Resource Conservation Measures Employed in Capital Projects

Annual Report
December 2018

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Executive Summary

Report Purpose:
This report is intended to provide the Board an overview of the resource conservation measures implemented by Capital Projects in support of Board Policy 6810. Only projects that have reached substantial completion during 2017-18 fiscal year are included in this report.

Resource conservation measures common to all major BEX IV projects include the following;

HVAC and other mechanical equipment operating schedules reflect the contract day for staff with exception scheduling capabilities to meet permitted after hours events.
Heating and cooling set points comply with 6810SP.
Facilities and Capital staff educate occupants on key aspects of 6810SP including but not limited to use of personal appliances and space heaters, operation of HVAC and lighting controls, ventilation, and controlled receptacle operation and use.
All projects complied with District requirements as well as applicable building and energy codes.
All projects comply with Capital Projects Technical Design Standards and/or have followed procedures for exceptions to the standards. Exceptions are reviewed and approved by the Facilities Department.

In addition to the major projects listed in this report, as part of the BTA IV Levy Facilities is performing Retro-Commissioning activities at all sites. Buildings are re-commissioned on a rotating basis in order to maximize utility savings, ensure optimal environmental conditions and to comply with the City of Seattle's Building Tune Up Ordinance.

This report does not include details of the work performed under the Major Preventive Maintenance program which has proven instrumental in achieving energy savings through lighting upgrades, window replacement, and various envelope upgrades to name a few.

Olympic Hills Elementary

Project Location: 13018 20th Ave NE

Senior Project Manager: Lucy Morello
MEP Coordinator: Mike McBee
Architect: McGranahan Architects
Mechanical Consultant: Hargis Engineers
Electrical Consultant: Hargis Engineers
Commissioning Authority: EEI Engineering
General Contractor: Cornerstone Constrtuction
Project Description: Construction of a new elementary school for 660 students including related site and off-site improvements.

School Open: Fall 2017

Resource Conservation Measures:

Ground source water to air distributed heat pump HVAC system and kitchen refrigeration system.

Time controlled electrical receptacles.

Daylight harvesting lighting controls.

Occupancy sensing controls to relax HVAC set points and disable lights.

Enhanced thermal envelope.

Energy monitoring and metering controls.

Dedicated composting and recycling stations

Energy Star appliances and office equipment

BAS controlled irrigation system with weather station logic to minimize irrigation needs.

Low flow plumbing flush valves and water conservation, time controlled faucet fixtures

Cascadia ES, Licton Springs K-8 Program & Robert Eagle Staff MS

Project Location: 1330 N. 90th Street

SPS Senior Project Manager: Eric Becker
MEP Coordinator: Mike McBee
Architect: Mahlum
Mechanical Consultant: Hargis Engineers
Electrical Consultant: Hargis Engineers
Commissioning Authority: EEI Engineering
Contractor: Lydig Construction, Inc.
Project Description: Demolition of existing seven building structures and construction of co-located new 660 student elementary school (ES) with 850 student middle school (MS) and 150 student K-8 school.

School Open: Fall 2017

Resource Conservation Measures:

Air to water source centralized heat pumps with high efficient condensing gas boilers.

Time controlled electrical receptacles.

Daylight harvesting lighting controls.

Occupancy sensing controls to relax HVAC set points and disable lights.

Enhanced thermal envelope.

Energy monitoring and metering controls.

Dedicated composting and recycling stations

Energy Star appliances and office equipment

BAS controlled irrigation system with weather station logic to minimize irrigation needs.

Low flow plumbing flush valves and water conservation, time controlled faucet fixtures

Edmond S. Meany Middle School

Project Location: 301 21st Avenue East

SPS Project Manager: Vince Gonzales
MEP Coordinator: Mike Kennedy
Architect: Miller Hayashi
Mechanical Consultant: Hargis Engineers
Electrical Consultant: Hargis Engineers
Commissioning Authority: Keithly Barber
Contractor: Western Ventures Inc.
Project Description: The existing building was re-purposed, modernized and reopened as a comprehensive middle school.
School Open: Fall 2017

Resource Conservation Measures:

High efficient condensing gas boilers serving zones heated with the hydronic system.

Time controlled electrical receptacles.

Daylight harvesting lighting controls.

Occupancy sensing controls to relax HVAC set points and disable lights.

Enhanced thermal envelope.

Energy monitoring and metering controls.

Dedicated composting and recycling stations

Energy Star appliances and office equipment

BAS controlled irrigation system with weather station logic to minimize irrigation needs.

Low flow plumbing flush valves and water conservation, time controlled faucet fixtures

Loyal Heights Elementary

Project Location: 7735 25th Avenue NW

SPS Project Manager: Connie Myers
MEP Coordinator: Mike McBee
Architect: BLRB
Mechanical Consultant: Metrix Engineers
Electrical Consultant: Hargis Engineers
Commissioning Authority: Wood Harbinger
Contractor: Skanska USA
Project Description: Modernization of existing elementary school (36,700 SF) and construction of a new addition (51,400 SF) for a total capacity of 660 students including related site and offsite improvements.

School Open: Fall 2018

Resource Conservation Measures:

Geo thermal well fields serving water to water, centralized heat pumps.

Minimum ventilation, dedicated outside air HVAC with displacement ventilation and heat recovery in high volume zones.

Time controlled electrical receptacles.

Daylight harvesting lighting controls.

Occupancy sensing controls to relax HVAC set points and disable lights.

Enhanced thermal envelope.

Energy monitoring and metering controls.

Natural ventilation "stack effect" relief air in common areas.

Occupant controlled ceiling fans.

Dedicated composting and recycling stations

Energy Star appliances and office equipment

BAS controlled irrigation system with weather station logic to minimize irrigation needs.

Low flow plumbing flush valves and water conservation, time controlled faucet fixtures

E.C. Hughes Elementary School

Project Location: 7740 34th Avenue SW

SPS Project Manager: Paul Wight
MEP Coordinator: Mike Kennedy
Architect: DLR Group
Mechanical Consultant: DLR Group
Electrical Consultant: DLR Group
Commissioning Authority: EEI Engineers
Contractor: Lincoln Construction
Project Description: Modernization of the existing E.C. Hughes Elementary School facility to accommodate the relocation of the Roxhill Elementary School program. Full mechanical, electrical and plumbing systems replacement and interior space reconfiguration to better support the Roxhill Elementary School program.

School Open: September 2018

Resource Conservation Measures:

High efficient condensing gas boilers.

Dedicated outdoor air system, minimum ventilation with fin pipe perimeter heating.

Time controlled electrical receptacles.

Daylight harvesting lighting controls.

Occupancy sensing controls to relax HVAC set points and disable lights.

Enhanced thermal envelope.

Energy monitoring and metering controls.

Occupant controlled ceiling fans.

Dedicated composting and recycling stations

Energy Star appliances and office equipment

BAS controlled irrigation system with weather station logic to minimize irrigation needs.

Low flow plumbing flush valves and water conservation, time controlled faucet fixtures