CLEAN CUBE

Medical System

SYNERGY MED

GLOBAL DESIGN SOLUTIONS, INC.

SCAN ME

2023

FAQ

PRODUCTS & SERVICES

CLEAN CUBE is a customizable, templated, pre-engineered, pre-fabricated, turnkey manufactured construction solution for Perioperative, Interventional, Critical Care, Sterile Processing and other critical environments. Synergy's product offering also includes Mobile CLEAN CUBE Medical Systems (MC3).

MISSION STATEMENT

To provide rapid, streamlined development, delivery & construction of complex, clean clinical environments, delivering a safer environment to patient and staff.

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US Patent No.: US10,071,177 B1
US10,369,242 B1
US11,000,613 B1
US11,224,673 B1
Additional patents pending.

THE CLEAN CUBE SYSTEM

Streamlined Development, Manufacturing, Construction & Delivery of Complex, Clean Clinical Environments turned on in as little as 2-3 weeks. Delivering a Safer, Smarter Space to Patients and Staff.

REDUCE HOSPITAL ACQUIRED INFECTIONS

Hospital-acquired infections, also known as healthcare-associated infections (HAIs), are a major concern, as they can lead to increased morbidity, mortality, and healthcare costs. HAIs often result from improper hygiene and contaminated equipment. The CLEAN CUBE system was designed to measurably decrease these costly infections and provide a safe and sterile environment for all individuals receiving medical care.

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WATCH A VIDEO

AN INTEGRATED SOLUTION

The CLEAN CUBE Medical System is a modular, pre-prefabricated, future-proofed clinical room/space with a universal design that supports efficient clinical operations and clean room components that promote the highest level of infection control. CLEAN CUBE is the entire room, consisting of everything from full wall systems, doors, finishes, entire ceiling system (wall to wall and up to deck), full MEP including novel air distribution, room controls, and much more. The system is 100% clinical vendor neutral.

With fewer skilled craft-workers entering the construction industry, CLEAN CUBE allows for a much quicker design, precise manufacturing and installation, allowing healthcare facilities to generate revenue much faster than standard construction methods.

- Surgical Suites
- ICU Patient Rooms/Isolation Rooms
- Burn Unit
- Trauma Bays
- Interventional Suits
- Procedural Suites
- Sterile Processing
- Pharmacy
- Laboratory
- Additional complex clinical spaces

THE CLEAN CUBE SYSTEM

A COMPREHENSIVE CLINICAL SOLUTION

Time and Cost Efficiency: The CLEAN CUBE is constructed off-site while the hospital construction or remodel is in progress, significantly reducing construction time. This results in cost savings by minimizing labor and construction delays. The standardized design and assembly process also help streamline the construction timeline.

Quality Control: The CLEAN CUBE is built in a controlled factory environment using advanced manufacturing techniques. This allows for strict quality control measures, ensuring that each component meets the necessary standards and specifications. The controlled environment minimizes errors and reduces the need for rework.

Customization and Flexibility: CLEAN CUBE can be customized to meet specific hospital requirements. The modular nature of these units allows for flexibility in layout, equipment integration, and technology implementation. Enabling hospitals to tailor the operating rooms to their specific needs, maximizing efficiency and functionality.

Reduced Disruption: Traditional construction and remodels can cause significant disruption to ongoing hospital operations. By using CLEAN CUBE, the amount of time required for construction on-site is reduced, minimizing disruption to patient care and hospital workflow.

ENHANCED INFECTION CONTROL

The CLEAN CUBE is constructed using materials that are resistant to bacteria and other pathogens. The controlled manufacturing process ensures proper sealing, ventilation, and airflow management, reducing the risk of infection transmission during surgeries. Conventional cleaning provides differing levels of cleanliness. The clinical team can be confident of a continuous 99.9% disinfection when using CLEAN CUBE's integrated Dry Hydrogen Peroxide. A terminal clean to 99.9999% decontamination is repeatedly achievable when using CLEAN CUBE's integrated Hydrogen Peroxide Vapor.

