GUARANTEED PERFORMANCE

We guarantee your cleanroom will meet or exceed the agreed upon performance specifications, for the quoted firm price we gave you, or we will make any required modifications.

MODULAR CLEANROOMS

DESIGN. ENGINEERING. MANUFACTURING. INSTALLATION. COMMISSIONING.

www.mecart-cleanrooms.com

AN AFFILIATE COMPANY OF POLR
KEY TOPICS

1. WHO WE ARE

2. WHY CHOOSE MECART
   I. PROVEN TRACK RECORD
   II. HVAC SYSTEMS
   III. ALL-INCLUSIVE TURNKEY SOLUTION
   IV. IN-HOUSE SPECIALISTS
   V. GUARANTEED PERFORMANCE & COMPLIANCE

3. OUR CAPABILITIES

4. A BETTER MODULAR SYSTEM

5. WALL PANEL SYSTEM

6. SELF-SUPPORTING WALKABLE CEILING SYSTEM

7. HVAC SYSTEMS

8. CLEANROOM DOORS

9. POPULAR OPTIONS FOR YOUR CLEANROOM

10. RECENTLY COMPLETED PROJECTS
    I. GMP CLASS B STERILE OPERATION CLEANROOM
    II. ISO 8 PHARMACEUTICAL CLEAN ENVIRONMENT
    IV. ISO 7 STERILE COMPOUNDING CLEANROOM
    III. ISO 6 SEMICONDUCTOR CLEANROOM
    V. ISO 7 CHEMICAL ANALYSIS ROOM
    VI. ISO 8 CLEANROOM
Established in 1974, MECART is a high quality Canadian manufacturer that designs, builds, and installs controlled environments worldwide. We offer turnkey solutions with our complete in-house engineering, design, and manufacturing capabilities, all conducted under an ISO 9001 certified Quality Assurance system.

Our applications include the following:
- Cleanrooms
- Metrology labs
- Acoustical rooms and enclosures
- Control buildings
- Electrical rooms

OVER 3,000 COMPLETED PROJECTS SINCE 1974!

THE MECART BRAND IS KNOWN FOR ITS PROVEN SOLUTIONS, HIGH QUALITY PRODUCTS, ON TIME DELIVERY, COMPETITIVE PRICING, AND EXCELLENT CUSTOMER SUPPORT.

OUR GROUP & BUSINESS UNITS
MECART is a unit of Pol R Enterprises Inc. With offices, plants, and distribution centers across Canada and in the United States, Pol R strives to make buildings, spaces, and facilities comfortable, quiet, safe, and efficient.
PROVEN TRACK RECORD

Founded in 1974, we have manufactured, shipped, and installed hundreds of cleanrooms worldwide. Our experienced team has worked on cleanroom projects varying in size and application and can guide you on classification requirements, layout, air treatment systems, etc. Our projects range from 150 to 100,000 square feet, and we have worked with some of the world’s largest companies.

ALL-INCLUSIVE TURNKEY SOLUTION

At MECART, we don’t simply manufacture cleanrooms, we can also assume responsibility for your entire project. Our turnkey solution avoids unnecessary costs such as project supervision, project management costs, and on-site construction risks. We also reduce training costs for contractors who are often unfamiliar with the strict rules of cleanroom environments. We meet or exceed all applicable regulations: FDA, GMP, ISO, and USP.

HVAC SYSTEMS

MECART’s in-house mechanical engineers will work with you to determine which HVAC system is best suited to your cleanroom, whether a MECART custom-built system or a third-party solution. MECART’s HVAC systems are manufactured in our plant under strict ISO quality guidelines.

SEE PAGE 10
IN-HOUSE SPECIALISTS
MECART’s in-house team of engineers, architects, and technicians are dedicated to your project from the early stages to determine your specific requirements. They stay with the project through installation completion, commissioning, and validation.

MECART installs cleanrooms worldwide with either a full MECART installation team or one of our supervisors working with a local team, ensuring rapid installation and compliance with local regulations.

GUARANTEED PERFORMANCE & COMPLIANCE
With its integrated approach, proven system, and track record, MECART is able to guarantee the compliance and performance of every cleanroom it delivers. MECART is committed to delivering your project on schedule and in accordance with your performance standards. Unlike most cleanroom manufacturers, we do not rely on third party suppliers. Since we manufacture the entire cleanroom in our own plant, we control every aspect of the manufacturing process from start to finish. We can guarantee the delivery time, quality, and performance of our cleanrooms!

