

Agricultural Science 450 Fence Report

Alexander Changfoot, Stephanie Chung, Shawn Johnston, Stephanie Tai, Brian Wu,

Riyad Zuber

University of British Columbia

AGSC 450

April 10, 2009

Disclaimer: "UBC SEEDS provides students with the opportunity to share the findings of their studies, as well as their opinions, conclusions and recommendations with the UBC community. The reader should bear in mind that this is a student project/report and is not an official document of UBC. Furthermore readers should bear in mind that these reports may not reflect the current status of activities at UBC. We urge you to contact the research persons mentioned in a report or the SEEDS Coordinator about the current status of the subject matter of a project/report".



Agricultural Science 450 Fence Report

Group 2

Alexander Changfoot

Stephanie Chung

Shawn Johnston

Stephanie Tai

Brian Wu

Riyad Zuber

Faculty of Land and Food Systems
Grounded in Science | Global in Scope

April 10, 2009

Table of Contents:

Introduction: The History, The Importance, and Our Goal-----p.3-4

The Design Process-----p.4-6

Group 2 Fence Design-----p.6-7

The Collaborative Fence-----p.7-8

Recommendations-----p.8-9

Appendix 1 - Our Fence SketchUp-----p.10

Appendix 2 - The Collaborative Fence SketchUp-----p.11

Introduction: The History, The Importance, and Our Goal

The Orchard Garden Project on the southwest side of UBC's MacMillan building is a 600 square meter urban food production space that is the result of the combined efforts of AGSC 450, directed studies student projects, as well as dedicated faculty, staff and volunteers. The garden produces food for use by AgUS, by Agora café, and for sale at UBC Farm's food market. The past two years have seen the vision of this space's potential for food production become reality, and its development continues. Last year, according to Jian Hui Cheng, the garden manger, mulched paths were added and potato and kale crops were successfully grown. Over the winter, garlic plants were incubated against the cold by a blanket of leaf mulch (Personal communication, February 24, 2009). In the early history of UBC this space was part of a larger orchard and some of its original fruit trees remain. This site's history is important to consider as the space develops and opportunities to honour its history exist.

In 2008 four groups of AGSC 450 students were involved in the LFS garden scenario, which researched different directions to move the garden forward in. Some common themes emerged from their papers, leading to the 2009 fence-building scenario. Among these themes were the building of a fence, building an on-site composting system and enhancing student-learning opportunities in and around the garden. We have kept these ideas at the forefront of our design plans throughout the development process.

In the initial stages of our fence design process it was explained to us that the purpose of fencing the LFS orchard garden was to create a unique sense of space that could be appreciated by the whole UBC community (Personal communication, Andrew Riseman, January 28, 2009). As urban development encroaches on agricultural spaces it is important to ensure that the values of these spaces are highlighted. Success of the fence and other LFS projects will be achieved if the orchard garden is maintained as a food producing and learning space indefinitely.

The Design Process

Within our group there was a varied level of experience in design and building, but we all wanted to learn more and gain experience. Our initial lectures on fences encouraged us to explore what qualities, purposes, materials, and socio-economic implications exist in different types of fences and how fences can be multifunctional. Our initial assignment was to observe fences and borders around Metro Vancouver and start thinking about their qualities. We learned that the design process starts by looking at a site and designing basic broad schematics and then gets more and narrower as the process moves on. Once we had our general ideas for the fence, we were encouraged to draw them to scale from several angles and begin looking at how they would actually be built. This eventually led us to looking at the materials available to use on this project and the practicality of each part of our design. We learned to use the powerful design program Sketch-Up which allowed us to develop full three-dimensional models of our fence designs.

