

Building Summary

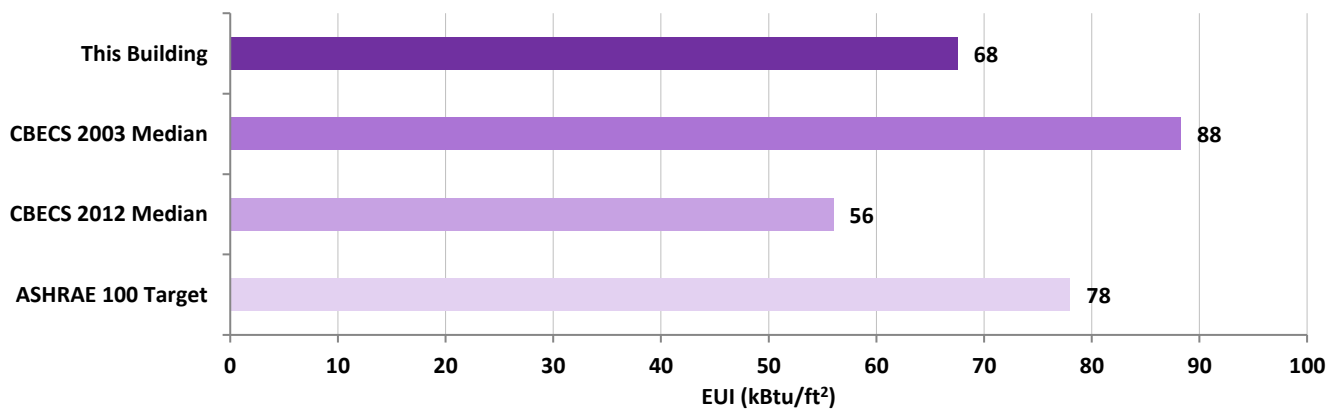
Building	Sample Building
Location	Portland, Oregon
Size	72,000 ft ²
Type	Public Safety

Reference Year Data

	From	To
Electric	Jan 2016	Jan 2017
Gas	Jan 2016	Jan 2017

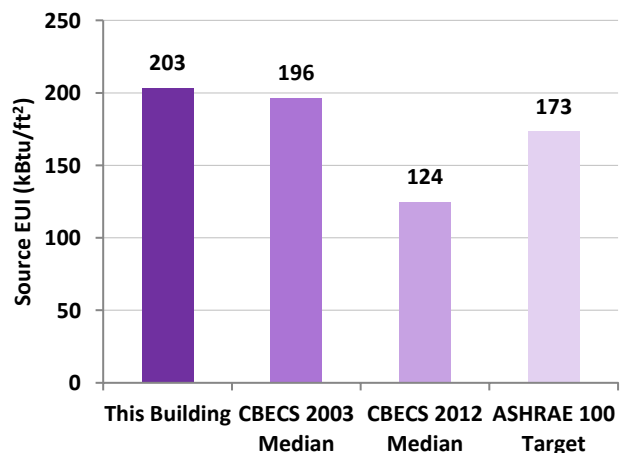
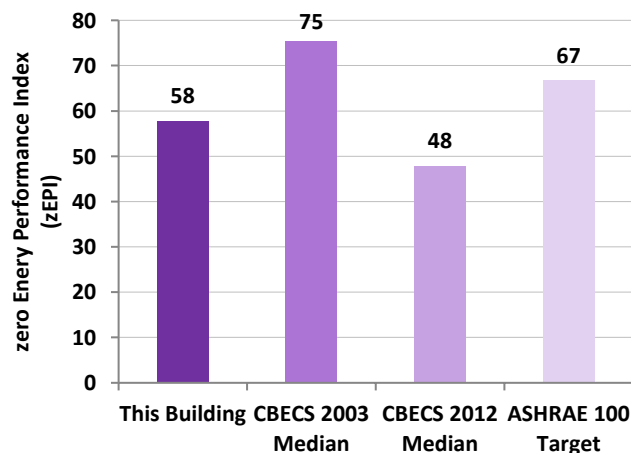
Annual EUI Comparison

The Annual Energy Use Index (EUI) comparison shows the total energy use of the building during the reference year compared to the median nationwide and climate zone specific target energy use for police station buildings as reported by CBECS* and ASHRAE Std 100,** respectively.



zEPI / Source

The zEPI score*** normalizes the building by type and climate zone. A lower score is better, with 0 representing net zero energy performance. Source EUI takes into account the total raw energy needed to power the building, including generation and transmission losses.



