

SIEMENS

Ingenuity for life

Industrial machinery and heavy equipment

Planet Dryers

Industrial specialist uses Solid Edge to design customized food processing machines quickly and easily

Product

Solid Edge

Business challenges

Utilize legacy design data
Illustrate machines measuring up to 40 meters
Bid for larger projects

Keys to success

Create sheet metal patterns easily
Flexible and intuitive for new users
Share CAD files with suppliers and customers

Results

15 percent off design time
15 percent cut in design costs
Synchronous technology enables quick design changes
Large assemblies easily manipulated
Photorealistic renderings support sales
Standardization significantly increases efficiency
Easy customization improves effective product delivery
Greater overall process efficiency improves competitiveness
3D expertise underpins business growth

Siemens PLM Software solution supports business efficiency and growth

Achieving the perfect texture and taste

The removal of humidity is a key stage in the production of foods such as breakfast cereals and savory snacks. Without an effective drying process, there would be no satisfying crunch. In addition, food with moisture left in it will have a shorter shelf life – crisp breads, pasta and pet treats must be stable. To ensure that food items dry out evenly to the correct level, there has to be complete control of warm airflow.

Planet Dryers specializes in this area, designing customized drying, cooling, roasting and cutting machines that are used by large well-known companies producing globally familiar brands. The largest unit is more than 40 meters long, with even the smallest models measuring at least six meters. The company offers a range of airflow systems with single-pass, multi-pass and multi-stage conveyor band dryers, and conveyor drives of variable speed.

Hygiene is, of course, critical. Machines from Planet Dryers are constructed in stainless steel, with a range of product spreading options and the ability to handle flavoring and coating. As such processes can result in a sticky residue, it is essential that machines can be thoroughly cleaned.



Each machine is designed as a framework covered by sheet metal, which has to be shaped at various junction points and cut out where parts such as gas burners are bolted on. "Our products are essentially conveyor belts with warm air blowing through them and one of the critical challenges is containment of the product," explains John Cresswell, engineering manager at Planet Dryers. "We have to manipulate sheet metal to create effective side guards and transfer chutes." It was this specific design requirement that led Planet Dryers to adopt Solid Edge® software from product lifecycle management (PLM) specialist Siemens PLM Software.

Flexibility and ease of use

Following the delivery of a particularly large order that indicated the potential for future international growth, Planet Dryers decided to review its overall design process. As a



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Daryl Collins
Designer
Planet Dryers

result, the company established an in-house design team and began to assess the engineering design software on the market.

“I was not familiar with Solid Edge and was quite surprised by how well the software met our needs,” says Cresswell. “In contrast, the software we’d been using previously had clear limits. When we gave some legacy data to a Majenta PLM engineer, he used the sheet metal feature and synchronous technology to show us how we could have saved hours on an earlier job.”

Solid Edge was implemented in January 2015. “We received really helpful and proactive support from both Majenta PLM and Siemens PLM Software,” comments Planet Dryers designer Daryl Collins. “Solid Edge is very intuitive for new users and

I was able to get to work immediately designing a triple pass dryer. Solid Edge is much more flexible than the software we had before. I can relate faces to each other or constrain angles yet still manipulate a plate without losing form.”

The flexibility to re-use and manipulate data

For Planet Dryers, the ability to utilize historical design data was a fundamental requirement. Solid Edge is fully compatible with any other format; it also provides the option of synchronous technology. Collins explains that he began by looking at old 2D designs and remodeling them using Solid Edge. He later attended a Majenta PLM course on synchronous technology. Collins notes, “It was exactly what I needed because I originally found the concept of synchronous technology intimidating. Now I use it on a daily basis.

“The flexibility that synchronous technology provides is astonishing. It enables me to accept files from any format, transfer data and amend a design without any reference to its history. It gives intelligence to a dumb shape, allowing me to change or remove attributes. I can, for example, see a circle, identify it as a hole and recognize the size and thickness so I can quickly amend a sheet metal pattern.”

