

# CLEANROOM LAUNDRY



Class 5, 7, 8 & CNC



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## THE CLIENT

Elis Cleanroom – global multi-service company that design, develop and provide bespoke solutions for flat linen, workwear, hygiene and well-being products, as well as cleanroom services, pest control and medical waste management.



Cleanroom Laundry



19+/-2 C  
50-60% RH



850m<sup>2</sup>

## THE BRIEF

The Guardtech Group were engaged to construct a cleanroom laundry at Elis' new facility in Knutsford, Cheshire – made up of two distinct zones: seven cleanrooms with classifications ranging from ISO5 to 7 and 8, as well as a larger CNC zone. Initially, our large-scale turnkey arm Cleanroom Solutions were brought in by a principal contractor to solely develop the cleanroom aspect of the facility, but when it became apparent that the original principal contractor was unable to fulfil all the necessary requirements, the Guardtech Group stepped in to assume full responsibility of the project, including the instalment of office spaces and toilets.



**“Innovative, bespoke design and stunning aesthetics...”**

Senior Project Manager Dan Baxendale said: “I’d like to pay tribute to everyone who contributed to this project – from Installation Manager Wayne Smith and civil works expert Besjan Musaraj to the wider Guardtech Group team. We inherited a massive project full of potential pitfalls from the previous contractor and worked so diligently to turn it all around and deliver a first-class facility that marries innovative, bespoke design features with stunning aesthetics.”

**Dan Baxendale**  
Guardtech Group  
Senior Project Manager



**cleanroom**  
solutions

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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 Pro wall panels, GT Lid Max ceiling grid, GT Lid Pro ceiling panels, GT Lid Lite ceiling grid (CNC zone), suspension: steel beam frame from floor level to underside plenum top for cleanrooms/from host building portal frame for CNC area, GT Access Plus semi-flush powder-coated steel single and double doors, GT Access Rise Pro rapid roll doors, GT Deck Plus flooring capped & covered.

◆ **Electrical:** 75 x 13-amp double sockets and 25 x CAT6A data sockets in surface-mounted 3-compartment PVC trunking, GT Lux Lite LED lighting panels providing 500 lux at bench level, 3-phase power.

◆ **Mechanical:** GT Flow Pro H14 HEPA Fan Filter Units with G4 Pre-Filters providing air change rates from 21 per hour up to 210 per hour, 3 x GT Air Pro downflow Unit delivering 93kW cooling each, connectivity with BMS via Modbus.

◆ **Monitoring:** GT Scan Pro Digital LED Environmental Monitoring panels displaying temperature, humidity and pressure reading from in-room installed probes. All fed back to 7" touchscreen HMI with full PC integration (Modbus), controls for FFUs and lighting alarms programmable for any measured element, 5 x in-room particle counters.

◆ **Furniture & Equipment:** Bespoke transfer hatches, 316 stainless steel shrouded sinks, stainless steel coat hooks, paper towel dispensers, glove box dispensers, garment rail, multi-purpose dispensers, non-perforated stainless steel tables pickled and passivated, stainless steel seating benches, 316 stainless steel shelving, stainless steel wall-mounted full-length mirrors, stainless steel bins.

## THE CHALLENGES

**Taking control:** The first, and perhaps most significant, challenge we faced in this project was the fact the original contractor appointed to run the build was unable to fulfil their duties. After falling behind on the schedule and missing several key deadlines, the client asked if we would consider taking on full responsibility for the project as Principal Contractors.

Because of our commitment to delivering a first-class service, as well as our appreciation of a great client, we accepted the challenge and set about re-organising the rest of the scheduled works to ensure a fantastic, complex facility would be delivered on time and on budget. We are no strangers to working under and stringently implementing CDM regulations, so it was a natural position for us to assume.

Before taking on all the additional works required, the team held frank discussions on whether it was worth the risk. But each member of the team felt compelled to deliver for the client and give them the best possible service we could.

This new level of responsibility brought a raft of different challenges, from utilities like the steam boiler plant that we hadn't taken responsibility for before to the installation of an office suite and toilets, which is usually beyond our scope as cleanroom design & build specialists. However, we had a malleable, dedicated team on site who felt compelled to go the extra mile and so we took on the burden of delivering aspects of the project that we would never usually assume in order to keep a cherished client happy.

