



STUDENT SUSTAINABILITY COMMITTEE

Funding Criteria

A. General Rules

1. Students, faculty, and staff are encouraged to submit requests for funding. Student-led projects require a faculty or staff sponsor in order to have funds awarded.
2. Funding can only go to university-affiliated projects from students, faculty, staff, and departments.
3. All SSC projects must make a substantial impact on students. This may be a direct impact or an impact through education and engagement. All SSC funding is 100% from student green fees, so the projects funded by the students must benefit them.
4. SSC encourages innovation and new technologies – creative projects are encouraged to apply.
5. Unless a type of expense is specifically listed below as having restrictions, SSC can generally fund it. The items referenced below should not be taken as comprehensive list.

B. Things SSC Can Fund, On A Case-By-Case Basis

1. SSC can fund feasibility studies and design work; however, it must work toward ultimately addressing a sustainability need on campus.
2. SSC can fund staff positions that are related to improving campus sustainability. Strong preference will be given to proposals receiving matching funding from departments and/or plans for maintaining continuity of the position after the end of the initial grant.
3. SSC can fund outreach events with a central theme of sustainability, provided their primary audience is the general campus community.
4. SSC discourages funding requests for food and prizes but will consider proposals on a case by case basis that prove significant reasoning.
5. SSC can fund repairs and improvements to existing building systems as long as it works toward the goal of improving campus sustainability; however, a preference is shown to projects utilizing new or innovative ideas.
6. SSC can provide departments with loans for projects with a distinct payback on a case by case base. Loans will require a separate memorandum of understanding between SSC and departmental leadership pledging to repay the award in full and detailing the payback plan.

C. Things SSC Will Not Fund:

1. SSC will not fund projects with a primary end goal of generating revenue for non-University entities.
2. SSC will not fund personal lodging, food, beverage, and other travel expenses.
3. SSC will not fund any travel expenses.
4. SSC will not fund tuition or other forms of personal financial assistance for students beyond standard student employee wages.

Your Step 2 funding application should include this application, the supplemental budget form, and any letters of support.

Please submit this completed application and any relevant supporting documentation to Sustainability-Committee@illinois.edu. The Working Group Chairs will be in contact with you regarding any questions about the application. If you have any questions about the application process, please contact the Student Sustainability Committee at sustainability-committee@illinois.edu.

General & Contact Information

Project Name: Engineering Hall VAV Box Upgrades

Total Amount Requested from SSC: \$209,200

Project Topic Areas: Land & Water Education Energy
 Transportation Food & Waste

Applicant Name: Evan Rabiela

Campus Affiliation (Unit/Department or RSO/Organization): F&S Energy Services Student Worker

Email Address: evanr2@illinois.edu

Check one:

This project is solely my own **OR**

This project is proposed on behalf of (name of student org., campus dept., etc.): F&S Energy Services Retrocommissioning and Energy Conservation

Project Team Members

Name	Department	Email
Evan Rabiela	Mech Eng Student	Evanr2@illinois.edu
Karl Helmink	Energy Services Retrocommissioning	khelmink@illinois.edu
Paul Foote	Energy Services Retrocommissioning	Gfoote2@illinois.edu
Name	Department/Organization	Email Address

Student-Led Projects (Mandatory):

Name of Faculty or Staff Project Advisor: Karl Helmink

Advisor’s Email Address: khelmink@illinois.edu

Financial Contact (Must be a full-time University of Illinois staff member)

Contact Name: Karl Helmink

Unit/Department: F&S Energy Services

Email Address: khelmink@illinois.edu

Project Information

Please review the proposal materials and online content carefully. It is highly recommended you visit a working group meeting sometime during the proposal submission process.

Please provide a brief background of the project, its goals, and the desired outcomes:

You may copy and paste your Step 1 application answer if nothing has changed.

The plan is to upgrade both the 1st and 4th floor 38 variable air volume (VAV) boxes which will have cost \$209,000. If the full funding is not available, this project can be incrementally completed, costing approximately \$5500 per VAV box and occupancy sensor. We are going to upgrade the 1st and 4th floor's 38 (VAV) boxes to Direct Digital Controls and room level occupancy sensors. These measures will allow for scheduling and programming the air flow to the areas served on these floors, which will reduce the energy consumption for heating, cooling, and electricity in these spaces. Currently the space is utilizing pneumatically controlled devices which are not able to be adjusted on a schedule, so they run constantly at one specific set point. This results in a lack of ability to adjust to changing environmental conditions and results in less than optimal operating conditions. Putting them on a schedule for different settings would be a very easy way to lower the unnecessary energy consumption in a building that gets a lot of use.

