

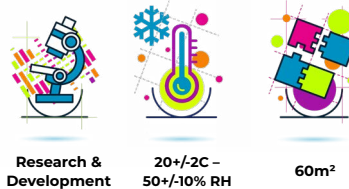


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## THE CLIENT

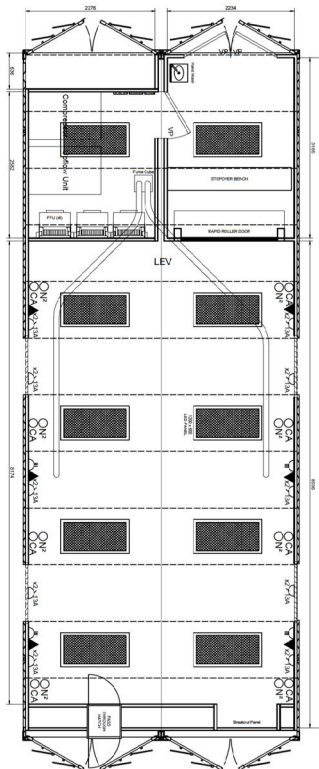
A global provider of technologies and services that advance and accelerate the development, manufacture and delivery of therapeutics. Our client's customers undertake life-saving activities ranging from biological research to developing innovative vaccines, biologic drugs and novel cell and gene therapies. The client supplies the tools and services their customers need to work better, faster and safer, leading to better patient outcomes.



Research & Development    20+/-2C – 50+/-10% RH    60m<sup>2</sup>

## THE BRIEF

The client needed some additional space for their Life Science Research & Development activities – primarily gene therapy testing which allowed critical final tweaks to their product prior to mass production. The client required the Maxi to be shipped to their base in Sweden – a facility where customers are able to experience the entire production process, from design to R&D (in our CleanCube Maxi), to production (the building next door) through to seeing the final product.



**“We can’t wait to see how it performs...”**

Guardtech Group Commercial Director Mark Wheeler said: “It was such a pleasure to take on this exciting project for such a distinguished client. “The Design and Install teams worked so well with the Project Manager and Commercial department to ensure all the complexities of this Maxi unit worked in perfect harmony. “We’re so proud to see another amazing CleanCube shipped overseas and can’t wait to hear the results of how it performs in such challenging conditions over in Sweden.”

**Mark Wheeler**  
Guardtech Group  
Commercial Director



**CleanCube**  
mobile cleanrooms

# CLEANCUBE MAXI



## THE TECH SPECS

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

◆ **Structural:** GT Shell Pro semi-flush de-ended wall panel system, GT Lid Pro de-ended ceiling panel system, GT Access Plus semi-flush single doors, GT Access Lite powder-coated steel double doors, GT Rise Pro rapid roll door with electromagnetic interlocks and status indicators, GT Vision Plus vision 1,000 x 1,000mm panels with internal vents, emergency escape breakout panel, GT Deck Plus ESD vinyl flooring with white rubber capping in Sapphire Blue.

◆ **Electrical:** European small power sockets, 63amp 3-phase power, CAT6 data sockets, conduit in panel void for containment, GT Lux Lite luminaires providing 1250 lux levels with PIR sensors, electromagnetic interlocks, smoke detection heads & panel fire alarm system.

◆ **Mechanical:** GT Flow Max Fan Filter Units with

H14 HEPA & G4 Filters providing 50 air changes per hour, GT Air Pro 19.7kW Upflow CRAC Unit ducted to plenum, LEV extraction arms connected to Purex FumeCube extracting 360m<sup>3</sup>/hr, compressed air system, nitrogen system, dessicant dryer, vertical air receiver.

◆ **Monitoring:** GT Scan Pro Environmental Monitoring System with Oncall Finestra Software measuring temperature, humidity, pressure via in-room LED displays and PC with wall-mounted monitor. Includes in-room alarm beacons.

◆ **Furniture & Equipment:** Stainless steel stepover bench, full-length stainless steel mirror, stainless steel sink with motion sensor taps, mechanically interlocked stainless steel transfer hatches.

## THE CHALLENGES

**Timescale and complexity:** The Maxi was built in a rapid timescale, particularly given the complexity of the unit. Manufacturing Manager Michael Burton remarked that it was the "most sophisticated CleanCube" that he'd worked on to date, with LEV arm extraction, nitrogen, compressed air, three-phase elec-

trics and a hefty HVAC system. "We got so much into such a relatively small space," says Mr Burton. "Roller shutter doors, sinks, environmental monitoring, all the Fan Filter Units, LEV arms, all the different utilities, three-phase sockets – it was a fantastic effort from the team."

**Bracing for the cold:** This project was hampered by troublesome conditions here in the UK, with a series of icy mornings, snowfall and heavy rain playing havoc with the manufacturing schedule and presenting plenty of on-going installation challenges.

However, that's nothing compared to the -25C extreme cold weather the unit will be facing in its final destination in Sweden – and with the internal temperature set at 20C, that presented the team with more potential issues. The Design and Install teams fashioned a creative solution with air vents in the windows, ensuring there wouldn't any condensation and that the unit could handle the 45C disparity from outside to inside.

**Big fans:** The Install team had to devise an intelligent 'stepped ceiling' inside the container, as the stacked wall of Fan Filter Units required to deliver an ISO7 room, as well as the frame to hold them, was higher than initially planned.

