



Telford based Proto Labs® is the manufacturing brains behind an unseen revolution in the outdoor advertising industry. The company's two rapid prototyping operations, Protomold® and First Cut®, helped London based Urban Storm to design and manufacture a faster, easier and more secure system for hanging and securing large-scale graphics, outdoors.

In an average day, the average commuter is bombarded with thousands of advertising messages, most of which adorn the sides of haulage trucks and buildings and hoardings alongside main roads and busy junctions. As we rush to work we may not give them a second glance, but the technology used to hang and secure enormous graphic displays through even the worst of weather has recently taken an evolutionary leap forward.

Sam Cook is founder and managing director of Urban Storm, the company that is now responsible for securing many of the UK's outdoor advertising graphic displays.

"In 1989 I was running a company called Scaffoltising. At the time, the system being used to secure advertising graphics was primitive, to say the least. Most graphics were stapled or pasted. It was fiddly, time-consuming and made hanging an ad very tricky. I wanted to design a system that was quicker and easier for the fitter without compromising the display quality."

Proto Labs® and the Perfect Stormflex™

Urban Storm

In 2000, Sam sold Scaffoldtising and set up Urban Storm to develop and manufacture such systems. Urban Storm now has 5 patents, half a dozen trademarks and provides display systems to almost all large-scale billboards in the UK. "Anything bigger than a bus shelter display and it can probably be held in place by an Urban Storm system," he says.

The challenge for 2009, says Sam, was to transform the traditional paper & paste billboards and to deliver an increased value site by improving the quality of the display; replacing many sheets

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of paper with one piece, digitally printed on a recyclable substrate. The aim was also to eliminate the need for ladders, to meet new health and safety requirements.

Once an initial design for the new system was finalised, Sam turned his attention to creating a working prototype to test the concept. Part of the system requires injection-moulded clips that clamp the fabric to a tensioned cable. In his search for a suitable manufacturing specialist, Sam came across the Proto Labs website and soon after, met the team.

"We knew we needed to develop the new system using physical prototypes. When we found Proto Labs I was really impressed with their fast delivery and with the simplicity of their process. We'd anticipated getting a basic prototype made within weeks, not days. We were also very

impressed that we could have the prototype product in the same material we intended to use for the production version."

The new fixing solution worked with cables and a cam-like clip, which when clicked into place, provided the necessary grip allowing tension to be applied to the cable, pulling the creases out of the poster. The cam had to be in exactly the right place to provide an adequate gripping force without damaging the substrate. "It took us quite a few attempts to get right," says Sam.

To meet minimum UK wind regulations each clip had to

withstand a force of 90kg. "We'd test a prototype clip for loading and if it didn't meet the standard, we'd adjust the design and have First Cut make another."

There were several things Sam particularly liked about First Cut's service. "Firstly, that we could order individual parts and that we could place our order via the online FirstQuote® system. We often picked up the phone and talked to someone at the company, but the online system was very interactive. The other thing I liked was the quick turnaround. We were able to develop our ideas at such a rapid rate! The whole process of getting the final system prototype only took about 2 months from start to finish."

It was his positive experience with First Cut that meant Sam had no hesitation in using Proto Labs' sister service, Protomold,

for the injection-moulded production version of the clip. "We needed 35,000 of each of two, separate parts. And, we needed them quickly."



Protomold's specialty - rapid injection moulding - gave Urban Storm a fast and affordable way of producing parts without the need to invest in expensive steel tooling. "Once I had the right design we were able to manufacture the product in what most injection-moulding companies would consider to be very low volumes. I didn't know anything about the injection-moulding process at the start," he explains, "but the system is set up to help even a novice like me."

Sam's work with First Cut and with Protomold gave birth to a whole new poster hanging system called Stormflex™, part of the EcoStorm™ range.

"We also sourced a new, recyclable PE based substrate called Ecoflex™, which we print on and produce as a single piece. Together, Ecoflex™ and Stormflex™ provide an all-weather, fast-change system for use on billboards, without the need to use ladders. It's a much better value system than the old paper & paste method and it meets health and safety regulations. Without a doubt, Proto Labs' services helped us to develop the product and the system more quickly and effectively than we imagined."