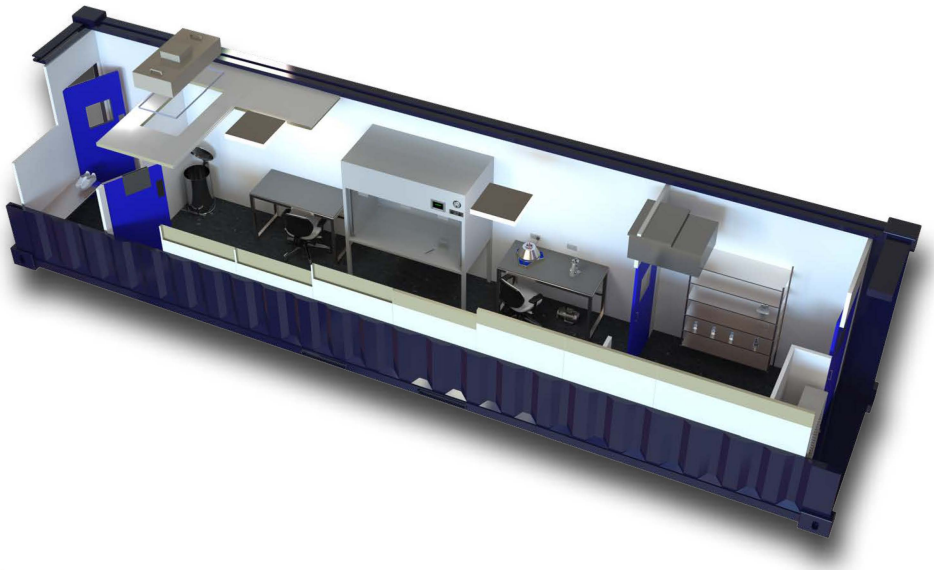


CleanCube

mobile cleanrooms

www.belenos.at

belenos

CleanCube
mobile cleanrooms

ENQUIRY FORM

Guardtech group

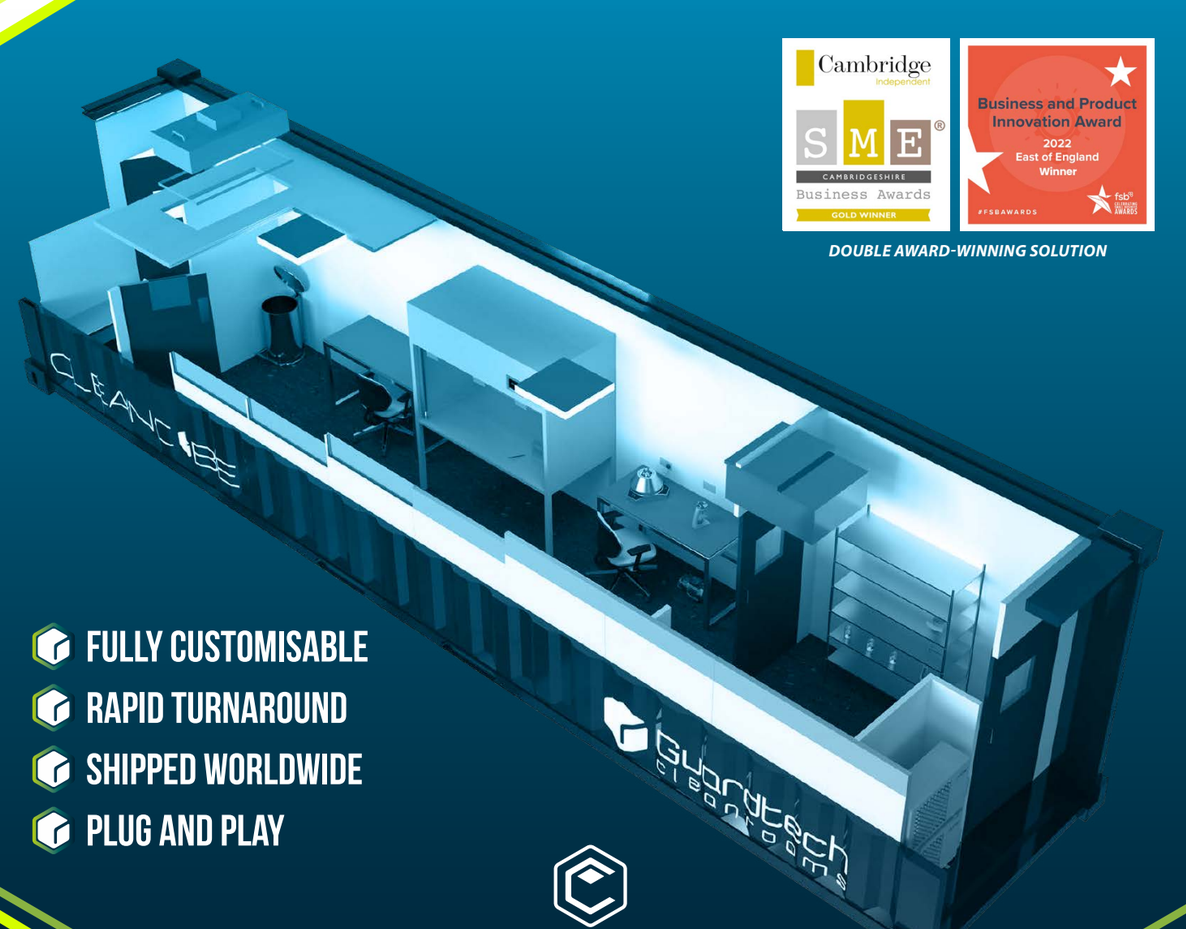
Name: **Company:** **Position:**

Location: **Telephone:** **Email address:**

Base model	**MINI** ☐	**MIDI** ☐	**MAXI** ☐	**MULTI** ☐	**MOBI** ☐	**MOBI+** ☐
Rooms	1 ☐ 2 ☐	1 ☐ 2 ☐ 3 ☐ 4 ☐	1 ☐ 2 ☐ 3 ☐ 4 ☐	How many rooms do you require? ☐	1 ☐ 2 ☐	1 ☐ 2 ☐
Function	Cleanroom ☐	Laboratory ☐	Biosafety Laboratory ☐			
Cleanroom classification	Laboratory ☐	ISO5 ☐	ISO6 ☐	ISO7 ☐	ISO8 ☐	
	BSL3 ☐	BSL2+ ☐	BSL2 ☐	BSL1 ☐		
Panel system	Flush ☐	Semi flush ☐				
Ceiling height	2.1m ☐	2.3m ☐	2.5m ☐			
Doors	Rapid roll ☐	Powder-coated steel ☐	GRP ☐			
Window unit	How many windows do you require? ☐					
Flooring	Vinyl ☐	ESD Vinyl ☐				
Temperature/ humidity control	20±3°C – RH uncontrolled ☐	20±2°C – RH 40-60% ☐				
LED lighting	500 Lux ☐	750 Lux ☐	1000 Lux ☐	1250 Lux ☐		
Environmental monitoring	None ☐	Analogue ☐	Digital ☐			
Utilities	13-amp double sockets ☐	3-phase power outlet ☐				
	Cat6 network sockets ☐	Compressed air ☐	Drainage ☐			
	Town's water supply ☐	Extraction ☐	Processed gases ☐			

CLICK HERE to download your Microsoft Excel enquiry form

Please email your completed enquiry form to sales@guardtech.com



Cambridge Independent SME Cambridgeshire Business Awards Gold Winner

Business and Product Innovation Award 2022 East of England Winner fsb

DOUBLE AWARD-WINNING SOLUTION

- FULLY CUSTOMISABLE
- RAPID TURNAROUND
