Drake University

COMPANY BACKGROUND

Drake University and Sodexo Education Services have been in partnership for more than ten years. Sodexo is committed to enhancing the learning environment on the Drake Campus through managing both food services and the facilities and maintenance activities. With the start of a sustainability program at Drake, efforts have been made to improve energy and plant operations, as well as grounds and custodial services. Drake and Sodexo strive together to improve in areas of sustainability, diversity and wellness.

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PROJECT BACKGROUND

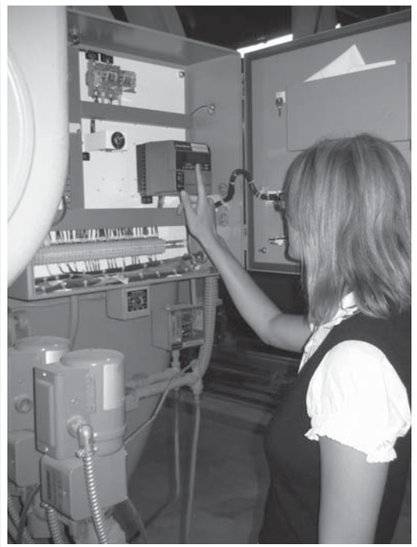
The 'Blue is Green' sustainability motto at Drake University has encouraged both staff and students to consider green practices on campus. Through the Pollution Prevention Intern Program, Drake has taken further steps by working on such projects as the HVAC system, food service equipment and a campus-wide recycling program. These projects, and others, have given Drake the opportunity to be a model of sustainability, both on campus and in the community of Des Moines.

INCENTIVES TO CHANGE

With the signing of the American Colleges/Universities Presidents Climate Commitment, Drake University has shown its dedication to the practices and actions that are needed for carbon neutrality and overall sustainability. This began what is now the Blue is Green program. With the help of the sustainability committee, Drake is now an example of how colleges and universities could take action and make positive environmental impacts. Since this commitment, Drake has taken action in food service and facility operations. Student groups have also formed to encourage the campus to become more 'green.'

RESULTS

Solid Waste: Recycling and solid waste programs were an important part in reducing Drake's carbon footprint. Drake has started a campus wide, single-stream recycling program that collects paper, plastics and cans in one receptacle. This will improve the convenience for students and staff, and reduce the cost of receptacles. The program will divert more than 360 tons of solid waste from the landfill each year. In addition, Drake's option to go trayless in dining areas will prevent 105 tons of food scraps from being thrown away during the course of the year and reduce purchasing and disposal costs.



HVAC Optimization: Improvements to Drake's boiler and HVAC systems could save more than 500,000 kWh, 10,000 therms and reduce carbon dioxide emissions by 200 tons per year. Recommendations include installing variable frequency drives on fans, variable air flow systems and dampers with sensors in areas that have zone heating or cooling. These additions will improve air flow throughout buildings and prevent overcooling of classrooms and offices that are unused during summers.

Steam Valve and Line Insulation: Drake could recover waste heat by insulating 303 feet of steam lines. Valves and plating could be insulated with retrofit blankets to save more than 39,000 therms per year. This project will improve boiler efficiency and prevent sulfur dioxide emissions by reducing the amount of natural gas needed for operation.

Food Service Equipment Optimization: Food service equipment can be a large investment for dining halls and concessions. Drake examined space usage and optimization for its equipment to not only decrease energy use, but also improve efficiency. Walk-in coolers and freezers could be improved through updated insulation, variable frequency drives and by replacing door seals. In addition, cutting back 350 kWh from peak demand by shutting off all unused concession equipment and phantom loads from drink dispensers could save Drake $14,000 annually.

Vending Misers: Vending misers are commonly used to shut down vending machines when not in use. They could reduce the machine running time by 40 percent, and on the Drake campus misers have been installed that save more than $3,000 and more than 60,000 kWh annually. This project will be further improved through a program to actively repair and install the tools in other areas to maintain the system at efficiency.

AIR POLLUTANTS DIVERTED IN TONS

Total for all sectors	
SO2	3.40
CO	0.59
NOx	1.69
VOC	0.37
PM	0.09

GREEN HOUSE GASES DIVERTED IN TONS
(CO2 Equivalent)

Total for all sectors	
CO2	652.64
CH4	103.90
N2O	0.51
CFC	8.03

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
SINGLE-STREAM RECYCLING PROGRAM	$9,000	360 TONS	IMPLEMENTED
FOOD WASTE REDUCTION: TRAYLESS	$6,000	105 TONS	IN PROGRESS
HVAC DISTRIBUTION: BOILERS	$8,100-$12,200	7,300-11,000 THERMS	IN PROGRESS
HVAC DISTRIBUTION: CHILLERS	$25,300-$33,200	412,200-577,100 KWH	IN PROGRESS
STEAM LINES AND VALVE INSULATION	$43,400	39,477 THERMS	RECOMMENDED
FOOD SERVICE AND HVAC EQUIPMENT OPTIMIZATION	$25,300	253,100 KWH	IN PROGRESS