



CASE NO. 26

PROJECT: St. Mary's Roman Catholic Church

LOCATION: Norwalk, CT

MECHANICAL CONTRACTOR: Petro Inc.

APPLICATION: MPC Platinum Series

Cycling & Sequencing Boiler Controls for
Church's Diverse Heating Requirements.

MPC Platinum Series

Control's Programming Options Offer Extra Blessings for Church

PROBLEM: The heat at St. Mary's Roman Catholic Church in Norwalk, CT was so difficult to control that the candles were actually melting in the Sacristy—the location where the priest's robes, sacred vessels and other treasures are kept. Ironically, some of the oils, stored in other areas, were freezing. Needless to say, the church's heating system was due for a conversion.

Like many old facilities, the church had numerous distribution systems that had been added or adapted to meet changing load demands over the years. These distribution systems included:

- Unit heaters for circulated hot water to heat the main church
- Steam convector type radiators in the upstairs Sacristy and main entrance hall
- Steam-to-air coils in the downstairs chapel
- Air handling units (AHUs) in the downstairs Sacristy and alter

These distribution systems operated based on thermostat settings for the main church zone and AHUs in the lower level chapel, Sacristy, and alter areas, while the boiler ran to its limit supplying heat to all other zones.

Not surprisingly, comfort was as inconsistent as the delivery means to the church. So, in 2006, Petro, Inc. was contracted to upgrade the overall system, including the installation of a new boiler. It was the perfect opportunity to upgrade the control system as well.

SOLUTION: Mike Matarese, Service & Installation Manager of Petro, Inc., was first introduced to Heat-Timer's MPC Platinum Series weather actuated steam cycling control by Dave Elovecky, Service Manager for Edgerton, Inc., the mechanical contractor in Monroe, CT that was subcontracted to perform the installations at St. Mary's.

Edgerton, Inc. has been using Heat-Timer controls on their boiler installations for over 15 years, and has installed over a dozen MPC controls in recent years. Mr. Elovecky knew he could count on the excellent customer support from Heat-Timer and had a lot of confidence in this user friendly control.

“Even before I visited the site, I knew the Heat-Timer controls would help because I'd been told by the parish priest that the heating was all over the place,” said Mr. Elovecky, who listed the MPC Platinum Series as an option on his quote to Petro.

What made the MPC a great fit for the St. Mary's application was the fact that it has several adjustable settings that enable it to be programmed to meet the specific needs of a building. An 80-character alpha numeric menu driven display makes it especially easy to operate and adjust. Most importantly, the MPC allows for 4 programmable day/night adjustments per day. It also has three auxiliary outputs that can control other equipment based on 4 additional programmable schedules.

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“We programmed the MPC to mirror the church’s activity schedule,” said Mr. Matarese, who programmed specific operational patterns into the control to accommodate the entire church’s schedule, including masses, choir practice, etc.

Enhancing the overall efficiency of the boiler system was easy using the outdoor reset capability inherent within the MPC Platinum Series. Designed especially for steam heated buildings, the MPC controls the steam boiler (or a motorized valve) to regulate heat. The control cycles the boiler based on outdoor air temperature which is more reflective of heat loss in a building and is therefore much more efficient.

By utilizing all of the features of this versatile control, Mr. Matarese was able to perfectly tailor the boiler system operation to meet the diverse schedules and distribution systems, thereby maximizing fuel efficiency and comfort.

How It Works:

The boiler system is broken down into two main zones. The first zone is the main upstairs church. Secondary to this zone is an upstairs Sacristy and front entrance hall which is heated via traditional steam convector radiators. The second zone is the downstairs chapel which provides secondary service to the downstairs Sacristy and alter. Heat to these areas is controlled by a system switch and a thermostat located nearby. Upon a call for heat, a steam valve located at the air handler will open and send steam to the coil where a blower will distribute the heated air through a short run of ductwork supplying this area. However, it is the MPC that is controlling boiler operation to service all 4 of these areas.

The MPC is programmed to operate the boiler either in “day” setting for times when the building is occupied and people are active, or in setback mode when the building is unoccupied. Either way, heat is always supplied to the building unless the outside temperature is above the outdoor cutoff setting which, in this case, is 65 degrees during the day and 50 degrees during setback periods. Each day can be programmed with a different operating schedule. For instance, on Monday, the boiler operates in daytime mode from 7AM thru 1PM, in setback mode from 1PM to 6PM, and then in daytime mode again from 6PM to 8PM. On Sundays the boiler operates in daytime mode from 6AM to 3PM to accommodate the day long mass schedule.



Mike Matarese (left), Service & Installation Manager of Petro, Inc., and Ray Boehm of Heat-Timer Corp. standing next to the new MPC Platinum Series weather actuated steam cycling control installed at St. Mary’s Roman Catholic Church.

“The versatility of this system really helped us fine tune it to the building,” said Mr. Matarese.

More Comfort—LESS Fuel

Father Greg J. Markey, pastor at this historic New England church, has been extremely pleased with the boiler system’s operation. The smooth operation is especially noticeable during the shoulder seasons when intermittent warm and cold days are common. Those are the days when the old boiler system was very ineffective and inefficient, said Fr. Markey.

Not only are comfort levels up, but fuel consumption is way down – a blessing considering the rising cost of fuel. The church saved 2895.5 gallons of oil the first year after the new system was installed October 2006. Equally important, occupants are more comfortable and the only candles that are melting are those that are lit.

“Now the system is really worry-free,” said Fr. Markey. “It runs on its own, based on outdoor temperature and we save fuel at the same time.”

If St. Mary’s chooses to have more sophisticated control down the road, they can upgrade the system to remote communications with internet access. But for now, the MPC is a perfect fit for the church exactly as it is.