View results

Respondent

9 John Summers

08:16
Time to complete

Instructions:

Please adhere to the session word counts. Project leads must attend one SSC working group meeting post step 1 application submission. If you have any questions about the application process, please contact the SSC at Sustainability-Committee@illinois.edu.

1. Have you attended a working group meeting and presented your project to the committee before this application? The SSC requires attendance at a working group meeting to remain eligible for SSC funding. If you have not attended a working group meeting, please do so and then continue the application.

   Linked below is our calendar with all of our working group meetings
   https://studentengagement.illinois.edu/student-sustainability/ssc/calendar/

   *

   - (●) Yes
   - ( ) No

2. Please enter the dates of the working group meetings you attended. As a reminder, the working group meetings are structured as followed:

   - Energy + Transportation and Infrastructure working group.
   - Food & Waste + Land, Air, and Water working group.
   - Education and Justice working group.

   *

   09/28/2023

3. Project Name: *

   Temple Hoyne Buell Hall DDC Upgrade of Room Equipment

4. Total Funding Requested From the SSC. *

   $80,000

5. Date of application. *

11/14/2023

6. Project Lead Full Name: *

John Summers

7. Project Lead University Email Address. *

summersj@illinois.edu

8. Project Abstract: (In less than 100 words, briefly describe the project.) *

An HVAC controls upgrade at Temple Hoyne Buell Hall to reduce the building's energy footprint and increase indoor air quality for students, faculty and staff. Currently the HVAC controls at the individual room-level at THBH are outdated and failing. This outdated equipment cannot be programmed to operate efficiently and causes an increase in utility consumption throughout the year, as well as reduced comfort level. This project will replace these controllers with digital Siemens controllers, which will allow custom programming to be implemented that will reduce airflow and better control space conditions.

9. Project Category *

- ○ Education & Justice
- ◉ Energy
- ○ Food & Waste
- ○ Land, Air & Water
- ○ Transportation & Infrastructure

10. Do you have a change in team members? *

- ○ Yes
- ◉ No

Project Questionnaire:

11. Any press releases or educational/promotional materials involving the project must acknowledge SSC funding. How will you bring awareness and publicize the project on campus? In addition to SSC, where will information about this project be reported? *

There are no plans to publicize this project on campus other than to communicate with the building facilitators and occupants. Reporting on this project will be done internally within F&S to ensure the project remains on time and on budget. However, we are open to suggestions for promoting the project.

12. Other than the project team, who will have a stake in the project? Please list other individuals, groups, or departments affiliated directly or indirectly by the project. This includes any entity providing funding (immediate, future, ongoing, matching, in-kind, etc.) and any entities that benefit from this project.

    Please attach letters of commitment or support below *

    Operations, Maintenance and Alterations will have a stake in the project as this group own, operates, and maintains the equipment. The completion of this project will allow for easier troubleshooting on new issues and equipment failures and will result in a lower operational cost of building HVAC systems.

13. Please attach any letters of commitment or support here along with any other supplemental media that will support your application (presentations, pictures, etc.)

    UES SSC Funding Application TBH & Wohlers_John Summers 1.pptx

14. How does this project impact environmental and social justice? 250 word max *

    This project will reduce energy waste and improve indoor air quality. This will promote a healthy, sustainable and inclusive space for learning and collaboration.

15. Where is the project located, does it require Facilities and Services permissions? *

    This project will take place throughout most office and class spaces throughout the building. There are no spaces in the building which require special permission to access, however work will need to be scheduled around classroom and office occupancy. The facility manager for this building has been contacted to raise awareness of this project and determine any specific requirements that will need to be respected while this work is performed.

16. Is this project student led? *

    - ○ Yes
    - ◉ No

17. If applicable, have you received approval from Facilities & Services and/or site manager? *

    - ◉ Yes
    - ○ No
    - ○ N/A

18. Do you have a plan for ongoing funding beyond SSC? (SSC does not guarantee ongoing financial support) *

    - ◉ Yes
    - ○ No

19. Beyond SSC, do you have sources contributing funding or support (ex. staff time, external grants, etc.) to this project? *

- (●) Yes
- ( ) No

20. Have you applied for SSC funding previously? *

- (●) Yes
- ( ) No

21. Project Timeline:
(SSC funding agreements remain active for two years. List your project's proposed end date.) *

There are (98) variable air volume (VAV) boxes in the building which will have their existing pneumatic controls replaced with direct digital controls. Project work is ongoing, and we expect this project to be complete in December of 2023.