Technological Integration: Advances in medical technology and equipment can be seamlessly incorporated into CLEAN CUBE. These units are designed to accommodate the latest surgical tools, imaging systems, networking, data, and other specialized hardware. The ongoing integration of technology can improve surgical outcomes, patient safety, and overall efficiency.

Sustainability and Environmental Impact: CLEAN CUBE employs sustainable construction practices, incorporating energy-efficient systems, environmentally friendly materials, and waste reduction measures. The controlled factory environment also allows for efficient use of resources and reduces construction waste on-site.

SYSTEM COMPONENTS

- THE NEST
  - Entire Complex Ceiling
- AIRFLOW MANAGEMENT
- INFECTION CONTROL
- CONTINUOUS 3 LOG DECONTAMINATION
  - Periodic 6 LOG Decontamination
- INTEGRATED ROOM CONTROL
- MODULAR WALLS
- FLOORING
- IMBEDDED SMART TECHNOLOGY

TIME IS MONEY

The CLEAN CUBE Medical System saves costs by reducing construction time and by minimizing disruption to ongoing hospital operations. Installation of CLEAN CUBE is much quicker than building a traditional operating room in place. This rapid deployment helps hospitals accommodate growing patient demand faster, leading to increased revenue generation.

CLEAN CUBE is highly scalable, allowing hospitals to optimize their resources and avoid overbuilding or underutilization of space, which results in additional cost savings.

Our integrated Medical System brings enhanced efficiency and workflows to the operating room. Improved efficiency can lead to shorter surgical durations, increased patient throughput, and reduced overall operational costs.

In addition to bringing spaces on line faster, CLEAN CUBE, as a manufactured assembly, can be treated as capital equipment. This opens up off balance sheet financing as well as an accelerated depreciation schedule.

RETURN ON INVESTMENT

The CLEAN CUBE Medical System enables hospitals to increase their surgical capacity quickly and efficiently. Hospitals can accommodate more surgical procedures and increase patient throughput. This increased capacity leads to a higher volume of surgeries, resulting in increased ROI.

CLEAN CUBE is installed and operational in a shorter time frame compared to traditional construction methods. The faster deployment and reduced downtime result in increased revenue opportunities.

Each room is designed with optimized layouts, integrated technology, and streamlined workflows. These factors contribute to improved surgical efficiency and reduced surgical durations, leading to increased revenue and utilization of resources.

CLEAN CUBE is an integrated Medical System that can be expanded, reconfigured, or relocated to meet changing hospital needs, including fluctuations in patient demand. The ability to adapt and optimize resources leads to improved ROI.

Our system has been engineered to enhance patient comfort through aesthetics, and safety through technology. These advancements can lead to improved patient satisfaction, better patient outcomes, and reduced complications or readmissions. Higher patient satisfaction and positive outcomes contribute to the hospital's reputation, attracting more patients and generating additional revenue.

SYSTEM COMPONENTS

THE NEST

The most complex and time consuming part of any Operating Room is the center part of the room. The center of the CLEAN CUBE is called "The Nest". The Nest is comprised of all structural, all mechanical, electrical and low voltage/integration conduits, media distribution and components, and medical gas piping.

