Recreation and Parks Headquarters

This building is heated and cooled by multiple single zone type rooftop air handlers and split systems A/C units. The rooftop air handlers are manufactured by York and serve single zones with multiple spaces in the building. Single zone programmable thermostats control the operation of the rooftop units. However, inspection of the programmable thermostats during the facility audit revealed that many of them are not programmed properly.

Install Controls for RTU Setback

This measure involves installation of DDC controls to manage the operation of the existing rooftop air handlers. We propose to provide energy management controls such as unoccupied setback and temperature averaging between the first and second floors. The existing thermostats will be replaced with Honeywell Lonworks communicating programmable thermostats. The existing wiring between the existing thermostat and RTU will be reused.

Replace Existing Rooftop Units

In this measure we propose to replace the existing seven York rooftop units with seven new York (or equal) energy-efficient rooftop air units. The new rooftop units will operate with a 9.0 SEER (Seasonal Energy Efficiency Ratio) or 13.5 SEER depending on the unit's capacity.

Existing Rooftop Air Handler

The new RTUs will be self contained, direct gas-fired units similar to the existing units, and will reduce the electricity use by approximately 25% to 30% compared to the existing older units. The new rooftop units would be installed with curb adaptors that will permit reuse of the existing roof curb to limit changes to the roof. We will retain existing gas, electrical and other infrastructure and reuse them for the proposed units.

Install Automatic thermostats to Control Unit Heaters in Shop Room

Shop Unit Heater

The existing unit heaters operate based on a manual dial setting on the unit heater. We propose to install Honeywell Lonworks programmable thermostats to setback the space temperature during unoccupied periods.

Solar Photovoltaic System

Photovoltaics (PV), solar electric technology features large arrays of collectors made up of silicon-coated cells. When sunlight strikes the surface of a PV cell, the incident solar light is converted to electrical energy. The energy generated by the PV system is direct current, and an inverter needs to be used to convert the direct current to an alternating current at 60 Hz, for use at the building. The proposed PV measure includes a 3 kW (AC) PV system, an inverter and electrical hardware that will synchronize with the electrical grid. The system will also include a utility-grade electrical kWh meter where the PV system will be connected before of the building's existing electrical utility meter.

Daylight Harvesting

ESG proposes to install light pipes in the warehouse area and in buildings B and C. A light pipe is a lens-based device that collects and focuses renewable daylight, bringing natural light indoors without using electricity. The light pipe is designed and manufactured to maximize light collection during times of low sun angles, such as those that occur during early morning and late afternoon. Since it maximizes available natural light output in lowlight conditions the facility can turn off lights during the day and thereby generate energy savings. Because we recommend this measure, we do not propose any retrofit for the existing high intensity discharge fixtures.

Light pipe installed

Please see Scope of Work Section in the appendix for details on this proposal and also refer to the Building Description Section for thorough descriptions of existing conditions.