

# Energy Conservation Initiative (ECI) Project Summary

## Appel Controls Upgrade, Facility 3204

**What We Did:** We repaired and upgraded controls throughout the facility areas. In non-dining areas, re-heat valves were replaced and occupancy sensors were added. A significantly oversized air handling system was replaced by fan coil units. Space controls were re-commissioned and repaired throughout the building.

In the dining area, hood exhaust variable airflow controls were added. The controls regulate exhaust airflow dependent on smoke concentration and temperature.

The new dining hood sensors and controls are complemented by new air handler and space air controls. The hoods operate on schedules and vary from minimum to maximum airflow based on ventilation demands.

**What It Cost:** \$430,000

**How Long It Took:** 8 months. Completed April 2013.

**What We Saved:** \$75,000 and 220 tons/per year carbon equivalent annually.

**Benefits:** The new controls restore fully automated operation with minimum airflow and reheat to ac-

complish energy efficient space conditioning. The new operation improves comfort, reduces maintenance issues, and reduces energy usage. In the kitchen areas airflow is now controlled based on cooking demands (50% minimum) and schedules can be easily adjusted so that equipment is only running and air is exhausted when it needs to be. If needed, staff turn on a hood "early" at the hood controller. The result is a significant reduction in annual energy used to heat and cool, supply and exhaust the ventilation and make up air.

Appel Commons general space controls were very much in need of maintenance. This project not only dramatically reduces energy usage, it fixed many comfort and reliability issues cost effectively with one large project.

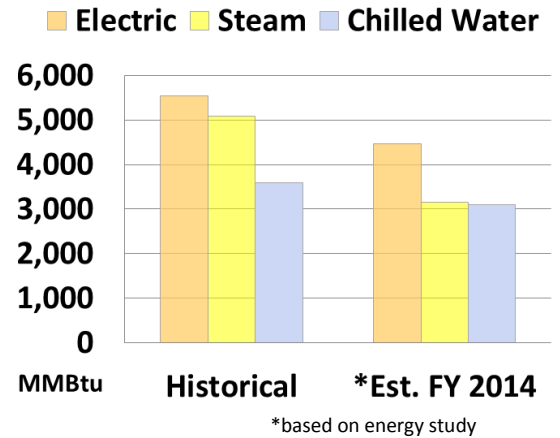
Chris Edwards  
Supervisor of Facilities

### Appel Controls Upgrade



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

Appel Controls Upgrade:  
Total Energy Use - Pre & Post ECI



### Appel Controls Upgrade: ECI Savings Table

Utility	Historical Energy Use (MMBtu)	*Est. FY 2014 Energy Use (MMBtu)	Energy Savings (MMBtu)	% REDUCTION	Historical Cost (billed rates)	*Est. FY 2014 Cost (billed)	Annual Savings \$	Equivalent # Homes
Electric	5,500	4,500	1,000	18%	\$114,000	\$92,000	\$22,200	25
Steam	5,100	3,200	1,900	37%	\$115,000	\$72,000	\$44,000	20
Chilled Water	3,600	3,100	500	8%	\$66,000	\$57,000	\$9,100	10
<b>Totals</b>	<b>14,200</b>	<b>10,800</b>	<b>3,400</b>	<b>24%</b>	<b>\$295,000</b>	<b>\$221,000</b>	<b>\$75,000</b>	<b>55</b>



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