STRUCTURAL

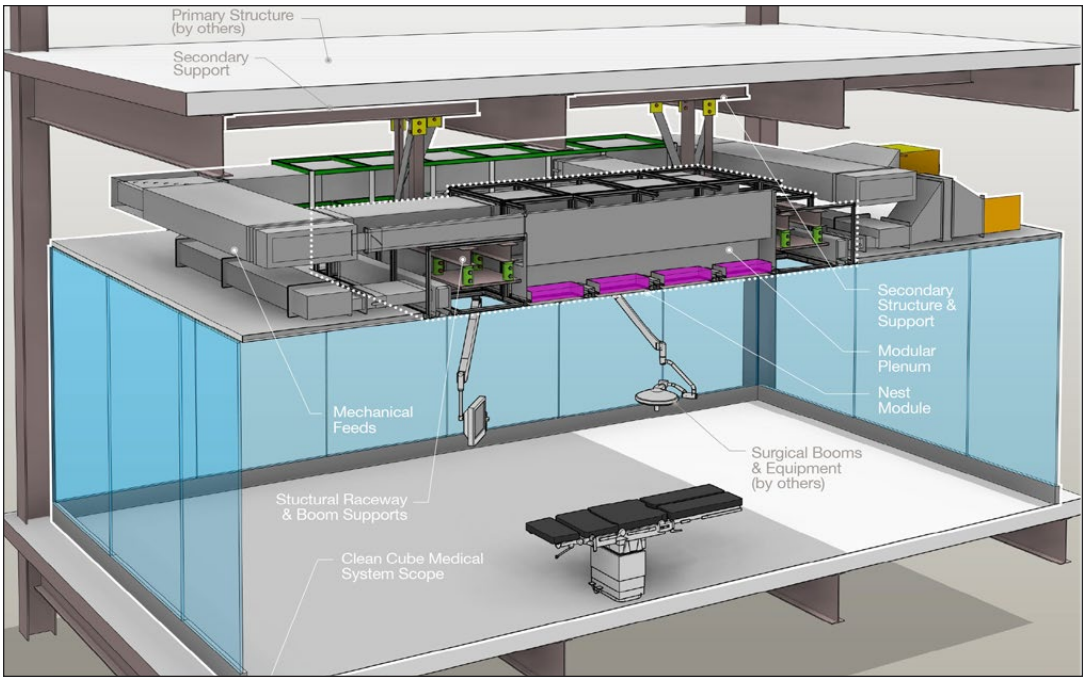
The structural grid is integral to the nest system. The systems vertical and or horizontal attachments to the base building are site adapt engineered and coordinated with the engineer of record. System is designed to be clinically vendor neutral and accommodate any and all mounting, plumbing, electrical, integration and other rough in specifications. Last minute modifications to equipment vendor make and model and even vendor change are seamless and easily modified. Site adaptable, dynamic and future proofed mounting structural system allows for adding and/or relocating ceiling mounted equipment easily versus a static structural plenum system.

MEP

The nest also includes all mechanical ducting and components such as VAV, reheat coils, dampers and other mechanical related devises, electrical and low-voltage conduit, med-gas plumbing. The nest is flanked by integrated multi-trade racks that deliver all MEP to precoordinated hand-off point to base-building teams outside of the CLEAN CUBE. All mechanical is manufactured transported and delivered using clean duct protocol.

CEILING SURROUND

The ceiling surround is panelized, with coordinated pathways for fire suppression, A/V integration, and lighting. Surround finishes include PVCU, Aclyloyl Engineered Polymer, and Paperless drywall.



