ACCRUENT EMS

LONG-ESTABLISHED PUBLIC UNIVERSITY

THE UNIVERSITY

This large public university is a global higher education leader with nearly 30,000 students and a member of the prestigious Association of American Universities.

THE CHALLENGE

The university's student union uses EMS to schedule more than 2,000 events and 10,000 meetings each year. They recognized the waste of running the union's heat and cooling system indiscriminately from 6:00 am to 12:00 pm, whether individual rooms were occupied or empty. They wanted to utilize their EMS schedules to regulate their Johnson Controls MSEA (MSEA) controls system so that heating and cooling would only occur in occupied rooms.

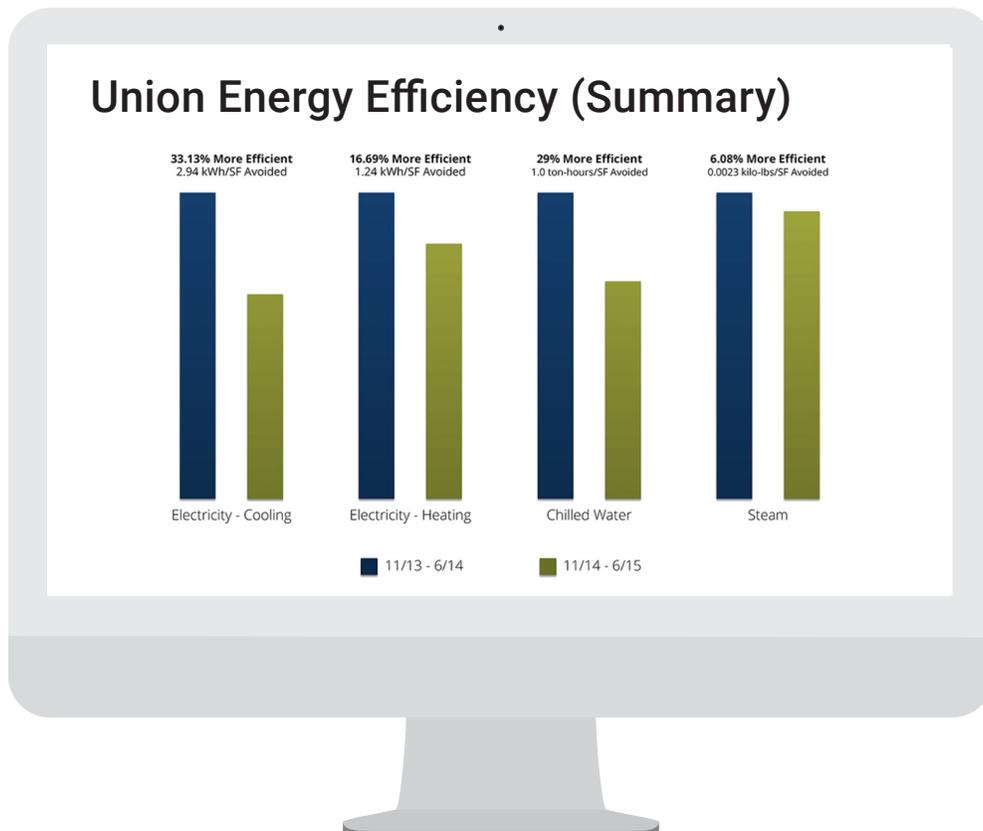| **29,000**	**$2.89B**	**279**
POPULATION	IN REVENUE	ACRES

ACCRUENT

THE SOLUTION

The union decided to utilize Events2HVAC by Streamside Solutions. This event automation solution bridges the gap between room schedules and HVAC schedules by pulling data from EMS and sending commands to buildings' automation systems, HVAC controls, and security systems to automate room conditions per scheduled use.

The union implemented Events2HVAC to pull schedules from EMS and send commands to their MSEA system for 26 rooms. While the 26 rooms comprised only one-third of the union building, they included a 5,200 square foot great hall and a 3,100 square foot auditorium. After deployment, they configured their HVAC equipment to return to settings designated for unoccupied rooms between scheduled events.