This project is separated into two phases, one for each of the air handling units (AHU) in the building. The first milestone, which has already been completed, was to replace the controllers on all VAVs which are served by AHU-2. The second milestone will be to replace all VAV controllers served by AHU-1. Each milestone will be reached once the new controller, damper actuator, valve actuators, occupancy sensors and thermostats are installed, operational and the old equipment removed.

22. Provide a detailed project description:
(In 400 words or less, describe your project. What does your project hope to accomplish? What are your project's deliverables?) *

Due to failed controllers, the room-level air supply equipment is not operating efficiently, causing increased energy consumption and reduced occupant comfort. These controller failures are often not noticed as other equipment is able to mask the issue by over-heating or over-cooling the air supplied to a space. This causes excess heating and cooling to occur year-round, which increases the building's utility usage, and also results in offices and classrooms often being too hot or too cold. This project will replace all the pneumatic VAV controllers in the building with new digital VAV controllers to ensure the equipment is controlled properly and to reduce the energy use. New digital controllers allow for finer control of air supply units and heating valves, which will reduce energy use and allow for remote monitoring to notify Facilities & Services of equipment failure.

Our project will replace all (98) pneumatic controllers with new Siemens DXR controllers and thermostats. Occupancy sensors will also be tied into the new controllers to allow setbacks when spaces are unoccupied. We will also make necessary piping changes to the perimeter heating coils on the classrooms that are served by AHU-2 in order to fix a long-standing issue that caused excess steam usage throughout the year.

This project has received partial funding from the SSC and we were encouraged by SSC in spring 2023 to re-apply for the remaining funding in the fall 2023 semester. This request is for the remainder of the original $150,000 from spring 2023.

23. Environmental Impact:
(In 200 words or less, how does your project increase environmental stewardship at UIUC? If applicable, what is the carbon, water, waste, and/or energy savings?) *

When the project is complete it is anticipated that the building's energy usage will be decreased at a minimum to the same values of 2018, and likely much lower. This will result in a reduction of steam (42%) and electrical (11%) energy consumption. This consumption will be measured through the campus billing system, and with today's utility rates will result in savings of at least $97,986 annually with a total project payback of 5 years.

Results from the ongoing project have shown a reduction in electrical (~18%) and steam (~46%) usage and has so far avoided 83,500-kwh of electrical consumption and 522-klbs of steam consumption from this past June to August.

24. iCAP Objective Correspondence:
(In 200 words or less, does your project aim to advance one or more of the Illinois Climate Action Plan's (iCAP) objectives? If so, how?)

A full list can be found here: https://icap.sustainability.illinois.edu/objectives

This work is directly related to the iCAP as this project's goal is to reduce the University's overall energy footprint.

When the project is complete it is anticipated that the building's energy usage will be decreased at a minimum to the same values of 2018, and likely much lower. This will result in a reduction of steam (42%) and electrical (11%) energy consumption. This consumption will be measured through the campus billing system, and with today's utility rates will result in savings of at least $97,986 annually with a total project payback of 5 years.

Results from the ongoing project have shown a reduction in electrical (~18%) and steam (~46%) usage and has so far avoided 83,500-kwh of electrical consumption and 522-klbs of steam consumption from this past June to August.

25. Student Impact:
(In 200 words or less, how will this project benefit students? How will students be involved with this project? What educational components are in your project?) *

Students will benefit through increased indoor air quality in the building. Newer controls will prevent excess heating and cooling throughout the year which will make office and class spaces more comfortable.

Project Finances

26. See attached file, please be very descriptive and fill out the finalized budget and timeline Excel sheet, and submit it below.

https://studentengagement.illinois.edu/student-sustainability/ssc/docs/SSC-Supplemental-Budget-Timeline.xlsx *

Temple Hoyne Buell Hall DDC Upgrade of Room E_John Summers.xlsx

27. Project Finance Manager.
Must be a fulltime UIUC faculty or staff member** *

Anthony Spurlock

28. Finance Project Manager Department *

Utilities and Energy Services

29. Project Finance Manager University Email *

spurlock@uillinois.edu