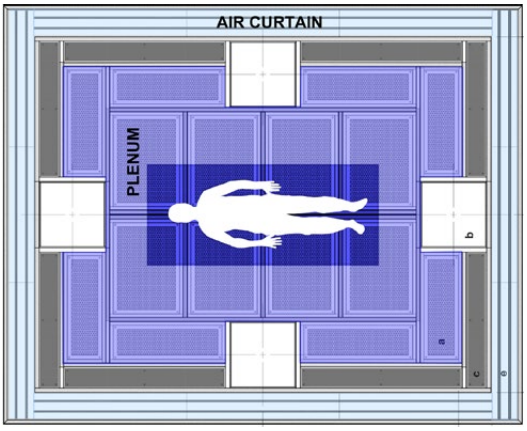
SYSTEM COMPONENTS

AIRFLOW MANAGEMENT

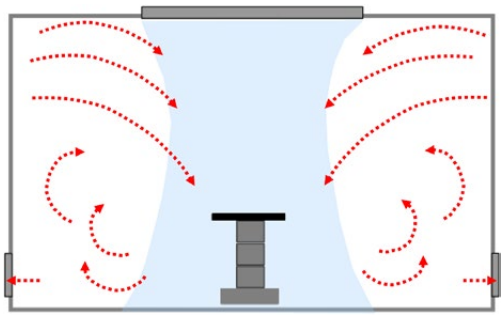
FLEXIBLE MODULAR PLENUM

CLEAN CUBE'S proprietary plenum delivers optimal air distribution over the sterile field with terminal HEPA filtration and up to 35 ACH. Our optional Air Curtain, protects the laminar flow from collapse, a condition demonstrated in all laminar only air systems. The "room within a room", achieved with a slight delta in temperature and air velocity from the curtain, prevents dirty air from mixing in over the surgical field. And with a greater area of the room treated, spaces outside the surgical field, which may have sterile instruments or equipment used intra-operatively, are kept cleaner.

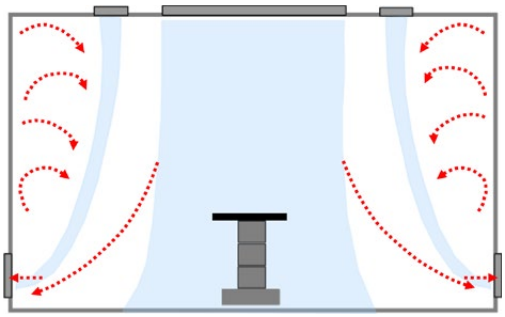
CLEAN CUBE MODULAR PLENUM



CLEAN CUBE AIR DISTRIBUTION



Modular Plenum Only



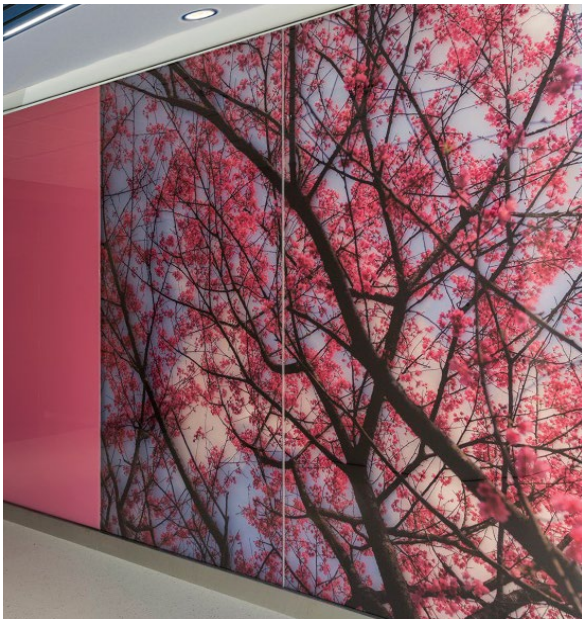
Modular Plenum with Air Curtain

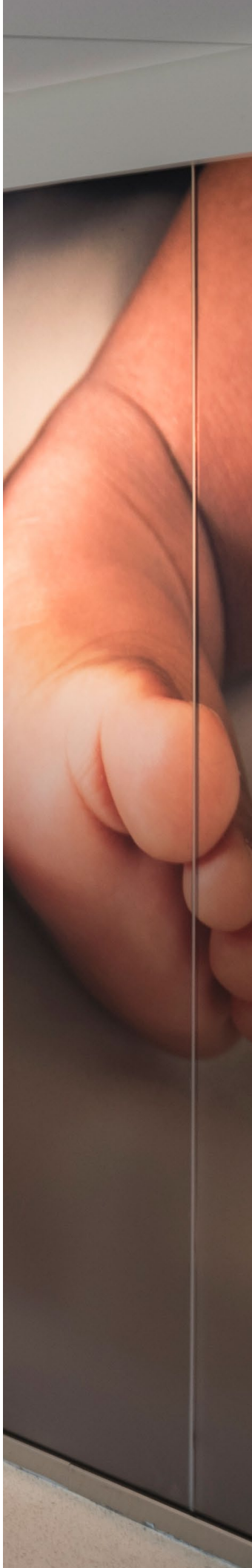
SYSTEM COMPONENTS

MODULAR WALL SYSTEM

CLEAN CUBE's panelizing systems produce wall and ceiling surround assemblies in project-appropriate depths of 2" furring wall, 4" and 6". Included in our portfolio are UL rated assemblies when smoke and fire partitions are called for. The system is delivered to the project with all required MEP and rough-ins as coordinated with base building. The demising walls of the CLEAN CUBE are installed in a single shift, with little to no lay down space consumed, and zero waste. Our walls arrive on site ready to receive the CUBE CLAD wall finish selected by the project.