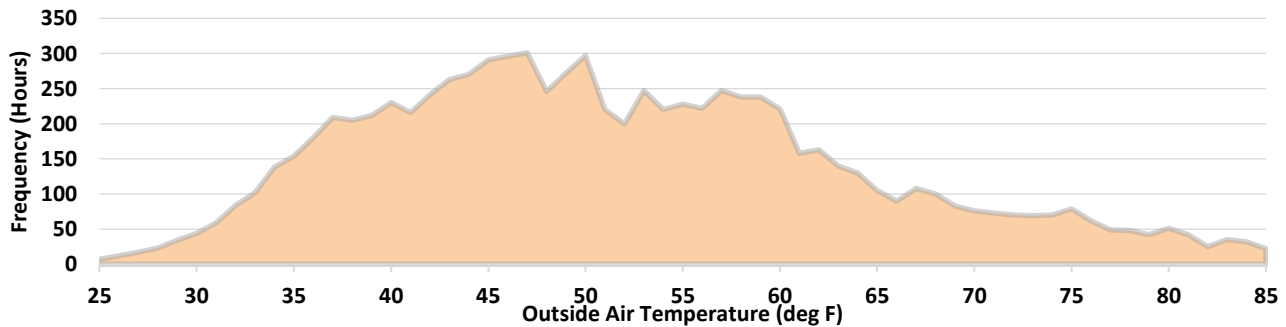
* The [Commercial Building Energy Consumption Survey \(CBECS\)](#), published in 2003 and 2012, is commonly used to represent the energy use of typical existing building stock in the United States.

** [ASHRAE Standard 100](#) details energy use targets for specific building types and climate zones which are derived from CBECS data.

*** [zEPI](#) provides a performance score for a building normalized by building type and climate zone. It is based on fixed benchmarks. A score of 100 represents a turn-of-the-century building, while a score of 0 represents net zero energy.

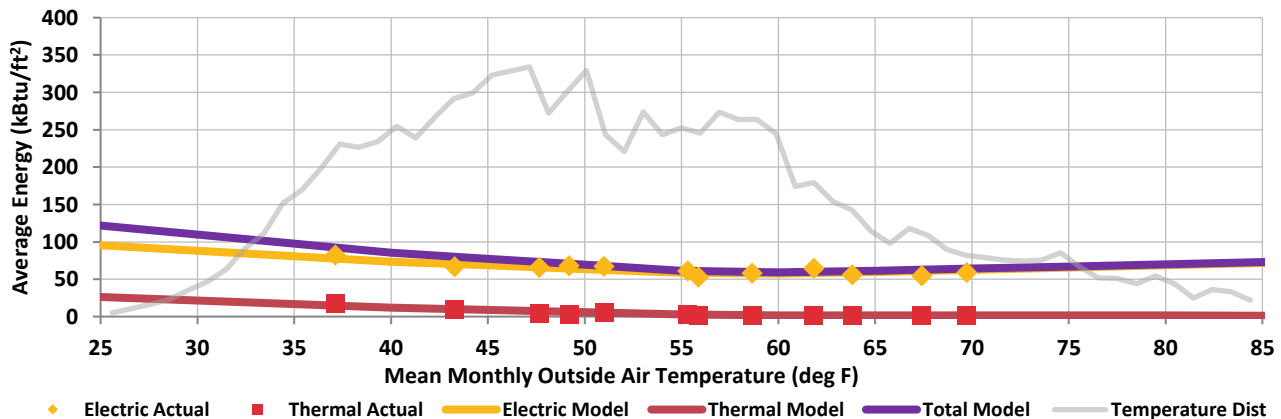
Typical Temperature Distribution

This figure shows the typical temperature distribution seen in Portland, Oregon. Compare this distribution with the energy signatures to see where your building is operating most often.



