



Embue Hybrid Fuel Optimization Speeds Decarbonization, Lowers Operating Costs at Coleman House

Embue's Hybrid Heat Optimization dynamically manages heat pumps and hot water baseboard heating, running the gas heat only on the coldest days of the year when certain cost savings and carbon emissions criteria are met.

Coleman House 2Life Communities

Coleman House is a 146-unit senior affordable housing property owned by 2Life Communities. Sustainability is a major focus for all of 2Life's properties, and Coleman House is no exception, meeting the Enterprise Green Communities sustainability certification requirements.

About Coleman Place

- Senior affordable housing
- 146 units
- Owned and managed by 2Life Communities

Challenges

- Lowering carbon emissions
- Heating and cooling loss due to operable windows
- Resident comprehension
- Energy efficiency

What's Installed

- Embue Hybrid Fuel Optimization
- Smart networked thermostats
- Remote temperature and humidity sensors
- Window open/close sensors
- Hydronic and domestic hot water monitoring

Embue Hybrid Heat Optimization Helps to Meet Cost Savings and Decarbonization Goals

Embue was installed at Coleman House as part of an initiative to lower carbon emissions where "through the wall" air conditioning units were removed and new windows were installed. A Daikin variable refrigerant volume (VRV) central heat pump system was also installed to provide both heating and cooling. Because the project was completed while residents occupied the building, 2Life kept the existing gas-fired hot water baseboard heat and then decided to use Embue's Hybrid Heat Optimization solution to dynamically manage both systems, running the gas heat only on the coldest days of the year. Typically, the gas system will run for approximately seven days per year, or 2% of the time.

Embue can decide and control which energy source is used for heating based on several different criteria, including:

- Indoor and outdoor temperatures
- Energy prices
- Real time carbon footprint
- Demand response signals during a winter peak event





Coleman House Retrofit

Embue Smart Thermostats Ideal for Senior Residents

In evaluating solutions, 2Life wanted to use a smart building system to make the entire building operate more efficiently but discovered that many solutions incorporated smart thermostats that were too complex and difficult for its senior population to use. Embue's networked thermostats have a large display and are easy to read and to operate, with a responsive touch screen that only displays the necessary features to the resident.

Building owners and managers can choose to enable specific features on the thermostat and to hide others. Property-wide limits can be set for features that are enabled, with the flexibility provided to make exceptions on a case-by-case basis to respond to the needs of the community.

Window Open-Close Sensors Improve Energy Efficiency

Also of concern to 2Life were the building's operable windows, as the resident population frequently opens windows in the extremes of winter and summer at its other properties.

At Coleman House, Embue's wireless window open-close sensors were installed to make the building more efficient. The sensors are tied to flexible logic that sets the thermostat back based on policies set by building management.

Flexible Setpoint Limits Speed Adoption

Embue provides the ability to set flexible setpoint limits to account for temperature variations in different areas of the building, for example the fluctuations of north-facing and south-facing units and for different elevations. Flexible setpoint limits also ensure consistent policies are followed while enabling staff to make exceptions to meet specific resident needs, reducing backlash from residents that result from rigid controls, resulting in happier residents and speeding the adoption of new policies.

Building-wide Sensors Make Coleman House More Comfortable and Efficient

2Life also installed sensors throughout the building that are tied to the Embue platform and enable whole building monitoring, automation and control of the building. Building maintenance staff manages the entire building using Embue Super, Embue's building-wide dashboard.

About Embue

Embue's smart building platform for multifamily portfolios provides whole building intelligence, automation and control to give owners and managers visibility and control of every apartment, common space and piece of equipment in the building. Embue provides end-to-end insight and control of the entire property, monitoring for resident discomfort and harmful conditions, like water leaks and high humidity, and makes the property more efficient to manage through a dashboard that provides control, automation and insight property-wide. With Embue, apartment buildings can become 25% more energy and carbon efficient and staff 30X more efficient on key tasks. Embue is installed or under contract in nearly 7,000 units at major national portfolios, with a rapidly growing footprint in 10 states and is headquartered in Worcester, Mass.