Features Include:
- STC Ratings up to 60 or per project specification
- Lead Lining
- UL Rated Assemblies
- Smoke, 1hr and 2hr rated assemblies
- Non-destructive access to wall cavity for post installation inspection, upgrades, or repairs





SYSTEM COMPONENTS

CUBE CLAD WALL FINISH SYSTEM

WALL CLADDING SYSTEM OPTIONS FOR THE CLEAN CUBE MEDICAL SYSTEM

Synergy Med offers FIVE different Cube Clad wall finishes. All finishes are a uniform 12mm thickness and all cladding is solid surface on the exterior for ultimate durability and cleanliness. Synergy's proprietary Clad-Lock fastener system allows for quick installation and demount of wall panels. Each of these cladding options are coordinated with our panelized walls for seamless installation. All Cube Clad product lines are glazed with an antimicrobial silicone, heat welded or chemically welded for a clean monolithic joint. Gasketing is available.

Glass is our most versatile option, allowing for high-definition images, patterns, and solid colors. The glass is back-painted and versions can also be backlit with different illumination.

Arcoplast, Altro, and Corian all have different color options. Altro has options for laser printing. Stainless-steel is our least versatile surface but can be powder coated and manufactured in high, medium and low sheen. Starfire Glass and Arcoplast are substrate free. Other options have a non-drywall substrate.

STARFIRE FLOAT GLASS

Tempered safety glass

- Most versatile option
- Hi-res images & graphics
- Solid colors
- Backlit options
- Substrate free

ARCOPLAST DECLARE

Aclyloyl Engineered Polymer

- Color Options
- Substrate free

ALTRO WHITEROCK

PVCU

- Color Options
- Laser printing

CORIAN

ATH (Acrylic Polymer)

- Color Options

STAINLESS-STEEL

- High, mid and low sheen
- Powder coating option

SYSTEM COMPONENTS

FLOORING

Floors are site installed and not prefabricated. Synergy will install any flooring type specified by the owner. Options include Sylikal, Stonehard, Nora Rubber, Sheet Vinyl, and others. Poured resin flooring systems have many benefits including speed of installation, resilience to staining, general wear and tear and the ability to adjust texture to the application.

SYSTEM COMPONENTS

INFECTION CONTROL VAPOR TECHNOLOGY

VAPORIZED HYDROGEN PEROXIDE (HPV)

The highest level of disinfection is achieved utilizing our integrated, automated, vaporized H2O2 system. The system eliminates bacteria, viruses, fungi, spores and more from every exposed surface in your clinical space. It is effective in every corner, floor to ceiling, and every nook and cranny. Decontaminate the entire space with just a single dosing cycle. Achieve >6-log reduction on bacterial spores (the gold standard), killing 99.9999% of pathogens in the room. Single or multi room systems available.

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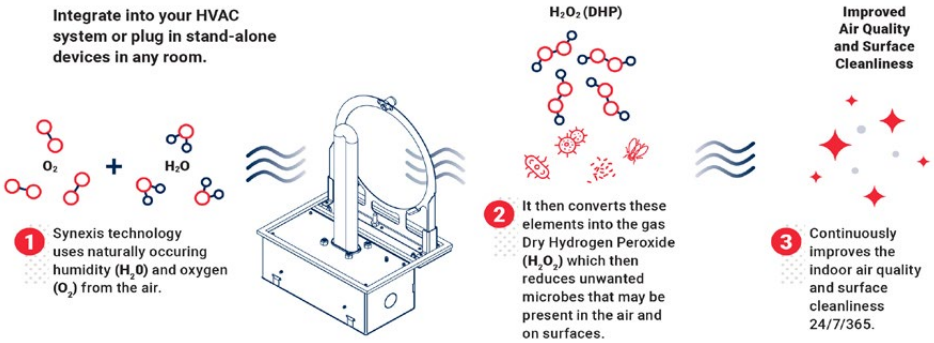
SYSTEM COMPONENTS

