

Electronics and semiconductor

Designplan Lighting

Using Solid Edge with synchronous technology to design customized products with speed and efficiency

Product

Solid Edge

Business challenges

Respond to customer requests easily and quickly

Amend standard products with speed

Utilize historical data effectively

Keys to success

Consolidate CAD on one platform

Enable easy learning and sharing

Create master models of all standard products

Results

Increased rate of customized designs from five to eight per week

Reduced 10 to 18 production stoppages per week to four

Accelerated design of customized options

Created master models of three product lines within six months

Reduced time to amend designs by 50 percent

Effectively worked with legacy files

With Siemens Digital Industries Software solution, Designplan saves time and increases rate of production

Lighting that lasts

Electrical equipment sometimes needs to withstand extreme conditions and deliberate attack as well as normal wear and tear. One indicator is the level of protection against mechanical impact; in Europe this is measured in terms of the impact protection (IK) ratings. For lighting products, the standard requirement is a rating of 10, which protects against an impact of 20 joules, or 5 kilograms being dropped from a height of 40 centimeters. Designplan's most robust products are rated much

higher, at 16 IK, which protects against impact of 150 Joules, or 10 kg being dropped from a height of 1.5 meters.

For half a century, Designplan Lighting has been making weather- and vandal-resistant luminaires that have tough bodies, tightly sealed diffusers and tamperproof screws. The company's extra-strong light fittings can be found in airports, train stations, housing estates and secure health care units. Specialist products are available for specific situations, such as custodial settings where care must be taken to prevent harm through the design of smooth rounded surfaces to which a ligature cannot be attached. In underground railway systems, lighting units must incorporate additional anti-fire and anti-smoke features.



Results *(continued)*

Improved innovation in design
using synchronous technology

Improved communication
with intelligent models

Easily retrofitted existing
products

With more than 140 employees and sales in over 20 countries worldwide, Designplan is a leader in using the latest techniques and materials. A pioneer in light-emitting diode (LED) lighting, the company's comprehensive portfolio includes an extensive range of energy-efficient fittings that are environmentally friendly and low maintenance. Part of the Fagerhult Group, it has a modern factory in south London.

A drive to improve efficiency

Designplan makes both standard and customized lighting products, and it was the particular challenge of making customized products that led Designplan to review its use of technology in the development process. Tony Croke, design team manager, explains: "Over the years, the company had acquired multiple CAD platforms, so when we had to quote for a new product we faced a whole series of questions: which existing model was closest to what was required, which package had it been designed in and who was most familiar with that software? Our vision was to consolidate on one package and improve our efficiency."

A demonstration from Siemens Digital Industries Software solution partner OnePLM convinced the Designplan team that Solid Edge® software with synchronous technology was the way forward. "It was clear that if we created a master model for each product we could use synchronous technology to modify attributes such as height and length easily and quickly," Croke says. Solid Edge was implemented early in 2016 and rolled out to nine design engineers who received tailored in-depth training from PCE and from Siemens.

Designplan immediately established a project to create a consistent, modifiable master model for every product in the company's existing catalog. The major product elements are body, gear tray and lamp with diffuser and frame or LED. Each



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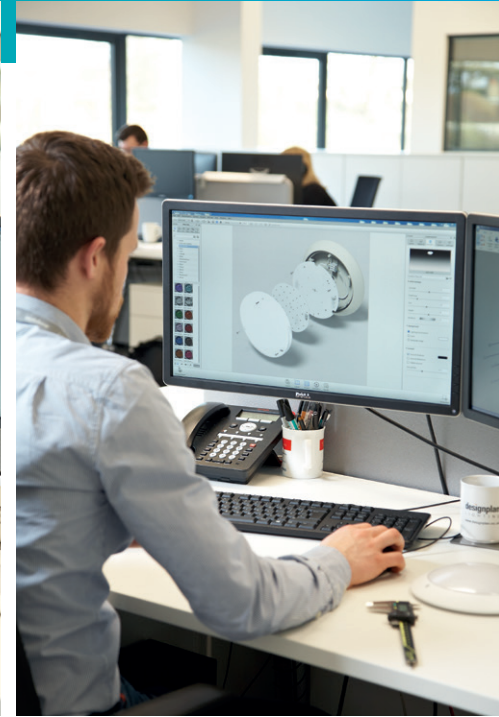
John Hough
Bespoke Design Engineer
Designplan Lighting

standard item has a large matrix of options and variations: three different lengths and six or seven versions such as flat or angled, plus the extra specification necessary for underground locations. Any potential customizations are in addition to these. Designplan therefore began by targeting the most popular lines.

