

# Brookdale Baptist Church

## Moorhead, Minnesota

May 2018

*Lighting upgrades, installation of building automation system, and implementation of demand limiting triage controls strategy result in significant reduction in electricity costs; decrease peak demand by 64 percent.*

### Challenge

Although the relatively small Brookdale Baptist Church sits idle most of the week, generally occupied on Sunday and Wednesday for services and classes, its utility costs were significant. Using a lot of power over short periods was resulting in over two-thirds of the church's electrical costs to be related to demand charges, which are based on the highest 15-minute average usage recorded during the billing cycle. Seeing that the high public utility demand charges, among the highest per kW in the area, were hindering its ability to fund core worship initiatives, the church sought solutions.

"Our demand charges were excessive," said John Rasmussen, facilities manager, Brookdale Baptist Church. "We wanted to find a way to control them to the best of our ability."

### Solution

Familiar with Trane's local reputation, Brookdale Baptist Church was open to discussion when the company contacted them. Trane staff reviewed energy use at the church, across both HVAC and non-HVAC assets, to determine what contributors might be adversely impacting consumption or demand. From this analysis, an extensive list of energy saving recommendations was developed. Working together, Trane and Brookdale Baptist Church evaluated each item on the list to determine which investments made sense, and which should be deferred until a later date due to budget constraints. The initial round of investments included an LED lighting upgrade in much of the facility, a water heater replacement, and demand limiting controls.



*Ministering in the Fargo-Moorhead area for over 40 years, Brookdale Baptist Church offers worship services, as well as Sunday School classes for both adults and children.*

### Gaining visibility and control of building operations

A Web-enabled Trane® Tracer® SC building automation system (BAS) was installed to provide the Brookdale Baptist Church staff access to operate and control building systems on-site or remotely using a phone or tablet. Facility managers use the BAS to view the status of lighting or HVAC equipment operation, establish scheduling based on occupancy levels, adjust setpoints and manage alarms. The BAS uses Trane® Air-Fi® wireless, a redundant, self-repairing mesh technology, which allows the church the flexibility to easily move sensors and thermostats or reconfigure space as needs change. Trane-provided training sessions on the new BAS help the church's facility staff to better understand and operate their building systems.

## Balancing comfort and energy

The Tracer® SC BAS allowed Brookdale Baptist Church to implement a demand limiting component. Working together, Trane and church staff developed a triage routine that best balanced comfort and energy use. The Trane team performed custom programming that would provide a comfortable environment during church services and programs, but would reduce system operations during less occupied times. The programming was refined until optimal comfort and demand reductions were achieved.

“With the programming we are able to better control demand,” said Rasmussen. “When demand gets to an established point, a message is sent to the building automation system and equipment is shut down, or cut back in certain areas of the building, to reduce demand.”

## Results

Working together, Brookdale Baptist Church and Trane implemented facility improvements to help reduce energy costs. LED lighting upgrades significantly lowered electricity costs and installation of a new BAS has provided the church with increased visibility to more efficiently control building operations. As a result of custom programming of the



*To help ensure optimal building operations and comfort for its members, Brookdale Baptist Church uses a Tracer SC BAS for on-site or remote access and control of lighting and equipment, such as the HVAC unit located on the side of the church.*

Tracer SC controls system to implement a demand limiting triage controls strategy, the building’s peak demand has decreased by 64 percent.

“Our peak demand has decreased a lot and we are saving money,” said Rasmussen. “The Trane team is awesome. They have been so much help. They’re light years ahead of the others.”

*Trane, the Circle Logo, Tracer and Air-Fi are trademarks of Trane in the United States and other countries.*



Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a \$14 billion global business committed to a world of sustainable progress and enduring results.

