Humanities 1 Rooftop Garden Feasibility Test

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Abstract

The goal of this project was to explore the feasibility of a green roof or rooftop garden on the Humanities 1 building at UC Santa Cruz. This paper discusses the goals, challenges, and accomplishments of researching the possibility of a green roof or rooftop garden. Through the year, and mostly at the start, this project was deemed unfeasible at this time. Research includes reading books, interviews with other campuses with green roofs, and interviews with possible stakeholders on campus. Because of this the report and the project expanded to include other options to bring feasibility into the Humanities division and what faculty and staff want be involved with concerning sustainability. This project succeeded in developing the actions of the Humanities Green Team, involving staff and faculty into sustainability, and expanding the efforts of innovative and novel work on campus in sustainability.

Introduction

My project for 2015-2016 PSI was to investigate the possibility of building a rooftop garden on the Humanities 1 building at Santa Cruz. My goal in the beginning of the year was to perform a feasibility test for a green roof or rooftop garden for the Humanities 1 building of University of Santa Cruz-Santa Cruz. The project developed through the rummaging, reading, and talking through information in the growing green roof/rooftop garden industry. This “pie in the sky” dream for a green roof ran into strict realities of renovation costs, green technology sales pitches, doubt in the vision, but was still fueled by an overall curiosity in the possibilities for reclaiming the roof for sustainability instead of simply the top of a building and working to create innovative sustainable action in the Humanities Division.

The findings from this project showed building a rooftop garden would have a set of problems and difficulties that the Humanities, at this time, is not prepared to move forward with the project. Though there are many positive aspects to green roofing technology, like its potential in urban areas with heating/cooling, green spaces, and rainwater control, it also takes careful planning and analysis to insure the new roof is weight bearing, cost efficient, and actually saving carbon as it potentially takes a large amount of carbon input to build and maintain (Dakin). Considerations like Santa Cruz campus is not considered urban, this would be a renovation, the building was not built with high weight bearing in mind, make a rooftop garden a big project that would take some time to build support and income (Interview with Felix Ang). Through supporting this feasibility test and other innovative projects, sustainability on campus is pushed into new, novel, and innovative ideas driven to enhance the experience of students, staff, and faculty.

Project Description

The vision for the Humanities always centered around using the space as a usable and social space therefore creating an intensive roof (a usable space for people). The phrase “rooftop garden” was adopted to describe the goal for the look and feel of the roof, a space with planters, chairs, tables. This roof would be a space for people to be and enjoy with hard flooring to walk on and enjoy. We envision the roof with 5’ by 7’ planters, along with a table, chairs, and shading. Since the goal is to use this space as an educational space and leisurely space information panels will be posted through the garden giving information about green roof technology or the plants we chose while seating would be available for meetings or lunch. One idea for funding the maintenance of this project is to choose plants that have demand in the market, looking at what campus or the city of Santa Cruz is lacking in crops that can grow on the roof. Ideas include teas or herbs. Both crops that may be in demand therefore incentivizing the upkeep of the roof. Another option is conferring with faculty to examine teaching opportunities around green roofs and how this may help in upkeep of the space. No plans around these ideas were solidified.

Overall the goal of this roof feasibility test is to explore alternative uses for roofs and an exploration into how we can create more sustainable and efficient buildings, to explore the interconnectedness of the campus in stakeholders, and to incorporate Humanities, a division often disregarded as sustainability-minded, as a forward thinking division for sustainable action. We want to create momentum with the Humanities Green Team by doing interesting and innovative projects within the division to excite and involve staff, faculty, and students. I think this project was a good start and a momentum that the Green Team will carry through to next year with their second PSI student.

In this project I was able to create resources around green roofs and explore the feasibility of grand ideas from the Humanities Green Team. Through interviewing other UC campuses with green roofing and possible stakeholders on campus, I could identify the roadblocks in the next steps of this project as well as individuals who may be useful resources if at anytime another student wants to move forward with this or a similar project.

