

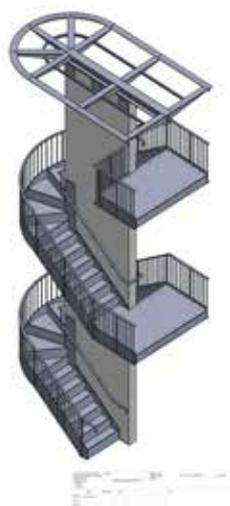


“ SOLIDWORKS has had a dramatic effect on getting our orders processed. Working in 2D it could take me days to implement any dimensional design changes; in SOLIDWORKS I can do the alterations in the time it takes to drink a cup of tea.”

“ Using SOLIDWORKS means our design process, from initial drawing to approval, is now 30% faster with 100% accuracy.”

Kevin Marsh, Director, Marsh Metalworks

Marsh Metalworks: Steel Design in a 3D World



The Challenge

Marsh Metalworks wanted to improve productivity and costs in three key areas:

- REDUCE cost of 2D software upgrades
- IMPROVE time to process orders
- ELIMINATE production errors

Marsh Metalworks is a father and son outfit specialising in steel construction for the building industry.

Established in 2009, the Essex-based firm have grown their business to design, manufacture and install bespoke structural steel, architectural ironmongery and balcony and balustrade solutions for the housing and commercial markets.

The Challenge

Director and designer Kevin Marsh had been using AutoCAD 2D throughout his career to produce customer drawings. Now running his own business with son Terry they wanted to improve productivity and costs in three key areas of time, cost and quality.

Prior to using SOLIDWORKS, each new order at Marsh Metalworks would be created as a 2D drawing and sent for customer approval, before being sent down to the shop floor for manufacture.

Getting the drawings approved was causing delays, as any dimensional changes requested by the customer would require every drawing to be started again from scratch.

Kevin explains, “Often I would send a project for initial approval and there would always be something that needed changing. On average each model would have 15 or 16 drawings, and if one dimension needed to be changed then all 15 drawings would have to be done again.

“Some of the biggest balcony designs I’ve done have had 35 separate 2D drawings. If the customer decides to change the levels, I would have 35 new drawings to do which could take two to three weeks. It was a massive drain on getting orders processed.”

The company was also struggling to find employees that could accurately read 2D drawings. This meant Kevin’s time could be tied up further with shop floor queries, higher levels of manual errors and delaying production.

The Design Solution - SOLIDWORKS and SOLIDWORKS Weldments

To reduce the annual cost of 2D upgrades from AutoCAD, Kevin researched other 2D products and discovered DraftSight from Dassault Systemes that was free to download and included free updates. But he still wanted to improve their day-to-day design flow. Once they were up and running with DraftSight he requested a demo for another Dassault Systemes product, SOLIDWORKS 3D CAD.

Moving from 2D to 3D was easy because SOLIDWORKS' software lets you preserve the value of 2D .DWG data with accurate data conversion, accommodating reusable 2D geometry and enabling a smooth transition.

SOLIDWORKS 3D CAD lets the designer automate the creation of drawings and automatically check designs for common errors and auto-updates while they work. The auto-updates functionality was key for Kevin, as any alterations made in the CAD model would be automatically replicated in all the workshop drawings without having to individually start each drawing from scratch.

Also included in the software is SOLIDWORKS Weldments, a design tool specifically targeted for the steel construction industry. The software enables Kevin to design weldment structures as a single multibody part, sketching the basic framework, creating structural members with groups of sketch segments and adding elements like gussets and end caps to complete the structure.

"SOLIDWORKS Weldments is exactly what our design process was crying out for," explains Kevin. "When I'm doing a drawing now, all I need to do in SOLIDWORKS is draw a line where I want the steel to go. I go to Weldments and pick out what I need from a comprehensive list of pre-defined structural shapes, such as an eye beam. I no longer need to draw that eye beam, I just click the line, move it to where I want the beam to be, top-middle-edge or back-corner, for example. This is a massive time saving.

"If they haven't got what I need, I can always do a sketch of what I want and save it in my Weldments profile and it will work in exactly the same way."

Being able to automate designs has been a big time saver too, especially for producing bespoke 'same but different' pieces. Kevin explains, "I've now got models saved in SOLIDWORKS that I can quickly alter to fit bespoke dimensions. For example, we do a standard stair balustrade and I've got all the dimensions drawn up in SOLIDWORKS, so when I go to survey a new one and the dimensions are different, it will only take me a couple of minutes to make a new drawing. So the beauty is, unlike 2D, I don't have to start from scratch every time a new job comes in, even though each job is unique."

The Results

Using SOLIDWORKS 3D CAD, Kevin has virtually eliminated the time it takes to implement design changes and their design process from initial drawing to approval is now 30 per cent faster.

Kevin says, "The normal industry standard for any 2D alterations is two weeks because it is a lot of work, but SOLIDWORKS has had a dramatic effect on getting our orders processed. Working in 2D it could take me days to implement any dimensional design changes; in SOLIDWORKS 3D CAD I can do the alterations in the time it takes to drink a cup of tea. I can alter a full set of fabrication drawings by just editing the CAD model and everything else is updated automatically. All the dimensions including lengths of beams, positions of plates, angle and pleats are all referenced and everything changes at once."

"On average we can produce a full set of fabrication drawings 30 per cent faster and accuracy is 100 per cent. The 3D drawings are much easier to interpret so the shop floor isn't struggling to see what the model should look like at the end. With SOLIDWORKS it means we can process orders faster, the shop floor is more streamlined and any manual errors have virtually been eliminated."

Benefits:

- Easy transition from 2D to 3D
- Design process 30% faster with SOLIDWORKS 3D CAD
- Improved workflows with SOLIDWORKS Weldments
- Auto-updates
- Shopfloor mate and production errors eliminated

Industry:

- Building

Product Used:

- SOLIDWORKS Premium
- SOLIDWORKS Professional



New Technology CAD/CAM

"New Technology CAD/CAM is our SOLIDWORKS reseller. They gave us all the training and telephone support we needed. Whenever I've been stuck there has always been someone on the end of the phone, who can share my screen and sort it out. Usually I would ring them up when I couldn't find a sketch that I had drawn, but they showed me how to go into the Tree and find it. But really I haven't had much use for it because their training was so good."

Kevin Marsh, Director, Marsh Metalworks

Photographic images supplied courtesy of Durkan Ltd www.durkan.co.uk

Call now to book a demo or to obtain further information 0800 018 6957

www.thenewtechnologygroup.com