- Guaranteed compliance
- Guaranteed performance (ISO, GMP, FDA, USP, etc.)
- Guaranteed quality
- Guaranteed on-time shipping and delivery
- Guaranteed price

We guarantee your cleanroom will meet the performance specifications it was designed for or Mecart will make any required modifications.
3. MECART’S CAPABILITIES

**TURNKEY / DESIGN-BUILD**
We can design, build, install, and commission your cleanroom.

**PRELIMINARY ENGINEERING**
The pre-engineering process enables us to produce a budgetary quote for your clean room project by identifying your needs and objectives, the regulations and classification requirements, the general technical specifications, and any other requirements.

**ENGINEERING & DESIGN**
MECART will design your cleanroom and will qualify the design (DQ) to make sure it meets your requirements. Our in-house mechanical engineers can design MECART’s HVAC system or recommend the integration of a third-party system.

**COMMISSIONING, PRE-CERTIFICATION, PRE-VALIDATION**
MECART thoroughly tests the cleanroom to confirm that it will operate according to design objectives and specifications.

**MANUFACTURING AND CONSTRUCTION**
Manufacturing modular components in the controlled environment of our factory enables us to produce and guarantee product quality and on-time delivery.
- Design, fabrication, and installation under ISO 9001
- 32,500 sq. ft. (3020 m²) manufacturing plant

**SHIPPING & INSTALLATION**
MECART can provide its own qualified installers worldwide.

**DESIGN TO PRINT**
We can partner with other professionals that you currently work with (consultants, architects, contractors, engineers) to manufacture custom panels to meet your needs.

**OR**

**3. MECART’S CAPABILITIES**
MECART’s modular cleanrooms are built using 100% prefabricated panels, which can include pre-wired outlets, lighting fixtures, and integrated utilities. This minimizes on-site disruptions and installation time and also drives consistent quality, flexibility, and prompt delivery. Our cleanrooms’ unique modular advantage is its Cam Lock, which makes assembling MECART’s modular cleanrooms as easy as putting two pieces of a puzzle together.

**INTEGRATION OF ELECTRICAL & MECHANICAL UTILITIES**

Our panels are prewired during fabrication
- Power Outlets and Light Switches
- Network and Telephone
- Magnehelic and other Monitoring Systems

**BUILT-IN AIR RETURN**

The cleanroom’s low air returns are engineered within the wall panel cavity, which uses less space, maximizes the building footprint, and is easy to clean.

**PRE-ENGINEERED ACCESS AND CONTROL PANELS**

- Gases (oxygen, nitrogen, etc.)
- Compressed air
- Purified water

**CAM LOCK SYSTEM**

Adjacent wall panels slide together by connecting the side hooks and locking them firmly in place. Once locked, panels fit perfectly together, leaving the cleanroom wall with a completely sleek surface finish.

Assembly is done without disruption as no cutting and fitting is required.

Dismantling is as simple as assembly which allows for fast and easy reconfiguration if needed.
MECART cleanroom wall panels are built using two strong Galvannealed steel panels that are sandwiched to create a 4" panel, allowing electrical outlets and mechanical components to be placed within the wall cavity prior to the on-site installation. The panels are custom-made for your cleanroom projects, pre-engineered, and pre-fabricated to eliminate any additional cutting and grinding during the on-site installation.

**HEAVY DUTY GALVANNEALED STEEL**

Galvannealed steel coating is harder than galvanized steel. Galvannealed steel panels are non-corrosive, anti-static and ESD compatible (since the room itself is grounded), non-combustible, and impact resistant.

**PANEL FEATURES**

**WIDE VARIETY OF COATINGS/OPTIONS**
- Non-particle shedding
- Non-outgassing
- Cleaning solution resistant
- Scratch resistant
- Anti-microbial
- Specific chemical resistant
- Allows for exterior installation

**THERMAL AND ACOUSTICAL INSULATION**

MECART’s clean room wall panels are insulated (R-16 insulation) for easier climate control, energy savings, and better acoustical performance.

**SELF-SUFFICIENT STRUCTURE**

MECART modular cleanrooms are typically designed to be fully independent from the main building and meet seismic zone requirements.

