



St. Elizabeth's Child Development Center

87 High Street
Portland, Maine 04101
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SYNOPSIS One of the oldest childcare centers in Maine (orphanage in 1888, daycare in 1969), St. Elizabeth's sought to upgrade the energy performance of the 1805 former-mansion located in a historic district.

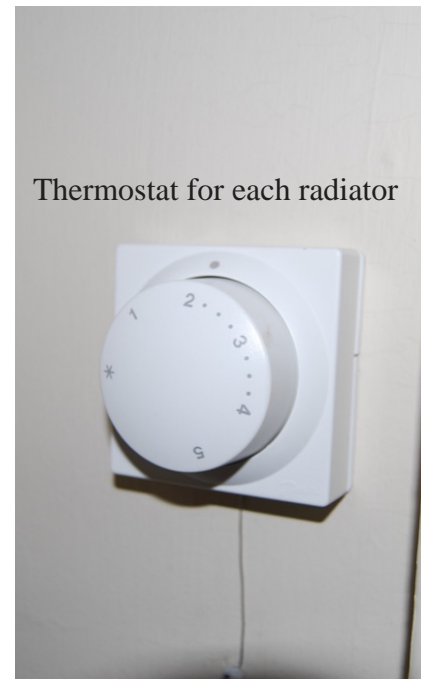
SCOPE St. Elizabeth's replaced conventional light fixtures with LEDs, put mechanical controls on its steam heating system, installed heat pumps to supplement central heating, and added interior storm windows.

RESULTS In the first year after improvements, St. Elizabeth's saved 16% on their electric bill and 35% on natural gas.

LESSONS The key strategy to upgrading this historic building with a busy day schedule and sensitive occupants (children) was to modify existing elements rather than to tear out assets and start new. The question applied to each challenge was, "How can we make what we have function better?"



I N P R A C T I C E



INDIVIDUAL RADIATOR THERMOSTATS St. Elizabeth's was experiencing unbalanced heating in their facility. When the central thermostat called for heat and the steam radiators came on, some rooms overheated while other rooms did not heat up enough before the boiler shut off. New individual radiator thermostats shut off the air vent (thereby preventing steam from entering the radiator) when the thermostat has reached the desired temperature. Radiators in hot rooms now close first while radiators in cooler rooms stay open longer. The individual thermostats also allow cold rooms to turn on the boiler while radiators in warmer rooms stay closed. Wall thermostats permit St. Elizabeth's staff to close radiators in unused rooms more easily and regularly than manually opening and closing radiator valves down by the floor (sometimes hidden under radiator cases).

REMOTE BOILER CONTROLS A major advancement at St. Elizabeth's was the installation of a remote boiler control. Now staff can control the boiler remotely when the building is vacant.

RELAMPING from florescent tubes to new LED fixtures (below).



INTERIOR STORM WINDOWS



Learn how to make interior storm windows at:
www.midcoastgreencollaborative.org/storms.html

HEAT PUMPS (right) were added to the most frequently used rooms, allowing St. Elizabeth's to keep the central thermostat lower (or even off during the shoulder seasons). Heat pumps are also capable of cooling in the summer. Because St. Elizabeth's is in a historic district, the outdoor components were located behind the building.