Though the rooftop garden unfeasible at this time, the exploration points to the division’s risk taking and inquisition into big and innovative ideas for the betterment of the environment and people. Also welcoming the creativity for staff, faculty, and students to build their own working and living experience on campus.

After determining the difficulties with moving forward with this rooftop garden, my project developed into working in projects in the Humanities division. This included a survey to involve Humanities staff and faculty and an Earth Day Event. Because we decided not to move forward with the rooftop garden, these efforts translated the goals of the roof, like creating a space for community and a learning environment, into actions and events.

Project Timeline:

(There were no hard deadlines in this project, instead things were completed within the quarter)

Fall quarter:

- Research on Green Roofs and Rooftop Gardens (Books for research included in Reference Section)

- Interview with Felix Ang

Winter quarter:
- Continued general research
- Interviews with Terri Mathers, Todd Lynch, Susan Rozakis, Jim Velzy, James Moore, Dan Miceli, and Susan Willats
- Presentation on Green Roofs and Rooftop Gardens

Spring quarter:
- Completed survey with Humanities Staff and Faculty
- Humanities Earth Day Event- Lunch and Learn (Friday, April 22, 2016)
- Humanities Sustainability Event Checklist
- Infographic on Green Roofs/Rooftop Garden

Project Stakeholders, Student & Mentor Roles

In order to gain understand the industry of green roofs I researched the industry through books and on the internet. The first interview was held with Felix Ang of PP&C, giving us an initial understanding of the possibility of renovating the roof. To see how green roofs are being used at other college campuses I contacted other UC campuses first, then expanded to CSU and some private schools. Those who had green roof structures and were willing to participate in an interview included representatives from Project Manager Terri Mathers of UC Berkeley, LEED Project Manager Todd Lynch of UC Los Angeles,Project Manager Susan Rozakis of Stanford, and Thimann Greenhouse Director Jim Velzy of UC Santa Cruz. Interviews expanded to possible stakeholders on the UC-Santa Cruz campus including James Moore from police, Dan Miceli from Physical Plant, and Susan Willats from TAPS.

The Earth Day Event was planned with the help of the Sustainability Zero Waste Team and caterers included UC-approved Ponos Hawaiian Bar and Grill, The Glass Jar (Assembly, Pop-up, and Penny Ice Creamery), India Joze, The Bagelry, and Conscious Creations.

Mentors were available to me for questions, presentations, establishing other contacts, and general visioning.

Measurable Results

Results were slightly difficult to measure because the project was so flexible in possible results and possible directions. In the end, we have concluded we do not want to continue a project to build a green roof or rooftop garden on Humanities 1. Reasons include retrofit costs, wear bearing capability of the roof, carbon costs of building a rooftop, and lack of staff capacity to support the project. These findings have been shared through presentation and short report. Hopefully information from this project will hopefully act as a helpful and interesting guide to those who want to know more about the project in a easy and accessible manner.

As far as Humanities Divisional organizing through efforts like the survey and The Earth Day Event, the event, information, and divisional interest in the Green Team were great results. They were measured in the outcome of the event, the responses we received from the survey,

and general interest from staff and faculty. Next year the Green Team will be taking another PSI to build a project around staff and faculty involvement as well as overall Humanities Green Team development.

