



THE CLIENT

A plasma technology company based in the South West of England who are leading providers of high-technology products and services to the world's leading industrial companies and scientific research communities, with a focus on greener economy, increased connectivity, improved health and leaps in scientific understanding.



Semiconductor



20°C+/-2°C
45%+/-5% RH



80m²



THE BRIEF

Storvik FM Limited came to us on behalf of their client with the need for a short-term facility while a new all-purpose facility was being built, as the client had a new production line that couldn't wait to be initiated. Budgetary constraints and a tight timeframe were critical factors in this build – for an Original Equipment Manufacturer (OEM) for the semiconductor industry.

“The response was immediate...”

“Peter Stratton, Director at Storvik FM Limited, said: “Our client, a plasma technology business, had an urgent requirement for an ISO5 extension to an existing ISO7 cleanroom, in order to expand their processing capability. Customer demand dictated that time was of the essence, and there was only a 12-week window during which the ISO5 cleanroom could be designed and built. “Following a late Friday afternoon phone call to Guardtech, the response was immediate and a survey was undertaken the following Monday, with the initial design complete within a week. The materials and equipment used to complete the build in such a tight timeframe were selected by Guardtech based on availability, suitability and cost, allowing the cleanroom to be built and commissioned within the required period.”





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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](#), [GT Lid Plus](#), [GT Lid Max](#), [GT Deck Plus](#), [GT Access Plus](#).

◆ **Electrical:** [GT Lux Lite](#), 13-amp small power, flush-mounted with embedded containment within the panel core, three-phase power sockets wall mounted, electromagnetic door interlock system, automatic swing-arm door closing systems on large double doors with infrared activation, digital touchscreen HMI group fan speed controller.

◆ **Mechanical:** GT Flow Plus Fan Filter Units including H14 HEPA, upflow unit providing total air supply of 3m² per second.

◆ **Monitoring:** GT Scan Plus digihelix gauges.

THE CHALLENGES

Space: The space was not really appropriate for an off-the-shelf cleanroom – there were many limiting factors that interfered with a smooth process, including a floor with significant gradient, service clashes that could not be removed and a ceiling that would not bear the weight imposed by the cleanroom requirements.

Floor: A system was devised for the floor track which allowed us at interval to raise the panel from beneath to ensure a level and uniform ceiling could be installed.

Timeframe: Due to the extremely tight timeframe and budget limitations, a bespoke solution needed to be found that accommodated these challenges – there was no time to rectify the building, which would've been the approach Guardtech opted for in a situation like this.

Bespoke solutions: Other cleanroom providers were sounded out for this project, but

the client quickly realised that they were only prepared to offer off-the-shelf solutions that were not fit for the requirements of this job. Guardtech were as flexible and adaptable as ever, delivering exactly what the client needed within the tight timeframe that other providers simply couldn't match.

Plenum: The framework and the utilities meant that a standard plenum design could not be implemented so a stepped system was devised, taking support from the structural framework that was added. Additionally, rather than inserting return air columns, all the structural walls were double-skinned to allow for return air chases for the exhaust air to return to the AHU (air handling unit), while the double-skinning provided additional structural support for the panelled ceiling above.

Structural: A bespoke steel framework was created to facilitate all the clashing services and allowed for a supporting structure to be built around these utilities, eliminating the need for removal or revision.



THE RESULT

Peter Stratton, Director at Storvik FM Limited, said: "Our client, a South West-based plasma technology business, had an urgent requirement for an ISO5 extension to an existing ISO7 cleanroom, in order to expand their processing capability. Customer demand dictated that time was of the essence, and there was only a 12-week window during which the ISO5 cleanroom could be designed and built."

"Following a late Friday afternoon phone call to Guardtech, the response was immediate and a survey was undertaken the following Monday, with the initial design complete within a week."

"The materials and equipment used to complete the build in such a tight timeframe were selected by Guardtech based on availability, suitability and cost, allowing the cleanroom to be built and commissioned within the required period, and within budget despite a couple of small setbacks. Overall, the Senior Applications Engineer responsible for the site was happy with both the performance and outcome."

