ETS

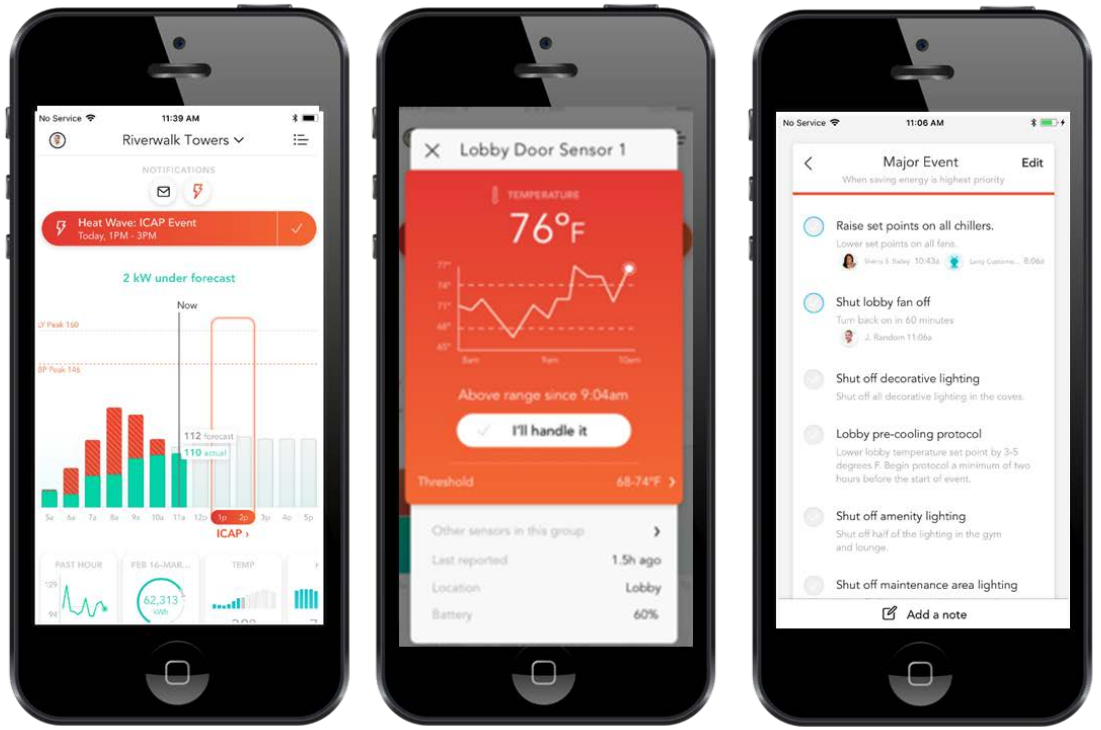
ENERGY TECHNOLOGY SAVINGS℠

Building Digital Transformation and Integrated Distributive Energy Resources

Energy Technology Savings ("ETS")

- **Utilizing data to reduce energy and maintenance costs while increasing resiliency and sustainability for buildings in the most capital efficient manner**
- **COD Jan 2014**
- **Servicing Over 60 Million SF / ~200 commercial and multifamily properties in Northeast**
- **Equipped with multidisciplinary licenses and certifications to deliver full stack value of energy efficiency and Distributed Energy Resources (DERs)**
- **Continuous optimization of >2MW of DER assets**

