

May 20, 2016

To the Sustainability Tracking, Assessment and Rating System:

I support Innovation Credit for the University of Wisconsin - Milwaukee's Office of Sustainability for the initiative, *EnQuest- Girl's Engineering Camp Solar Powered Stormwater Irrigation Project*.

EnQuest is UW-Milwaukee's all girl engineering camp for high school students offered by the College of Engineering and Applied Science. As the camp's coordinator, I seek opportunities for the high school participants to apply problem solving skills through a project that has tangible, real-world benefits for its users. The *Solar Powered Stormwater Irrigation Project* engaged the participants in learning about erosion and pollution problems associated with stormwater run-off, designing a renewable energy system to meet the power requirements of the pump, and methods used to distribute water.

The project involved collaboration between the EnQuest campers, college undergraduate members of the UWM Student Chapter of Engineers Without Borders, representatives of the Sustainability Office, professional engineers who volunteered to assist the campers and licensed technicians. Its goal was to create a system to make water collected in an underground stormwater cistern available to gardeners and to the campus's composting facility while also increasing stormwater diversion capacities. The Sandburg Garden includes space used by Dining Services to grow vegetables steps from a residence hall kitchen, a raised bed that supplies a food pantry, and community garden beds and fruit trees.

Before the camp began, Engineers Without Borders student members identified the pump to be used and met with the Sustainability Office and professional engineers of Johnson Controls to make additional plans. The EnQuest camp was held August 1 - 6, 2015. The campers designed a method for safe lowering and raising of the pump, as it must be removed each year for the winter months. They created an outdoor utility box to house the battery and electrical components of the system and calculated the solar charging needs to determine that the placement of the solar panel was suitable. They girls learned to use surveying tools and took measurements that they used to propose a system of waterlines and tanks.

The EnQuest campers visited the Concordia Gardens, a site operated by the nonprofit Victory Garden Initiative of Milwaukee. Interactions with the farmer and gardeners there helped the group understand the needs and preferences of gardeners who would use the rainwater. The farmer explained the kind of information he would like to have about his water supply, which prompted the girls to revise their ideas for the sensors the system should include. This community interaction also made the

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campers aware of more ways in which rainwater is used in a garden and the challenges entailed in maintaining structures in public spaces. The girls hope that the system they developed can serve as a useful model for other community gardens.

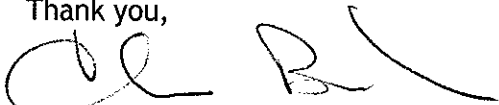
In the fall of 2015, the project was the topic of a display that was taken to the Milwaukee Maker Faire. Members of the UW-Milwaukee Society of Women Engineers Student Chapter staffed the display and shared information about the EnQuest project with hundreds of visitors.

The Sandburg Garden site and the *Solar Powered Stormwater Irrigation Project* present ongoing opportunities for future students to investigate stormwater diversion, sustainable landscaping, local food production and composting.

The project is an exemplary model in the areas of public engagement, water, grounds and dining services.

Please feel free to contact me with questions or requests for further information. I can be reached at chrisbe@uwm.edu.

Thank you,

A handwritten signature in black ink, appearing to read 'Chris Beimborn', with a stylized flourish extending to the right.

Chris Beimborn
UW-Milwaukee EnQuest Coordinator
College of Engineering and Applied Science