

UBC Social Ecological Economic Development Studies (SEEDS) Student Report

Orchard Garden Enclosure

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Land and Food Systems

Orchard Garden Enclosure



<http://www.flickr.com/photos/christopherdale/116478161/>

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Problem statement - From Global to Local: Addressing Food Security

The global population is growing at an alarming rate. This has put pressure on our global food system. This increasingly unstable, dynamic system has implications on food security and the sustainability of our planet. This scenario addresses the current food crisis that we are collectively coping with as human beings. It does this by putting an international problem into a local context, helping to create a realization that even affluent countries suffer food insecurities (Halweil & Nierenberg, 2007).

Since a growing number of our global population lives in cities it is important to see agriculture as a part of every system: rural, sub-urban, and urban. Farming does not just belong in the countryside anymore, and no longer can we afford to rely solely on these sources to provide us with our food. Through the implementation of the Orchard Garden, the Land and Food Systems community has tried to demonstrate urban agricultural practices and the potential of agriculture in the city.

This garden serves as a learning tool, which aims to promote an appreciation of the land, the food and the community that we need to begin relying upon to overcome food insecurity in our own backyards. This community garden is also meant to connect other parts of the UBC food system network. It serves not only to educate, but also to feed and nourish our community, and the environment around us.

Our task was to create a sense of place by designing an enclosure around the LFS Orchard Garden. We asked ourselves “how can we plan, design, and construct an enclosure that meets the needs of its stakeholders while contributing to the learning environment in which it is situated” (Villagomez, E., pers.com, Jan.14th, 2009)?

Through this scenario, the ambitions of the garden initiative were captured through a thoughtful design process. This enclosure is not meant to separate the garden from the surroundings, but rather draw attention and add meaning to the garden (Villagomez, E., pers.comm., Jan. 14th, 2009).

History of the LFS Orchard Garden

The LFS Orchard Garden began in 2007 as a class project within the Landscape Architecture program (LARC) as a demonstration site for urban and organic agriculture. The project was designed to implement the three tiers of sustainability: economical, social, and environmental. The layout was planned by LARC and an agroecology student, Lin Steedman. Shortly after, the students began digging up the living grass, breaking up the soil, and adding compost and nutrients (Steedman). In 2007, class members from AGSC 350 worked on a scenario to improve the LFS Garden (south). Based on recommendations from students, the garden was expanded to the west side of the MacMillan Building. The creators collectively agreed to name it the “LFS Orchard Garden” in order to reconnect to the past use of the site as a heritage apple orchard.

A key component of the LFS Orchard Garden is the management of the land. Although there is not a consistent structure implemented as of yet, past students have suggested the creation of a “Garden Committee.” This committee is currently forming through the collaboration of students, faculty, and staff, who have interests in maintaining the garden.

The LFS Orchard garden received donations from Friends of the Farm as well as the UBC Farm to plant a variety of herbs and vegetables. According to Steedman's directed studies report in 2007, there have been tomatoes, zucchini, cucumbers, squash, lettuce, and basil planted within the garden, as well as cover crops during the winter season. A long growing season into the fall months (when school is in session) is desired in order to include the student body in the growing and education process. This is accomplished by producing later harvest crops such as squash.

In the summer and fall of 2008, a much larger variety of crops was planted. These included kale, parsley, chives, sage, thyme, bush beans, carrots, beets, broccoli, squash, garlic, potatoes, flowers, and cover crops at the end of season (Cheng, J., pers. comm., April 6th, 2009). A total of 18kg of red potatoes and 21kg of white potatoes were harvested from the garden; these were donated to the UBC Farm Farmers Market. Much of the other crops were sold to Agora for gross sales of \$476.25 (Cheng, J., pers. comm., April 6th, 2009).

Overview of our design process

Our design process was influenced by a set of criteria that was outlined at the beginning of the project. Examples of these requirements include the absence of permanent materials, the use of recycled products whenever possible, the flexibility to grow a variety of plants and the facilitation of outdoor learning and social interactions.