SmartKit by ETS

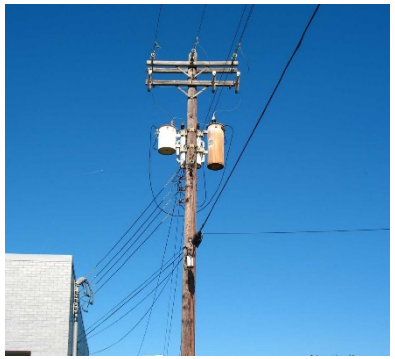


Building Digital Transformation and Grid Decentralization Trends

Generation

Transmission

Distribution



Load

In Front of the Meter

Behind the Meter

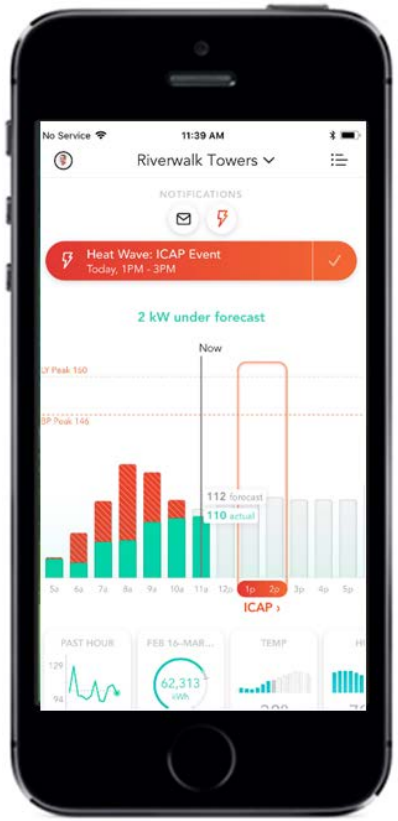
New York Independent System Operator (“NYISO”)

Con Edison

Building Digital Transformation and Integrated Distributive Energy Resources

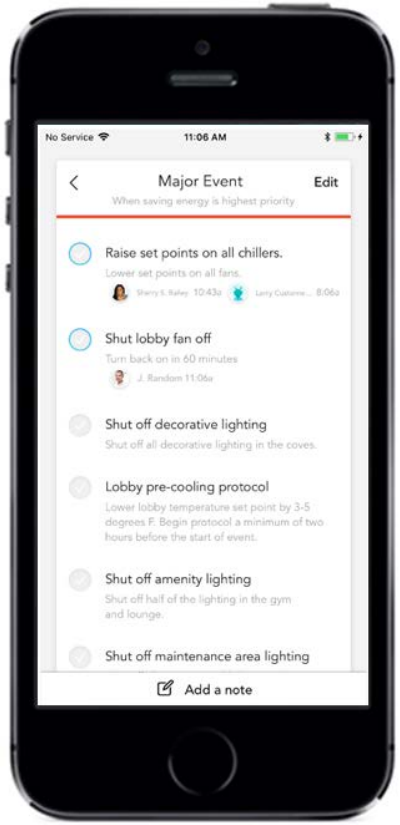
Building Digital Transformation

Building Denominator



Building Numerators

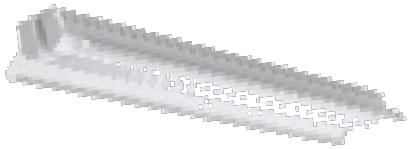
Staff Engagement



Integrated Distributed Energy Resources

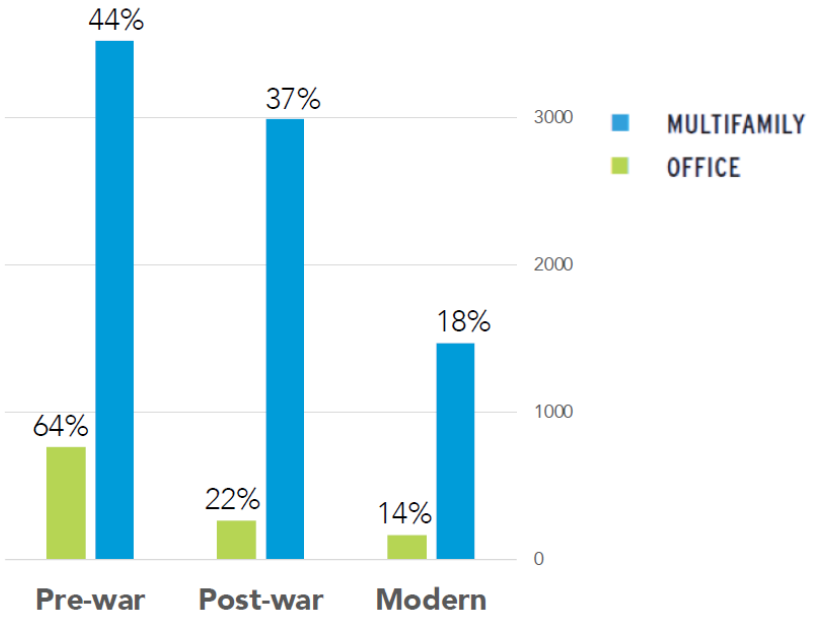
Energy Efficiency Capital Projects: LED Lighting, VFDs, Cogen, Backup Generator, Solar, Battery Storage etc.