- SHIPPED WORLDWIDE
- PLUG AND PLAY

CleanCube
mobile cleanrooms

MOBILE CLEANROOMS

Press play for video content

CLEANCUBE: a comprehensive portfolio of plug & play portable controlled environment solutions.

CleanCube Mobile Cleanrooms ship worldwide and are ideal for quick turnaround projects, space utilisation and temporary applications.

A full range of customisation allows users to configure these mobile formats to best suit process requirements.

With a wide range of internal finishes and structural, mechanical and electrical specification choices, CleanCube can be rapidly designed and manufactured to meet User Requirement Specification (URS) significantly quicker than conventional builds with the added benefit that offsite construction offers.

CleanCube Containers

Available in three sizes: Mini, Midi and Maxi – a 40ft 'double container' with an increased 50m² footprint. Shipped globally as stackable modules via standard shipping channels.

CleanCube Modular Buildings

Steel-framed structures that can be combined to create large internal footprints – ideal for expansion projects where building space is restricted.

CleanCube Vehicle Conversions

3.5 and 7.5-ton vehicles internally fitted out to function as fully operational plug & play mobile cleanrooms and labs.

CONTENTS

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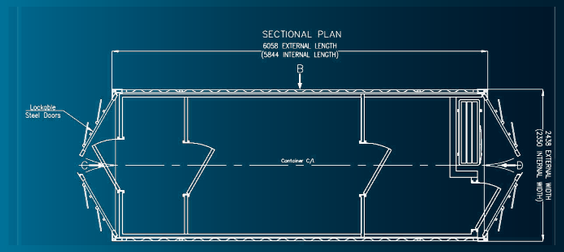
PAGE 6-9 – Modular buildings
PAGE 10-11 – Mechanical & Electrical
PAGE 12-13 – Vehicle conversions
PAGE 14-15 – Furniture & Equipment

