

Friedrich Air Conditioning



FRIEDRICH
1883

VERT-I-PAK® CASE STUDY

Magnolia by the Lakes &
Champion Commercial Structures



VERT-I-PAK PROVIDES OPTIMIZED HVAC SOLUTION FOR MODULAR APARTMENT PROJECT

The senior-living residence known as “Magnolia by the Lakes” provides beautiful views of Cass and Sylvan Lakes that surround Kegoo Harbor located 30 miles northwest of Detroit, Michigan. To match the outdoor environment, an advanced HVAC solution – Vert-I-Pak packaged systems from Friedrich -- is creating a beautiful indoor climate for new apartments opened in record time using innovative modular construction methods.

“Modular construction is increasingly popular for apartments, because it can happen fast with minimal site disruption,” says Steve Snyder of Champion Commercial Structures, the modular builder responsible for the project.

As Champion’s director of consumer warranty services and project manager for commercial multi-family sales, Snyder points out that “applying split systems and chillers can be complex in multi-level modular buildings. For this project, single vertical packaged units from Friedrich were easier to work with.”

VERTICAL PACKAGED HVAC SYSTEMS FIT MODULAR CONSTRUCTION METHODS

Kegoo Harbor was established in 1900 as a planned resort community. Today, it has many resort-style residences serving a thriving senior population. One of the latest is “Magnolia by the Lakes North” -- a two-story, 20-unit assisted-living facility that opened in December 2014. Across the street, a five-story “South” complex adds 125 one-, two-, and three-bedroom apartments scheduled to open in late 2016.

A unique feature of both facilities is a “winterless” environment. A sun deck, an aquatic center, fitness center and garden all create a comfortable, all-season environment -- complemented by Vert-I-Pak single vertical packaged systems that controls each apartment’s climate individually.

“Traditional HVAC technology faces a couple of challenges on a modular project like Magnolia South,” says Barry Bookout, Friedrich’s director of sales for lodging and specialty markets. “First, there are unique HVAC application issues to deal with. Second, there are issues specific to modular construction itself.”

Bookout emphasizes that the interior design of the Magnolia South apartments required an upscale look and feel. “While our Friedrich packaged terminal air conditioners (PTAC) have their place in hotels and other commercial properties, the architect didn’t want a through-the-wall HVAC solution. That’s where our Vert-I-Pak vertical packaged HVAC systems fit into a project like this.”

To create an attractive, home-like appearance, Vert-I-Pak systems include condenser, compressor and evaporator inside a compact, packaged profile that fits inside a closet. In general, AHRI-certified Vert-I-Pak models are available in nominal cooling capacities from 9,000 to 24,000 BTU. All units are 23 inches wide and deep. The 1.5-ton units selected for the project are 32 inches tall, and the 2-ton units are 47 inches high.

FLOATING CHASSIS DESIGN REDUCES NOISE AND VIBRATION

“The beauty of these systems is that they are completely self-contained and out of sight,” says Bookout. “There’s no clutter of outdoor condensing units like you have with split systems -- and no cooling tower that you have with a chiller. Plus, the builder doesn’t have to deal with refrigerant lines running from floor to floor. Setting the unit is relatively straightforward – electrical, drainage, and duct connections can be done by a single technician in minutes.”

To simplify installation, the floating chassis design slides into the wall plenum. A weather-tight gasket firmly seals the chassis to a patented telescoping plenum without the need for permanent metal fasteners such as screws or bolts.

“Eliminating the need to bolt the chassis to the wall sleeve prevents metal-to-metal contact and vibration,” says Bookout. “That’s a huge advantage in creating a quiet system that residents love.”

Other exclusive features include standard coil corrosion protection and a 5-year limited warranty that covers labor. For HVAC contractors replacing existing vertical packaged units manufactured by a leading competitor, a sleeve adapter is available to minimize the expense of resizing wall openings.

VERT-I-PAK FITS INTO MODULAR ASSEMBLY PROCESSES

The Vert-I-Pak solution also fits nicely into Champion’s modular manufacturing process. On the assembly line, the unit is inserted into the wall cavity created for the system. Each apartment gets one plug-and-play unit utilizing an individually controlled, four-wire, wall-mounted thermostat.

According to Bookout, independent metering is important for multi-tenant applications. “It eliminates the burden to prorate electric costs for heating and cooling. Individual residents can easily set individual temperature set points. And unlike central systems, there’s less risk that a whole building space becomes uninhabitable if the system needs to be repaired or replaced.”

In the Magnolia South installation, electrical wiring, plumbing, and ducting run above the ceiling to bedroom and kitchen supply outlets. The return is located in the closet.

Each Vert-I-Pak HVAC system is shipped in place, which saves a tremendous amount of installation time on the site. After the apartment module is bolted down and power is turned on, the few HVAC steps include: removing the unit's stabilizing straps used during transport, installing the grille for the exterior wall opening, and commissioning the system, which Friedrich supported on site. At Champion’s factory in Topeka, Indiana, Friedrich provided drawings and installation support to minimize labor on the assembly line. That time savings, along with 80% of overall construction being done in Champion's plant, shortened the period of building Magnolia South by about two years.

According to Snyder, “For Champion, Friedrich provided the upfront installation assistance and the back-end warranty support that will assure superior interior climate comfort for the 'Magnolia by the Lakes' project for years to come.”



Friedrich's Vert-I-Pak packaged units can be concealed in closets and incorporated into the modular manufacturing process for easy installation.

With 30 manufacturing facilities across North America and the United Kingdom, Champion Commercial Structures (www.championcommercialstructures.com) uses its expertise in modular construction to build banks, mini-markets, hotels, luxury apartments, multi-family housing and other commercial properties.

Founded in 1883, Friedrich has manufactured room air conditioners since 1952. Friedrich is a leading manufacturer of air conditioners and other home environment products. Constructed of the highest quality components, Friedrich products are built to exacting standards and are among the quietest, most highly featured and most energy-efficient available. For more information, please visit www.friedrich.com