

# Aiken Center Wind Mobile

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First, it must be mentioned that this project is an advance and restructuring of the project proposed last year. It is a continuation that is planned to go beyond the original design, since it includes the calculations and dimensions that will be used to make the final full-sized mobile. We thank last year's group for coming up with the idea of the project, as well as obtaining estimated costs (approximately \$200), an efficient design, and finding the sustainable fabric, as well as a scale design.

This project is designed to blur the conditions inside and outside the Aiken Center by bringing attention to changes in weather through a piece of art. This piece of art will be a large wind mobile that will hang in the north atrium of the Aiken Center and will rotate at different speeds, to indicate the outdoor wind speed as measured by the rooftop anemometer that is part of the Aiken green roof meteorological station. The project will use fabric in different colors that harmonize with the colors used in the building, representing the original design of the Aiken Center. These colors are a reference to the soil, the earth and the sky in different gradients.

The steps taken include an analysis of the space to be used and measurements to propose a sketch of how the final piece will look. It can be seen in the picture.

With the measurements taken and input variables (diameter of the rings to be used, space between the pieces, and the number of pieces that are desired), a calculation system was proposed that shows the dimensions in which the fabric has to be cut. In our case, 8 pieces with a separation of 0.5 inches were chosen, and a small width of 6.5 inches and a big width of approximately 13.5 inches were obtained. For more details, you can check the Greening Rubenstein Interns wiki page. We will use a Raspberry Pi minicomputer, a speed controller, a variable speed motor, and a WiFi connection system to link the mobile with wind speed data from the green roof meteorological station.

We have obtained the hoops (hula hoops) for the mobile. The next step is to cut the fabric that will be used in the mobile, this will be done in the class as a session with all the members of the Greening Rubenstein Interns course, which will promote interest and participation. Later they will use liquid silicone glue and sew the fabric pieces onto the ring. It is also proposed to use weights at the end of each fabric piece to give stability to the design during rotation. Later on, the class will assemble the model and, through the use of plastic pipes, create a support structure for the roof. We hope to have the mobile installed and fully operational by the end of the semester.