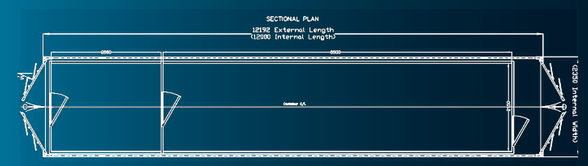
STRUCTURAL

LAYOUT OPTIONS

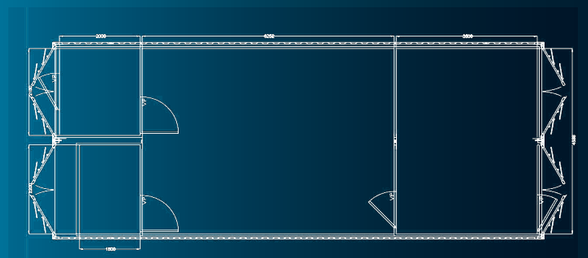
CleanCube mobile cleanrooms MINI 10m²



CleanCube mobile cleanrooms MIDI 25m²



CleanCube mobile cleanrooms MAXI 50m²

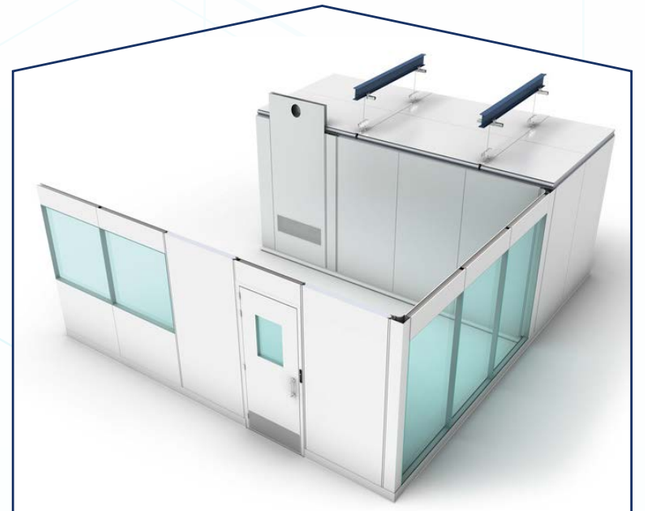


DOORS

Choice of doors available: rapid rise doors – PVC curtain with stainless frame and GRP or powder-coated steel personnel doors with stainless steel push plate, kick plate and handle with 400mm x 400mm vision panel. All Guardtech doors can be electromagnetically interlocked. Also available as a fully flush system with recessed base for flooring to cove into.

GLAZING

Fully-flush or semi-flush glazing between rooms. Doubled-glazed units can also be installed in the container shell but these are only for UK applications.

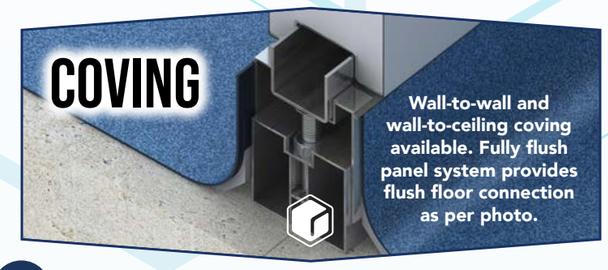


WALLS

Powder-coated CR4 mild steel panels with polyisocyanurate (PIR) insulated core and interlocking joints. The panels feature a 50mm thickness to form walls and ceiling. Highly durable, cleanable and chemically resistant, the walls are silicon sealed.

COVING

Wall-to-wall and wall-to-ceiling coving available. Fully flush panel system provides flush floor connection as per photo.



CEILING

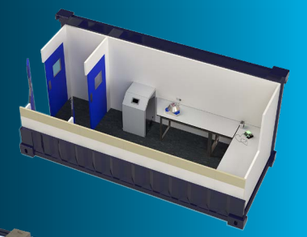
Panelled ceiling with thermal insulation core provides a flush surface. Lighting and filtration modules are recessed into apertures or surface mounted for laboratory applications.

FLOORING

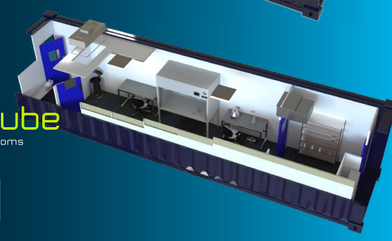
Homogenous vinyl floor reinforced with cross-linked polyurethane, UV-cured, hot-welded joints. Coved 100mm up the wall over underlay former and capped. Copper-grounded anti-static vinyl also available.