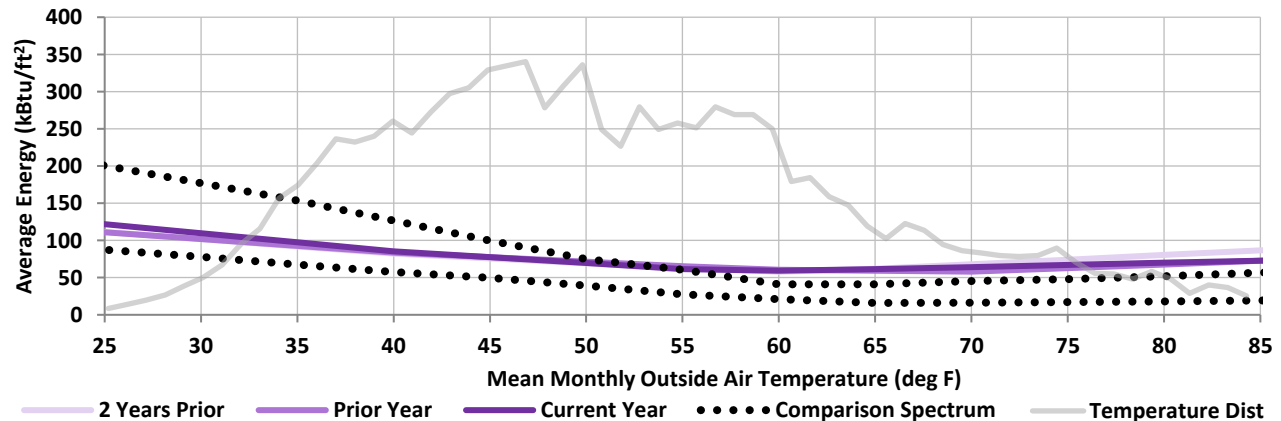
Energy Signature by Fuel

The Energy Signature by Fuel plot shows actual energy usage along with the FirstView modeled energy use, calibrated to the actual usage. Energy Signatures characterize average energy use at various temperatures. The plotted points in this chart represent the building's electric and gas usage, while the solid lines represent the FirstView models of the energy uses. The orange line represents total energy use, or the sum of the modeled lines.



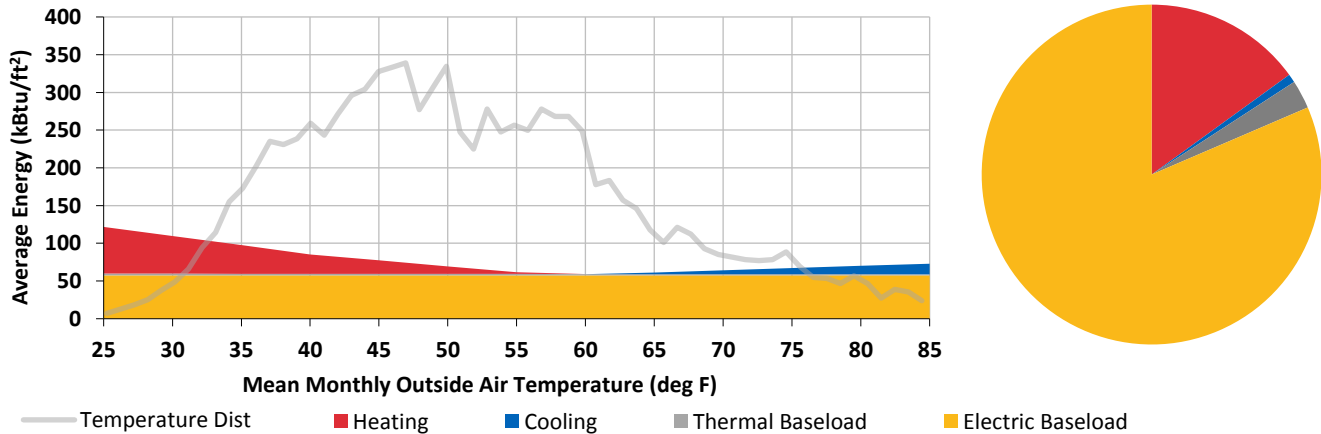
Trending Analysis and Energy Signature Comparison

In this graph, the building's energy signature history is compared to a spectrum of other buildings analyzed in this study. This provides the opportunity for a comparison with building peers. The upper and lower dotted lines represent the 75th and 25th percentiles, respectively, of the buildings analyzed.



