head off manufacturing problems, and our bills of material are drawn directly from the 3D model, so they are now much more accurate," Gratie continued. "The resulting reduction in rework and scrap material has reduced our fabrication costs by 10% since we began using CADWorx." Holland Applied Technologies has recently begun using CADWorx Steel Professional and expects to obtain additional savings by using these same methods to design steel support structures.

"We find it easy to modify the CADWorx database, such as when we add models of the specialized equipment used in the biopharmaceutical industry. When we run the bill of material, it perfectly matches the descriptions in our inventory."

"We have found that designers who are familiar with AutoCAD can easily pick up and learn CADWorx, becoming highly productive in a short period of time."

PRODUCT INDEX

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