BASE MODEL SIZES

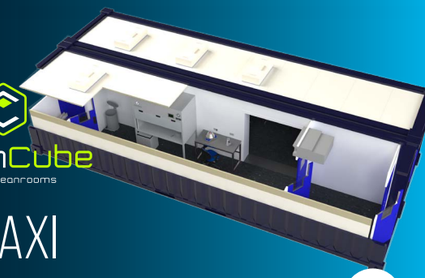
CleanCube mobile cleanrooms MINI



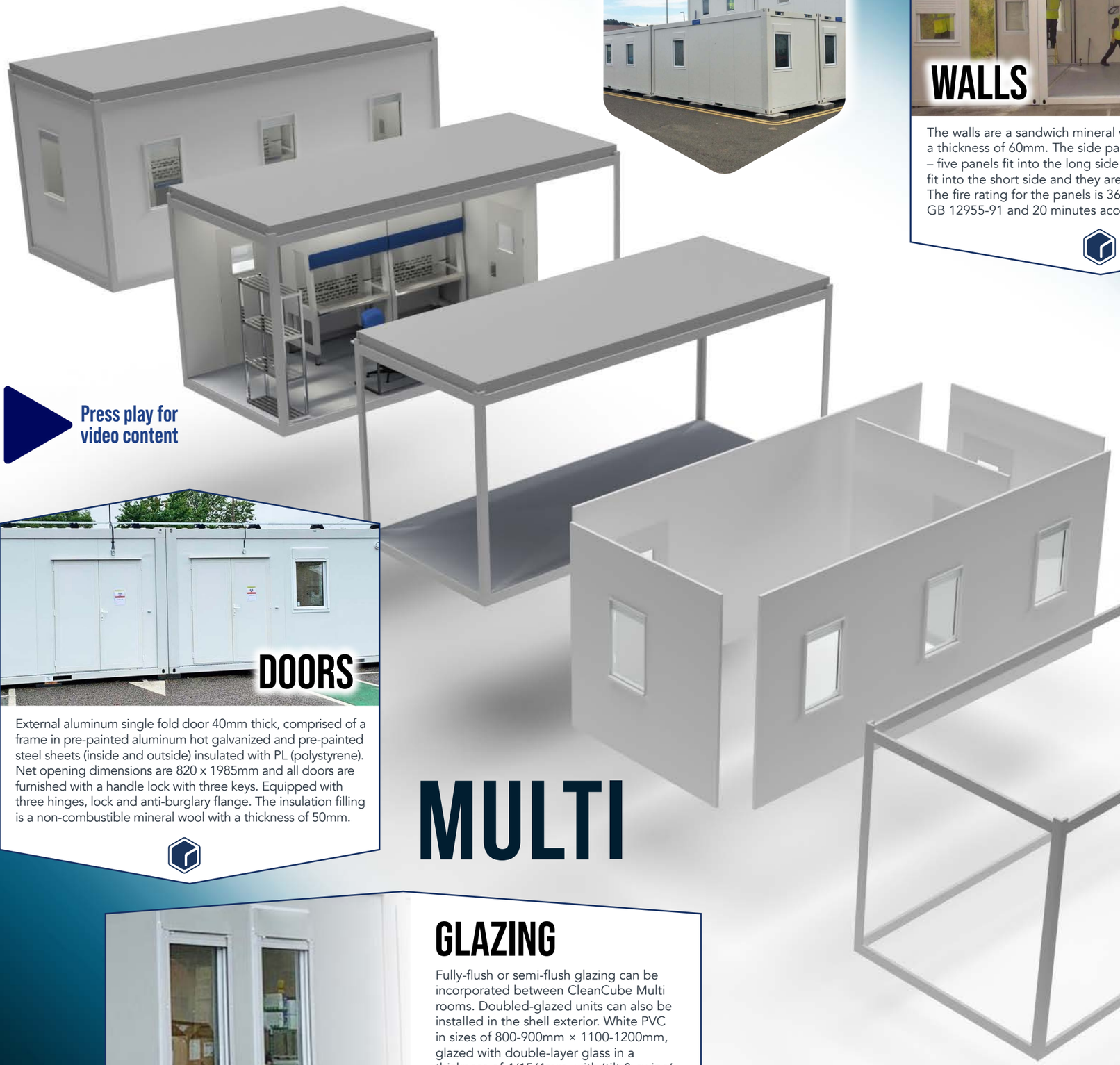
CleanCube mobile cleanrooms MIDI



CleanCube mobile cleanrooms MAXI



MODULAR BUILDINGS



Press play for video content

DOORS

External aluminum single fold door 40mm thick, comprised of a frame in pre-painted aluminum hot galvanized and pre-painted steel sheets (inside and outside) insulated with PL (polystyrene). Net opening dimensions are 820 x 1985mm and all doors are furnished with a handle lock with three keys. Equipped with three hinges, lock and anti-burglary flange. The insulation filling is a non-combustible mineral wool with a thickness of 50mm.

WALLS

The walls are a sandwich mineral wool composition with a thickness of 60mm. The side panels are 1140mm wide – five panels fit into the long side on the unit while two fit into the short side and they are fully interchangeable. The fire rating for the panels is 36 minutes according to GB 12955-91 and 20 minutes according to BS 476.

RAINWATER GOODS

Each Multi unit has a rainwater pipe in the roof framework, with a plate thickness of 10mm. There are four PVC rainwater downpipes with a diameter of 50mm in the corner pillars.

FLOORING

Cellulose fiber cement board flooring, autoclaved, with a thickness of 18mm and a cleanroom vinyl covering. The external wainscot is a flat galvanized steel sheet metal with a thickness of 0.5mm. The insulation filling is a non-combustible mineral wool (100mm thick) among steel transverse supports.

FRAME

Cold-formed steel profiles in a thickness of 3-4mm (bottom rails). There are eight corner fittings (dimensions according to ISO 1161) with a plate thickness of 10mm excluding top corner fittings of the top kit of each bundle (20mm thickness).