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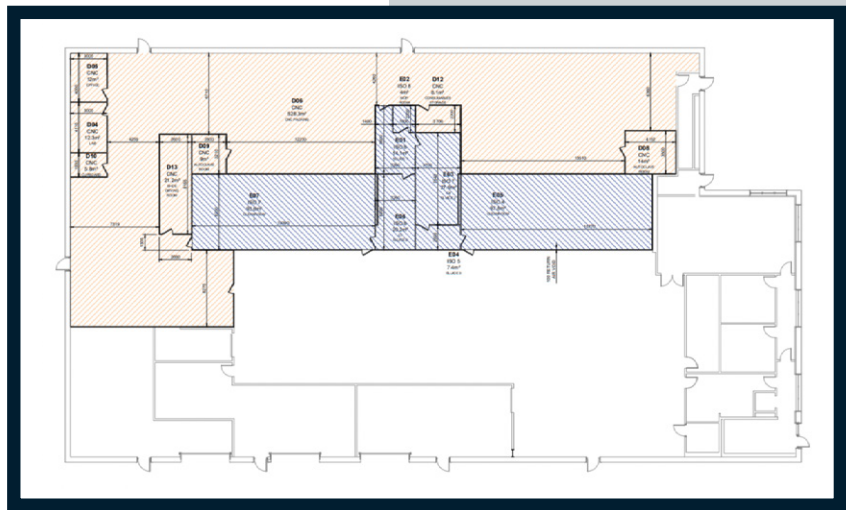
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**Keep it civil:** Among the civil works that required attention beyond our usual scope of influence were aspects of the site like the car park. We had to relay drains from the inside, replacing plastic drains originally installed by the previous contractor with more appropriate concrete drains. Rather than stripping everything out, we devised an innovative lining solution to ensure the drainage would still work as intended.

Taking care of all these civil works beyond our usual cleanroom specialism, like toilet block and office fit-outs, has afforded us the confidence going forward to know we can deliver an even-more holistic offering to clients, giving us a newfound belief that we can offer the most comprehensive turnkey builds in the company's 24-year history.

**Fine finishing:** Upon completion of the installation, our Compliance Manager conducted his usual post-build review as part of our in-depth Commissioning process. The project review team noted that he put forward a markedly low number of possible snags and potential issues, such as the dedication to delivering a high-quality facility to extremely high standards. From window placement in the main process suite to the installation of stainless steel plates for vacuum provision, the Cleanroom Solutions team assumed responsibility for all areas of the project and ensured a high level of attention to detail,



care and scrutiny was given to every aspect of the finish to ensure it met the client's equally high standards.

**Hatching plans:** We consulted closely with the client to ensure our Design Team effectively captured what their process was, giving us the best possible platform to deliver a facility that operated exactly as they needed it to. This included the design and manufacture of bespoke transfer hatches to move garments from the cleanroom space to trolleys in the outer CNC zone. Previous incarnations of the

room design, at other facilities across the world, had not included an innovative system like the one we devised, with their 'open slots' allowing clean air to escape into the CNC side and be recirculated. Our unique, bespoke hatches allowed leakage rates to be controlled in a manner that far exceeded the process that had been in place before our innovation.

**Walk the walk:** We had to devise way to include a bespoke 'walk-on' ISO4 plenum in this design because of the central plant area that the layout required – a plant area that included four sizeable AHUs (Air Handling Units).

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The Guardtech Design Team went through various intricate designs before settling on what they thought would be the safest, tidiest and most efficient model to ensure operators could access Fan Filter Units, electrical points and other key channels effectively.

**Sealing the deal:** Despite the fact we finished the CNC area as per the client's wishes, upon further review, we both decided that the exposed (though well sealed) corrugated walls in that zone would benefit from some kind of paneling solution. We never want to leave a job feeling like we could've done more to support our client's needs – and so plans are in place to return and exact every bit of quality we can out of the possible solutions we have to offer.



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**"We now feel like we have several sub-teams within the Group with the resolve, knowhow and experience to take on comprehensive, all-encompassing projects like this without hesitation.**

**"Everyone at the company, and I mean everyone, pulled together to turn a nightmare scenario into something beautiful and I'm so grateful for the support of the Guardtech Group family."**

## THE RESULT

Senior Project Manager Dan Baxendale said: "I'd like to pay tribute to everyone who contributed to this project – from Installation Manager Wayne Smith and civil works expert Besjan Musaraj to the wider Guardtech Group team. We inherited a massive project full of potential pitfalls from the previous contractor and worked so diligently to turn it all around and deliver a first-class facility that



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