THE PROBLEM

When a building is first constructed, a large floor-by-floor self-contained unit, either water-cooled DX or chilled water VAV air handler, can be installed before the walls are completely framed. Using a crane or forklift, the HVAC system can be placed inside an internal mechanical room with relative ease. Years later, the challenge is for the commercial building contractors or facility managers to service the system when it needs replaced.

THEIR SOLUTION:

Traditional Take-apart

In the retrofit market, there are many obstacles when it comes to replacing previous equipment - limited space, efficiency, and ease of installation are some of the factors. Traditional replacement units are oversized and must be disassembled prior to installation.

• Temporary cooling/heating needed during changeover
• High noise levels could mean relocation of personnel
• Special equipment required to move new units into space
• Only one unit installed at a time due to space constraints
• Possible electrical updates or rewiring might be needed
• Could require breaking the refrigeration circuit to get it in the door

OUR SOLUTION

WaterFurnace Versatec® Variable Speed technology enables the building owner to replace the previous system with multiple “twinned” modular units that operate as one unit providing more capacity in a much smaller footprint. The Versatec Variable Speed units are capable of twinning up to 4 units (60 tons) and can provide the convenience of modularity and redundancy.

High Capacity + Small Footprint = Easy Retrofit

• Easily fits through a standard 36” door and on small freight elevators.
• Install faster with single point power, eliminating the need for an electrician to rewire existing electrical systems.
• No need to break the refrigeration circuit, or ship the compressor or fan coil separately because the unit is self-contained.
• Easy install with modular design which eliminates need for temporary cooling or heating during changeover.
Variable Capacity for High Efficiency
Variable capacity compressors offer the absolute best in efficiency and performance. Each model has a 25-100% capacity range or 4:1 turn down with load matching. Variable speed systems provide high efficiency for maximizing LEED points.

Better Control of Leaving Air Temperatures
By using variable speed compressor technology, the heat pump can better temper the leaving air to avoid overcooling the space in dehumidification mode.

Free Cooling With the Integrated Waterside Economizer
Standard heat pumps with waterside economizers require field installed wiring, relays, and aqua-stat to operate the waterside economizer mode. Aurora Advanced controls inside the Versatec Variable Speed equipment integrates waterside economizer operation in series with compressor operation. This reduces field installation time and allows the waterside economizer to work seamlessly with the heat pump. With BAS applications, the economizer set-point can be adjusted easily over the network whereas an aqua-stat cannot be viewed over the BAS.

VAV Applications
Leaving air temperature control with factory provided static pressure sensor for true VAV operation.

- Allows for lower price per ton of large units while controlling the temperature of smaller zones.
- Morning warm-up mode can be adjusted and controlled by either time or space condition requirements.
- Factory installed differential pressure transducer with factory supplied Tygon tubing.
- Heat pumps are capable of operating from stand-alone communicating sensors or from network variable.

Flexible Outdoor Air Handling Capabilities
All units are equipped with 4-row air coils that allow for improved dehumidification over standard WSHP equipment. Additionally, this enables the variable speed equipment to accommodate some of the outdoor air requirements without needing an entire DOAS unit.

- 50% of outdoor air @ 95/78 in cooling mode.
- Minimum airflow is 40% of maximum published cfm in specification catalog.

Demand Control Ventilation
Built in modulating demand control ventilation allows user to specify CO2 set-point and control within the upper/lower control limit.