MULTI

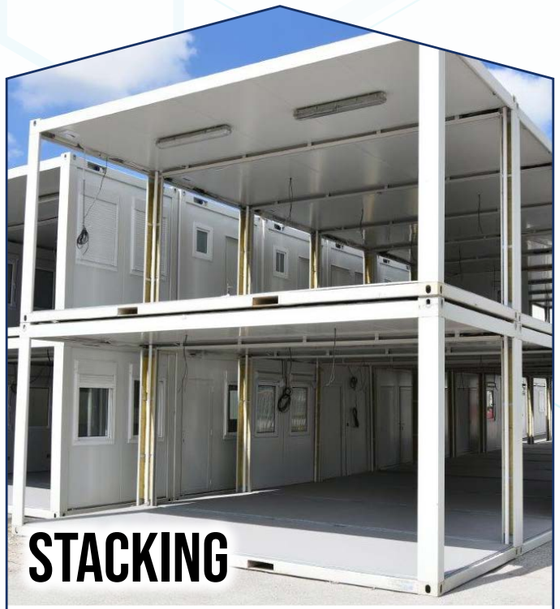
GLAZING

Fully-flush or semi-flush glazing can be incorporated between CleanCube Multi rooms. Doubled-glazed units can also be installed in the shell exterior. White PVC in sizes of 800-900mm × 1100-1200mm, glazed with double-layer glass in a thickness of 4/15/4mm, with ‘tilt & swing’ mechanism with aluminum rolling shutters.

CEILING

The CleanCube Multi ceiling is made up of 50mm thick mineral wool sandwich panels screwed to the steel beams of the roof frame. The external wainscot is 1.6mm thick corrugated ISO roof, CORTEN-made, shot-blasted and painted. The insulation filling is a non-combustible mineral wool with a thickness of 50mm among 30mm x 50mm x 2mm steel square bars.

