Self-Contained Air Conditioning Systems
Design flexibility, durable construction, quiet operation and low installation and operating costs make McQuay self-contained indoor air conditioning systems the ideal solution for multi-story building projects—both new and renovation. Available in capacities from 20 to 125 tons, they offer more choices in cabinet sizes, features and options than any other manufacturer, making it easy for specifiers to design systems without compromise.

Many of our standard features are not even offered as options by other manufacturers. Add to this our heavier construction, strict engineering documentation and state-of-the-art manufacturing, and you have a customized system that can last longer, run quieter, and perform better at affordable costs.
McQuay floor-by-floor self-contained systems can provide installed cost savings of $1.00 to $2.50 per square foot compared to chilled water systems:

- They take up less floor space than standard chilled water air handling units.
- They eliminate the need for large chiller equipment rooms and for expensive, insulated chilled-water piping systems.
- Factory-installed MicroTech II® controls streamline installation, reduce startup risks and lower job costs.
- Units are factory tested to reduce commissioning and start-up costs.
- For renovation projects, self-contained units can use existing chilled water lines for the condenser loop.
- For renovation projects, modular design SWT units make installation easier because they’re designed to negotiate narrow hallways, elevators and three-foot doorways (see next page).
- Both left-hand and right-hand water connections, as well as several fan discharge options, are available to fit any equipment room.
Lower Renovation Cost

The McQuay Model SWT self-contained unit is specifically designed to meet the unique requirements of renovating an existing building. Its unique modular design allows the contractor to save time and money in installation, while improving system reliability.

• The design features a two-piece base section and a separate top-mounted fan section.
• Each section can negotiate existing hallways, elevators, and three-foot framed doorways.
• One base section houses the DX coil, heating coil, condensers, compressors and the control panel.
• The other base section contains the economizer coil and filters.
• The sections are specifically designed to eliminate the need to braze, evacuate and charge the system with refrigerant in the field.
• Reassembly is easy. Victualic couplings provide quick separation and re-connection of water piping. Wiring is also quick connect.

Model SWT units can be separated into three sections for easy navigation of corridors and doors as narrow as three feet.
By combining high-efficiency scroll compressors, direct-expansion cooling, water-cooled condensers and VAV control, McQuay self-contained units provide significantly higher operating efficiencies than alternative systems. Efficiencies in excess of ASHRAE Standard 90.1-2004 guidelines are the norm.

- Water-cooled condensers and DX refrigeration allows extremely efficient compressor operation.
- Each of four or more scroll compressors operate only as needed to reduce electrical costs.
- Forward-curved and airfoil fan options available with variable frequency drives.
- Gradually expanded fan discharge design reduces turbulence and fan noise (see picture on page 7).
- Waterside or airside economizer options reduce compressor run hours by using available “free cooling.”
- Floor-by-floor self-contained units can provide tenant electrical metering to accurately proportion utility costs.

School District of Philadelphia Education Center, Philadelphia, PA
Cannon Design, Architects and Engineers

Waterside economizer
Improving Indoor Air Quality

McQuay self-contained air conditioning systems improve indoor air quality with standard features like:

- 4" filter selections (30%, 65% or 85% efficiency).
- Microbial-resistant filter options.
- Pre-filter option.
- Double-wall panel construction that eliminates fibers in the supply air stream. Washable to decrease dirt build-up that supports other contaminants.
- Double-sloped, stainless steel drain pans that eliminate stagnant water and bacterial growth.
- Optimal discharge air temperature and dehumidification control capabilities to keep humidity levels within acceptable IAQ standards.
- Optional UV lights help prevent microbial growth in the coil and drain pan.
- Optional R-407C is an HFC refrigerant with no phase-out date that qualifies for a LEED point when used in these units.

Ideal for LEED® Certification

The superior performance of McQuay self-contained systems can contribute to satisfying prerequisites and earning up to 6 LEED points out of the 26 required for LEED–NC certification* as follows. Contact your McQuay representative for details.

**Energy & Atmosphere LEED Points**
- Prerequisite: Minimum Energy Performance
- Prerequisite: Fundamental Refrigerant Management
- Credit 1: Optimize Energy Performance (up to 4 points)
- Credit 4: Enhanced Refrigeration Management (1 point)

**Indoor Environmental Quality LEED Points**
- Prerequisite: Minimum IAQ Performance
- Credit 5: Indoor Chemical and Pollutant Control (1 point)

* LEED Green Building Rating System For New Construction & Major Renovations
McQuay self-contained units are engineered to be used in sensitive areas where noise and vibration must be minimized. Successful applications include TV studios, libraries, museums, schools and performing arts centers.

- Exceptionally low sound levels, verified in independent laboratory tests.
- An acoustically-designed supply air plenum with thick, high-density insulation and lined with perforated metal.
- Heavy-gauge metal and welded construction to minimize vibration.
- An aerodynamic, gradually expanded fan discharge to reduce air turbulence.
- A choice of forward or backward discharge rotation to reduce pressure and turbulence.
- Internally isolated, spring-mounted fan and motor assembly.

