

Energy Conservation Initiative (ECI) Project Summary

Duffield Clean Room Re-circulation Air Flow Control, Facility 2000

What We Did: We installed 25 particle counters throughout the Duffield clean room facility. The particle levels are used to control each of the 25 RA-HU's varying the air change rate from a minimum 30 air changes per hour. Originally the system maintained a flat air change rate of 90 air changes per hour. Typically clean rooms use extremely high air change rates through HEPA filters to reduce particles.

What It Cost: \$145,000

How Long It Took: 12 months. Completed October 2011.

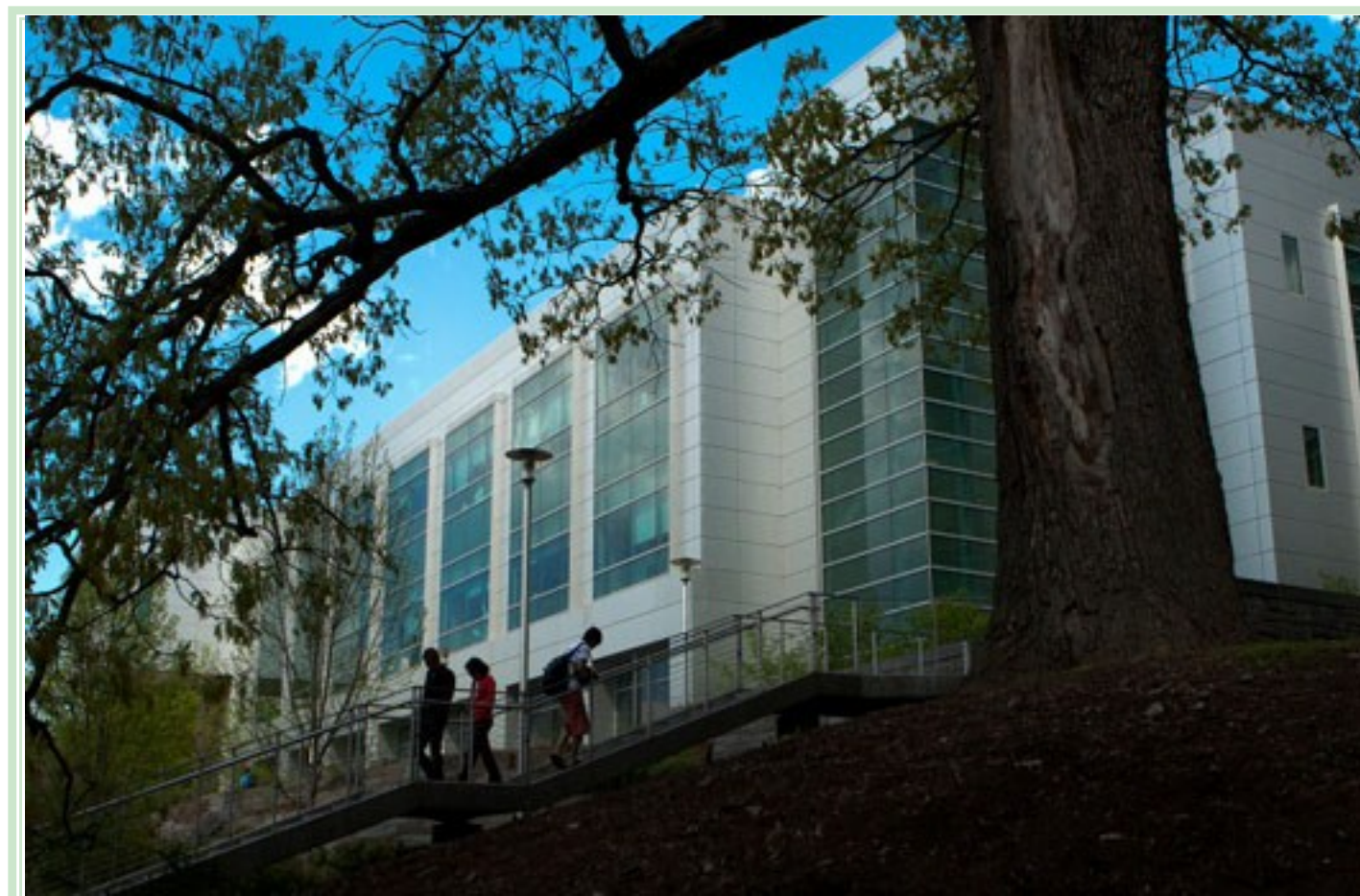
What We Saved: \$45,000

Benefits: The Duffield clean room is now one of the few in the world to significantly reduce air energy usage by varying recirculated airflow based on measured air particle count.

The project has enabled us to trend and monitor the particle count in the clean room facility. Reduction of air change rate has increased the life of our HEPA filters while decreasing the energy use significantly.