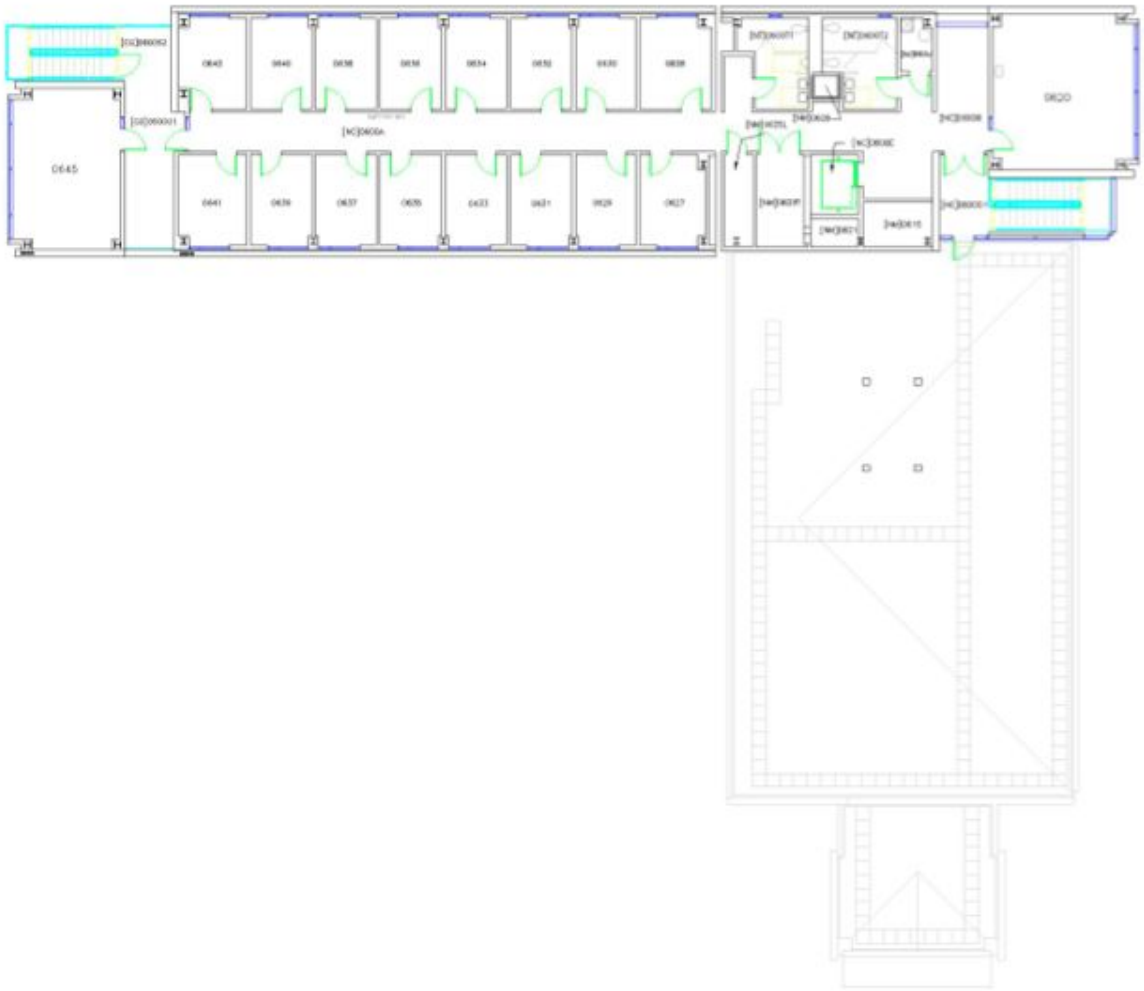
References

Dakin, Karla, Lisa Lee. Benjamin, and Mindy Pantiel. The Professional Design Guide to Green Roofs. Portland, Or.: Timber, 2013. Print.

Dunnett, Nigel, and Noël Kingsbury. Planting Green Roofs and Living Walls. Portland, Or.: Timber, 2008. Print.

Weiler, Susan K., and Katrin Scholz-Barth. Green Roof Systems: A Guide to the Planning, Design, and Construction of Landscapes over Structure. Hoboken, NJ: John Wiley & Sons, 2009. Print.

Appendices



Humanities 1 Roof Image. Courtesy of PP&C

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Humanities Earth Day Lunch and Learn relay and presentation

Link to Humanities Green Event Checklist:
https://docs.google.com/a/ucsc.edu/document/d/1leewKMXc4OqJyeP4D66eGV8HVnktWtHopwNznXrJcRE/edit?usp=sharing