“The McQuay Self-Contained AHU has been very impressive, with resulting low noise levels. This project is no exception.”

Ted Carnes, Ph.D., P.E., Senior Consultant
Pelton Marsh Kinsella, Dallas, Texas / Sound Consultants

Senator John Heinz Regional History Center,
Pittsburgh, PA
Ray Engineering, Consulting Engineer
McKamish Chesapeake Inc., Contractor

Lincoln Place at Legacy, Dallas, TX
B, L & P Engineers, Consulting Engineer
Don Burden and Associates, Contractor

Gradually expanded fan discharge
McQuay’s compartmentalized design and MicroTech II controls make our self-contained units the easiest to access and maintain.

We are the only manufacturer who places all of the following major components out of the supply air stream—making it possible to perform measurements and adjustments while the unit is operating:

- Condensers, compressors and filter dryers.
- Refrigerant sight glasses.
- Water economizer valves with actuators.
- Expansion valves (option available for four and six-circuit systems).
- Compressor and filter drier isolation valves (option available for four and six-circuit systems).

Fully integrated and and factory-tested MicroTech II controls can significantly reduce costly field commissioning and are easily accessed for system diagnostics and quick adjustments.

- Our Open Choices™ feature provides easy integration with your BAS using open, standard protocols including BACnet® and LONWORKS®.
- On-board diagnostics help maintain long-term performance and reliability.

Convenient service and maintenance, with easy-to-remove service panels, promotes routine maintenance of the unit and long life.
McQuay’s self-contained systems are designed for longevity and for reliable operation. They feature:

- A welded base assembly designed to withstand shipping, rigging, and dragging without distortion—consisting of 4” C-channel and tubular steel with formed base plates of 10-gauge galvanized steel and integral lifting lugs.
- A 1/4” tubular steel interior integrated with 10, 12, and 14-gauge galvanized steel-formed members for lower vibration and longer life.
- Complete cabinet, frame and formed access panels have 1.5 lb density fiberglass insulation with optional metal lining.
- Standard, stainless steel, double-sloped drain pans.
- Mechanically cleanable, water-cooled copper and brass condensers rated at 400 psig water pressure.
- Longer-lasting supply fan bearing.
- Scroll compressors.
- Advanced refrigerant circuitry with optional hot gas bypass.
- Long-life, standard 4” filters.
McQuay’s Unique Features and Options

Designed for:
• Variable air volume
• Constant air volume
• Water economy cycle
• Air economy cycle
• 100% outside air
• Make-up air
• Dehumidification
• Low temperature air

High efficiency fan system
• Ideally suited for vertical discharge
• Discharge design reduces turbulence and fan noise
• Front or back discharge orientation reduces losses, improving energy and sound performance
• Forward curve and airfoil fan options available

Waterside economizer
• Effectively uses low cooling tower water temperatures to offload compressor operation
• Airside economizer also available where installation parameters permit

Six-row, copper tube, aluminum fin, evaporator coils with interlaced circuiting
• Provide excellent full-load and part-load temperature and humidity control
• Prevent temperature stratification
• Effectively handle lower discharge air temperature designs that can reduce first cost and operating costs

Double-sloped, stainless steel drain pan
• Eliminates standing water
• Reduces bacterial growth
• Serviceable

Internal drain trap with brass cleanout plug
• Easy to maintain
• No need to elevate unit
• Eliminates a field drain trap

Variable frequency drive
• Controls fan motor speed for lower fan operating costs and quieter operation
Self-Contained Systems

- **Custom-designed acoustical discharge plenum**
  - Multiple plenum heights
  - Multiple duct opening location and size options
  - Acoustic design with 3-inch, 3-pound density glass fiber insulation, perforated steel liner and interior baffles to reduce turbulence and noise

- **MicroTech II™ DDC controller**
  - Open Choices™ feature provides easy integration with your BAS using open, standard protocols including BACnet® and LonWORKS®
  - Easily accessed for system diagnostics and adjustments via a keypad and display on unit
  - On-board diagnostics to maintain long-term performance and reliability

- **Individual Short Circuit Protection On Each Motor Load**
  - Isolates the trip to a select motor for easier diagnosis and efficient system operation

- **Scroll compressors**
  - Up to six, for quiet, efficient operation
  - Custom selections tailored to specific customer needs
  - High EERs and low operating costs
  - Standby redundancy

- **Water-cooled condenser**
  - Improves compressor reliability by reducing refrigerant charge
  - Mechanically cleanable, all copper and brass construction
  - More efficient than shell and tube condensers
  - Easier to clean than gasketed head, shell and tube condensers

- **4” structural steel base with lifting lugs and 1/4” tubular steel supports**
  - Unsurpassed strength and durability
  - Less vibration
  - Reduced rigging costs

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A global leader in system solutions for air conditioning, heating, ventilating and refrigeration.

McQuay International delivers engineered, flexible solutions for commercial, industrial and institutional HVAC requirements with reliable products, knowledgeable applications expertise and responsive support.

For more information or the name of your local McQuay representative, call 1-800-432-1342 or visit www.mcquay.com

Products manufactured in an ISO certified facility.