

Churches

Churches are among the most difficult facilities in which to control energy use. This is so because churches are only used a few hours a week primarily on only two days. The general advice is to turn off everything possible between uses but to be conscience of how the church is reheated prior to services.

Heating and Air Conditioning

In many churches, heating represents over half of the cost to operate the church building. With a properly sized heating and air conditioning system, the recommended way it should operate is that in winter and summer the church should be heated / cooled to a few degrees below the optimal comfort temperature. The heat given off by the attendees will bring the sanctuary to optimum temperature about half way through services, and by the end of services the space will start to get a little warm.

- Ceiling fans can be used in sanctuaries with very high ceilings to push the heat down towards the congregation in the winter, which should make the space more comfortable. Studies have shown ceiling fans do not have a significant affect on the cost of heating a space.
- In the winter, assuming that the sanctuary is used only once or twice a week, set the unoccupied temperature to 55°. If the space is used daily then the unoccupied temperature should be set to 60°-62° or so to make it easier to warm the space up in the morning.
- If the building is heated with a heat pump, use a smart thermostat designed for heat pump night set-back. This type of thermostat will not allow the strip heat to come on during reheat unless it is so cold outside that the heat pump alone cannot bring the building up to temperature.

- Maintain the temperature in storage rooms at 50° to 55° all the time. Be sure this is sufficiently warm to prevent pipes from freezing. These rooms should not be cooled in the summer
- Ensure that any fresh air inlets are closed at night and any other time the space is not being used.
- All ductwork should be sealed with a mastic designed for the use. Duck tape is not sufficient.

Building Envelope

- Maintain a good caulked seal on the outside of windows between the window frame and the wall.
- Doors should seal tightly. No light should be able to be seen under the door or around the jamb.
- If the roof is flat and does not use pebbles as part of the roofing ballast, the roof should be painted white with a coating that meets the Department of Energy specification for reflectivity. This will reflect heat in the summer and keep heat in during the winter.
- Insulate the space above the ceiling to R-38. Do not cover fluorescent or recessed light fixtures unless they are rated for insulation. Such fixtures will have a label that specifies this.

Lighting

- Replace incandescent light bulbs with compact fluorescent lamps. There are many styles now that can be used in candelabra and other decorative fixtures.
- Replace lamps and ballast(s) in 4-foot fixtures with F32T8 lamps and an electronic ballast. This will reduce the energy use of the fixture by up to 46%.

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- Exit lights with incandescent lamps in them should have the lamps replaced with an LED replacement kit. This will reduce the energy use of the exit light by over 90%. Plus the lamp will not have to be replaced for 25 years.
- Install occupancy sensors in rooms that are rarely used, such as closets and storage areas.
- The custodians should be required to only use those lights in the space they are cleaning.
- Clearly label light switches and breakers to identify which lights they control.
- If there is a commercial size kitchen that is regularly used, turn on appliances only 15 to 30 minutes before they are needed.
- If you have a baptism pool it pays to manage how it is heated. If you only fill the pool when it is needed then there is not much that can be done to reduce the water heating costs. If you keep water in your pool all the time, then you should cover it with a cover similar to an insulating swimming pool cover to reduce evaporation. You should also turn the temperature down to as low a level as will allow you to bring up the temperature in a timely manner when you use it again.

Other

- The hot water should be set to 105°. If there is a kitchen then the temperature may need to be set as high as 140°. However, it will probably be less expensive to run the dishwasher on the heated water cycle than maintain a constant 140° temperature all the time.
- Eliminate dripping faucets. Even a small drip of only one drip every three seconds will waste over 1,000 gallons of water a year. If hot water is dripping then there is the additional waste of the energy used to heat it.