The first step of the design process was to develop an awareness and understanding of what enclosures are, what they represent and how they contribute to their surroundings. Any delineation of space can represent an enclosure, however, developing an appropriate design for a particular space can be challenging. This process involves a consideration of how space is used and what the space means to the community. This was achieved by observing the site in terms of its physical attributes, social connections, and ecological significance. The physical attributes include the slope, dimensions and location of the site. We captured people's walking patterns on paper, and reflected upon how people connect to and use the space. In regards to ecological significance, we explored how enclosures can co-exist with their natural surroundings.

We translated our ideas into sketches using appropriate scales and drawing schemes. The drawings were supported with a logic statement and a list of suggested materials. During a design competition, we presented our ideas to two other fence design groups, as well as various stakeholders. Following our presentation, we received feedback to further develop and refine our design.

Overview of our fence design

As mentioned above, our group developed a well thought out fence design. The east side of the garden (adjacent to the MacMillan building) and the west side of the garden (bordering the parking lot) both feature a series of alternating benches and

planters. The benches were chosen so that students would be able to sit and enjoy the view of the garden. Ideally, the benches would attract students to the edge of the garden; where they could interact with the various herbs and flowers planted in the planters. A strength of the west and east sides is that the benches and planters offer a porous and open enclosure. The distinguishing feature of the east edge is a three bin compost unit, which will be positioned adjacent to the MacMillan building for accessibility purposes.

The north and south sides also add a sense of symmetry and feature trellis entrance ways and cob benches. The trellis entrances were chosen for both aesthetic purposes, and to facilitate vertical and horizontal growth. This living fence would function both as an enclosure, and as a means to support the growth of a variety of produce such as kiwis or hanging squash. The cob benches were included to display alternative building materials. We proposed that the south trellis system be used to plant apples in an espalier style. We chose apples specifically because we wanted to honour the history of the space, which was previously used as an apple orchard. We proposed that the north trellis system, adjacent to the portables, be used to plant grapes. We placed the grape trellis on the north side because the foliage is denser and would block the sun from entering the garden if located on the south side.

The following three sections will go into greater detail regarding the ecological services, the community connections, and the infrastructure of the fence.

Ecological services

When deciding on the various components to include in a fence design it was important to consider the ecological services they provide, in addition to other functions and aesthetics. The fence should benefit its surroundings in as many ways as possible, and conversely have as little negative impact as possible. Exploring the many possibilities of a fence prior to the completion of the design will thus improve its overall sustainability.

The apple trellis along the south side of the garden will help to attract bees and syrphid flies as pollinators of the garden with their sweet smelling, and often colourful apple blossoms (Hanna, 2002). The foliage of the grape vines and apple trees will provide a desirable habitat for beneficial insects such as lady bugs, lacewings, and parasitic wasps (DeAngelis, 2009), and also provide a protective and attractive cover for small birds. The bird houses, which will sit atop several of the fence posts, will provide further shelter. By promoting the presence of beneficial insects and small birds including chickadees and house wrens, populations of aphids, caterpillars and moths can be maintained through biological control.

In addition to offering more growing surfaces for climbing plants, the trellis systems can protect the garden against wind. Incorporating bark mulch underneath the trellis will also attract beneficial beetles to the garden (Hanna, 2002), as well as decrease the amount of water run off from the garden.

Connection to Agora and AGUS

During the design process, we considered how the fence could enhance the Orchard Garden's connection to Agora and AgUS. After multiple discussions, it was evident that our group strongly supported the idea of a living fence. Thus, our final fence design greatly facilitates the growth of edible produce while providing structure year round.

The south trellis system was proposed to support the growth of apple trees which can provide apples for AgUS community dinners. For example, previous meals have featured apple crisp for dessert. The leftover apples could be sold individually at Agora, where fresh fruit is often sold at an affordable price.