Consumption by End Use Energy Signature

The Consumption By End Use Energy Signature shows the total energy use split into four end use categories: heating (electric, gas, and/or steam), cooling, electric baseload (e.g. plugs, lights, and equipment), and thermal baseload (e.g. gas or steam used for water heating). This plot shows cumulative energy use at a range of outside temperatures and can offer insights into building consumption patterns. [Click here to learn more.](#)



Diagnostics

Category	Status
Heating and Ventilation Efficiency	Poor
Cooling Efficiency	Good
Controls	No apparent problems
HVAC Reheat	No apparent problems
Thermal Baseload	Typical
Light and Plug Loads	High
External/Process Load	No apparent problems
Data Consistency	Orderly

Automated diagnostics are generated by analyzing the shape of the Energy Signature and comparing it to aggregate data collected from similar buildings in the FirstView database. [Click here to learn more.](#)

Additional Notes

This building may be a good candidate for potential heating system improvements. Excess outside air rates, high outside air infiltration, poor control settings, and 24-hour fan schedules may be present.

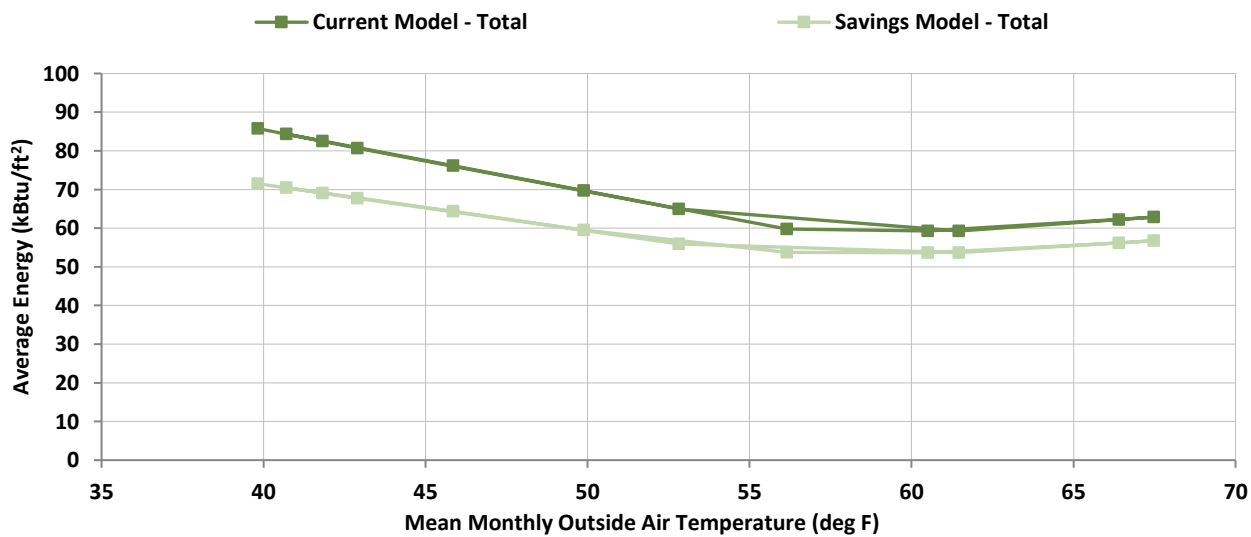
The building has an elevated electrical baseload. Barring process electrical loads, savings may be available via lighting upgrades and/or plug load management.

Environmental Impacts

Annual Energy Consumption	1,684,000 kWh
Annual Carbon Impact	1,224,000 lbs CO2
Annual Water-Energy Impact	664,000 Gallons

Savings Potential

This plot shows the weather normalized building performance for a typical meteorological year (TMY) as currently modeled compared to the potential performance of the building with improvements as outlined in the table below



Model Variable	Current	Target	% Improvement
Shell and Ventilation Efficiency (Btu/°F-hr-ft ²)	0.73	0.87	20%
Cooling Efficiency (COP)	20.0	22.0	10%
Lights and Plug Loads (W/ft ²)	1.04	0.94	10%
Summer Gas Use (Gallons of hot water/day-ft ²)	0.033	0.03	10%

Annual Costs and Savings Potential Estimates		Current	Target	% Improvement
Energy	kWh	1,684,288	1,417,010	16%
Energy Cost	dollars	\$ 32,862	\$ 27,923	15%
CO ₂	lbs	1,223,697	1,037,731	15%
Watershed	gallons	663,575	651,257	2%