



Design that delivers manufacturing innovation

Orthox medical implants

Design, but not as we know it...

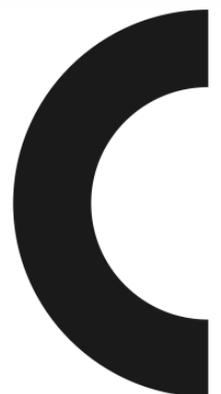
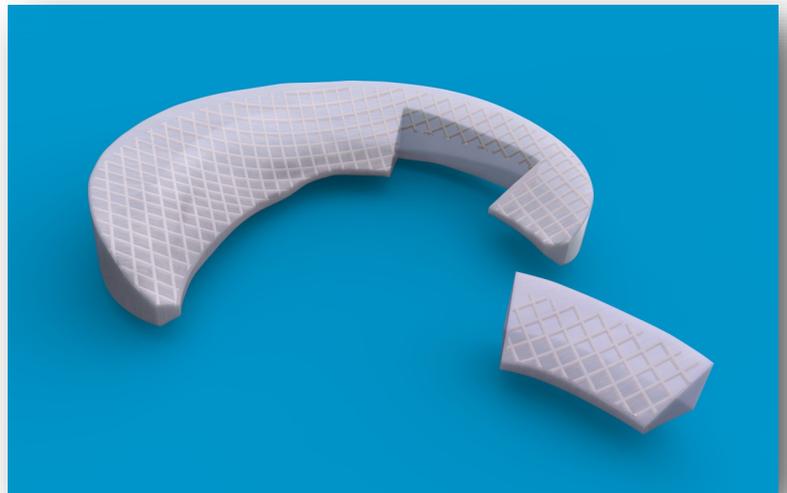
The creative process is often only associated with influencing how something looks, but our work with Orthox proves that Crucible's problem solving and manufacturing expertise is as valuable as our design capabilities.

When Orthox originally contacted us, they were looking help with improving the tooling clamps used in the production of a new medical implant for people with damaged knee cartilage. The implants (right) take over the role of damaged tissue and assist long term regenerative repair.

Not just a clamp

Our initial discussions with Orthox led to a process of experimentation and manufacturing development that has lasted several years. Essentially, we were developing an entirely new technology and its associated production methods. Early technical experiments, using Selective Laser Sintered (SLS) clamps made by 3TRPD in Newbury morphed into complex production tools that allowed Orthox to create the exact shape and density of implant required.

These, in turn, led to the discovery of alternative ways to create the implants and new production methods which would save time and increase accuracy. We were also involved in identifying methods of modifying standard implants to meet specific clinical needs, simplifying their identification, adjustment and use during operations, and designing specialist packaging to protect the delicate products whilst in storage.





Design for manufacture

One of the most interesting aspects of this project was the way it became an exercise in exploring new manufacturing techniques and identifying specialist suppliers. Recent developments in additive manufacturing (or 3D printing) as well as improvements in more 'traditional' techniques like machining and fabrication have created new ways of making complex parts and even the creation of new types of product. This was our contribution to this project: not conventional design, but very unconventional manufacturing innovation and creativity.



The results for Orthox have been very successful. The project is still under development and continues to generate innovations and creative solutions. Crucible's involvement is almost complete, and has been a vital part of the development process.

As Nick Skaer, the CEO of Orthox put it:

“Crucible’s design, engineering and manufacturing expertise has proved invaluable in helping Orthox to realise our product and manufacturing ambitions.

Not only has Crucible provided innovative solutions to several complex engineering challenges, they have also become an essential supply chain resource, advising us on manufacturing techniques and introducing us to essential parts suppliers and manufacturers.”

About Crucible Design

Mike Ayre established Crucible Design Ltd in 1990. Crucible works across all areas of product design and development, with an emphasis on meeting specific client needs, including sales improvement, cost reduction, technical innovation and the sourcing of manufacturing partners.

This focus on the commercial benefits of good design has generated an excellent track record of successful projects and the practice has also won a number of design awards for appearance, innovation and technical expertise.