**OUR STANDARD IS A CUSTOM SOLUTION**

MECART’s cleanroom wall panels are custom-built for your needs. Our configurable panel system allows us to offer custom cleanrooms at competitive pricing.

REQUEST A QUOTE TODAY
6. SELF-SUPPORTING
WALKABLE CEILING SYSTEM

Our ceiling system uses prefabricated and pre-engineered steel panels with preconfigured HEPA filters, lighting, and other penetrations for fire alarms, video cameras, sprinklers or sprinkler openings, etc.

The absence of tiles gives you a TRULY smooth finish, which is easy to clean.

WALKABLE CEILINGS

Our cleanroom walkable ceiling is constructed from a self-supporting steel structure allowing for installation of equipment above the room and allows maintenance staff to traverse the whole clean room ceiling, which eliminates the need for costly and obstructive catwalks and mezzanines.

OPTIONAL SEAMLESS WALL-TO-CEILING COVING

Coved corners are used for hard-to-clean right angles on wall-to-ceiling (and wall-to-floor) joints. These are generally required where aseptic operations are being conducted and in more stringent classes such as ISO 5 and ISO 6 which require easy to clean environments.

PRECONFIGURED UTILITIES

MECART ceiling panels are preconfigured for filtration and lighting. HEPA and ULPA filter units, lighting, and fire sprinkler heads are integrated directly into the ceiling panels. Maintenance such as servicing lights and cleaning HEPA/ULPA filters can be done from the ceiling without entering the cleanroom, thus preserving the clean environment, which considerably reduces your maintenance costs.

SELF-SUPPORTING CEILING

Our freestanding cleanrooms use self-supporting panels. This means our cleanroom is totally detached from the main building roof structure. **We don't make any attachment to your walls and ceiling – NONE!**

- **Potential savings of $50,000 to $250,000** depending on the cleanroom size if your roof needs modifications to the structure to support 20-30 lbs. per sq. foot (average load of our competitors ceiling with HVAC)
- **No permanent attachments to existing walls** – no costly work or approvals in leased space
- **NO (or very minimal) internal columns**
- **Zero attachment means much more future flexibility and adaptability to your process changes, expansions, or regulation changes**
Since the HVAC system is at the heart of your clean room, it needs to be properly designed. With our experienced in-house engineering team, MECART will consider all aspects of the HVAC system in order to design and build you a compliant, performant, and comfortable cleanroom.

MECART experts will find your best HVAC solution!

MECART GUARANTEES THE PERFORMANCE AND COMPLIANCE OF ITS HVAC CLEANROOM SYSTEMS.

CUSTOM DESIGN

- Our custom-made horizontal or vertical air handling units are perfect for space restrictions.
- Multiple engineering configurations and air tunnel options are available.
- Floor or roof-mounted options
- Preassembled at MECART plant or pre-fabricated and assembled on your site.

DURABILITY & EASE OF MAINTENANCE

Our HVAC systems are heavy duty and maintenance-free. Factory-installed components and control systems simplify job-site coordination, reduce installation time and expenses, and provide single-source responsibility for warranty and service issues.

MECART-MADE AIR HANDLER

Whether you need temperature/humidity control precision, specific air flow, have space constraints, or any other specific requirements, let MECART design your air handling unit to meet your specifications.

- Airflow: 500 to 40,000+ CFM per AHU
- Heavy duty construction (16 gauge, oven-cured polyurethane painted, galvannealed steel, optional stainless steel)
- Automated pressure and flow control system (real time compensation)
- Vertical or horizontal configuration
- Direct drive plenum fan: silent operation and zero maintenance
- Modular construction (pre-assembled or assembled on site)
- Walk-in units for ease of maintenance

3RD PARTY HVAC UNITS

If you have a preferred HVAC contractor/supplier, MECART can supervise the integration into our cleanroom design.
8. CLEANROOM DOORS

MECART offers several cleanroom door and window options, ranging from our famous Teardrop-Shaped Window to the conventional rectangular rounded-corner shape. MECART-made cleanroom doors can be configured as single or double swing doors (manual or motorized) and can be entirely customized.

All doors are airtight and easy to clean with smooth surfaces as well as corrosion resistant panels.

