



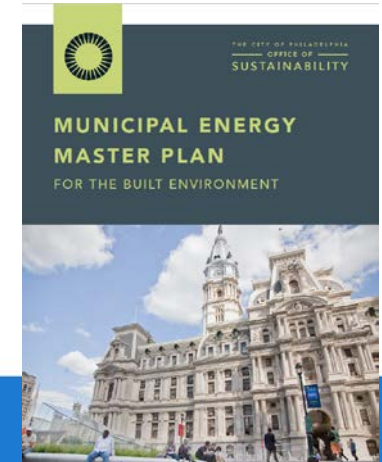
How municipal buildings will comply to the Building Energy Performance Policy



City of
Philadelphia

Energy Office & its functions

- Housed within the Office of Sustainability
- Developed and implements the Municipal Energy Master Plan
- Track live progress at: <http://bit.ly/philamunienergyuse>





**Reduce greenhouse gas emissions from
the City's built environment 50 percent by
2030**



**Reduce the City's built environment energy use
20 percent by 2030**



**Generate or purchase 100 percent of
all electricity for the City's built environment
from renewable resources by 2030**



**Maintain or reduce the City's
built environment cost of energy**



THE CITY OF PHILADELPHIA
OFFICE OF
SUSTAINABILITY

MUNICIPAL ENERGY MASTER PLAN

FOR THE BUILT ENVIRONMENT





Primary Compliance Paths

1

Building Tune-up

2

Energy Performance Contracting & Holistic Retrofits

3

ENERGY STAR Certification vs Energy Audit

4

Building Monitoring Platform





Building Tune-up

Building Tune-up at Juvenile Justice Center

- 160,000 square foot school and residence hall. Built in 2013.
- Retuning completed by Practical Energy Solution, US Facilities and Johnson Controls Inc.
- Retuning started in April 2019 and changes will be verified later this month
- Cost to retune: \$.05-\$.08/square foot or \$8,000-\$12,000
- Estimated savings associated with retuning corrective actions: \$.15/square foot or \$24,000/annually





High-performance Compliance



High-performance Compliance Options

- LEED Gold for Building Operations & Maintenance v.4
- Net-Zero Energy Certification
- Participation in and completion of a utility retro-commissioning program
- Completed a full retro- or recommissioning
- **Demonstrated energy savings of at least 15%**
- **Conducted an energy audit (ASHRAE Level II or stricter)**
 - *implemented all the no/low-cost EE measures (payback of 3 years or less)*

Timing

Within the three years prior to the scheduled tune-up

- Low Site EUI (less than 20 kBtu/sq ft)

Two of the three years before the Compliance Date

- **ENERGY STAR certification (75 or greater)**
- Renewable energy serving 100% of electricity load

Within the year preceding the tune-up

- **Active optimization / demonstrated continuous commissioning**

Two years of reports





Energy performance contracting & holistic retrofits

Energy performance contracting & holistic retrofits

- Philadelphia Museum of Art
 - \$11.4 million Guaranteed Energy Savings Act project
 - \$3.5 millions utility cost before project
 - 21% reduction post project
- Fire Administration Building
 - undergoing a major HVAC and lighting retrofit
 - targeting to gain 26 ENERGY STAR points post construction





ENERGY STAR certification vs Energy Audit

ENERGY STAR

- In 2017, the One Parkway Building became the first Municipal Building in Philadelphia to achieve the ENERGY STAR certification
- 660 E Erie, a mixed-use building, is currently investigating certification



Property Name	Dept.	ft²	2021 Score
One Parkway Building	Public Property	502,000	64
City Hall	Public Property	659,185	63
660 E Erie	Public Property	53,000	58
Municipal Services Building (MSB)	Public Property	491,000	58
Family Court (Arch St)	Courts	510,000	44
Fire Administration Building	Fire	50,601	43
Criminal Justice Center (CJC)	Public Property	600,000	30
Stenton Family Manor	Homeless Services	50,450	25
Police Administration Building	Police	126,000	7
Philadelphia Nursing Home	Health	347,543	2