Scott Albrecht, Duffield Building Manager

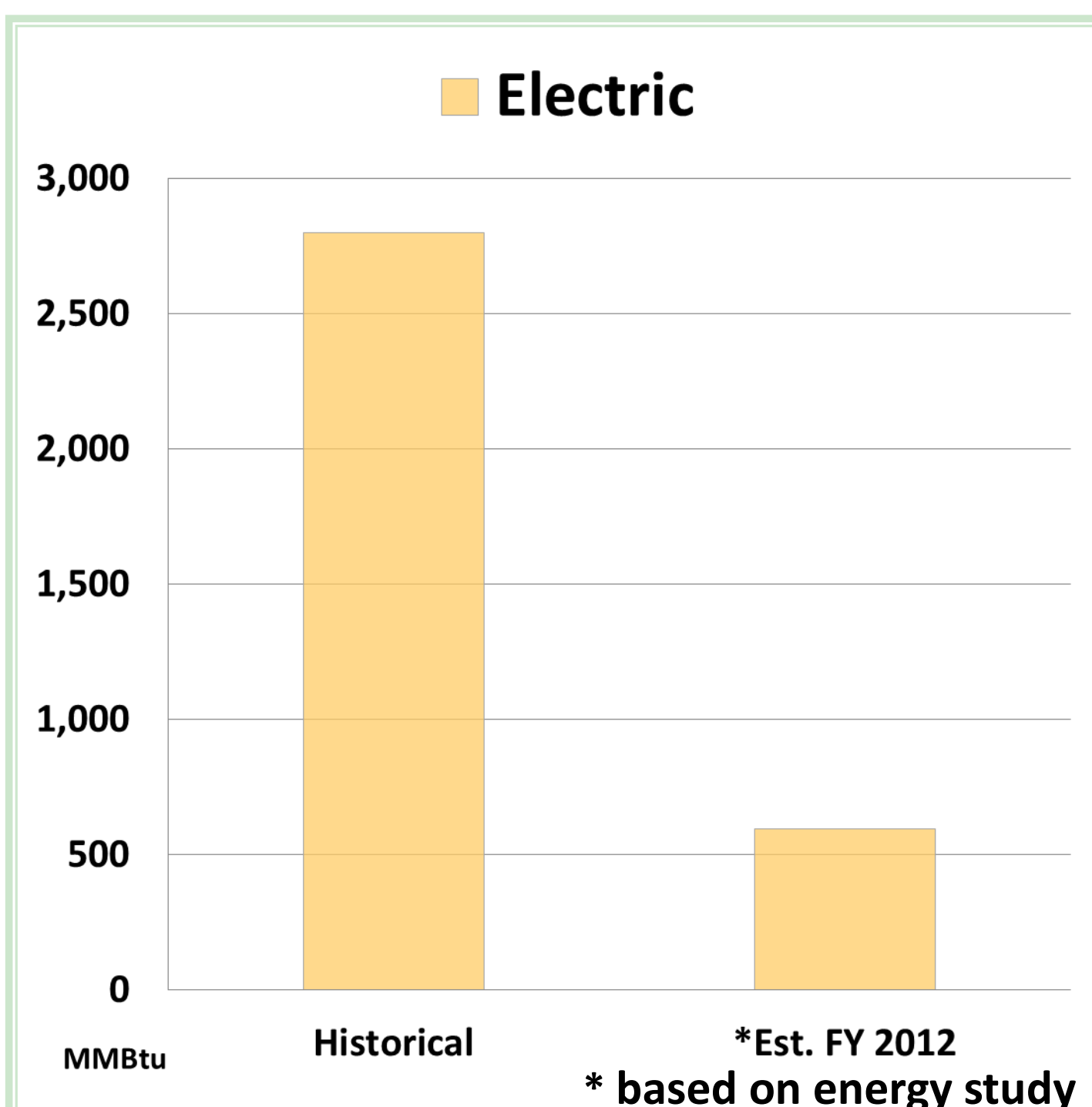
Duffield Hall



[Map](#)

[Duffield Hall Utilities Costs and Use](#)

Duffield Hall: Total Energy Use Pre & Post ECI



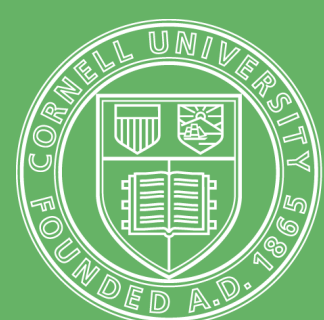
Duffield Hall: ECI Savings Table

Utility	Historical Energy Use (MMBtu)	Est. FY 2012 Energy Use (MMBtu)	Energy Savings (MMBtu)	% REDUCTION	Historical Cost (billed rates)	Est. FY 2012 Cost (billed)	Savings \$	Equivalent # Homes
Electric	2,800	594	2,206	80%	\$57,000	\$12,100	\$45,000	55
Steam								N/A
Chilled Water								N/A
Totals	2,800	594	2,206	80%	\$57,000	\$12,100	\$45,000	55

Energy use based on project scope



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



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