Collins particularly appreciates the choice that Solid Edge offers. “If I know a product is always going to be similar in shape, then I use the ordered approach because we can control aspects of the design very

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Speed and quality

The move to 3D is enabling Planet Dryers to design industrial machines that are effective and economical to run as well as easy to clean and maintain. It is also speeding up the design process. "With Solid Edge, we can quickly convert a design to a flat pattern of parasolids ready for sheet metal fabrication," reports Collins. "Working with large assemblies is also much easier."

A typical lead-time is 16 weeks from order to delivery, with design time accounting for half of that. "I estimate that for each new machine, we've taken 15 percent off the design cycle, that's six business days," comments Cresswell. "The time and resources this frees up allows us to work to a higher level of detail, checking and optimizing to produce a more complete design and a more competitive product. In addition, we can confidently give our customers accurate lead times. We can also rationalize parts, make cutting simpler for our fabricator and minimizing our costs."

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Designer
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clearly by making assumptions, automating processes and locking in definitions. On the other hand, synchronous technology is like working with clay, it allows more freedom during the actual design process. For example, after I'd designed a particular discharge chute, our process engineer advised me to taper the sides. This would have taken two hours in the ordered environment. With synchronous technology, it took one minute."

"Solid Edge makes complex product development much easier."

John Cresswell
Engineering Manager
Planet Dryers



Clearer communication with customers and suppliers

One of the results of designing in 3D is better communication and this is having a beneficial impact. Ian Carter, managing director at Planet Dryers, explains: "We purchase motors and bearings and it is much easier to fit these standard products into our machines because suppliers often give us 3D model files. We can also deliver quite detailed 3D information, such as the location of power outlets, to planning teams who are preparing a factory for one of our machines."

For John Cresswell, one of the major benefits of using Solid Edge is the ability to visualize the end product. "Our renderings are excellent and enable me to give a much better presentation to customers," he comments. Visualization is also important for Carter, who is responsible for sales: "I keep renders on my tablet and laptop and can describe a machine in great detail. For example, I can remove parts to reveal what goes on inside and really demonstrate the thought that has gone into a design. For a customer who is not an engineer, a picture is much more meaningful than a line drawing."



The company now uses renderings as backdrops for exhibition stands. "Because our machines are so big we cannot ever take one to a show and it's difficult to get a good photo of one running," says Carter. "A rendering not only shows the whole thing, it is photorealistic."

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Solutions/Services

Solid Edge
www.siemens.com/solidedge

Customer's primary business

Specialist manufacturer of industrial dryers and ancillary machinery, Planet Dryers serves a wide range of food and industrial markets.
www.planetdryers.co.uk

Customer location

Peterborough
United Kingdom

Partner

Majenta PLM

Efficiency and cost control supports business growth

The company designs 10 to 12 machines each year. "Each customer has a unique process and different requirements, but with Solid Edge our machines are slowly becoming more standardized and modular as we bring more and more of our designs into 3D format," says Carter. "This is giving us greater financial control over costs and we are seeing a 15 percent saving on internal design costs."

Having improved efficiency with the creation of sheet metal patterns, Planet Dryers expects to see a further reduction in cost as it begins to deploy a new application developed by Majenta PLM. Collins explains, "We have started creating DXF (laser profile) files for one of our

fabricators, but at the moment we have to do each one separately. With the new application, we'll be able to select files and run a batch, which will save hours and hours of time. By supplying such comprehensive and precise data, our fabricator will be able to cost the job instantly. This would not be possible without 3D CAD."

Planet Dryers is a growing company. Annual revenue has risen by 20 percent over the past three years and the number of employees has doubled. Carter reports that a recent large win came as a result of the company's ability to design in-house and demonstrate complete control over quality. "Solid Edge makes complex product development much easier," concludes Cresswell. "It is an extremely powerful tool."

"We are seeing a 15 percent saving on internal design costs."

Ian Carter
Managing Director
Planet Dryers

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