*Please submit this completed application and any relevant supporting documentation by the deadline listed on the SSC website 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* [*http://sustainability-committee@illinois.edu.*](http://sustainability-committee@illinois.edu.)

**General Information**

Project Name: Off-Grid Solar Kiln

Total Amount Requested from SSC: $8,250

Project Topic Areas:  Land & Water  Education  Energy

Transportation  Food & Waste

**Contact Information**

Applicant Name: Austin Johnson

Unit/Department or RSO/Organization: Architecture

Email Address: amjohns7@illinois.edu

Phone Number: 2707055797

Project Team

|  |  |  |
| --- | --- | --- |
| *Name* | *Department/Organization* | *Email* |
| Lowell Miller | Architecture | lrmiller@illinois.edu |
| Jay Hayek | Natural Resources | jhayek@illinois.edu |
|  |  |  |
|  |  |  |

Financial Contact’s Name: Greg Anderson

Faculty/Unit/Department: Architecture

Email: gnanders@uillinois.edu

Phone: 2172650930

(If Applicable)

Facilities Manager Name: Lowell Miller

Email: lrmiller@illinois.edu

Phone: 2177217539

**Project Information**

*Provide a brief background of the project, its goals, and the desired outcomes.*

The emphasis for this grant is to provide an alternative drying source for slabbed and dimensional lumber as opposed to industrial kiln drying. The goal is to recycle a retired shipping container which is air and water tight to create a de-humidifying kiln powered by passive solar energy.

*How will this project improve sustainability at UIUC?*

The goal of this product would be to create a permanent wood drying solution that can be powered completely off grid and entirely self-sustaining. Kiln drying is efficient, however the use of an industrial kiln can become costly in energy consumption.

*Where will the project be located? Do you need special permissions to enact the project at this site? If so, please explain and attach a letter of support to your application.*

The location will be at the forestry plot at the corner of race and Windsor in Urbana, by adding this solar kiln, ground area will be cleared where current logs have been sitting, adjacent to the milling area. This will not be a fixed structure, no additional codes or permits would be required.

*Other than the project team, who will have a stake in the project? Please list other individuals, groups, or departments indirectly or directly affiliated to this project. This includes any funding entities (immediate, future, ongoing, etc.) and any entities that will be benefiting from this project.*

Moving forward, any fabrication technicians for the architecture woodshop, forestry graduate assistants, and specific classes pertaining to wood processing will be involved in the milling and drying processes. Generally that means at least one to three classes for each semester in architecture. Facilities and Services may also be approached regarding purchase of the excess materials when dried.

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

In a joint venture between the school of architecture and the natural resources department, students will be encouraged to monitor the de-humidification of wood, developing a knowledge of drying characteristics of various wood species. Students will develop a comprehensive knowledge of the moisture peaks in the drying process as well as understanding how wood may become compromised structurally under pressure.

*Have you applied for funding with SSC previously? If so, for what project?*

Yes, I was a project team member involved on the Root to Roof Grant.

**Scope, Schedule, and Budget verification**

*What is the plan for project implementation? Describe the key steps of the project including the start date, target completion date, target date for submitting a final report, and any significant tasks or milestones in the table below. Please be as detailed as possible.*

A retired shipping container will be ordered, delivered, and placed on site at the Illinois Forestry Plot, from there, solar panels will be wired in series to create sufficient power to a dehumidifier that will be placed within the unit itself. The timeline would be fairly short as the primary time lapsed would be based on waiting for materials, coating the container surface for extended use, then placing the solar panels properly per maximum efficiency.

*List all budget items for which funding is being requested. Include cost and total amount for each item requested. Please be as detailed as possible.*

8’x40’ WWT Shipping Container – Western Container Sales - $2,390.00 (shipping cost is determined upon purchase, this particular information was not obtainable, the item can be shipped from Chicago, Indianapolis, or St. Louis Locations)

Up to $500 for shipping conservatively

Electrical work will be budgeted at $400

(2) In-wall exhaust fans 5000cfm power 30” Units $350

Sensor Push device and application for air quality control $50

(2) 70 pt Dehumidifiers with hose connections to discard moisture buildup $350

(4) 18volt Ryobi One+ Cordless LED workbench Light $50

(2) 18volt Ryobi One+ Lithium-Ion 4.0Ah battery 2 pack $99

(2) Grape Solar 265-watt polycrystalline solar panel (4pack) $999

(7) 1 gallon Valspar anti rust paint $50

Painting Supplies $100

Moisture Meter $200

Support framing for Solar panels made from 80/20 plus fasteners $300 plus shipping

Magnetic hooks to hang bench lights $50

*If the 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? (Note: SSC provides funding on a case by case basis and should not be considered as an ongoing source of funding)*

There will be no ongoing costs for this project, the upfront cost will cover the funds needed for the next 25 plus years as the only product that would be expected to expire is the solar paneling.

*Please include any other sources of funding that have been obtained or applied for, and please attach any relevant letters of support.*

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

The grant would be published on the Illinois School of Architecture website as well as advertisement through the architecture program as materials become available for students and projects.