*Please submit this completed application, the supplemental budget spreadsheet, and any relevant supporting documentation by the deadline indicated in your Step 1 notification letter 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 SSC Program Advisor, Micah Kenfield, at* *kenfield@illinois.edu*

# General Information

**Project Name:** Root to Roof

**Total Amount Requested from SSC:** 94,475.00

**Project Topic Area(s):** [x] Energy [x] Education [ ] Food & Waste

 [x] Land [ ] Water [ ] Transportation

# Contact Information

### Project Lead

Applicant Name: Lowell Miller

Unit/Department: Dept. of Architecture

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Phone Number: 217-721-7539

### Financial Contact *(Must be Full-time University of Illinois Staff Member)*

Contact Name: Greg Anderson

Unit/Department: Dept. of Architecture

Email Address: gnanders@uillinois.edu

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### Facilities Management Contact *(If Applicable)*

Contact Name: Name of Applicant or Project Lead

Email Address: Preferred Email Address

**Primary Project Team**

|  |  |  |
| --- | --- | --- |
| **Name** | **Department** | **Email** |
| Lowell Miller (Staff) | Dept. of Architecture | lrmiller@illinois.edu |
| Austin Johnson (Grad Student) | Dept. of Architecture | amjohns7@illinois.edu |
| Greg Anderson (Admin) | Dept. of Architecture | gnanders@uillinois.edu |
| John Stallmeyer (Faculty) | Dept. of Architecture | stallmyr@illinois.edu |
| Aaron Brakke (Faculty) | Dept. of Architecture | aaron@illinois.edu |

# Project Description

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

Root to Roof is a program established to educate students about the sustainability and availability of urban wood for the design and fabrication of furniture, outdoor installations, homes and buildings. This program also aims to illuminate the importance of carbon sequestration, carbon footprint and short-term vs. long-term environmental impact with regard to the usage of urban trees.

We understand that by implementing these ideas, participants are able to invest more in their local economy through the hiring of local arborists, sawyers, and craftsmen. Root to Roof focuses on utilizing trees, both invasive and native to our local environment, for building purposes thereby maintaining carbon sequestration by keeping usable material out of landfills, and reducing the carbon footprint by limiting or even eliminating the use of exotic and domestic materials shipped over thousands of miles.

Most dimensioned construction lumber will ship from, on average, 2000 miles away and is shipped on semi-trucks. Exotic woods will often ship from over 3000 miles away, often on large cargo ships that do not have to worry about emission regulations.

**How will the project improve the sustainability of the Illinois campus and how will the project go above and beyond campus standards?**

We are currently working with Jay Hayek at NRES on campus to utilize invasive tree species and dying trees beset by pests and disease. Trees like ash that have been devastated by the emerald ash borer, or elm that has succumbed to Dutch elm disease that would otherwise be unusable and would likely end up as firewood. Removing dying, diseased, and pest infested trees promotes a healthy ecosystem and better tree health.

We have also received donations of trees from the City of Urbana for use in this endeavor. We are working to establish a relationship with the University Arborists to utilize trees that are scheduled for removal, so that they may be used for Root to Roof projects.

Students involved in Root to Roof will be milling and drying urban trees for use in studio design projects that collaborate with and give back to local communities. Students will be working with local clients on designs and using the Architecture Fabrication shop to fabricate those designs. Once the designs are fabricated, students will be involved in the installation of said designs as well.

Milling material locally produces hundreds of pounds of CO2 annually compared to tens of thousands to buy the same material from all over the USA. This also allows the Root to Roof program to utilize otherwise useful material for beneficial projects instead of that very same material being shredded into mulch. This allows for net gain of carbon sequestration locally.

As this program expands we will be setting progressive goals for sustainability and urban wood utilization. We will do this by selling wood back to the F&S Mill and Carpentry shops for use campus wide. We will also use this material to fabricate indoor and outdoor items for campus use.

We believe that even at this early stage, this innovative program goes far beyond what is being accomplished on other campuses across the nation. From our research, there is no other school that is working at the scale we are now or in the foreseeable future.

**Where will the project be located? Will special permissions be required to enact the project on this site? If so, please explain and submit any relevant letters of support with the application.**

This project will be located in Arch Annex 1 in the woodshop and fabrication shop areas. The kiln used for drying material is located in the Wood Science lab belonging to the Department of Agriculture (relevant MOU attached to email). Permission has been granted for this project by the Director of the Architecture program.

