YAZAKI

- Direct-fired double-effect absorption chiller/heater
- 100 refrigeration tons
- Parish church
- Brooklyn, New York

Historic church gains new aesthetic by installing Yazaki chiller/heaters.

During Ireland's potato famine of 1847, hungry Irish nationals fled to America and found refuge in St. Patrick's parish in Brooklyn. New generations of parishioners, who prayed together in a barn until 1925, designed St. Patrick's with a 60-ft. vaulted ceiling. More contemporary worshipers, however, found St. Patrick's comforts lacking: cold and drafty in winter; hot and stuffy in summer.

As part of major renovations to help create a welcoming, "user-friendly" church, St. Patrick's Msgr. Patrick O'Toole advocated an improved mechanical system. Eager to preserve St. Patrick's popular appeal, he turned to Brooklyn Union for advice.

Msgr. O'Toole was initially cool to the merits of natural gas cooling, but he quickly warmed to enticing rebates. Consolidated Edison Co. of New York, the electric utility, offered a rebate for saving kilowatts and switching from electric to gas heating/cooling. Brooklyn Union offered a rebate to defray the cost of installing natural gas heating/cooling. An energy study undertaken by Brooklyn Union showed that monthly utilities for cooling would plummet from roughly $14,000 per year to $4,000.

Prior to renovations in 1993, the basement of the old brick church housed an oversized air handler that worked in conjunction with a 23-year-old electric chiller to cool only the lower level. In summer, wilting heat usually forced weddings and funerals downstairs; only hardy souls braved the discomfort of the

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ornate sanctuary.

In winter, an underground steam line acted as St. Patrick's umbilical cord, bringing heat to the church from the school next door, where an oil boiler was fired up each weekend to provide heat to 2,500 worshipers.

Two 50-ton Yazaki absorption chiller/heaters replace that inadequate HVAC system. A chilled water coil replaces the electric DX coil. Linear supply diffusers and return grilles were built to blend into the octagonal designs of the domed ceiling. The new system, designed by Keyland Mechanical Corp., provides even, quiet, comfortable climate control throughout the building, every season of the year. "Our monthly operating costs are very low, less than before, yet we use the system more," says the monsignor.

"I challenged the engineers to build a system that would function imperceptibly," he continues. "We aimed to highlight St. Patrick's original beauty, adding improved climate control and access for the disabled to encourage more parishioners to come to church. I'm pleased to report that the gas-fired heating and cooling system is fantastic: it's quiet; it's out of view; it's always comfortable. It actually adds to the aesthetics of the church."

The monsignor says the installation of natural gas chiller/heaters has put the kibosh on one reason why parishioners might try to miss Mass on Sundays.

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