Property Name	Dept.	ft ²	2019 Score	Alt. Comp
660 E Erie	Public Property	53,000	71	ENERGY STAR
Municipal Services Building (MSB)	Public Property	491,000	60	Building Monitoring
One Parkway Building	Public Property	502,000	60	Building Monitoring
City Hall	Public Property	659,185	56	Building Monitoring
Criminal Justice Center (CJC)	Public Property	600,000	33	Building Monitoring
Fire Administration Building	Fire	50,601	27	Retrofit
Family Court (Arch St)	Courts	510,000	23	
Stenton Family Manor	Homeless Services	50,450	19	
Police Administration Building	Police	126,000	5	To be replaced
Philadelphia Nursing Home	Health	347,543	2	

Property Name	Dept.	ft²	2021 Score	Alt. Compliance
One Parkway Building	Public Property	502,000	64	Building Monitoring
City Hall	Public Property	659,185	63	Building Monitoring
660 E Erie	Public Property	53,000	58	Energy Audit
Municipal Services Building (MSB)	Public Property	491,000	58	Building Monitoring
Family Court (Arch St)	Courts	510,000	44	
Fire Administration Building	Fire	50,601	43	Retrofit
Criminal Justice Center (CJC)	Public Property	600,000	30	Building Monitoring
Stenton Family Manor	Homeless Services	50,450	25	
Police Administration Building	Police	126,000	7	Vacant
Philadelphia Nursing Home	Health	347,543	2	



Building Monitoring Program



Building Monitoring Program

- Using building automation system (BAS) data
 - Platform runs analytics from BAS points
 - Captures trends and schedules
 - Meetings with building operators every other month
 - Current buildings include:
 - One Parkway Building
 - Municipal Services Building
 - City Hall
 - Upcoming buildings:
 - Criminal Justice Center
- 

Meter Data Analysis - One Parkway Building

70°F Cloudy

Meter

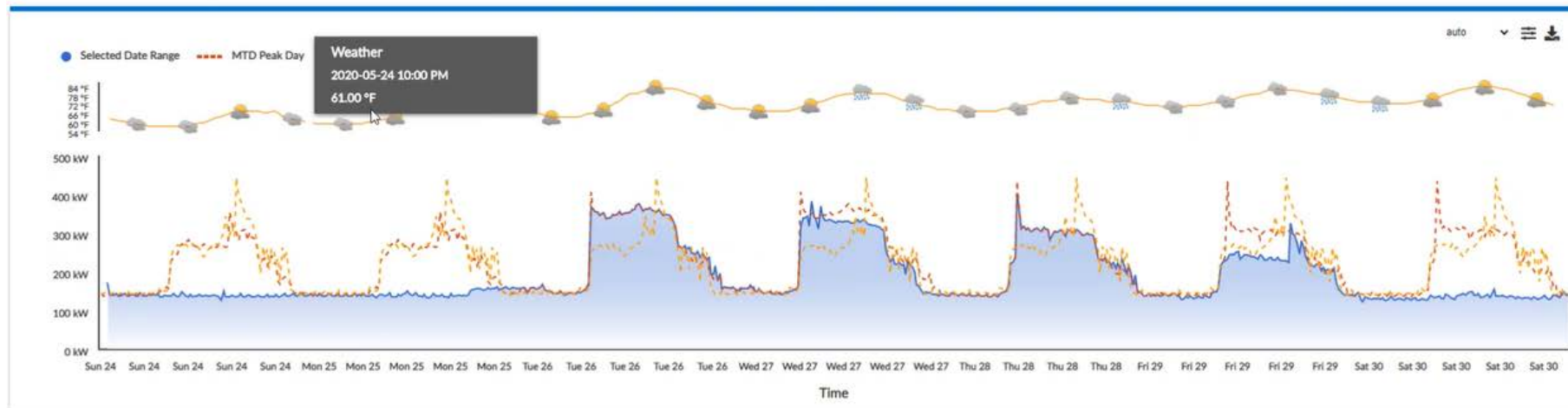
Main Electric Meter

Date

2020-05-24 to 2020-05-30

Demand View

Raw



Month to Date	Previous MTD	Prev Year Same Month	Year to Date	Previous YTD
434kW 2020-05-28	442kW 2020-04-27	450kW 2019-05-16	442kW 2020-04-27	450kW 2019-05-16

USAGE



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City Energy Manager

Office of Sustainability / Energy Office

City of Philadelphia

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