

MEMO



To: Fr. John Meany, Pastor
St. Paul Catholic Center

Project: St. Paul Catholic Center - FA/MP
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entheos ARCHITECTS

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The following are building components or systems included in the Phase 1 scope of work that although can be categorized as maintenance items have the potential to save the Parish significant dollars in operational and energy usage costs. In general, the facility was constructed many years ago with technology, materials and building systems that are obsolete, and at a time when energy costs were significantly less.

Architectural Systems

Exterior Windows: The west windows on the west porch (currently being used for storage) are a combination of aluminum-farmed sliding glass panels and jalousie windows. These windows extend from floor to roof deck so this represents a very high percentage of exterior wall. These frames are not thermally broke, the glass is single pane, and the window type is extremely energy inefficient for this climate. The proposed window system includes an aluminum frame incorporating a thermal break and low-E insulating glass (double-glazed) that will significantly reduce the energy loss along the very vulnerable west facade. It is likely that the area of exterior windows will be reduced in the proposed design.

HVAC Systems

New Boilers: The existing boiler is an aged steam producing unit that is approximately 60 – 65% efficient in ultimate heating production. The usage of steam requires operating at higher temperatures and pressures and requires well insulated piping to not further reduce the heat transfer where needed. The energy consumption for a new hydronic boiler plant and distribution system will be reduced and an improved control of heat transfer will be obtained. System efficiency will increase to 90 – 95%.

Air Handling Units: The proposed replacement and additions of air handling units will not only provide the required capacity for cooling and heating, but also allow staging for low and non-occupied hours. This will economize the usage of equipment and utilize only the most efficient units necessary to maintain conditions.

Economizer : Each new air handling unit will utilize free cooling of the spaces served using outside air when conditions allow. This negates the use of refrigeration equipment during these conditions.

Make up air for kitchen hood: The current cooking hood and dishwashing area are exhausted to the exterior without dedicated make up air. This requires air to be drawn in from adjacencies and fenestration openings uncontrolled. Consideration should be given to provide a tempered make up air unit that supplies air at the hood and dishwashing area.

Programmable Thermostats: Each air handling system will include a space thermostat for control of temperatures. These can be programmable to obtain scheduled occupied and non-occupied setback temperatures, with automatic changeover from heating to cooling.

Electrical Systems

LED Lighting: Generally, LED lighting has an expected life of 50,000 to 70,000 hours, well exceeding most fluorescent lamp life (20,000 - 30,000 hours) and many incandescent lamp sources (200 - 2,000 hours). The long life of LED sources translates to fewer re-lampings and significant energy cost reduction. In areas that require dimming, LED's are often the preferred lamp source due to its inherent dimming capability.

The Sanctuary and Gathering Space currently utilize high wattage incandescent halogen or quartz luminaires.

Sanctuary high ceiling luminaires are 500W each, lower side area luminaires are 250W each. Gathering Space utilize 250W luminaires. All of these can easily be replaced with LED luminaires to reduce energy consumption by up to 50%.

Not only will energy consumption be reduced, but lower wattage luminaires will produce less heat gain and reduce the strain on air cooling during summer months.

LED luminaires would most likely require an updated dimmer system that could also provide 'pre-set scenes' of lighting levels for various functions i.e. "wedding", "weekly service", "vespers" etc.

Offices, Meeting Rooms, Circulation Spaces and Restrooms utilize T12 fluorescent lamps with magnetic ballasts.

T12 lamps have been discontinued as a result of legislation that requires higher efficiency, and production of these lamps has been phasing out since 2012. In short, T12 lamps will not be available for purchase in the coming years, and replacement with T5 or T8 luminaires will be a necessity at some point.

T8 and T5 lamp life is significantly longer at 30,000 hours compared to T12 lamp life of 20,000 hours.

Magnetic ballasts are an older technology, and are significantly less efficient than current electronic ballasts.

By replacing the existing old T12 / magnetic ballast luminaires with T5 or T8 / electronic ballast luminaires, can result in energy savings of up to 45%.

Exterior lighting currently uses High Intensity Discharge (H.I.D.) pole top and building mounted flood luminaires.

LED pole mounted luminaires would reduce energy consumption and possibly provide more even illumination, with the appearance of 'more' or 'safer' lighting.

LED site luminaires can also be controlled in such a way as to reduce light output to 50% when the area is not in use, thereby providing general illumination, but at a further reduced energy consumption.

Plumbing Systems

The proposed plumbing renovations for SPCC would provide separate domestic hot water systems, allowing the kitchen system to be deactivated during periods with no use.

Point of use water heaters will serve administrative and restrooms areas.

The Rectory will have a separate high efficiency gas fired water heater serving plumbing fixtures designed for low water consumption.

All new plumbing fixtures and system will be provided for the Rectory. Sensor operated flush valves and faucets will be provided.

A domestic booster pump system will be employed to address low pressure issues in the facility.

Perimeter hose bibs that were found to be in poor condition and will be replaced.

Sanitary waste revisions will include some site sewer mains reworked along with a grease interceptor to serve the kitchen.