THE RESULTS

After syncing EMS with Events2HVAC and switching to LED lighting, the union's Building Operations Manager worked with the university's Energy Management department to track the union's overall energy efficiency. They tracked electricity, chilled water, and steam use over a period of 8 months.

They compared the utility data to the same period for the previous year, normalizing for differences in weather by including the number of cooling days and the number of heating days for each time period in their calculations. A comparative summary of the results appears in this case study, with the base year pegged at 100%.

Union Energy Efficiency (Summary)

33.13% More Efficient 2.94 kWh/SF Avoided	16.69% More Efficient 1.24 kWh/SF Avoided	29% More Efficient 1.0 ton-hours/SF Avoided	6.08% More Efficient 0.0023 kilo-lbs/SF Avoided
Electricity - Cooling	Electricity - Heating	Chilled Water	Steam

■ 11/13 - 6/14   ■ 11/14 - 6/15

The results show a dramatic decrease in energy use. Again, this was accomplished by syncing EMS and Events2HVAC to only one third of the union's total rooms, as well as incorporating LED lighting.

Other tables illustrate data and calculations for energy efficiency at the union. Note that the charts represent data for the entire building, while the EMS-Events2HVAC integration is controlling just one third of it. Other parts of the building were on a daily building schedule or operated in occupied mode 24/7.

ELECTRICITY EFFICIENCY

TIME PERIOD	TOTAL ELECTRICITY CONSUMPTION (kWh)	TOTAL COOLING DEGREE DAYS	kWh PER DEGREE DAY	NORMALIZED kWh	kWh/SF
11/13 - 06/14	1,228,175	223	5,507.51	1,349,340	8.88
11/14 - 06/15	1,025,277	278	3,682.75	902,273	5.94

AVERAGE COOLING DEGREE DAYS: **245**　　　　　　　OVERALL EFFICIENCY INCREASE: **33.13%**

TIME PERIOD	TOTAL ELECTRICITY CONSUMPTION (kWh)	TOTAL HEATING DEGREE DAYS	kWh PER DEGREE DAY	NORMALIZED kWh	kWh/SF
11/13 - 06/14	1,228,175	3,845.9	319.35	1,137,832	7.84
11/14 - 06/15	1,025,277	3,853.8	266.04	947,912	6.24

AVERAGE HEATING DEGREE DAYS: **3,563**　　　　　OVERALL EFFICIENCY INCREASE: **16.69%**

Electricity efficiency related to cooling the building increased 33% over the eight-month period compared to the same eight months of the previous year. During the same time, electricity efficiency related to heating the building increased almost 17%. The university calculated that the total electricity savings from the EMS-Events2HVAC integration and LED conversion came to $10,000 for the eight-month period.

CHILLED WATER EFFICIENCY

TIME PERIOD	TOTAL CW CON-SUMPTION (ton-hours)	TOTAL COOLING DEGREE DAYS	ton-hours PER DEGREE DAY	NORMALIZED kWh	ton-hours/SF
11/13 - 06/14	1,228,175	223	2,131.84	522,302	3.44
11/14 - 06/15	1,025,277	278	1,512.32	370,519	2.44

AVERAGE COOLING DEGREE DAYS: 245   **OVERALL EFFICIENCY INCREASE: 29.00%**

The efficiency increase for chilled water calculated in a similar manner over the same eight-month period was 29% — and it could have been greater.

> *"Unfortunately we did have a much hotter and colder winter and summer during the time period, so it's not going to show on the bottom line as much. But if you look at how efficient we've been with the weather normalized data, I think that is where the program really speaks for itself in terms of cost avoidance. "*

– Building Operations Manager

CONTACT FOR A DEMO

ACCRUENT EMS

Accruent, LLC

sales@accruent.com | 512-861-0726
www.emssoftware.com | www.accruent.com

ACCRUENT