



## STUDENT SUSTAINABILITY COMMITTEE

### Funding Application – Step II

#### 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](mailto: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](mailto:sustainability-committee@illinois.edu).

## General & Contact Information

**Project Name:** Re\_Home wall rehab and siding

**Total Amount Requested from SSC:** \$60,000

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

**Applicant Name:** Steve Ford

**Campus Affiliation (Unit/Department or RSO/Organization):** Agricultural and Biological Engineering

**Email Address:** seford@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.): Department of Agricultural and Biological Engineering

### Project Team Members

Name	Department	Email
Steve Ford	Senior Research Engineer, ABE	seford@illinois.edu
Xinlei Wang	Professor, ABE	xwang2@illinois.edu
Tim Lecher	Facility Manager, ABE	tlecher@illinois.edu
Sri Theja Vuppala	Research Engineer, ABE	sritheja@illinois.edu

### **Student-Led Projects (Mandatory):**

Name of Faculty or Staff Project Advisor:

Advisor's Email Address:

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

Contact Name: Samantha Hurt

Unit/Department: ABE

Email Address: sjhurt@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 Re\_Home was designed and built by students for the 2011 US DOE Solar Decathlon Competition. Following the competition, the house was set up at the Agricultural and Biological Engineering Farm Research and Training Center (ABE FRTC) and has been used by Illinois Solar Decathlon and various departments. It serves as a valuable educational facility for students from different colleges and schools on campus to learn sustainable living with zero energy. Unfortunately, the wall and siding have deteriorated in the past nine years due to water intrusion. There is a need to rehab the wall and install new siding with a drainage plane system to increase the life span of the building and make it more useable by the Illinois Solar Decathlon and other organizations. Funding is requested to pay for the cost associated with the new siding. Once the renovation is completed, we will use the house for educational purposes for a wide variety of courses, visits by current and prospective students, as well as a staging area for the Illinois Autonomous Farm - a joint venture between the Department of Agricultural and Biological Engineering and the Center for Digital Agriculture that serves as a testbed for advanced artificial-intelligence-driven technologies for agriculture and related areas.

### **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.*

This project will take place in UIUC building 1485. It is located at the Agricultural & Biological Engineering Farm Research and Training Center, 3603 South Race Street, Urbana, IL 61802. No special permissions are required for this location. The proposed contractor is an approved contractor with the University of Illinois.

### **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.*

- Center for Digital Agriculture
- UIUC School of Social Work
- Illinois Solar Decathlon
- College of Agricultural, Consumer and Environmental Sciences
- The Grainger College of Engineering

### **How will this project involve and/or benefit students?**

*This includes both direct and indirect impact.*

The Illinois Solar Decathlon is an interdisciplinary registered student organization with over one hundred undergraduate and graduate student members. Over the past 12 years, ISD has built five solar powered net-zero houses, and have been rewarded for their efforts by the U.S. Department of Energy. The RE\_Home will be used to educate students and local community regarding sustainability and energy efficiency. The house also

served as a lab for students to participate in simulated home visits in social work. We will continue to use the house as a teaching lab for the following courses:

- ABE 374 – Environmental Control for Buildings
- ABE 436 - Renewable Energy Systems (~50 students per year)
- ARCH 231 - Anatomy of Buildings
- ARCH 474 - Capstone Design Studio
- ECE 333 - Green Electric Energy
- NPRE 201 - Energy Systems
- TSM 232 - Materials and Construction System
- TSM 371 - Residential Housing Design (~30 students per year)
- TSM 372 - Environmental Control & HVAC Systems
- TSM 438 - Renewable Energy Applications (~30 students per year)
- ENG 491 - Interdisciplinary Design Project
- ENG 571 - Theory Energy & Sustain Engineering
- SOCW 506 – Social Work Practice With Children and Adolescents
- SOCW 507 - School Social Work Practice (~ 100 students for SOCW courses fall 2019)
- SOCW 509 - Advanced Clinical Assessment & Interviewing

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

We will work with our departmental and ACES Office of Marketing Communications to assist in telling the story of what we did, why we did it, and who helped make it possible. ABE will publicize and promote this project through our multiple news outlet channels such as Facebook, Twitter, department website and ABE@Illinois Connections. It would also be ideal to advertise the development of these facilities as a campus learning hub, where student activities focus on learning about sustainability related topics, which can also be achieved through the support of the SSC. The Center for Digital Agriculture will also publicize this project through the website, Twitter, and newsletters. In addition, if funded, we will place a sign on the wall of the Re\_Home that SSC provided funding to rehab the wall.

Collaborating with other groups provides additional opportunities such as the following:  
[https://www.smilepolitely.com/culture/collaboration\\_in\\_action/](https://www.smilepolitely.com/culture/collaboration_in_action/)

### **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?**

Yes. The Department of ABE received SSC funding to upgrade to energy efficient windows and doors on several research farm structures. Tim Lecher served as the project team lead for both projects.

**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.*

This project would not require any ongoing funding after repairs. Minor future repairs will be paid for by departmental operating funds.

**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.*

We have not applied for funding elsewhere but are actively seeking other funding sources. Funding a significant level of this request would help us in seeking additional partner funding.

## **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 further enhance awareness of sustainable measures at UIUC. Energy efficient systems, like the Re Home, have been used to educate and inspire our students to make sustainable decisions for building design. Since the home was built in 2011, the Illinois Solar Decathlon (ISD) has hosted many educational tours for UI students, K-12 students from the state of Illinois, and local community. Our goal is to use Re\_Home sustainably by hosting prospective and current students and also events in the house. The house will also be used as a staging area for the autonomous farm, which was launched in 2020 as a joint effort between the Illinois Center for Digital Agriculture and the Department of Agricultural and Biological Engineering at Illinois. The farm is a testbed for advanced AI-driven capabilities for automated production farming, plant breeding, and scientific research. This house will expand the ever-growing demonstrations of practical, sustainable, and renewable energy production. In terms of energy usage, the house is more than net-zero, exporting more energy than its consumption. This project aligns with iCAP goals because the house is increasing sustainability outreach within student groups by demonstrating their efforts in the sustainability field.

**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 Re-Home's net zero energy performance over the past nine years is a testament to what can be accomplished in a central Illinois solar house. During these nine years we have also learned that some of the wall and siding construction details allowed moisture penetration and wall damage. An improved wall drainage plane and new siding will provide the following benefits:

Short term environmental benefits:

- Stabilize the structure thus minimizing materials headed to landfill
- Maintain net-zero building square footage for the university

Long Term Environmental benefits:

- Durable fiber cement siding can provide 100+ years of life ([www.nachi.org/life-expectancy.htm](http://www.nachi.org/life-expectancy.htm))
- Minimize materials headed to landfill over the lifespan of the house.

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

Education and Outreach will continue to be a big part of the Re\_Home Solar house as it has been since its' construction in 2011. Additionally, its' use by the Center for Digital Agriculture will provide added visibility to another audience.

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