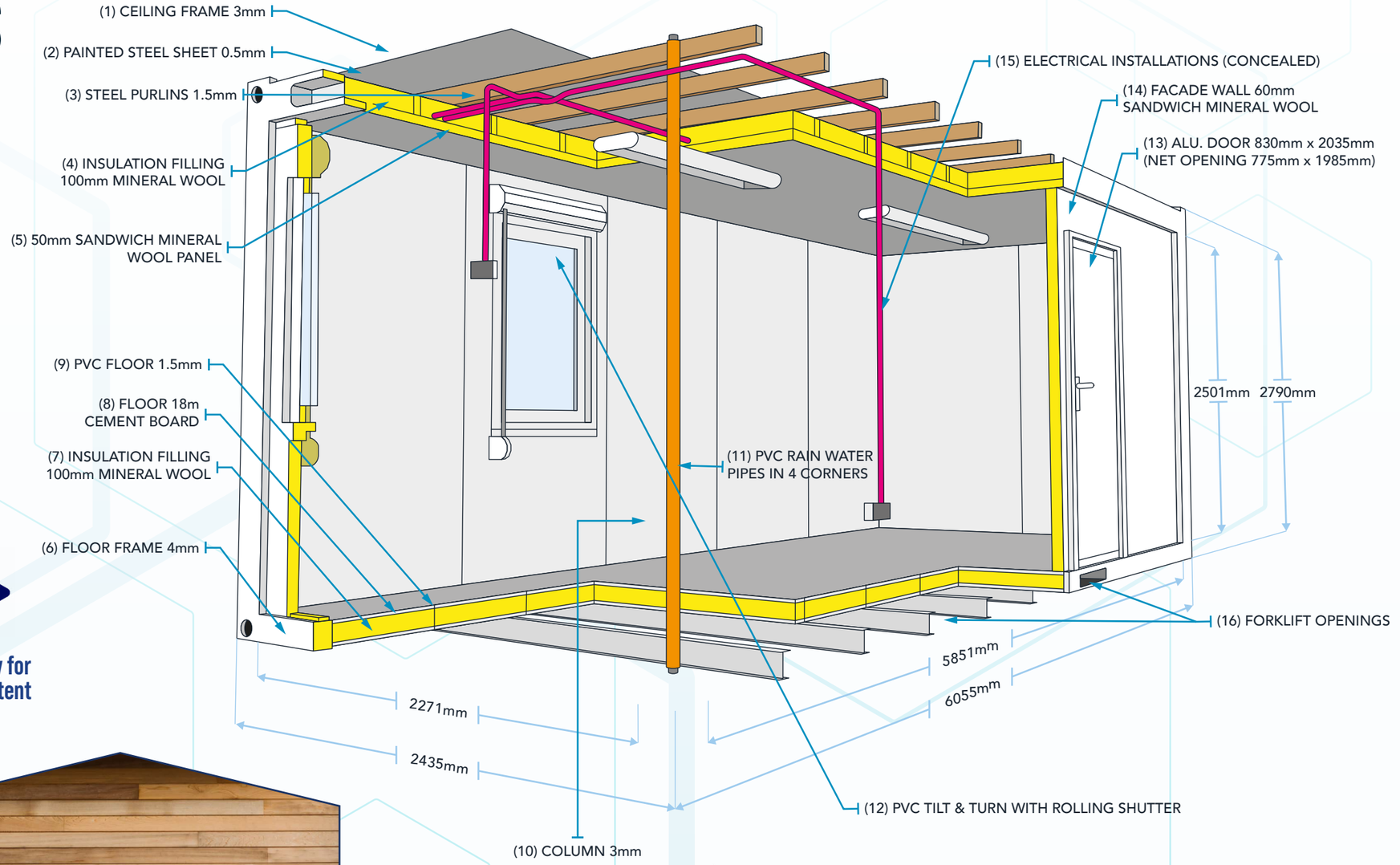
MODULAR BUILDINGS



STACKING

All Multi units are designed and factory assembled to meet the individual requirements of customers. The units can be stacked to create a two-floor system, with an adjoining staircase connecting the ground and first floors. The CleanCube team will be more than happy to discuss any particular configuration requirements you have.

Press play for video content

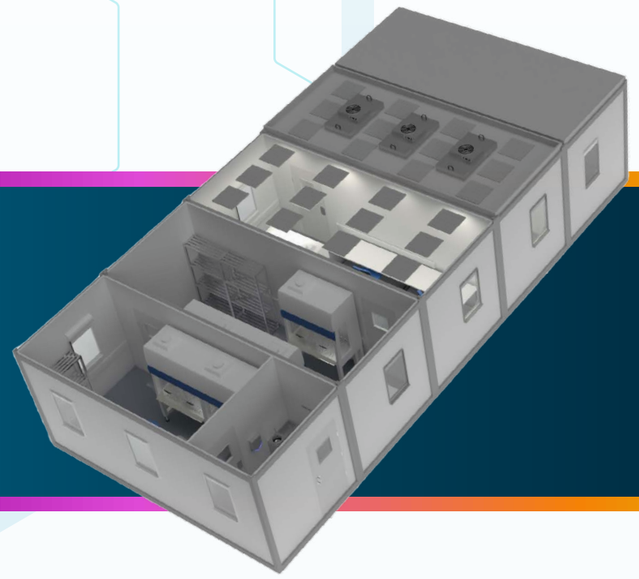


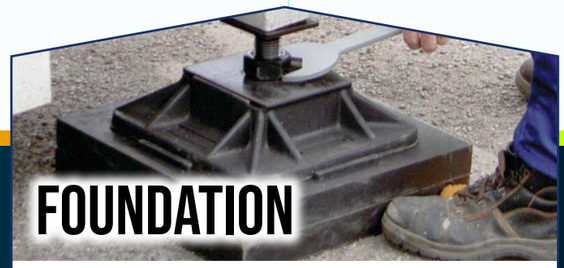
UTILITY CONNECTION

Mains power is brought to the CleanCube via the client facility or from dedicated generators. Electrical load will be determined during the design phase and a full register will be assembled. This will dictate the size of the supply required – typically this is likely to be a 63-amp 3-phase supply. Multi features a wide array of utilities options for the end user, including compressed air, extraction, vacuum, nitrogen and purified water hook-ups and services, as well as full drainage and connection to the town's water supply.

EXTERNAL CLADDING

CleanCube Multi units can be externally clad with decorative larch or oak slats or fully vinyl wrapped with client branding or decorative design.





FOUNDATION

All Cleancube Modules can be installed on a multitude of surfaces. The simplest installation will always be on a perfectly level concrete or other hard standing base or foundation pads. Alternatively, a specialist reinforcement membrane can be provided to lay over level grass or gravel with a load bearing of up to 150 tonnes per m2. Guardtech can make fine adjustment levelling using Jack Pads – a high-performance heavy load bearing levelling system.

MECHANICAL & ELECTRICAL

FILTRATION

For ISO 14644 compliant environments Fan Filter Units (FFU) with H14 HEPA filters and G4 pre-filters, provide 1,000m³/hour of filtered air. HEPA filtration can also be placed on the exhaust to provide BSL-3 compliance. For ceiling heights of 2.1m slimline FFUs are installed in the ceiling to provide vertical laminar flow. For ceiling heights of between 2.1m and 2.5m cleanrooms are horizontal flow.

HVAC

Temperature control via FCU (fan coil unit) serving a plenum for cleanrooms or wall-mounted recirculating units for labs. Humidity control also provided via upflow units or separate desiccant wheels. External condensers can be contained in attached plant rooms or mounted on CleanCube exterior.

EMS

Guardtech provide a fully integrated Environmental Monitoring System that can also be 21CFR Part 11 compliant. With a range of high-performance multifunction sensors, temperature, humidity and pressure can all be monitored in real time and recorded for an audit trail. Fully flush or semi flush LED display gives in-room feedback.

