

# Energy Conservation Initiative (ECI) Project Summary

## Vet Research Tower Facility Code 1140

**What We Did:** The temperature control system in this building was outdated and not performing properly and therefore needed to be upgraded with a new building automation system that improves efficiency and comfort. We upgraded the hydronic system in floors 2 through 7 with new electric valves on the reheat and radiation systems. Digital controls with temperature and occupancy sensors were added to control space temperature based on occupancy. In the basement and 1<sup>st</sup> floor we upgraded the space control to new controls with electric valves on the reheat. We installed new variable air volume boxes based on new air flow design criteria. We installed new temperature and occupancy sensors to adjust airflows and temperatures based on occupancy. We upgraded reheat, radiation and chilled water hydronic systems with new digital controls. We upgraded the mechanical system in

the penthouse from pneumatic to digital.

**What It Cost:** \$729,000

**How Long It Took:** 10 months. Completed October 2014.

**What We Saved:** \$122,000 and 188 tons/per year carbon equivalent annually.

**Benefits:** The project replaced re-heat and perimeter heating valves addressing a significant deferred maintenance item. These improvements allow better space temperature control and allow temperature setbacks during unoccupied periods.

The upgraded building controls have significantly reduced energy use and improved occupant comfort.

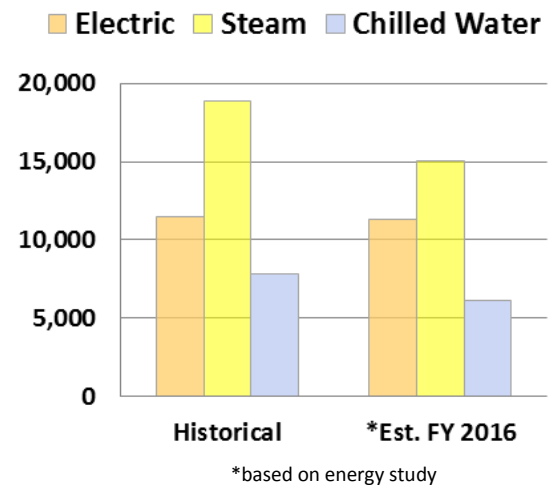
Mark Howe  
Campus Energy Manager  
Cornell Energy and Sustainability

### Vet Research Tower



[Map](#)  
[Utilities Costs and Use](#)

Vet Research Tower  
Total Energy Use - Pre & Post ECI



### Vet Research Tower: ECI Savings Table

Utility	Historical Energy Use (MMBtu)	*Est. FY 2016 Energy Use (MMBtu)	Energy Savings (MMBtu)	% REDUCTION	Historical (billed rates)	*Est. FY 2016 Cost (billed)	Annual Savings \$	Equivalent #Homes
Electric	11,500	11,300	200	2%	\$236,000	\$231,000	\$5,000	5
Steam	18,900	15,100	3,800	20%	\$427,000	\$340,000	\$87,000	40
Chilled Water	7,800	6,100	1,700	22%	\$143,000	\$113,000	\$30,000	34
<b>Totals</b>	<b>38,200</b>	<b>32,500</b>	<b>5,700</b>	<b>15%</b>	<b>\$806,000</b>	<b>\$684,000</b>	<b>\$122,000</b>	<b>79</b>



Energy use based on project scope

Equivalent # Homes Savings based on average home use: 40 MMBtu Electric • 90 MMBtu Heat • 50 MMBtu Cooling