Introducing user ease and speed

"I find Solid Edge very intuitive to learn and it gives us better tools," says Amy Deeprise, design engineer at Designplan. "Solid Edge also has a lot of features that are extremely helpful, for example the ability to pattern a feature. Playback is particularly useful. If I go away from a project and return to it later, it's really easy to see the steps I took before and continue without losing any time. I can also share this feature with colleagues to demonstrate how to do something. There is much assistance available from the wider Solid Edge community and I often obtain information from online resources."

John Hough, bespoke design engineer, focuses on customized products. "I had worked for 25 years with CAD, but moving to Solid Edge opened my eyes to what is possible. I love synchronous. I find it very quick to manipulate an existing model in order to change a fitting, lengthen a luminaire, reposition a hole or amend a pitch. I am saving more than half the time I previously spent making changes at the part and assembly level."



With Solid Edge, the Designplan team can easily access historical design data. "We can open up any file and work with it straight away," Hough says. "Sheet metal is our bread and butter as it is used for all bodies and for some fittings. We have several fittings designed on a platform we used previously and when we bring these files into Solid Edge they are actually associative. We can even import drawings from a basic 2D package we use for the punch press."

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Design Engineer
Designplan Lighting

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Streamlining the quote and design process

After six months, Designplan had created master models for three product sets and the team was reviewing customer requests and anticipating demand for different sizes. Deeprise notes the benefits of the new approach: "In particular, synchronous technology allows us to work organically. We can explore options because there is no sketch to build as in an ordered modeling environment. When we have a Solid Edge assembly we can do model explosions and gain visual help to cross-reference quickly against the master BOM (bill of materials)."

All Solid Edge files are kept together in one folder as Designplan builds a library of master and variant components within product families. The data management features of Solid Edge support basic workflows for file release, storage and retrieval. "The way that we manage files within Solid Edge is a vast improvement over our previous system," Deeprise says.

The team has also been creating building information modeling (BIM) files in line with government legislation. "Solid Edge is fully compliant with BIM regulations and produces widely recognized standard BIM files, Deeprise explains. "There is no extra step required. If a BIM file is requested at 8 a.m., we can usually produce it by midday."

Fulfilling the vision

The first products designed using Solid Edge went into production nine months after implementation. "We can make an assembly much more intelligent; it is so easy to set up components and alter them as required," Deeprise explains. "Now that we have started to work from master models, any changes are taking minutes rather than hours."

"We are finding that Solid Edge allows us to upgrade the technology within a product quickly and easily and this extends operating life," Hough adds. "Local authori-

ties are saving costs by replacing sodium lighting, and retrofitting LED elements into an existing fitting takes just a few minutes."

According to Croke, there has been a huge opportunity to freshen up the company's top revenue-producing products. "We will have addressed 90 percent of our best sellers within one year," he notes. "In addition, we have improved our products and reduced manufacturing errors. Production stoppages for bespoke products used to average between 10 and 18 per week. Since we began to use Solid Edge, they have dropped to just four." The rollout of Solid Edge across the production facility also gives Designplan the opportunity to highlight established checklists that enable operators to provide feedback on procedures such as punching, folding, shaping, fitting and assembly.

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Solutions/Services

Solid Edge
solidedge.siemens.com

Customer's primary business

Designplan Lighting has more than 140 employees and sales in over twenty countries worldwide. Project applications include rail and metro stations, social housing complexes, custodial environments, secure health-care facilities and urban areas where robust lighting is demanded. Designplan products are consistently recommended by a loyal customer base of consultants and architects working on large infrastructure projects throughout the world.
www.designplan.co.uk

Customer location

London
United Kingdom

Solution Provider Partner

OnePLM
www.oneplm.com

There is also the option to use the simulation capability within Solid Edge to assess structural integrity. "We can cut further time in production if we identify any weak points through simulation," explains Deeprose. "This is particularly important as we have to physically prove the strength of our anti-vandal fittings."

The business benefits of the new platform will continue to emerge as the design team implements various plans. Use of rendering is enabling sales and marketing images to be produced early in the design process for in-house knowledge, customer presentations and use on the company website.

"Every time we get a job, whether it is standard, bespoke or retrofit, Solid Edge helps us to save time," concludes Hough. "We used to complete an average of five bespoke fittings per week. We are now averaging eight per week."



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