POWER MANAGEMENT

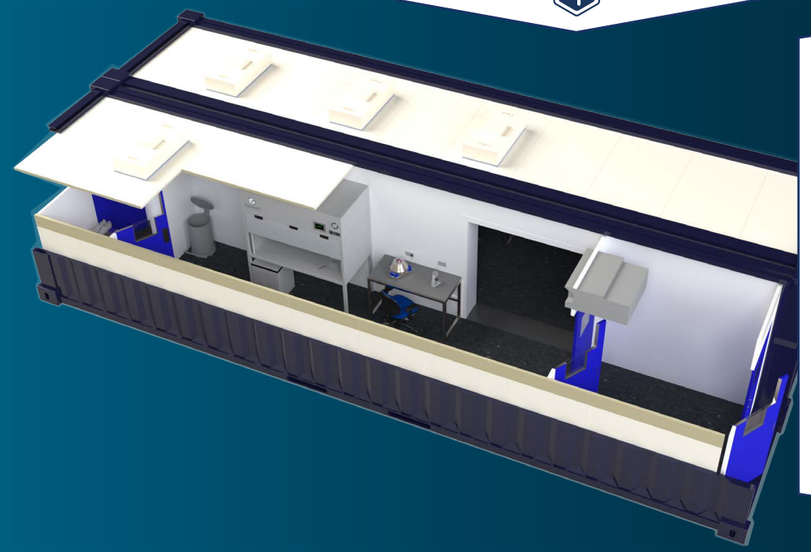
All models require a power connection from an external source. The rating of this will depend on the power demand of each module. UPS (uninterruptible power supply) battery back-up can also be provided and a changeover switch can be installed to alternate between a mains and generator supply.

FIRE ALARM

In-room smoke detectors and audible and visual alarm beacons can be installed and linked back to a centralised fire alarm panel. This can be connected back to the main facility fire panel board if required.

GAS SERVICES

Compressed air and other specialist gasses such as N2 and CO2 can be installed, with pipework in stainless 316 or Transair and connection to dedicated compressors, generators or cylinders.



CONTROL PANEL

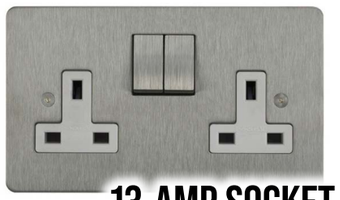
15.7" touchscreen HMI+PLC provides a full control and monitoring system for the CleanCube. Environmental Monitoring System feeds back to give real time data on temperature, humidity and pressure. Fan speeds and HVAC systems can be controlled as well as other compatible equipment.

GAS

Compressed air and nitrogen via compressors and generators housed directly within the cleanroom or lab – or in an enclosed plantroom. Pipework, point-of-use fittings, regulators and hook-up connections can also be put in place.

EXTRACTION

Chemicals, airborne particulate and heat can all be extracted to a localised filtration unit for scrubbing. Safe change modules can also be placed on the exhaust system to mitigate the risk of cross-contamination.



13-AMP SOCKET

All CleanCube models can include stainless steel or white plastic 13-amp sockets mounted flush. CAT6 network sockets and 16amp or 32amp three-phase options are also available in the range.

LIGHTING

Powder-coated steel light units, flush mounted into the ceiling panels with drop-down hinged diffuser. Also available as surface-mounted aluminium LED batten luminaires for laboratories. Activation by switch or PIR (passive infrared) sensor. Lights can be UV filtered for photo sensitive processes.

CONTAINMENT

For cleanrooms Guardtech install sockets and services flush to the panel system with containment embedded within the panel core. For laboratories, three-compartment PVC trunking is used for flexibility of socket positioning and cost effectiveness.

VEHICULAR CONVERSIONS

MOBI 3.5-TON

PDF

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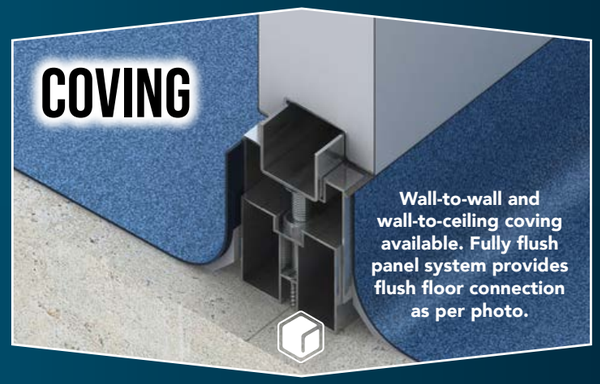
DOORS

Choice of doors available: rapid rise doors – PVC curtain with stainless frame and GRP or powder-coated steel personall doors with stainless steel push plate, kick plate and handle with 400mm x 400mm vision panel. All Guardtech doors can be electromagnetically interlocked. Also available as a fully flush system with recessed base for flooring to cove into.

FILTRATION

For ISO 14644 compliant environments Fan Filter Units (FFU) with H14 HEPA filters and G4 pre-filters, provide 1,000m³/hour of filtered air. HEPA filtration can also be placed on the exhaust to provide BSL-3 compliance. For ceiling heights of 2.1m FFL slimline FFUs are installed in the ceiling to provide vertical laminar flow. For ceiling heights of between 2.1m and 2.5m cleanrooms are horizontal flow.