Where will the project be located? Are special permissions required for this project site?

If special permission is required for this location, please explain and submit any relevant letters of support with the application.

The project will take place on the first and fourth floor of Engineering Hall. I may need to contact the College of Engineering or Facility Manager in charge of Engineering Hall to let them know that we will be going through with the project.

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 at the end of the application.

Facilities & Services, the Facility Manager in charge of Engineering Hall, and possibly the College of Engineering.

How will this project involve and/or benefit students?

This includes both direct and indirect impact.

I am the student lead/intern spearheading the proposal, and I will participate in the process to gain useful project management experience. These floors are primarily student use classrooms, lecture rooms, computer, and lab space. The engineering students will benefit from improved HVAC performance and experience a more comfortable work environment. These systems will be monitored through the energy control center resulting in less down time and improved response times for HVAC conditions.

How will you bring awareness and publicize the project on campus? In addition to SSC, where will information about this project be reported?

I plan on making a plaque to hang in the building that would recognize the SSC for its contributions. I could also try and get the project information into The Daily Illini or on a Quarterly or Weekly Report in the F&S Newsletter.

Financial Information

In addition to the below questions, please submit the supplemental budget spreadsheet available on the Student Sustainability Committee [website](#). Submission of both documents by the submission deadline is required for consideration of your project.

Have you applied for funding from SSC before? If so, for what project?

I have not applied for funding from SSC before.

If this project is implemented, will you require any ongoing funding required? What is the strategy for supporting the project in order to cover replacement, operation, or renewal costs?

Please note that SSC provides funding on a case by case basis annually and should not be considered as an ongoing source of funding.

The project will not require any ongoing funding if the project is implemented. F&S will be in charge of supporting replacement, operation, or renewal costs as we are the organization who is completing the project.

Please include any other obtained sources of funding. Have you applied for funding elsewhere?

Please attach any relevant letters of support as needed in a separate document.

F&S Energy Services management recognized my efforts and may be able to secure additional funds to complete this same project throughout the rest of the building if my project is funded. I also looked into applying for a Revolving Loan Fund, but concluded that this wouldn't be a viable option. They already chose projects to support in January of 2018, and likely won't start looking to support others within reasonable time to complete this project before I graduate from the university.

Environmental, Economic, and Awareness Impacts

How will the project improve environmental sustainability at the Urbana-Champaign campus? If applicable, how does this project fit within any of the [Illinois Climate Action Plan \(iCAP\)](#) goals?

This project will improve environmental sustainability on campus by reducing the building's total energy use by an estimated 1125.7MBTU which equates to 541,289 lbs of CO₂ (same as emissions from 53 cars driven a year). It also reduces approximately \$20,300 of annual utility costs, meaning a payback of ~10 years. This project fits in the Energy Conservation goal of the Illinois Climate Action Plan. The 2010 iCAP called for a reduction in total energy use of existing buildings of 20% by FY15, 30% by FY20, and 40% by FY25. This goal of energy conservation is primarily achieved by strategies like retrocommissioning, HVAC improvements, scheduling and control strategies, etc. This project is including several of those strategies, as we are improving the HVAC VAV box units, as well as putting them on a schedule instead of having them running 24/7 at a specific setpoint.

How will you monitor and evaluate the project's progress and environmental outcomes? What short-term and long-term environmental impacts do you expect?

Some examples include carbon emissions, water conservation, green behavior, and reduced landfill waste.

The project will be monitored by F&S personnel directly. I will be able to use Siemens digital controls from the Energy Services Control Center to view all the VAV units with new controls, which will allow me to see when a unit needs adjustments or maintenance in real time. I will also be able to monitor and evaluate the project's environmental outcomes through our Energy Billing System website, where I have access to the utility cost and consumption by month, building, and meter. It allows me to view current and past information, compare buildings, and see trends over time. One short-term environmental impact is that the project is going to reduce the building's carbon emissions by approximately 541,289lbs each year, which equates to the emissions of 53 cars driven a year. A long-term impact is that it will hopefully promote this kind of work as well as other kinds of HVAC changes to be done throughout the rest of Engineering Hall and other buildings across campus.

What are your specific outreach goals? How will this project inspire change at UIUC?

I believe when people see the successful outcomes of this project, it will inspire change in other campus buildings. They will also see how simple and relatively small changes like upgrading VAV boxes can really make a huge difference in the long term which will hopefully motivate them to look for changes to make themselves, whether they be big or small.

If applicable, how does this project impact environmental injustice or social injustice?

N/A