

# Proposal Details

## G Hendrix

### Section 1: Summary Information

|  |   |
|--|---|
| * <b>Project Title:</b>                    | Reduction in Urban Heat Island Effect: Cool Roof Strategies |
| * <b>Duration (months):</b>                | 6   |
| * <b>Total Budget (\$):</b>                | \$5,872.00  |
| * <b>Requested SGEF Funds (\$):</b>        | \$5,872.00  |
| * <b>Matching Funds (\$):</b>              | \$0.00  |
| * <b>Proposed Starting Date:</b>           | 1/1/2018  |
| <b>PI Graduation Date (if applicable):</b> | 5/6/2018  |

### Section 2: Applicant Information

|                                 | Full Name        | Unit/Department                                | Phone      | Email                   |
|---------------------------------|------------------|--|------------|-------------------------|
| * <b>Principal Investigator</b> | Syed Sadiq Suheb | Mechanical Engineering                         | 8138166237 | sadiqsuheb@mail.usf.edu |
| <b>Investigator 1</b>           | Suchi Daniels    | Facilities Management-Planning, Sustainability | 941) 545-8 | suchitramba@usf.edu     |
| <b>Investigator 2</b>           | Ashini Vashi     | Environmental Engineering                      | 8633378934 | aav3@mail.usf.edu       |
| <b>Investigator 3</b>           |                  |  |            |                         |
| <b>Investigator 4</b>           |                  |  |            |                         |

### Section 3: Project Description

#### \* Project background and purpose (reasons motivating request) (Max 500 words)

Cool Roofs, also known as Reflective roofs can prove to be a cost effective way of saving energy and meeting sustainability goals for a building. Analysis for the present standard darker gray surfaced product vs white surfaced roofing product Derbicolor GP FR CR (Cool Roof) is carried out and CPH roof replacement which is already a funded project, only the incremental cost to provide roof layer will be needed. A cool roof would reflect more sunlight (high reflectance) and release more absorbed heat (high emittance) than a standard roof, resulting in a cooler roof and building and eventually lead to reduction carbon footprint and energy as well as cost savings.

#### \* Project activities (Max 250 words)

With SGEF funding, this project will provide a cool roof to the CPH building. The project will be implemented through normal USF construction process of project management which includes, design, bidding, permitting, and installation. Expected time frame for completion of this project is four months.

#### \* Project results (Max 500 words)

A cool roof improves indoor comfort for spaces that are not airconditioned such as garages. Decreases roof temperature that eventually extends roof service life. Also reduces local air temperature called the Urban Heat Island effect. Reduce power plant emissions, including carbon dioxide, sulfur dioxide, nitrous oxides, and mercury, by reducing cooling energy use in buildings and reduction of HVAC equipment size and wear. Also DerbiColor GP-FR-CR is an ENERGY STAR qualified roofing system and can help to reduce amount of air conditioning needed in buildings and reduce peak cooling demand.

#### \* Outcomes of the project (Max 250 words)

By using the EPA Greenhouse Gas emissions calculator we come down to a result of reduction of carbon footprint by 5.5 metric tons of through reduction of 7349 kWh of electricity resulting in annual savings of \$557.78 by the installation of cool roof layer. The project is expected to have a payback of 10.5 years. (calculations attached in the file)

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|   |           |
|---|-----------|
| <b>* Annual Energy Savings</b>          | 7,349 kWh |
| <b>Annual Cost Savings</b>              | \$808.39  |
| <b>Return of Investment in %</b>        | 0.14      |
| <b>Annual Green House Gas Reduction</b> | 0.00      |

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**\* Project Sustainability (Max 200 words)**

This carbon foot print reduction is equivalent to, CO2 emissions from various sources like 5984 pounds of coal burnt or Greenhouse gases emissions from 13,405 miles driven by an average passenger car. Facilities Management has agreed to maintain the roof, thus ensuring sustainability of the project and no further cost to SGEF.

**Section 4: Workplan and Budget Details**

**\* Detailed work plan/schedule of activities (Max 250 words)**

The space impact form (17-412 cph) is complete and we will be working with Project Manager Wayne Richter according to his schedule that starts in January 2018.

**\* Budget breakdown**

| Category                                       | Request from SGEF | Applicant contribution | Total             |
|--|-------------------|------------------------|-------------------|
| <b>Personnel (include all involved)</b>        | \$1,500.00        | \$0.00                 | <b>\$1,500.00</b> |
| <b>Equipment</b>                               | \$0.00            | \$0.00                 | <b>\$0.00</b>     |
| <b>Supplies/Materials</b>                      | \$4,372.00        | \$0.00                 | <b>\$4,372.00</b> |
| <b>Contractual</b>                             | \$0.00            | \$0.00                 | <b>\$0.00</b>     |
| <b>Construction</b>                            | \$0.00            | \$0.00                 | <b>\$0.00</b>     |
| <b>Other (specify in budget justification)</b> | \$0.00            | \$0.00                 | <b>\$0.00</b>     |
| <b>Total Project Cost</b>                      | <b>\$5,872.00</b> | <b>\$0.00</b>          | <b>\$5,872.00</b> |

**\* Budget justification (Max 250 words)**

The cost of the materials is reduced to 4372 and the labor cost is 1500. As the project is already funded the remaining cost will be included.

**Upload File:**

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No comments added.