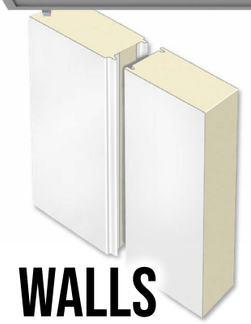


COVING

Wall-to-wall and wall-to-ceiling coving available. Fully flush panel system provides flush floor connection as per photo.

FLOORING

Homogenous vinyl floor reinforced with cross-linked polyurethane, UV-cured, hot-welded joints. Coved 100mm up the wall over underlay former and capped. Copper-grounded anti-static vinyl also available.



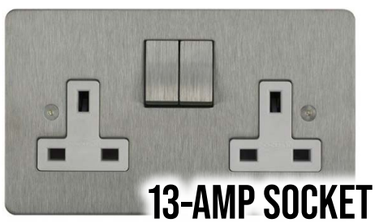
WALLS

Powder-coated CR4 mild steel panels with polyisocyanurate (PIR) insulated core and interlocking joints. The panels feature a 50mm thickness to form walls and ceiling. Highly durable, cleanable and chemically resistant – silicon sealed.

MOBI+ 7.5-TON

IMPORTANT INFORMATION TO NOTE:
Guardtech's 3.5-ton Mobi can be driven on a standard UK licence. The 7.5-ton Mobi+ version requires a specialist licence and a tachograph will also need to be installed and operated.

All CleanCube vehicles are fully RAC checked. Internal weight restrictions will apply. Leasing options available. Vehicle owner will be responsible for road tax, MOT and insurance.



13-AMP SOCKET

All CleanCube models can include stainless steel or white plastic 13-amp sockets mounted flush. CAT6 network sockets and 16amp or 32amp three-phase options are also available in the range.

SINK

Self-contained stainless steel sinks with container-fed hot & cold water supply and separate drainage vessel. Motion sensor-activated tap, soap & towel dispenser attached.

POWER SOURCE

Safety isolation transformers on all CleanCubes provide the mobile unit with independent grounding from the connected power source. 32amp male hardwired plug exterior-mounted.

LIGHTING

Powder-coated steel light units, flush mounted into the ceiling panels with drop-down hinged diffuser. Also available as surface-mounted aluminium LED batten luminaires for laboratories. Activation by switch or PIR (passive infrared) sensor. Lights can be UV filtered for photo sensitive processes.

AIR CONDITIONING

Temperature control via VRF split system serving a plenum for cleanrooms or wall-mounted recirculating units for labs. Humidity control also provided via upflow units or separate desiccant wheels. External condensers can be contained in attached plant rooms or mounted on CleanCube exterior.

FURNITURE & EQUIPMENT

CHAIRS

Our MVMT Pro chairs are designed for critical environments, including static-sensitive and particle/microbe-controlled areas. The MVMT Pro offers weight-activated control, meaning an individual user's weight sets the tension, which alleviates resetting controls in multi-user shift workplaces.

LAMINAR FLOW UNIT

Guardtech have partnered with Esco to bring you an extensive, exciting range of equipment solutions for your CleanCube, with an array of models to meet your laminar flow clean bench needs. Esco's new generation Airstream® laminar flow units offer a wide range of options in terms of material specs, width and height.

TRANSFER HATCHES

These hatches provide a controlled air-tight zone for the transfer of products on trolleys, eliminating unnecessary traffic from the cleanroom, reducing particle ingress and decreasing the risk of cross-contamination.

BIOSAFETY CABINET

Guardtech are delighted to offer the full range of Esco biosafety cabinets in all of our CleanCube models. This includes delivery, fitting and commissioning – if required. Popular installations feature the Airstream Class II Biosafety Cabinet – AC2-4E8 4ft model, but we can adapt the layout to meet your operational requirements.

ACCESSORIES

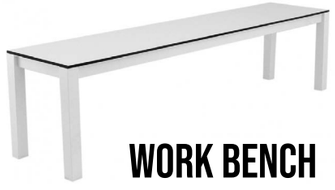
Guardtech can offer a number of cleanroom accessories with their range of CleanCubes, including Dyson Airblade hand dryers, various dispensers and stainless steel coat hooks.

SHELVING UNIT

Stainless steel shelving units available in a range of sizes and shelf configurations. These units are resistant to harsher cleaning products and are specially designed to be easy to clean, durable and functional.

SINK

Self-contained stainless steel sinks with container-fed hot & cold water supply and separate drainage vessel. Motion sensor-activated tap, soap & towel dispenser attached.



WORK BENCH

Whether it's chemical-resistant Trespa TopLab or simply a stainless steel surface you require, we can fit out your CleanCube with high-spec workbenches to ensure the quality of what you do isn't compromised.

CABINET

Guardtech's CleanCube cabinets are manufactured from either Trespa or grade 304/316L stainless steel. The units are available with a range of door and drawer configurations, stainless fixtures and fittings and can be arranged as mobile units on casters or static cabinets on solid levelling legs.

STEPOVER BENCH

CleanCube stepover benches come as standard seating benches on levelling legs or with storage compartments underneath for shoes, garments, PPE and consumables. Manufactured from Trespa or grade 304/316L stainless steel, Guardtech's stepover benches are durable and easy to clean.

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