

Energy Conservation Initiative (ECI) Project Summary

Robert Purcell Community Center (RPCC) Space and Dining Kitchens Air-flow Control, Facility 3212

What We Did: We added dining cooking hood variable airflow controls that change exhaust and matching make up airflows with exhaust temperature and smoke concentration. 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 (50%) to maximum airflow based on ventilation demands. We completely replaced all space controls following a previous project that replaced all central mechanical controls. Central systems control logic was updated to utilize load information from the space controls, allowing central system pressure and temperature setpoints to vary with the load.

What Did It Cost? \$824,000
How Long it Took? 8 months. Completed March 2013.

What We Saved: \$141,000 and 560 tons/year carbon equivalent annually.
Benefits: Airflow is now controlled based on cooking demands and schedules can be easily adjusted so

that equipment is only running and air is exhausted when it needs to be. The result is a significant reduction in annual energy used to heat, cool, supply and exhaust the ventilation and make up air. User comfort was improved along with a significant reduction in energy use with the new controls providing accurate control of operation, airflows and temperatures. Significant deferred maintenance issues were eliminated due to the full controls replacement and recommissioning efforts.

This project was part of our total kitchen controls updates to reduce energy usage and do better temperature control. It was a tough one to implement in operating kitchens, but the ECI team pulled it off with assistance from our Dining staff and it is working very well.

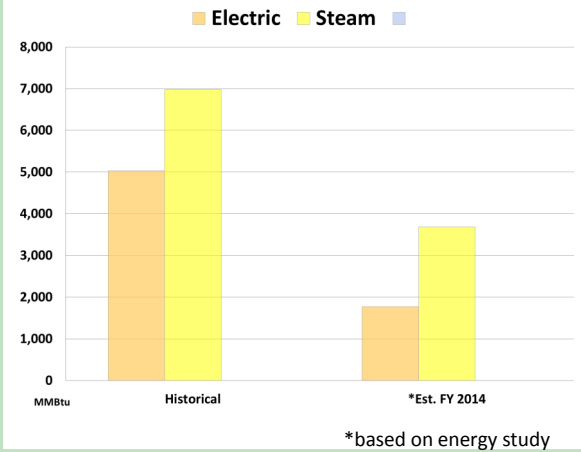
Bill Baldwin
 Facilities Manager
 Cornell Dining

RPCC Air-flow Control



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

RPCC Air-flow Control:
 Total Energy Use - Pre & Post ECI



RPCC Air-flow Control: 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	5,000	1,800	3,200	64%	\$103,100	\$36,300	\$67,000	80
Steam	7,000	3,700	3,300	47%	\$157,600	\$83,300	\$74,000	40
Chilled Water								
Totals	12,000	5,500	6,500	54%	260,700	119,600	141,000	120



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