Intelligence / Controls



NYC: 15,000 properties over 50,000 square feet, which account for as much as 48 percent of New York City's total energy use (1)

NYC LL84 Benchmarking (2)



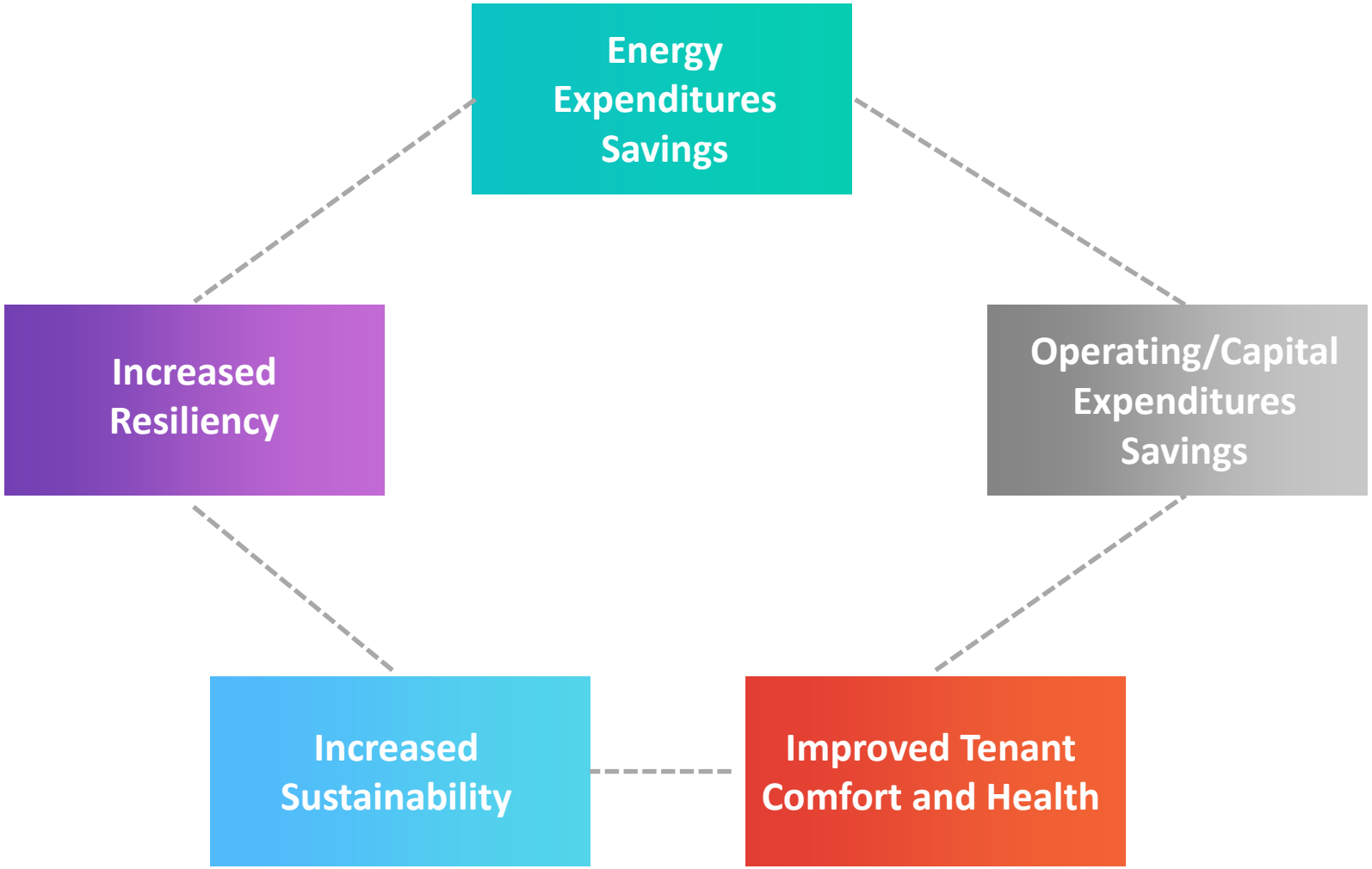
- **~50% of electricity consumption in a multifamily building is borne by the owner (3)**
- **ETS is unlocking energy management value in the largest electricity consuming segment**

