



THE CLIENT

Space Forge – microgravity manufacturing company that uses the favourable atmospheric conditions of space to aid manufacturing processes, with the lack of gravity, and prevention of buoyancy, ensuring metals of different densities can be alloyed more effectively. They harness the power of space’s vacuum, where the lower pressure is 10 trillion times that of the Earth’s, to help remove contamination and the need for multi-stage pumps.

THE BRIEF

Guardtech Cleanrooms were commissioned to design and build a 30sqm controlled environment. The modular cleanroom, used for the development of satellite parts, would be constructed in a warehouse in Cardiff.



Aerospace



Ambient



30m²

**Guardtech
Design
Engineer:
Elliott
Pearce**



“Out of this world project!”

Guardtech Design Engineer Elliott Pearce, who played a major role in the project’s delivery, was delighted to deliver a cleanroom for the ‘microgravity service’ company, using the space environment in such a fascinating way for their ForgeStar Platform.

“It’s been a joy to work with the guys at Space Forge,” he said. “The work they do is clearly very interesting and it was great to immerse ourselves in their world – so to speak!

“But, for us, it was also important that we delivered the same high-quality standards that we do in any modular cleanroom build, and I’m proud of the team for doing just that.”

Elliott Pearce
Design Engineer




Guardtech
cleanrooms

MANUFACTURING MODULAR



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THE TECH SPECS

A controlled environment designed, installed, cleaned and commissioned by Guardtech built to the following specification:

- ◆ **Structural:** [GT Shell Plus PIR wall panels](#), [GT Lid Pro ceiling grid & tiles](#), [GT Deck Plus ESD Vinyl capped & coved](#), [GT Access Plus GRP cleanroom doors](#).
- ◆ **Electrical:** 16 x 13-amp double sockets in PVC trunking. Electromagnetic interlock doors. [GT Lux Lite LED Lighting recessed into ceiling grid – flush-mounted providing 500 LUX at bench level](#).
- ◆ **Mechanical:** [GT Flow Plus H14 HEPA and G4 Fan Filter Units](#).
- ◆ **Monitoring:** GT Scan Lite environmental monitoring system – Magnehelic Gauges housed within Stainless Steel Shroud.

THE CHALLENGES

As a smaller-scale modular cleanroom project, this build presented the team with very few challenges and issues to tackle.

Grand opening: In the end, the biggest challenge the team had to negotiate centred around co-ordinating around the facility's grand opening! The Install team had to remove some of the floor track so that the contractor on site could install a rather fetching Welsh flag! The site works had to be halted for a day to ensure the grand opening went without a hitch, but the project was still completed on time, on budget and to Guardtech's usual high standards.



THE RESULT

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