CONTINUOUS DECONTAMINATION

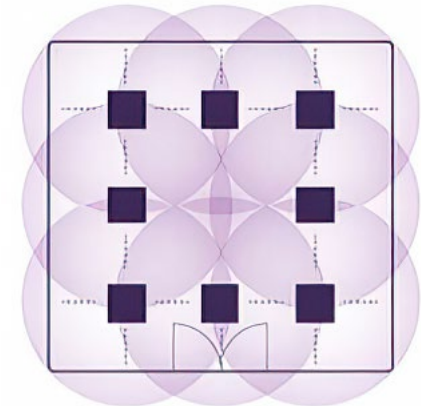
DRY HYDROGEN PEROXIDE (DHP)

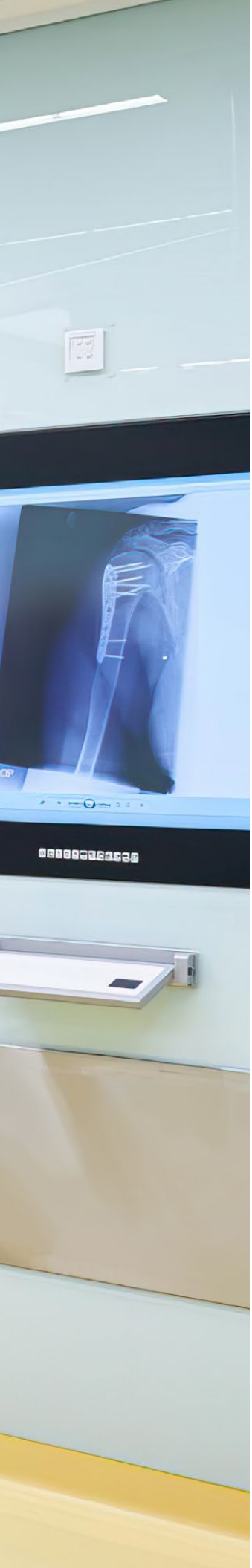
DHP is a patented technology that produces Dry Hydrogen Peroxide from the humidity in the air to reduce bacteria, mold, viruses, odors, and insects. DHP flows continuously into every corner of a room without requiring anyone to leave the space. The DHP system technology can be fully automated and seamlessly integrated into any CLEAN CUBE duct system and dispersed into the CLEAN CUBE via the air curtain and delivers a continuous 3 LOG decontamination.



UV OPTIONS

Periodic UV & Continuous Near UV, disinfection solutions available for integration into your CLEAN CUBE





SYSTEM COMPONENTS

INTEGRATED ROOM CONTROL

CLEAN CUBE can integrate with any base building BAC Net system. Using our standard JCI controls or by matching base building and project specific control systems, CLEAN CUBE will adapt to the required system to ensure seamless monitoring and control of the entire facility.

CLEAN CUBE controls include integration with our automated disinfection platforms allowing for constant visualization of the condition of the environment.

Focused on safety and performance, adjustments to temperature are felt immediately thanks to dedicated coils built into the total CLEAN CUBE solution.

TURNKEY INSTALL

Once the layout, dimensions, and required equipment for the turnkey operating room are determined, the CLEAN CUBE design is adjusted to meet any site specific requirements and standards. The unit is fabricated off-site in a controlled factory environment. The necessary components, such as walls, ceilings, floors, lighting, and HVAC systems are assembled and prepped for shipping. The CLEAN CUBE is transported to the site, delivered in prefabricated sections that can be easily assembled and interconnected.

