

Commercial Lighting Program

COMMUNITY REFORMED CHURCH OF COLONIE

A ROOM TO SERVE EVERYONE

The Community Reformed Church of Colonie serves a large suburban community near Albany. The general sanctuary area is used for services and also becomes a multi-purpose space for a day school, a nursery school, student activities, studying, and presentations. Church leaders recognized that they needed a new system that would yield better and brighter lighting to provide the desired atmosphere for church services, while allowing flexibility for the other activities. At the same time, the church wanted to reduce operating costs.

Church officials and Joe Fisher, Church Administrator, worked with a lighting design team and Mike Gori from the Great Electric Company, a Business Partner Contractor in the New York Energy \$martSM Commercial Lighting Program (CLP). Mike has experience submitting lighting projects in the past that met the CLP criteria and understood how to implement a qualified lighting design. The team selected fixtures to create a system that would meet all of the church's needs. The result was an aesthetically pleasing, flexible lighting system for staff, members, and students – an effective, energy-efficient lighting design.

CONTROLS HELP OVERCOME MULTIPURPOSE ROOM CHALLENGES

The large multi-purpose space can be separated into four distinct areas by sliding partitions. At times the partitions are used to separate activities, but at other times the entire space is open even though multiple activities are taking place. Since different activities can require different light levels, each quadrant requires individual lighting controls to provide the maximum flexibility and visual comfort.

To overcome this challenge, the team chose a dimmable system with the capability to control each quadrant individually. Separate controls for accent lights further help create the desired ambiance for specific activities. To save energy and to make the system easy to use, a combination of wall-mounted and ceiling-mounted occupancy sensors automatically turn off the lights in unoccupied quadrants. Occupancy sensors typically save thirty percent of energy costs by eliminating energy use when the space is not occupied. By taking a coordinated approach during the specifying stage of the project, the team ensured that the ballasts, lamps, dimming controls, and occupancy sensors were all compatible.



“In addition to saving energy, the new lighting system provides total flexibility to suit our every need.”

**- Joe Fisher,
Church Administrator**

Project Profile

Type of Space
Church

Square Footage
4,978 of Sanctuary and Multi-Purpose Space

Project Objective
Increase the maximum light level while providing adjustable settings, maintaining the church appearance, and reducing energy costs.

Project Benefits
Higher light levels
System flexibility
Attractive appearance
Lower utility bills

Two-lamp T-8 surface-mounted linear fluorescent fixtures with dimmable, programmed-start ballasts provide the general ambient light. The programmed-start ballasts were chosen for their long lamp life in frequent starting conditions while the warm color temperature and good color-rendering qualities of the T-8 lamps make for a comfortable atmosphere for prayer services and school activities. The fixtures feature a dark metal housing that looks like wood to blend in with the room's ceiling.

Eight halogen PAR track lights with individual dimming controls provide accent lighting to the pulpit and choir area during church services. These lights can be set before or adjusted during services to create different moods.

The maximum light level throughout the area ranges from 30 to 40 foot candles, which is an appropriate range for the varied tasks. For instance, while the nursery school children are resting, the light levels can be lowered and then raised to the maximum level during playtime. Similarly, during services the light levels can be lowered or they can be increased during study group or other activities. Church staff finds the new lighting system to be effective and bright, while providing the flexibility this type of space requires.

THE BOTTOM LINE

As a result of these energy efficient changes, the lighting energy use for this multi-purpose space is well below the maximum allowed by the Energy Conservation Construction Code of New York State. General lighting is provided with only 1.25 W/sf, and accent lighting is accomplished with only 0.45 W/sf. The additional savings from dimming controls and occupancy sensors will exceed \$3,500 in energy cost savings per year compared to similar spaces.

The decorative "wood-look" fixtures increased the initial cost of this project to about \$7.00 per square foot. However, for other multi-purpose room applications, the same dimming system options and occupancy sensor controls can be specified at a lower cost. More importantly, the Community Reformed Church of Colonie achieved its goal of providing an effective and attractive energy-efficient lighting system for its clergy, staff, and congregates.

FOR MORE INFORMATION

The New York State Energy Research and Development Authority (NYSERDA) offers its Business Partners opportunities through the New York Energy \$martSM Commercial Lighting Program. Additional programs can help customers reduce utility costs, including the New York Energy \$martSM Existing Facilities Program, which offers financial incentives to businesses for energy-efficient lighting equipment and a variety of other electric-efficiency measures.

To learn more about these incentives and to make your lighting more effective and efficient, visit www.therightlight.org or call toll-free 1-866-NYSERDA.

Tech Specs

- Original equipment: Fifty 2x4, four-lamp recessed and surfaced mount fluorescent fixtures with F34T12 cool white lamps and magnetic ballasts; and ten 23-watt, recessed high-hat fixtures with screw-in compact fluorescent lamps.
- New equipment:
 - 42 low-glare, nine-cell, two-lamp T-8 U bent parabolic fluorescent fixtures
 - 8 two-lamp, 13-watt wall sconces
 - 3 eight-lamp, 26-watt compact fluorescent pendant bowls
- All lamps are high-color rendering
- 1.66 installed watts per square foot
- Estimated annual energy savings: 8,418 kWh (over \$650 per year)

*Recessed parabolic fixtures provide general illumination.