

ENGINEERING CAPACITY

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**Bespoke equipment enclosures and structures:
complete solutions from ICEE Managed Services**

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Based on two sites in Milton Keynes and Bedfordshire, The Engineering Quest sets itself apart from the mainstream volume subcontracting sector. From components for space telescopes to miniature ophthalmic instruments, it specialises in the development and manufacture of components that are hard to find, hard to design and hard to make.

As Managing Director Steve Matheron explains: "When you look at our portfolio you can see that we make lots of incredibly complex parts. Our core competencies encompass producing tightly toleranced items – working at micron and sub-micron machining levels – in some of the most difficult materials there are – including polycrystalline diamond, tungsten carbide and superalloys.

We can do miniature and micro-machining, and we can do complexity – some of the parts we make have over 1,000 dimensions.

"We say that If you show us a job that nobody can make for you, we will make it."

The Engineering Quest was born when two companies in the same group came together – Tracel, a high-end aerospace subcontractor, and Preform Tools, which made carbide compaction tooling for the indexable insert industry.

The first area where they applied their combined capabilities was in the development of high-pressure block pumping technology for common rail fuel injection systems operating at up to 3,500 bar.

The specialist SME with a corporate heart



■ This optical telescope casing was engineered for Surrey Satellite

"We started getting into these very tightly tied up components made out of very difficult materials. The parts were going into extremely harsh environments under massive pressures. We solved a lot of problems for them, which meant that they could get the block pump working. It was the highest pressure diesel pump at the time. And the higher the pressures, the harder the materials and the tighter the tolerances. We ended up making things in tungsten carbide to sub-micron tolerances

– and we are still making them now," says Steve.

"We needed a name to pull the businesses together and wanted something that was going to set us apart. We looked at what we mainly do for people, finding answers and solving problems, and so that is where our name came from: Engineering and the Quest to find solutions."

Diverse manufacturing capability

The Engineering Quest is well equipped with a wide range of manufacturing equipment, including 52 CNC machine tools and an extensive metrology capability.

Steve says: "We have a very diverse set of machinery that we have built up over the years. This allows us to move from market to market and problem to problem. We have invested in a lot of high-end equipment, including Swiss grinding and EDM equipment. We always thought that cylindrical grinding was an area that was underserved in the UK and so we have invested over £1m in new Kellenberger machines."

But the actual manufacturing side of the business is only part of the story. The Engineering Quest also offers customers a complete service to take a new product from design to production – either in-house or at a third party manufacturer.

“We have developed a unique package for customers called the Quest Design Optimisation System (Q-DOS), which is a suite of tools and software that enables customers to evolve their products and save money. With our Q-DOS approach a customer can remove production costs at the design stage, potentially saving them millions of pounds over the life of the part,” says Steve.

“We go into companies and work with them right at the initial concept phase.”

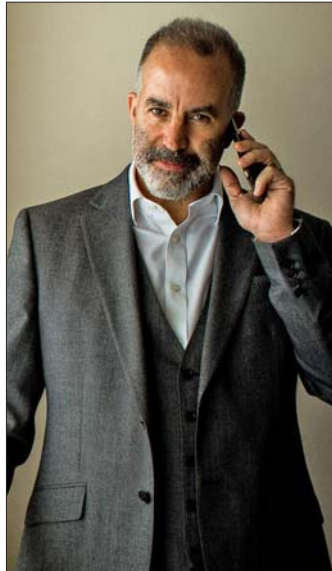
The full process includes manufacturability assessments, design for manufacture analysis, prototyping, and putting the blueprinted part into production. It also features value stream mapping, global product mobility and process flow analysis to optimise the manufacturing process.

At that stage, the customer has a choice. If it is a high-value process that comes within The Engineering Quest’s core competencies, then the components can be made in-house. Alternatively, the customer can be given a ready-to-go production process that they can take to a third party to manufacture.

Embedding best practice

The Engineering Quest has worked with organisations such as Cranfield University and the Institute for Manufacturing at Cambridge University, to ensure that best practice is embedded throughout the company.

At the heart of this is something rarely, if ever, seen in an



■ **Engineering Quest Managing Director Steve Matheron**

engineering business of this type; a central bank of tools to support people at a thinking and behavioural level. Called the Quest Cultural Engagement Library (Q-CEL) it defines the culture and what is expected of staff in order to deliver the highest quality of products and service. Items in the library include; The 20 essential engineering precepts, the 10 essentials of leadership and the 7S’s of well-being.

Steve Matheron explains: “This is our own internal culture and it gives everyone a clear direction of how to approach things. We take big company thinking and boil it down to SME scale. We’re also extremely proud of how we promote well-being for everyone at The Quest Engineering. The library keeps welfare and key working practices in focus, so that

we have a consistent culture across the whole business.”

“We have a long-standing culture of learning and development in the business, so we invited the Institute of Manufacturing to audit our strengths and weaknesses. We also work with some of the world’s largest engineering organisations and constantly review our systems so that we remain aligned to their best practice approaches. We scrutinise ourselves in the same way we take time to analyse a new part. That’s led to the creation of Q-DOS and Q-CEL and our own intranet, called Being Brilliant, that staff access on a daily basis.”

“We are not just a normal subcontractor; we currently have a part on the Mars Lunar Rover and you can’t be at that level without being willing to keep learning and having the creativity to develop new ways of working.

“As we say to people; if you can’t make it, we can!”

Looking ahead, he is very positive, and the company has taken on more work for major customers as other suppliers have closed during the Covid pandemic.

“The outlook for the future is good for us. Our current quotation level is through the roof. We have probably quoted more jobs in the past three months than we did in the whole of last year. The Engineering Quest continues to develop and we look forward to solving more engineering challenges for our global customers.”

■ **join-the-quest.co.uk**