The east trellis system can be used to support the growth of grape vines. The grapes could be used for the FNH Wine Science Laboratory and the grape vines could serve as a visual learning aid for courses, such as FNH 330 - Introduction to Wine Science. The grapes could once again be used for AgUS community dinners.

We suggest that the planters be used to plant herbs and berries (such as blueberries). The herbs can be used in Agora's weekly soups and quiches, while the berries could be used in smoothies and baked goods. AgUS can use both herbs and berries in community meals.

Infrastructure in the Garden

The Orchard Garden has the potential to be an excellent outdoor classroom and offers a great space for students to experience horticulture. The enclosure welcomes

visitors and offers a place for people to sit, study, eat or relax by the garden. Our design was created to bring people to the periphery of the garden, but not disturb the growing environment. We also decided to add a more interactive component into the sitting spaces by placing planters next to them.

A three bin composting system was designed to be a part of the bench and planter component on the eastern side. This location was chosen as it is easily accessible by Agora and AgUS volunteers, who are the intended primary users.

Design Amalgamation

After careful consideration of the components that each of the three fence design groups proposed, the group members, along with stakeholders and several faculty members came to a decision on the final design (refer to appendix – Class fence design).

A trellis structure was chosen to border the main entrance of the garden, which is located at the northeastern corner of the garden, as well as for the southeast corner. These structures, along with an additional trellis system (for the west edge) were incorporated into this design to provide increased growing space for the garden. As previously mentioned, they will allow for climbing plants, which require additional support, to be grown.

The east side of the garden will feature the alternating bench and planter design that was described earlier. It was chosen for this space specifically because the majority of students tend to congregate here (especially when Agora is being used for

Wednesday night barbeques). The row of planters and benches will also be detached and pushed out slightly from the garden, towards MacMillan. This will provide the necessary room for people to sit on either side of the bench and will prevent any plants that are growing along that edge of the garden from being trampled. As the planter and bench component will be detached, people will be able to enter from either the northeast or southeast corner of the garden. A layer of bark mulch will be spread between the benches/planters and the garden to provide a more finished look and to define the space as a walking area or pathway.

The apple tree trellis was chosen for the south side of the garden as the foliage of the espalier style is less dense than that of the grape trellis chosen for the north side, which will allow the sun to shine into the garden. The apple tree trellis is an important component of the garden as it re-incorporates apples into the area.

The three bin compost unit has been included in the design and will be placed on the western side of the main entrance for accessibility reasons. Additional seating will be constructed for the southwestern corner of the garden. Similar to the eastern edge, the trellis system along the west of the garden will also be detached allowing both corners to be entry points to the garden.

Reflection

This project has given us the opportunity to develop new skills in the field of landscape architecture. As our thoughts were displayed in pictures rather than written text, we first had to develop the ability to visualize our ideas. In order to accurately

depict the components, we had to research how they would fit together and learn how to draw them to scale. Three drawing schemes were incorporated into our learning process: plan, cross-section, and axonometric. Once we were able to represent our thoughts visually, we began to discuss the use of materials and the construction techniques we would use. Finally, our group will gain valuable hands on experience during the building of this tangible product.

Conclusion

Our global population has grown drastically over the past century. This has created immense pressures on our global food system. Farming can no longer take place in solely rural environments. It must take place in our own backyards. Although these facts may sound grim, there are things we can do to improve our local food security.

The LFS Orchard Garden demonstrates the capacity of a small piece of land in contributing to the food system. This space allows for students, staff, faculty and other community members to engage in urban agriculture and to share knowledge about it. However, there is more to the garden than just a centre for learning and teaching. It is now a part of the LFS community.

The enclosure around the garden was designed to welcome and attract people to the garden so that they too could engage it its potential. It was designed with people **and** nature in mind. This enclosure provides ecological services, grows food, creates shelters, and makes the garden an asset to our faculty, and to our university.

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Appendix

Class fence design

