# LAKE UNION BUILDING

## Building

- 7 story office building
- o Built in 1970
- o All-electric
- o 2,250,000 kWh/yr
- o EUI = 81 kBtu/sf
- Energy Star rating of 66
- Energy Services
  MacDonald Miller





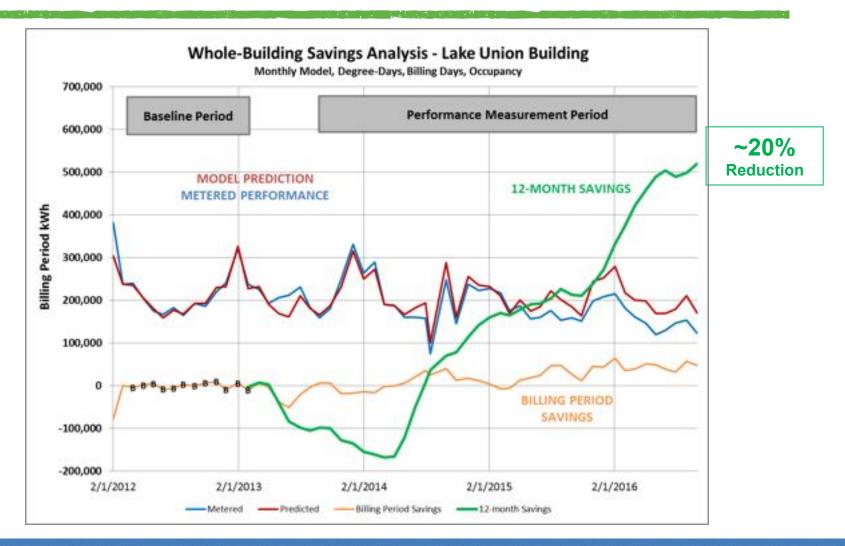
### LAKE UNION BUILDING

#### Efficiency measures

- HVAC control system overhaul
  - Control system hardware and software
  - Installation of isolation dampers and active motor control for building pressurization control
- Electro-chromatic glazing
  - Variable tinting characteristics via controlled signal



#### LAKE UNION BUILDING – PRELIMINARY RESULTS





# **#3 - BULLITT CENTER**

- Living Building Challenge
  - Net Zero
    - Highly Energy-Efficient Design
    - 244kW Solar Array

# MEETS pilot

- Addresses deep-efficiency obstacles through a financial transaction structure
  - Performance-based payments





#### **BULLITT CENTER PERFORMANCE**

100,000 Baseline EUI = 56 kBTU/ft²/Yr 80,000 60,000 Electricity, kWh 40,000 20,000 Actual EUI = 12 kBTU/ft<sup>2</sup>/yr Ô 0 -20,000 Metered Solar Production -40,000 Jul Jun Jun Aug Sep Oct Nov Dec Feb Apr May Mar Mar SCL Power Used Solar Used by Bullitt Solar to SCL Mtr'd EE DeltaMeter Baseline - Bullitt Center Use -O-Net Meter -





THE NATION'S GREENEST UTILITY | 5

### #4 – PACIFIC TOWER

- Partial renovation of historic building with change in occupancy
  - Amazon -> now State of Washington
  - Offices -> now education
  - o 16 floors; 225,000 sf
- Built 1932, numerous additions and past renovations
- First building permitted under "Operating Energy Alternative"
  - Code EUI = 120% of reference model
  - Code kWh = 4,050,962 kW/year
  - 3 years to hit code after 75% occupancy
  - Goal = 21% below code (850,000 kWh)





