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THE CLIENT

One of the leading suppliers and system integrators of support equipment for military and commercial electro-optical sensors in the world. With decades of experience in their focus markets, the client brings real world experience to assist customers in meeting the demands of today's military and security equipment programs.



Defence
& Optical



21+/-2C
40-55% RH



140m²

THE BRIEF

The client wanted to adopt a new production process within their facility, which is best suited to controlled and classified conditions.

After successfully working with Guardtech on a previous cleanroom build, the client asked Guardtech to consult on the design and to formulate a proposal for the new cleanroom.



“The final product was exceptional...”

Carl Miller, Operations Director for the client, said: “Guardtech worked with us in a collaborative way throughout the process to ensure that the project came in, on time and on budget.

“The final product was exceptional and was constructed in such a way to cater for our individual special requirements for the manufacture of our optical assemblies.”

Carl Miller
Operations Director
for the client

Guardtech
cleanrooms

Guardtech
cleanrooms



THE TECH SPECS

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

◆ **Structural:** GT Shell Pro de-ended wall panel system, GT Lid Pro de-ended ceiling panel system, GT Access Plus semi-flush single and double doors with electro-magnetic interlocks and status indicators, GT Deck Plus vinyl flooring capped & covered in Sapphire Blue swatch.

◆ **Mechanical:** GT Flow Plus Fan Filter Units (FFUs) with H14 HEPA filters achieving 35 air changes per hour, HVAC provided by GT Air Pro 25kW CRAC Air Handling Units (AHUs), gas services: compressed air, nitrogen, vacuum pumps, heat extraction in plant room, equipment extraction, FumeCube in plant room, exhaust recirculated to AHU.

◆ **Electrical:** 13amp sockets in panel core,

CAT6 data outlets, electro-magnetic interlocks door and status indicators, GT Lux Pro LED switch activation lighting achieving 1200 lux/12,800 lumens.

◆ **Environmental Monitoring:** GT Scan Pro Environmental Monitoring System (EMS) with Stainless Steel Panel LED Displays measuring Temperature, Humidity, Pressure, fed back to client PC. In-room alarm beacons.

◆ **Furniture & Equipment:** Ducted fume cupboard, 5 x H14 HEPA filter laminar flow workstations, 5 x Trespa benches with grade 304 stainless steel support stands, contamination control mat.

THE CHALLENGES

Making space: This project included a sizeable collection of critical components and utilities that had to be carefully condensed into a tight plant room. As well as a relatively large CRAC upflow Air Handling Unit (AHU), the plant room also had to cater for the Uninterrupted Power Supply (UPS), compressors, patch panels and the distribution board, therefore

requiring some skilful plotting from Guardtech's Design and Install teams.

Scrubbing up: Because of the nature of the work involved with the client's application, there was a potentially harmful chemical that needed to be extracted from the process space. However, as per our original plans, we couldn't house a Pure scrubber to deal with the chemical in question. The room had to be equalised and re-balanced and there was some significant post-HVAC design work to ensure a ducted fume could be accommodated to solve the issue.

Great integrating: There were often a number of different trades on site at once – from HVAC and ducting operatives to flooring specialists, panel installers and electrical engineers to utilities such as nitrogen gas, compressed air and vacuum. The Guardtech Cleanrooms team were able to cater to everyone's needs and ensure a harmonious and efficient working environment. There were also some new faces involved in this project who had to embrace the Guardtech way quickly – but they did this with aplomb, showing a great degree skill to install our intelligent ceiling grid system.

ELECTRO-OPTICAL SENSORS

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THE RESULT

Guardtech Cleanrooms Project Manager Craig Druce said: "Thanks to everyone involved in this project – the Design and Installation teams worked seamlessly to deliver a great build.

"We had to rework some of the plans due to an issue with extraction, but all of the parties involved came together brilliantly to devise a winning solution.

"I wish the client well in their future endeavours and hope they continue to go from strength to strength.

"It was a pleasure for Guardtech to return to a place where we've previously installed a modular cleanroom and I hope we get the chance to return one day in the future."

Carl Miller, Operations Director for the client, said: "Guardtech worked with us in a collaborative way throughout the process to ensure that the project came in, on time and on budget. The final product was exceptional and was constructed in such a way to cater for our individual special requirements for the manufacture of our optical assemblies."



THE 2019 MODULAR

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Guardtech Cleanrooms installed this stunning modular cleanroom at the same site back in 2019. Guardtech Group Commercial Director Mark Wheeler said: "We enjoyed working on our original project with this client so much that we were delighted to take on the newer build. We wish them well with what is pioneering manufacturing for their sector."



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