HANDLES
- 9 inch C-shape pull handle on the outside with push plate on the inside
- 3 foot C-shape pull handle on the outside with push plate on the inside
- Custom handles

OTHER OPTIONS
- Stainless steel push plates
- Stainless steel kick plates
- Automated openers (motorized operators)
- Interlocks
- Touchless functionality
- Automatic drop down door seal
- Security control / Lock
- Door header

WINDOW DESIGN
(double glazed, tempered glass)
- No window
- Rectangular design with right angle or rounded corners (16” X 42”)
- Teardrop design (24” x 65”)
- Custom-designed window

SEMI-FLUSH WINDOW
The most economical solution for cleanrooms with less stringent classification applications. The semi-flush window has a small rubber edge that does not attract particles and is easy to clean.

FULLY FLUSH WINDOW
Fully-flush windows are flat against the clean room wall. The absence of edges makes them easy to clean since there are no corners or edges to collect dust particles and microorganisms.
9. POPULAR OPTIONS

Interlocked Doors
Pass-Through
Wall-to-Ceiling Coving
Full Flush or Semi-Flush Lighting System (room access or roof access)

Additional Options:
- Air Shower
- Acoustic Insulation

Stainless Steel Sink with Hands Free Operation (hand wash station)
Full Flush Magnetized Air Return Grill
Pharma Grade Vinyl Floor with Floor-to-Wall Coving

Intercom
Partnering with a customer’s designated engineering firm, we completed the extension of an existing cleanroom and connected the new cleanroom to the existing one.

**HIGHLIGHTS**

- Fully flush windows for a flat wall finish
- High ceiling - 10 feet tall with HEPA filters
- Multiple pre-cut custom openings in the walls for the installation of water pipes and other utilities
- Custom-engineered removable wall panel to allow a large filling machine to be brought into the cleanroom at a later date (after cleanroom installation is complete)
ISO 8 PHARMACEUTICAL CLEAN ENVIRONMENT

This cleanroom was built for a multinational pharmaceutical company for their packaging operations of non-sterile pharmaceuticals.

The height, width, and angle of the wall partitions are entirely custom-made based on the client’s design. All the wall panels openings were pre-cut at our plant which minimized dust generation and reduced installation time on-site.
Mecart undertook the entire design, manufacturing, installation, and commissioning of this compounding facility. Having worked with other cleanroom suppliers in the past, this client was looking for a higher quality system. They requested a state-of-the-art modular cleanroom from Mecart. The room’s compliance with NAPRA and USP standards was essential, but so was the aesthetics of their facility as it would be in full view of their patients. Notice the fully flush windows and Mecart’s proprietary flush air return grille design.
ISO 6 SEMICONDUCTOR CLEANROOM

This 1,700 square foot cleanroom was designed and built for a high-precision sensor manufacturer.

HIGHLIGHTS

• Fast track project completed in less than 4 months, from initial design to commissioning
• Turnkey project also included the supply of a custom-built HVAC system
• Extra large 20’ bay window that offers an impressive view of the operations inside the cleanroom

This customer requested a "show room" type cleanroom as well as a tightly specified ISO 6 cleanliness level.
CUSTOM-MADE HVAC SYSTEM
This walk-in unit delivers 24,000 CFM of conditioned air to a 1,700 square foot cleanroom.

HIGHLIGHTS
• Air is delivered using 6 plenum fans powered with variable frequency drives
• Access doors to each of the sections ensures easy maintenance
• The interior is made with the same finish as the cleanroom which makes it very easy to keep clean with no dust accumulation inside

Additionally, MECART’s acoustical expertise ensured quiet operation.
ISO 7 CHEMICAL ANALYSIS ROOM

HIGHLIGHTS
We designed and built a custom HVAC system which would counterbalance the high volumes of extracted (toxic) air for this toxic vapor environment.
A Mecart team traveled to Mexico to install this cleanroom. Our client needed a controlled environment for a specialized piece of equipment which had to operate in an ISO 8 class cleanroom with positive pressure. The complexity of this project is that the process inside the specialized equipment contaminates the air and thus must be evacuated from the building. The room needed a constant supply of new, conditioned air (20°C and 60% RH) to compensate for the evacuation of contaminated air and to maintain the positive pressure of the room.
WE SHIP & INSTALL WORLDWIDE

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