

CASE STUDY

SURREY SATELLITE TECHNOLOGY

Monmouth Scientific supports space sector with Cleanroom Manufacturing Cells for satellite experts Surrey Satellite Technology.

Client Background

Surrey Satellite Technology (SSTL) has been at the forefront of space innovation for over 40 years. The Guildford based firm deliver customisable mission solutions for Earth observation, science, communications, and navigation.

Key Objectives

After experiencing an increase in project workload, Andrew Norton approached Monmouth Scientific in search of a solution to guarantee a highly clean environment within in which the SSTL Engineering teams could assemble, and test complex Optical Payloads for satellites.

These intricate and highly bespoke pieces of technology provide visual information and play a vital role in the development of communications between space and earth. The systems can be used for observation of earth, the moon or other planetary investigation, to gather weather data, for deep-space exploration and navigation.



Our Solution

Our experienced team identified the Aluminium Modular Cleanroom as the ideal solution to meet the needs of the team at Surrey Satellite Technology, who would be assembling delicate technologies, capable of withstanding the harsh environment of space.

The two Cleanrooms installed at SSTL's headquarters include a 6m x 5m Satellite Engineering Zone, LED Lighting Panels throughout and 4m wide Double Sliding Door Entry/Exit Points to allow for the efficient movement of large equipment in and out of the Manufacturing Cell.

THE MARKET LEADER IN CLEAN AIR SOLUTIONS

The room also includes a total of four CAMT2000 Clean Air Module, guaranteeing positive pressure and an ISO 14664-1 clean environment.

The CAM unit filters air as it enters the room through HEPA filters (99.997% efficient at 0.3 microns) before creating the positive pressure in the environment, providing up to 1800m³ of HEPA filtered air, a total of 60 clean air changes per hour.

Based on initial validation reports, and particle counts, the two Cleanrooms achieve an ISO Class 5 environment, containing less than 100 particles (0.5 microns or larger in diameter) per cubic foot of air.

For some of the extremely complex processes, SSTL also required controlled zones within the Cleanroom to ISO Class 4. The Circulaire© HLFT1200 Horizontal Laminar Flow Cabinets installed in the Cell guarantee a particle free working environment within which to work, more than satisfying the cleanliness requirements and providing the very best protection.

The Cleanroom structures are constructed from a smooth profile aluminium framework with aluminium composite and clear non-break polycarbonate created windowpanes. Entirely reconfigurable, the solution's modularity means they can be extended to suit SSTL's future requirements and project demand.

What they said...

“These genuinely look like a quality lab and by using them as manufacturing cells we have been able to apply good practices from the manufacturing world.”

We've been able to impart flexibility and agility into the system that allows these manufacturing cells to be used across payloads that are highly bespoke and rarely the same.

The team at Monmouth Scientific were engaging throughout the entire process and provided a cost-effective solution to our requirements.”

Andrew Norton;
Surrey Satellite Technology

