



Rice Lake, Wisconsin

## BRENTWOOD SENIOR COMMUNITY

### CHALLENGE

Assisted living facility with diverse loads needing reliable comfort for 29 units, a kitchen and a chapel

### SOLUTION

CITY MULTI® VRF zoning system with heat recovery

### RESULT

Precise zone-by-zone comfort control, ultra-quiet operation and reduced operating costs



Opened in January 2004, Brentwood is a 35,100-square-foot, 29-unit Residential Care Apartment Complex (RCAC) located in Rice Lake, Wis. (pop. 8,500). Founded in 1864 on the site of a Menomonie Indian village and a wild rice bed, Rice Lake is the largest primarily retail community between Eau Claire (60 miles south), Superior/Duluth (100 miles north), and Minneapolis/St. Paul (100 miles west).

Created and owned by David and Diana Barta (Brentwood Senior Communities, LLC), Brentwood may be the only assisted living facility in the state with a concrete storm shelter (8-inch-thick walls for the occasional tornado) which also serves as the facility chapel.

Designed by Rice Lake Architect David Cramer, AIA, the current facility occupies a "footprint" of approximately five acres out of the total property of 32 acres, "with possible future expansion in mind," according to Barta. The large commercial kitchen was designed with future expansion as a

possibility. Brentwood has a staff of 16 full and part-time employees.

### BRENTWOOD HVAC SYSTEM

In Brentwood's early design/planning phase, an old friend, Ervin Dirks, Dirks Heating and Cooling, Barron, Wis. introduced Barta to Mitsubishi Electric Variable Refrigerant Flow (VRF) zoning systems, the first (and only) simultaneous cooling and heating modular zoning system in the United States, designed and manufactured by Mitsubishi Electric.

Perfect for assisted living and long-term care facilities, Dirks described a sophisticated, "smart" HVAC system that could provide "whisper-quiet" personalized comfort controls in each guest room, with a high efficiency zoning system that supplies up to 16 rooms from one outdoor compressor. "I was attracted to Mitsubishi Electric's advanced heat pump INVERTER technology, efficiency, flexibility, simultaneous cooling and heating, separate controls, super-efficient heat pumps,

**Project Completed:** January 2004 |

and the prospects of long-term savings," Barta said.

## A PERFECT SOLUTION FOR BRENTWOOD

Barta envisions the joys of the exact amount of cooling or heating required by each zone, variable speed compressors for precise comfort control, a constant and comfortable indoor environment, LCD remote control for each unit, considerable cost savings and the benefits of giving his guests their very own climate control.

Dirks Heating and Cooling installed two identical R2-Series VRF zoning systems at Brentwood. Each 100,000 Btu/h outdoor unit delivers refrigerant for cooling or heating to 14 ceiling-concealed ducted units. Mitsubishi Electric's heat pump INVERTER technology varies the speed of the compressor in the outdoor unit to match the load requirements in each interior space. So, the system operates only at levels needed to maintain a constant and comfortable indoor environment. High-efficiency boilers have been added to provide heat when the Wisconsin winters plunge to zero and below. The VRF system's advanced technology enables the Brentwood facility to use these boilers less frequently, providing



*The Mitsubishi Electric VRF zoning system installed at the Brentwood assisted living facility provides individual and simultaneous cooling and heating to 29 units, the kitchen and a chapel.*

management with considerable cost savings.

Thusfar, Barta says he is impressed with the ease and low costs of the VRF zoning system's installation. And he is looking forward to the reduced operating costs made possible by the INVERTER-driven technology which has the ability to cool one room and heat another at the same time.



## EQUIPMENT

- ▶ (2) PURY R2-Series Outdoor Units
- ▶ (14) PDFY Ceiling-concealed Air Handlers

## PROJECT TEAM

**Owner:**

Brentwood Senior Communities, LLC, Rice Lake, Wis.

**HVAC Contractor:**

Dirks Heating & Cooling, Inc., Barron, Wis.

**HVAC Distributor:**

The Gustave A. Larson Company, Plymouth, Minn.