When remodeling an existing operating room, an assessment is conducted to evaluate the current layout, functionality, and any specific requirements for improvement. This includes considering factors such as workflow efficiency, infection control, and technological upgrades. Based on the assessment, a remodeling plan is developed, considering the necessary changes to the operating room. During the planning phase, the modular components needed for the remodeling are fabricated off-site. This ensures minimal disruption to ongoing operations in the existing operating room. The existing operating room is prepared for remodeling by disconnecting and removing any equipment or fixtures that are being replaced or repositioned. The modular components, such as wall panels, ceilings, or equipment supports, are installed, integrated, and connected. Once the modular components are in place, all systems are tested to ensure proper functionality and integration. This includes electrical connections, medical gas supply, lighting, ventilation, and data connections.

PROJECT MANAGEMENT

Managing a CLEAN CUBE Medical System instal involves overseeing the entire process from start to finish. Here are some key steps in a CLEAN CUBE Medical System installation:

- Project Initiation
- Stakeholder Assessment
- Planning and Design
- Procurement
- Construction and Installation
- Integration and Testing
- Regulatory Compliance
- Training and Handover
- Commissioning and Operations
- Documentation and Project Closure

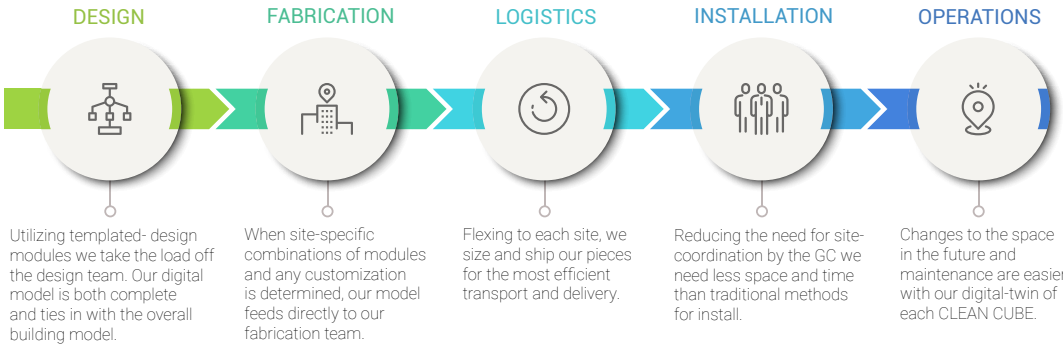
Effective project management for CLEAN CUBE requires strong communication, collaboration, and coordination among various stakeholders involved. Regular progress meetings, clear documentation, and proactive issue resolution are essential for successful project completion.

OPERATIONS/DEPLOYMENT

PROJECT INTEGRATION

DESIGN PROCESS - DELIBERATE FRAMEWORKS AND APPROACH

CLEAN CUBE closely follows a design for manufacturing and assembly (DfMA) approach. This results in streamlined design and engineering integration with base building, efficiency during installation, and ease in maintaining the space. CLEAN CUBE quickly adapts to base building design and existing conditions inclusive of sizing of components for ease of ingress, be it through a standard elevator or open section of the curtain wall.



OPERATIONS/DEPLOYMENT

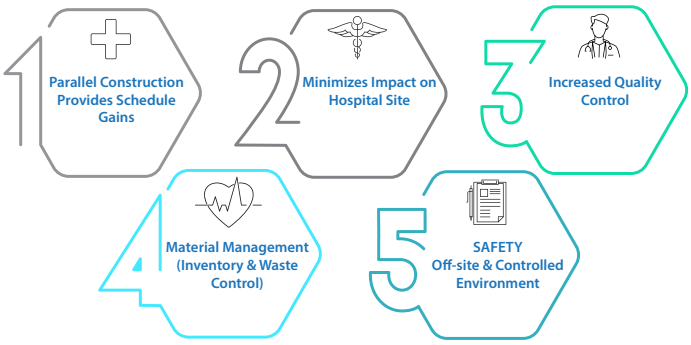
PROJECT INTEGRATION

DESIGN INTEGRATION ACROSS THE ARC

CLEAN CUBE is designed to integrate across the spectrum of traditional project development, from conceptual design through construction document sets. Our developed and published models project our commitment to clear communication on scope, respect traditional subject matter expert review, and educate project teams about the benefit of prefabrication. We do so with an in depth understanding of the design arc and the appropriate level of information to be shared at each step.

