

# MICROSCOPY CLEANROOM



## THE CLIENT

One of the world's leading manufacturers of microscopes in the life sciences and materials research markets.

## THE BRIEF

Guardtech had built the first cleanroom for this client back in the year 2010 and have been maintaining and validating this quality controlled environment ever since. However, with a relocation to a larger modern facility, a new cleanroom was required and Guardtech were tasked with the design and build of a controlled environment with an extended brief of mechanical and electrical services, alongside a number of customised transfer solutions.



Optics



21C+/-2 & 30-70% RH



80m<sup>2</sup>

## THE CHALLENGES

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

◆ **Structural:** [GT Shell Pro Wall Panels](#), Double Glazed Units with integrated blinds, [GT Access Plus Powder Coated Steel Doors on Electro-Magnetic Interlocks](#), [GT Deck Pro ESD Vinyl Floor Capped & Coved](#), [GT Lid Pro Heavy Duty Powder Coated Aluminium Ceiling Grid & Tiles](#).

◆ **Electrical:** 13-amp power and Cat 5e network flush-mounted sockets, containment buried within the wall panels in channels and housed in basket in service channels under the raised access floor.

**“The build went smoothly, even with some complex challenges to overcome..”**

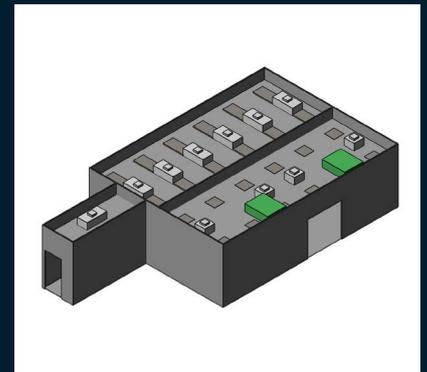
“Guardtech were commissioned to build an ISO7 cleanroom within our relocated manufacturing facility. They were selected on the basis of their proactive and collaborative approach towards design and the fact that they could deliver a complete turnkey solution from design to commissioning. “The installation team were diligent, helpful and friendly and the build went smoothly, even with some complex challenges to overcome, such as an ultra-low headroom crane to accommodate and a bespoke transfer system to build into the fabric of the room.”

**THE CLIENT**  
ISO7 Microscopy Cleanroom





 Unit C The Brocks,  
Homefield Rd,  
Haverhill, CB9 8QP  
 0330 113 0303  
 sales@guardtech.com  
 www.guardtechcleanrooms.com



## THE TECH SPECS

**Mechanical:** VRF high level Split System ducted to a plenum housing slimline Fan Filter Units with H14 HEPA's mounted in the ceiling grid, low level return air columns ducted back to the return air side of the VRF. Compressed air with transair pipework ring main and wall mounted drops with fitting for equipment connections. Central vacuum system with vacuum pipework contained within the panel presenting flush plates housing the vacuum fittings.

**Monitoring:** Environmental Monitoring System including temperature, humidity and pressure sensors fed back to CF21R compliant software, with in room LCD displays.

**Low headroom crane:** The client needed a crane that could travel in all directions on the X and Y axis, due to the height restriction and the heavy load and required clearance of the hoist an ultra-low headroom crane had to be custom designed and manufactured.

**Transfer system:** The client required their product to be moved between the cleanroom and adjoining pump room in a stable, controlled fashion, so Guardtech designed and manufactured 12 bespoke stainless steel trolleys and an air shower pass-through hatch with rollers. The trolleys had specialised roller systems on them which could be locked off and also had docking mechanisms so they could line up precisely with the transfer hatch. The transfer hatch had interlocked sliding vertical doors to maximise space and the internal roller system could also be braked.

**Services:** The client had a large number of services in a very small space, including 13-amp sockets, 3ph power, network, vacuum and monitoring – this resulted in 75 contained channels embedded in the panels which had to be captured in the design phase and pre-manufactured prior to site arrival.

**Containment:** The client had a raised access floor – when it was determined that space in the ceiling void was extremely restrictive, Guardtech found a way to provide accessible underfloor containment for cabling. This also had to be used as the only route to get drainage pipework out of the building from the air conditioning condensate pumps.

**Site activity:** The client was also amidst a major refurbishment of the rest of the building, which was being handled by a principal contractor. Guardtech had to work alongside this contractor and negotiate a safe installation with a vast amount of other trades onsite in a very restrictive space.

## THE RESULT

**The client added:** "The project manager had a very good handle on the whole process and we were well communicated to throughout," the client said. "The team were flexible when it came to accommodating on the job changes and we ended up with a cleanroom of very high quality and good value for money. "Overall, I was very impressed with Guardtech throughout the project and would highly recommend them as a cleanroom provider."

## THE CHALLENGES

**Restricted ceiling void:** We had to overcome a very tight ceiling void by installing slimline FFUs that are shallower but also require less clearance above to draw air intake.