

SIU Sustainability Council Project Final Report

Project Information

Project Title	Green Wall and Vertical Garden
Project I.D. #	41205
Award Date	Fall 2012
Completion Date	Summer 2014
Funds used	\$50,000

Qualitative Assessment and Feedback

Please provide a brief description of the project and your experience.
<p>There are two aspects of this green fund, the green wall and the vertical garden. Both demonstrate sustainable practices using current systems. The green wall was installed inside the agriculture building in October, 2013 under the guidance of the professionals who produce the system we selected. The 8' x 9' green garden wall was created by attaching marine plywood, a water barrier, and then a sheet of pvc to the wall. Two layers of a high quality felt were attached to the pvc as well as an irrigation system across the top. To plant, we cut a slit in the thin outer layer for each plant. Then we removed the potting soil from the plant roots and placed the plant into the pocket we had created by cutting the fabric. Next we stapled the pocket area to hold the plant into the system. The irrigation keeps the felt damp and contains the nutrients to keep the plants alive and healthy. Track lighting was installed to provide adequate lighting. The wall is healthy and continues to be a popular site to visit.</p> <p>The vertical garden (which are growing towers made of pvc) is seasonal and was housed in the agriculture teaching greenhouse. It included a series of towers designed to hold a soilless medium and plants in a vertical position. This, too, is a hydroponic system meaning the plants receive nutrients from the water. We used the towers for research to compare the growth and nutrient values of different fertilizers, including aquaponic, on lettuce. Rocco is completing the data analysis for this project. We continue to plant other vegetables to demonstrate hydroponics and promote eating fresh and local produce and to demonstrate alternatives for urban agriculture.</p>

What were the best things learned/produced from the project?
<p>That growing plants vertically can provide great opportunities for many setting and uses. The vertical garden creates an atmosphere of calm, beauty and interest as well as benefitting air quality. The towers used for research to grow lettuce demonstrated that delicious and healthy produce can be grown in an indoor environment without soil. Although we found that the traditional fertilizer produced the lettuce with the best results (tested for vitamin C and nutrients), we still had good results with the lettuce grown using aquaponics (water from the tank that catfish were living in). The data has not been completely analyzed at the writing of this report, but will be</p>

included in a thesis to be completed by the end of fall semester 2014. We grew beets, parsley and basil in between growing lettuce. We harvested an impressive crop and shared it with Sylvia Smith's Restaurant management class. They used the produce in delicious recipes we got to taste. So we shared what we learned by giving 'local' fresh produce to the class in an off season. We learned that the opportunities with vertical gardening for produce and vertical /green walls are endless.

More specifically, Rocco learned the specific details of the installation and maintenance of aquaponic systems and hydroponics. He gave numerous tours and visited classes in horticulture to share his knowledge. Karen, along with many students, learned how to construct these projects. This has allowed her to be a better instructor in teaching the benefits of sustainable practices and the construction of each.

How do you define sustainability? In what way did this project confirm or challenge your ideas?

Balancing man's impact on natural systems to benefit both humanity and the environment. Also to employ practices, that may not be traditional or standard, to accomplish healthy and happy environments and people. These projects confirmed to us that with creativity, application of scientific knowledge, an effort to try new approaches, it is possible to move towards a sustainable lifestyle.

Where would you like to see this project, or projects like it, go in the future?

We will continue to maintain the green wall in the agriculture building. It is a very pleasant additional, attractive piece for the campus (the new student tours even walk past it), it's a great demonstration of vertical gardens and students in horticulture, architect and related studies can get hands on learning with the maintenance. Karen anticipants that the experience of having a green wall on campus with encourage future designers to include green walls in their planning. So we hope to see it remain for many years. It would be awesome to eventually get more vertical gardens on campus.

The same thoughts are true with the vertical garden towers and growing vegetables in the green house. We intend to use them for demonstration and hands on learning for future students. Maybe someday we could have a hydroponic green house and grow produce for the dorms. (big dreaming)

Do you have plans for continued involvement in such work? If so, how did this project contribute to those plans? Rocco is still deciding what he will do once he graduates but he is very interested, and now knowable, about vegetable production in growing towers. So there are numerous opportunities. Karen will echo what was said above, both systems will continue to be used for demonstration and education.

Optional: Do you have any suggestions or ideas for the SIU Sustainability Council?

No, they are doing an awesome job.

Please attach at least 5 images of your project. Make sure that at least one of these includes a picture of you with your project and, if applicable, your team. These images may appear on the Sustainability Council website to help inspire future projects and to promote sustainability at SIU Carbondale.