(1) NYC Mayor's Office of Sustainability | Green Buildings & Energy Efficiency

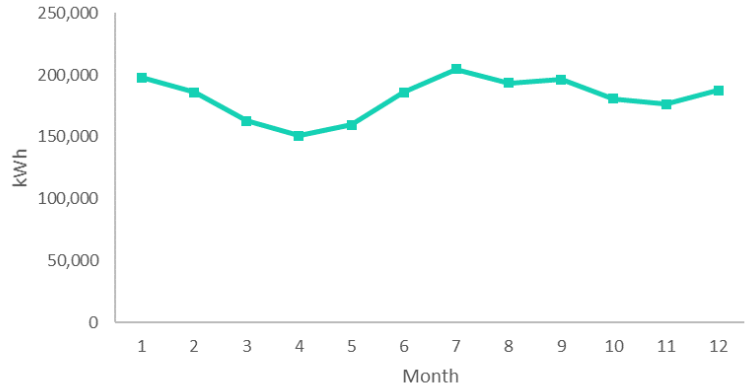
(2) URBAN GREEN COUNCIL A MILEMARKER ON THE WAY TO 80X50

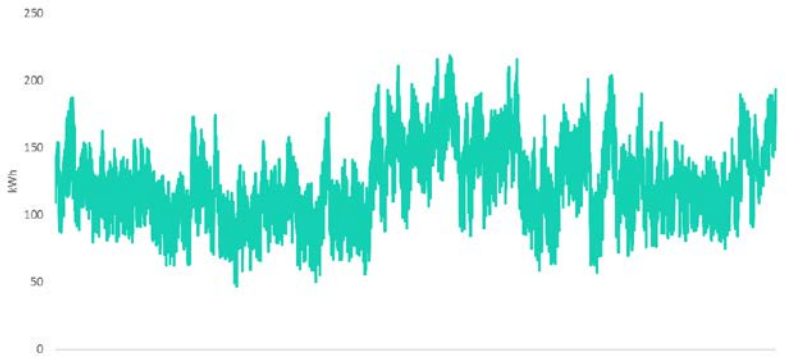
(3) ETS ENERGY TECHNOLOGY SAVINGS®

Smart Building Desired Outcomes

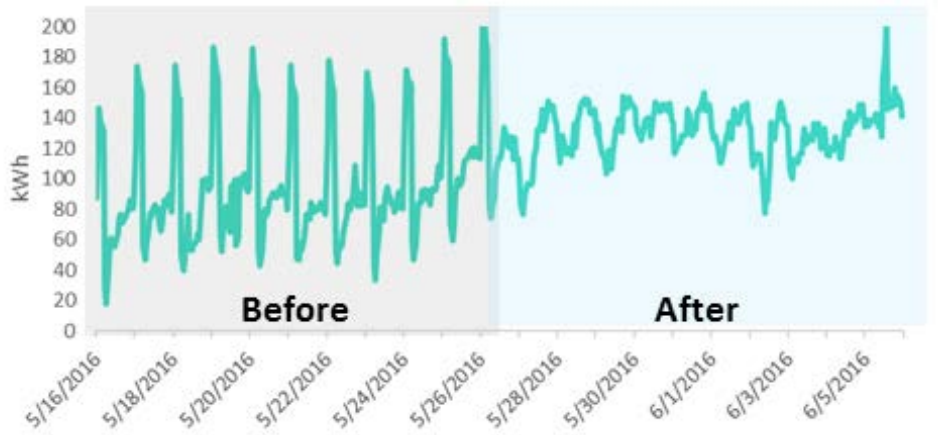


Building Denominator: Smart Building Full Stack Value Opportunities

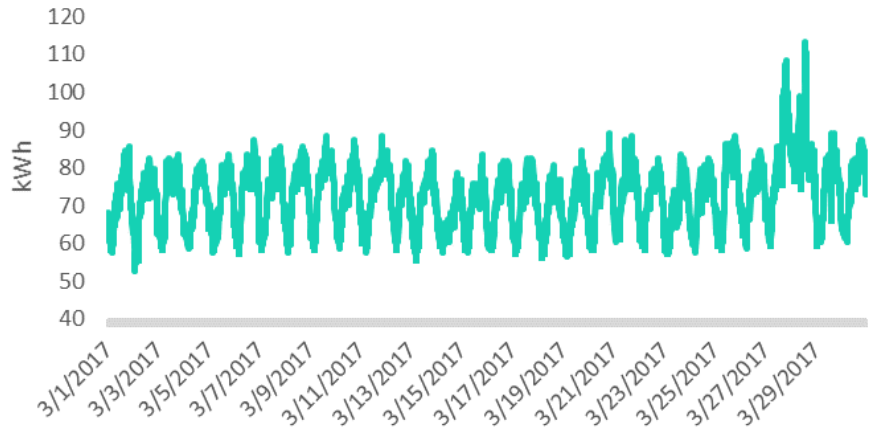




Fault Detection

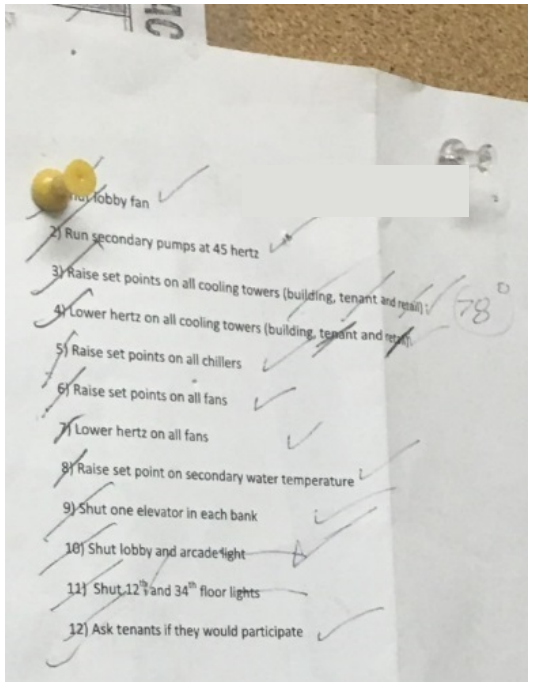


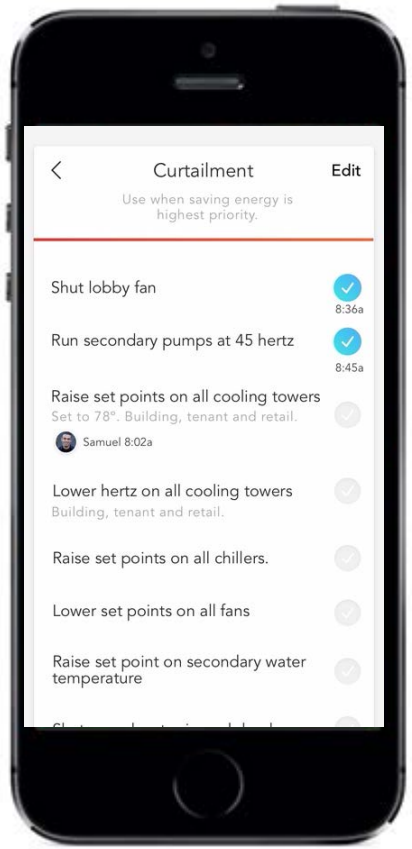
Continuous Demand Management

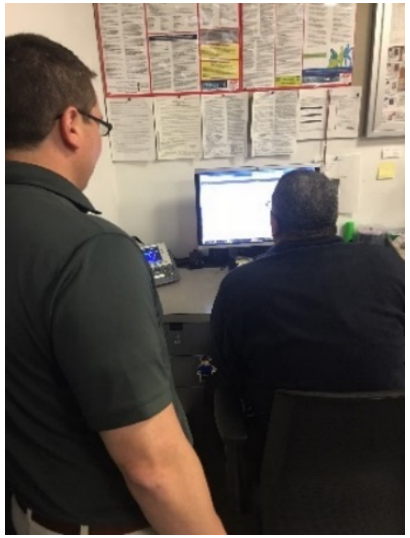


Building Numerators: New Era of Big Data Insights