**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 will be benefitting from this project. Please attach letters of commitment or support at the end of the application.**

Currently we are working with Brian Jacobson in Ag Science as well as Jay Hayek from NRES. Both have been very helpful in assisting with setting up space for Root to Roof and assisting with finer points of the wood kiln and log mill. As of this moment, entities benefitting from the project are University of Illinois and City of Urbana. The first Root to Roof studio built furniture that will be located near Temple Buell Hall. The City of Urbana has donated trees for an upcoming seminar that will fabricate items for a small mini park.

**Please indicate how this project will involve or impact students. What role will students play in the project?**

At the beginning of the Root to Roof program, students majoring in Architecture will benefit from the studios and seminars established because of Root to Roof. Once Root to Roof establishes itself as an RSO in 1-2 years, students all over campus will benefit from this program.

Students are involved in Root to Roof at every stage. There are taught about sustainable urban and conventional forestry practices. They learn about that entire supply chain of wood products and how to harvest and utilize local materials. Students also help to develop the direction of the various studios and seminars in which Root to Roof is involved. Currently, we are exploring opportunities to give back to local communities and forge long standing partnerships, beautify the college campus with objects fabricated by students, and to think critically about sustainable habitats and housing for displaced or impoverished persons. The overarching goal is to create a program that helps to impart a deeper global consciousness while focusing on local environments and needs.

We believe that by educating students at this stage, we are guiding generations of possible architects, designers and developers to practice sustainable and environmentally progressive policies with regard to manufacturing and construction. We feel that by reducing the overall demand of exotic materials and focusing locally, we will help to reduce rising deforestation of rainforests, illegal logging practices and the displacement of indigenous peoples.

# 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. This is the first project for which I have applied for funding.

**If this project is implemented, will there be any ongoing funding required? What is the strategy for supporting the project in order to cover replacement, operation, or renewal costs?** If the project is implemented, there will be ongoing funding required to purchase consumables, fund staff and fund repairs. Our goal is to self-fund through lumber sales (akin to the meat science lab) as well as to transition to an RSO that will collect dues from student members and create opportunities for student leadership and development.  **Please note that SSC provides funding on a case by case basis annually and should not be considered as an ongoing source of funding.**

We believe that ongoing funding from SSC will not be needed.

**Please include any other sources of funding that have been obtained or applied for. Please attach any relevant letters of support as needed in a separate document.**

No other sources of funding have been applied for. Our goal is to work with the University, local communities and private business to create funding for ongoing and future initiatives.

# Environmental, Economic, and Awareness Impacts

*In addition to the below questions, please indicate specific measurable impacts as applicable on the supplemental budget spreadsheet.*

**Which aspects of sustainability does your project address, and how? Does the project fit within any of the iCAP goals? If so, how does the project go beyond the university status quo standards and policies.**

The Root to Roof program will address three aspects of sustainability: First, the program addresses continuing education regarding material use and waste as well as impact on local ecosystems. Second, this program looks at carbon sequestration and how utilizing urban logs diverts tons of solid waste from landfills. Finally, the program promotes lower energy use by producing and fabricating materials on site instead of transporting materials from across the nation. I believe that this program goes beyond the status quo and engages students on a personal level. They leave the program with a better understanding of waste and consumption which will bolster their desire for sustainability.

**How will the environmental impacts of your project be measured in the near and long term? What specific monitoring and evaluation processes will you be using to track outcomes and progress?**

We will track our progress by how many tons of waste we keep out of the landfill. We will do this by quantifying how many cubic feet of material we mill for use. Our progress will also be evident in how many students participate in projects in which Root to Roof is involved. Finally, our progress will be tangible because of the completed projects that will be used by the University community and the community at large.

**What is the plan for publicizing the project on campus? In addition to SSC, where will information about this project be reported?**

Promotion of this project will begin in the Department of Architecture. From there we will be focused on spreading the word through various media entities on campus and locally. Our goal is to enter competitions that will promote sustainability and provide platforms that can be used to expand the educational reach of the program. Our end goal is to produce LEED platinum, cradle-to-cradle sustainable objects and habitats.

**What are your specific, measurable outreach goals? How will these be measured?**

Our measurable outreach goals focus on community partnerships. As we lay the groundwork for this program and begin to expand our scope, we are looking toward greater amounts of community projects. Currently we are at 1 per year and we hope to expand to 3-4 projects per year once we are established as an RSO.

**Do you have any additional comments or relevant information to aid in evaluation of this application?**

This project began as a way to involve students at the ground level of fabrication. We have worked hard to establish partnerships and connection across campus. We have also developed an entity that, conceivably, will be a flagship program in sustainability education, outreach, design, and fabrication.