Synergy Med has a series of architectural, structural, plumbing, mechanical and electrical families that are purposefully adaptable to the base building model.

PRE-FABRICATED MODULAR DESIGN DELIVERS CONSTRUCTION EFFICIENCY AND FASTER REVENUE



MC3 MOBILE CLEAN CUBE

The Patented Mobile CLEAN CUBE or MC3 unit was originally designed for the Marine Corps for use in frontline modular, mobile deployable clinical space to give an injured soldier an exponentially better chance of survival in the field.

The arrival of COVID19 to the US in the spring of 2020 gave Synergy Med the opportunity to rapidly modify designs and engineering from a military battle field application to a multi-use civilian application for expanding, ebbing and flowing clinical capacity solutions.

MC3 UNIT BENEFITS:

- Fully self-contained mechanical air handling systems delivering MERV 8 or differing levels of pharmaceutical grade HEPA filtration.
- Integrated potable water and waste system as well as ability to tap into community water and waste.
- Ability to hook into electrical grid with generator backup or exclusively run off generator.
- UPS is available for onboard IT and selected sensitive equipment.
- Badging and high security systems

MOBILE CLEAN CUBE

MC3-RR (Rapid Response) units contain many technological innovations aimed at improving care and safety for caregiver, patient and others. It is an extremely durable, modular, expandable, upgradable, and fully transportable multi-use environment. The MC3 is a mobile, scalable, clean-clinical environment that can be designed, engineered, manufactured and delivered to the deployment site with “lights on” in just weeks VS months or years for standard constructed environment. The units can be designed as stand alone or be configured using multiple units delivered and installed as one.

Contamination and potential infectious agents are controlled with integrated, automated dry hydrogen peroxide delivering a 3-4 LOG reduction in bioburden while space is occupied. When a greater decontamination is needed Synergy Med’s patented sequence of operations delivering integrated, automated vaporized hydrogen peroxide to achieve a greater than 6 LOG decontamination of the clinical or other space.

SMART CUBE

SMART CUBE employs RFID, optical, and IOT sensors throughout the space to allow for real time and continuous data capture of critical equipment, personnel, patients and processes. Analysis of data collected will allow for correlation to and correction of never events, produce opportunities for continuous improvement, confirm or improve upon best practices and create more training opportunities for staff. Ultimately, this translates to improved patient care and facility utilization.

SCAN ME

SYNERGY MED
GLOBAL DESIGN SOLUTIONS, INC.

Synergy Med Global Design Solutions is the developer of the original CLEAN CUBE Medical System and a leader of clean clinical space design. With over 100 years of experience and three patented products, we strive to develop safer, smarter clinical spaces for employees, patients and medical professionals.

CLEAN CUBE MEDICAL SYSTEM
MC3 MOBILE CLEAN CUBE
SMART CUBE
VIRTUAL CUBE

SYNERGY CLEAR
SYNERGY MED CAPITAL
SYNERGY STAFFING SOLUTIONS

CLEAN CUBE MEDICAL SYSTEM
SMART CUBE TECHNOLOGY * Patent Pending
VIRTUAL CUBE
MC3 Mobile CLEAN CUBE
CLEARANCE & SCREENING KIOSK SYNERGYCLEAR
SYNERGY STAFFING SOLUTIONS
SYNERGY MED CAPITAL

Proudly designed, engineered, and manufactured in the USA

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Synergy Med is a Proud Sponsor of the American Hospital Association
https://www.aha.org/aha-transformation-talks/ep8-facility-planning

GET IN TOUCH

Please contact us for more details or additional information:

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Additional patents pending.

Multiple financing options available.

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