Property Operations Data Digitization







Case Studies

SmartKit in a High Rise Multifamily Property – New York, NY Case Study

~10% Electricity Expenditures Reduction through Data Transparency and Behavior Modification

Energy Savings

- **2017 Energy Savings: $18,363**
- **~10% Reduction in Electricity Expenditures**
- **~$550,000 increase in NAV**

Resiliency & Sustainability

- SmartKit data is providing the roadmap and capability for all future energy related capital projects at the Building such as Combined Heat and Power, Battery Storage and Solar
- The Building's participation in Demand Response proved out a critical resource to Con Edison in the case of an actual emergency to avoid blackouts in the Con Edison Service territory
- The Building reduced 100kW (40%) of electricity consumption during Demand Response Events

1 **Continuous Energy and Operations Management:**

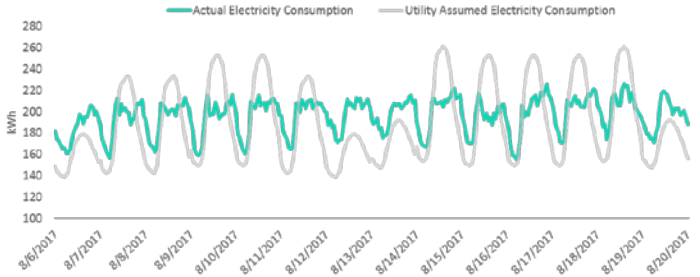
SmartKit monitors:

- **Energy:** Real-time building electrical usage
- **Temperature:** Ambient (e.g. lobby) and material (e.g. hot water pipes)
- **Operations:** Water leaks, door movement, audio/visual data

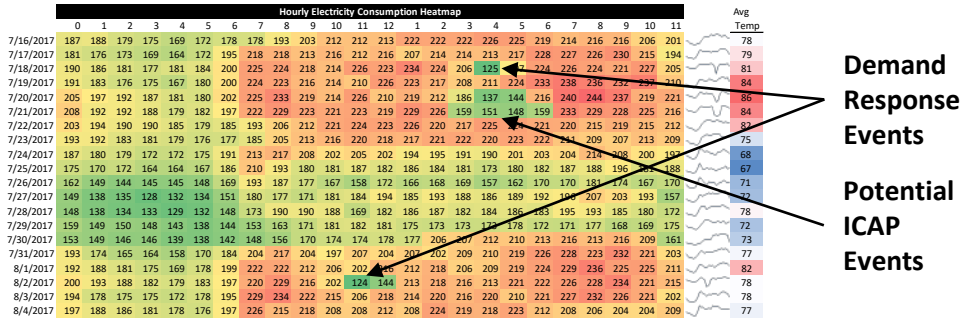
Smart Kit enables building staff to reduce energy and operating expenditures through intelligent guidance of energy usage reduction and building system fault-detection diagnostics