**Continued on next page**



# CLEANCUBE MAXI



By eating into the plenum space at the top of the container, this also meant that some of the critical pipework had to be cleverly re-routed. Some seriously creative layout work ensued and some excellent solutions were achieved.

**Reinforcement:** Because of the nature of the CleanCube Maxi design, where the central walls of each container are removed prior to connection, plus the fact that this particular project required some heavy duty transportation and lifting, the containers needed to be adequately re-enforced.

The Design and Install teams worked together to ensure a solution was devised which meant the structural integrity of the finished product would not be compromised in transport.

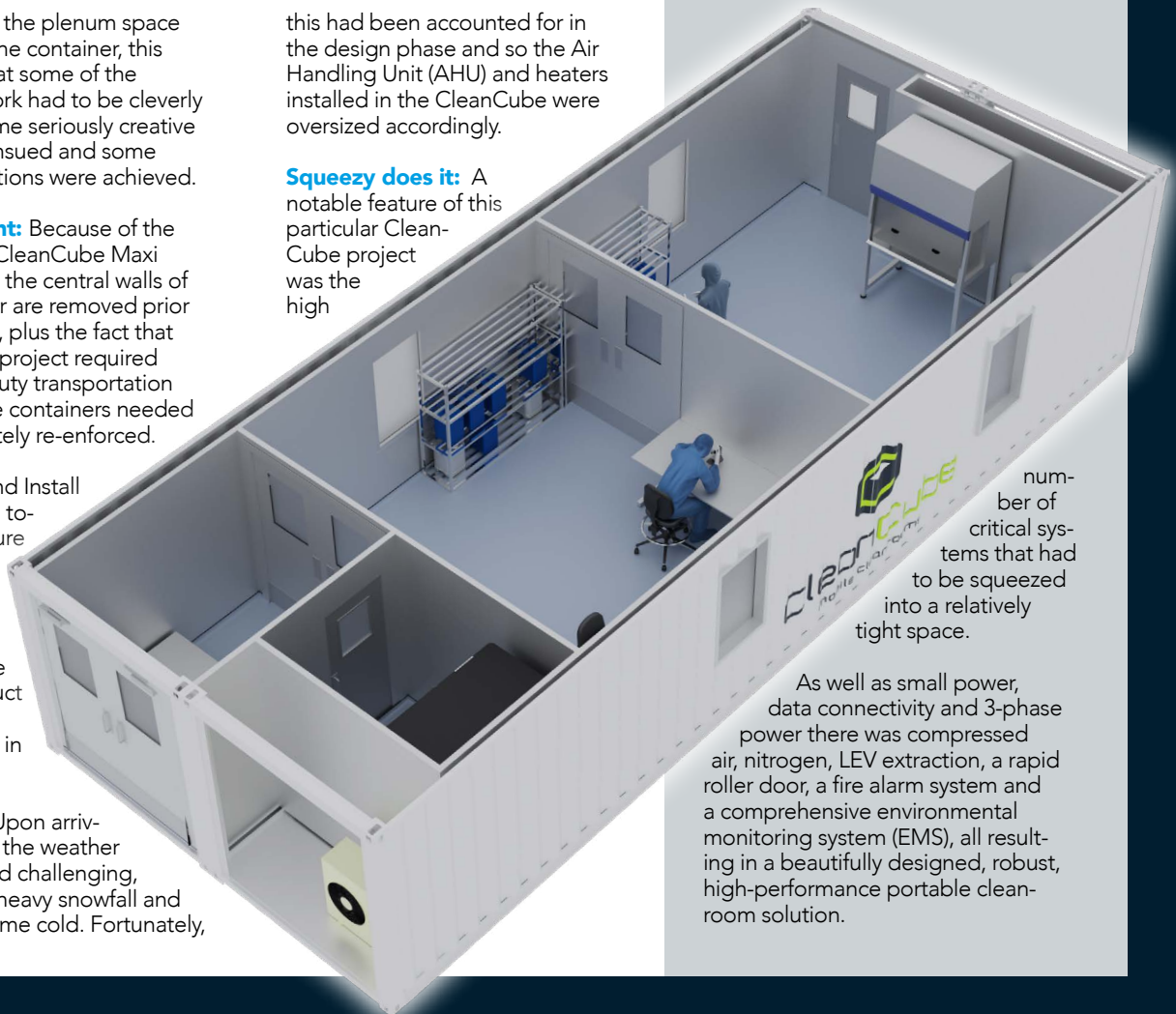
**Heating up:** Upon arrival in Sweden, the weather proved challenging, with heavy snowfall and extreme cold. Fortunately,

this had been accounted for in the design phase and so the Air Handling Unit (AHU) and heaters installed in the CleanCube were oversized accordingly.

**Squeezy does it:** A notable feature of this particular Clean-Cube project was the high

number of critical systems that had to be squeezed into a relatively tight space.

As well as small power, data connectivity and 3-phase power there was compressed air, nitrogen, LEV extraction, a rapid roller door, a fire alarm system and a comprehensive environmental monitoring system (EMS), all resulting in a beautifully designed, robust, high-performance portable clean-room solution.



# CLEANCUBE MAXI

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## THE RESULT

Guardtech Group Commercial Director Mark Wheeler said: "It was such a pleasure to take on this exciting project for such a distinguished client.

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"We're so proud to see another amazing CleanCube shipped overseas and can't wait to hear the results of how it performs in such challenging conditions over in Sweden."

