



"The TAC wireless solution was installed just in time. Fuel prices had increased dramatically over the previous year. We were very pleased to have stayed on budget while preserving our historic structure."

*Russell Hussey,  
Building Manager,  
Masonic Temple*

**PROJECT AT A GLANCE**

**Location:**

Newburyport, MA, USA

**Project Type:**

Integration of wireless technology in an existing building

**Property:**

3-story building  
(24,000 sq. ft. / 7,135 m<sup>2</sup>)

**Equipment:**

- (1) CyberStation front-end
- (1) bCX1-CR-32 (32 node BACnet building controller)
- (1) b3804
- (7) b3887-L-115-C
- (9) WL-ADPR  
(Used as Wireless Adapters)
- (2) WL-ADPR  
(Used as Wireless Repeaters)

**Applications:**

Energy conservation

**Installation:**

May 2006

## Newburyport Masonic Temple Landmark Leverages Wireless Technology

Marrying the "old" and the "new" gave the Newburyport Masonic Temple the cost-effective solution it needed to lower energy costs, gain greater control over the indoor climate, and abide by guidelines for historic landmarks.

**THE CHALLENGE**

First settled in the 1630s, Newburyport, MA is a city proud of its heritage. It was the first to stage a "tea party" opposing England's tax on tea. It was also the birthplace of the U.S. Coast Guard. And since 1929 four Masonic organizations have made one historic landmark their home.

The former home-turned-into-lodge was built in the large, gracious Federalist style popular during the early 1800s. The original structure is partially disguised by the grand colonial revival façade that the Masons added when they converted the building in 1929.

The structure's age and its designation as a historic landmark presented the Masons with several challenges when they began looking for a way to reduce their energy costs.

The three-story building relied on an aging control system to provide heat for 10 zones. However, the zones were unable to communicate with each other, and only two were able to command the boiler to start operating.

"Regular hours of operation" were not the norm at this Masonic Temple. The Masons used some of the space for monthly meetings and special events. They also leased unused space to the American Red Cross and the Newburyport Community Services, and rented the large function halls for local events and weddings.

When an evening event required heat, the building manager had to start the boiler several hours ahead of time. Someone would then have to turn off the system manually or it would run all night.

**CUSTOMER BENEFITS**

- High-tech, low-cost solution
- Substantial energy savings
- Interoperability with other systems
- Flexible, intelligent system scheduling
- Ease of use and self-maintenance

## Masonic Temple

The Masons are a non-profit organization, and they were not in a position to fund installation of a new building control solution. Moreover, thick walls would have made it time-consuming and costly to add traditional controls in difficult-to-wire locations.

Rising energy costs motivated the group to look for a viable solution. TAC®, a building controls company known for its innovative systems and solutions, offered a cutting-edge response to the dilemma facing the Masons.

### THE SOLUTION

TAC replaced the Masonic Temple's existing thermostats with the Andover Continuum™ Wireless BACnet Field Bus to provide enhanced control of the heating system throughout the facility. A phased installation of wireless controllers ensured a non-disruptive conversion to the new solution.

Wireless capabilities lowered installation costs by eliminating the need to contend with hard-to-wire locations. It also enabled the Masons to leverage new technology without disturbing the integrity of this historic building.

TAC was able to reuse the existing system's valves. However, TAC replaced the old hardwired thermostats with wireless controllers and digital "smart sensors."

TAC then networked the building's 10 climate control zones: four on the first floor, four on the second floor, and two on the third floor. Each zone now communicates with a master controller in the basement—and any zone can call for heat.

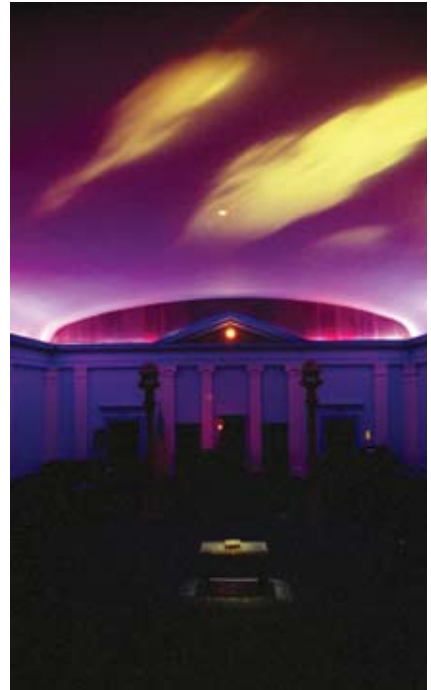
Andover Continuum's intelligent scheduling capability also allows the building manager to use a single workstation to schedule requests for heat in advance. Turning on/off the fans, valves and boilers is now handled automatically—not manually. Controlling the Masonic Temple's indoor climate is now transparent to those who use the building.

### THE BOTTOM LINE

The Masonic Temple became TAC's first installation for the Andover Continuum BACnet Wireless Bus. Even in a city that treasures its heritage, the Masonic Temple demonstrated that it was feasible to "marry" an old facility and a new technology—without violating any wiring restrictions placed on historic buildings.

After TAC had enabled just three of the 10 zones with the wireless technology, the Masonic Temple reported that it had used 1,000 fewer gallons of fuel oil in a 3-month period.

Now that the wireless controllers service all 10 zones in the building, the Masons expect to see even greater savings, enabling them to direct more funds toward charitable activities rather than heating their building.



The main Lodge room possesses a rare "Starry Decked Heaven" with lighting that simulates clouds, sunsets and sunrises while 200 lightbulbs depict the constellations above that location when the cornerstone of the addition was laid.

*"The intelligent schedules not only save fuel, they also save the energy I use running around the building to pre-heat rooms for a meeting. Scheduling and viewing the whole building from my office has made a difference."*

*Russell Hussey,  
Building Manager,  
Masonic Temple*

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