SmartKit IoT Sensor Platform: smart meter, camera, sensors, connected to ETS mobile and web software tools

2 **Data Transparency:** Building benefits immediately from energy use transparency



3 **Behavior Modification:** Guided by ETS Energy Concierge and software application, building managers reduce energy usage during key high-value time periods



Mini Storage HVAC Control and Monitoring System

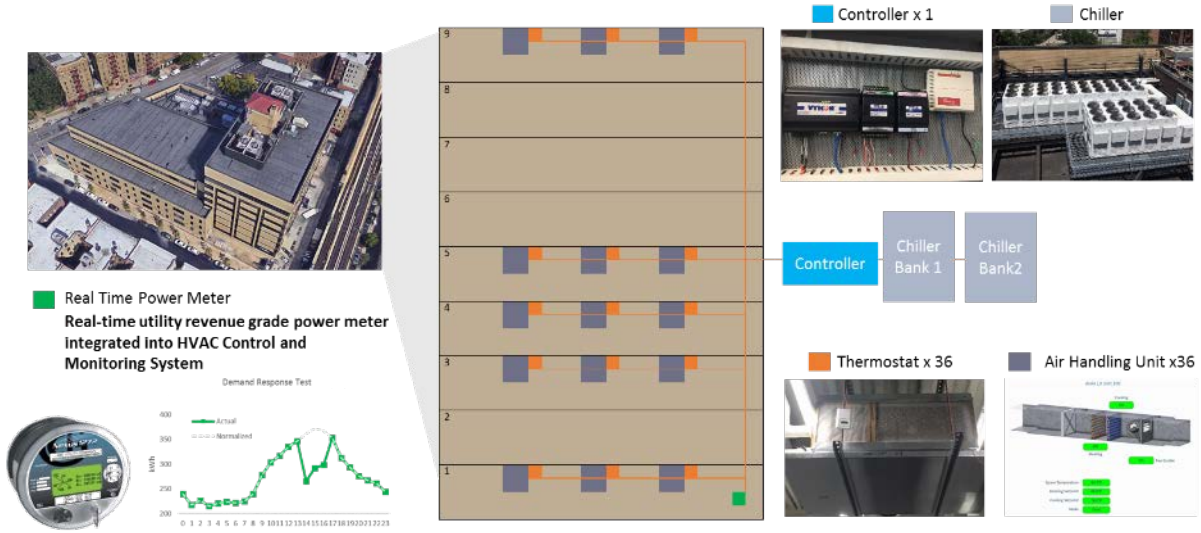
Sustainability:
10% of Energy Consumption Reduced Through Intelligent Temperature Control

75 kW Automated Demand Response:
Providing a Critical Resource to the NY State Electric Grid

Financial Returns:
~$40k Net Savings
~$35k Net Capex
<1 year payback
~$740k NAV Increase

"The Mini Storage HVAC Control Project was the fastest, most effective and cost efficient Demand Management Project we have seen." -Con Edison

System Design and Configuration



The Problem:

- The facility had 36 manual thermostats that hang 15 feet in the air from the ceiling. The temperature set points were only changed twice per year (summer / winter) due to the difficulty of physically reaching each manual thermostat.

Project Scope:

- ETS designed and installed a control system on a 420 ton electric chiller and 40 fan coil units distributed throughout the facility. The system enables remote temperature monitoring and control of each zone.
- System can be easily accessed, monitored and controlled from mobile app and desktop devices

- NYSERDA (Real Time Energy Management) and Con Edison (Demand Response Program) rebates combined to >50% of the total project costs

Questions

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