

## CASE STUDY | Government Office Building

The objective of this case study was to determine what The Tri-M Group could do to reduce consumption when the reliability of the electric grid is in jeopardy as requested by the supplier. In order to test the demand reduction strategies, the equipment commands and space temperature setpoints were manipulated during peak demand conditions using the building automation system. Peak demand conditions include extreme hot and extreme cold weather. The system logged historical data for space temperature, space humidity, space CO<sub>2</sub>, and two main electric meters during the test periods. The historical data was then analyzed using Tri-M Analytics.



### SNAPSHOT

- 7-story building
- Philadelphia, Pennsylvania
- Vertical Market: Office



### SCOPE

- Demand Limiting
- Integrated BAS & Energy Optimization



### RESULTS

- 16.7% demand reduction during Equipment Shutdown
- 4.7% demand reduction during Setpoint Adjustments
- Minimal effect to occupant comfort



### Demand Limiting

#### Non-essential Equipment Shutdown

- Limiting the buildings's equipment to allow only essential equipment to run will immediately reduce building electrical demand.

#### Space Temperature Adjustments

- Relaxing temperature setpoints for a short period of time can result in minimal effect to space temperature, humidity, and CO<sub>2</sub> conditions while allowing mechanical equipment to shut off, limiting their impact on the building's electrical demand.



## Results/Conclusion

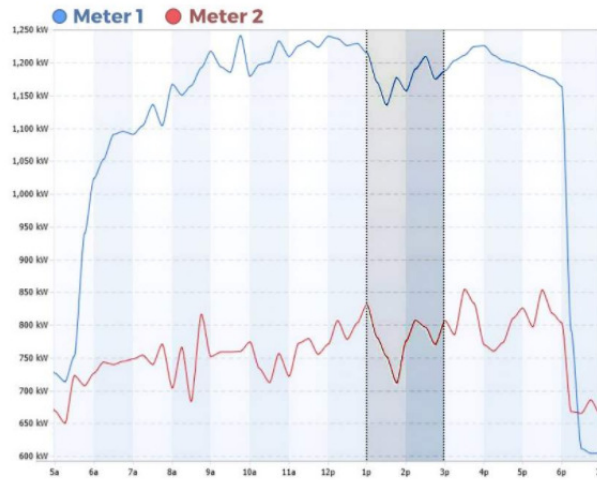
Utilizing Tri-M Analytics in conjunction with the Building Automation System allowed this facility to effectively reduce its electrical demand by more than 16% when requested by the utility company.

### Non-essential Equipment Shutdown



	Meter 1	Meter 2	Total
Typical Demand	1447.0kW	725.9kW	2172.9kW
Measured Demand	1130.6kW	679.5kW	1810.1kW
Demand Reduction	21.9%	6.4%	16.7%

### Setpoint Adjustments



	Meter 1	Meter 2	Total
Typical Demand	1212.7kW	814.4kW	2027.1kW
Measured Demand	1166.5kW	765.6kW	1932.1kW
Demand Reduction	3.8%	6.0%	4.7%