Early in the term each group gave a brief presentation to representatives from the other Orchard Garden scenarios as well as various other stakeholders. From the garden scenario 4a groups, who were responsible for the interior utilization design of the garden, we learnt each of their specific objectives and ideas of transforming the garden into a better multifunctional space: 1) *production, harvesting*: To implement a three bin compost of a budget approximately \$300 dollars and mounting of irrigation system; 2) *community education and outreach*: To create an education space as an integrated agro-ecological learning model for students on campus and schools in Vancouver, and establish a place which can be functioned as a venue for festivals and causal gathering of interested visitors; 3) *management and resource*: To form a sustainable garden committee, create a sustainable budget, reduce maintenance cost by removing trailers, and seek grants and funding from possible donors and organizations such as UBC Farm for maintenance (Personal communication, February 24, 2009). Questions were then answered and feedback was given. This led to design refinement and consideration of the intentions of the other scenarios. A second round of presentations took place in mid march and all stakeholders were invited. Faculty professors, UBC Plant Operations, Landscape Design graduate students and AGSC 450 students examined the designs, asked questions and gave feedback. This helped us to improve our designs with respect to social themes and practicality. Ultimately, Erick Villagomez, a highly experienced landscape architect, worked with us and the two other groups to develop a final work plan that was a composite of the three groups' ideas. The initial design included generic representations of the basic ideas to be used and a

class discussion led to some refinements as to the design specifics. For example, it was decided that the class preferred using cut branches to lumber to fill in the fence below the trellis.

On our last day of class we flagged the site. This was a practical learning experience for all members of the project. We first determined a reference line at the edge closest MacMillan. From this edge we made right angle turns to survey each edge. The angles were checked twice by measuring from a given corner three meters in one direction and four in the other. If the hypotenuse measured five meters the angle was 90 degrees, if not adjustments were made. Flags were placed in six-foot intervals where UBC Plant Ops will drill holes for our fence posts.

Group 2 Fence Design (See Appendix 1)

The fence that our group designed took into consideration the past, present, and future of the orchard garden space. Fruit production played a large part in the history of this space and we decided to honour this by incorporating fruit production into our design. Post and wire support structures were designed to support dwarf pyramid apple trees along the northwest edge and raspberries along the southeast edge and a picnic table shaped like an apple was designed to sit in the south corner. The arbor above the seating area along the Northeast edge was designed to support overhead growth of kiwifruit vines. The present day gave us the recommendations from last year's groups as well as the site itself, as it currently exists. We had to work with the orchard garden's dimensions and limitations and consider the service that this garden currently provides

to Agora, AgUS, UBC Farm and others. The future aspect of the garden led us to consider what we wanted to accomplish with our design and ultimately focused us on creating a design that balanced learning and production.

We also considered the economic, social and environmental aspects of sustainability in our fence design. By incorporating an edge producing apples, one producing raspberries and several raised beds, we planned to support the financial needs of the garden through enhanced production and product differentiation. The social aspect of the garden led to our design of learning/social edges where classes or individuals could interact with each other and the garden from its edges. The environmental considerations of our fence focused on attracting beneficial organisms to the garden. Birdhouses were placed on the tops of fence poles to attract robins and chickadees, and raised beds planted as pollinator gardens were designed to help attract native pollinators.

The Collaborative Fence (See Appendix 2)

Some commonalities existed between group designs, such as post and wire fences supporting fruit production, seating areas with overhead structures supporting plants, the use of corner space for seating, and birdhouses atop fence poles. Some ideas were unique to individual groups, such as producing each edge in the theme of spring, summer, fall and winter, building small cold frames, and the use of materials such as cob and split cedar. Overall, the three designs were well developed and each alone would have added enormously to the orchard garden. However, compromises

were made in developing a fence that represented some aspects of each groups design and sided with the practicality of materials and building.

The final fence included alternating benches and planters along the Northeast side, post and wire fences along the Northwest and Southeast sides and a solid fence with an overhead arbor on the Southwest side. Both the North and South corners were designed to contain benches with an overhead arbor above. This design will allow for the production and learning objectives to be achieved.

Recommendations

The Orchard Garden Fence will change the face of the Orchard Garden and of the Southwest side of MacMillan Building. If the social spaces of the fence are successful they will draw in people from a variety of locations to eat, read, relax and learn at the garden's edge. We recommend that those who continue work on the garden continue to foster a culture of communication and learning that will make visitors to the garden feel welcome and help them to understand the vision, mission, objectives and goals of this small urban garden. The use of signs to identify individual crops as well as explain concepts such as composting and mulching may help to accomplish this. Signs could also be used to help people identify the types of birds and bees that are working in the garden and what their roles are.

If next year's groups find that the post and wire edges, overhead arbor, or planted boxes have not yet been planted we recommend that they use this opportunity to do so. We have recommended dwarf apple trees for the post and wire edges,

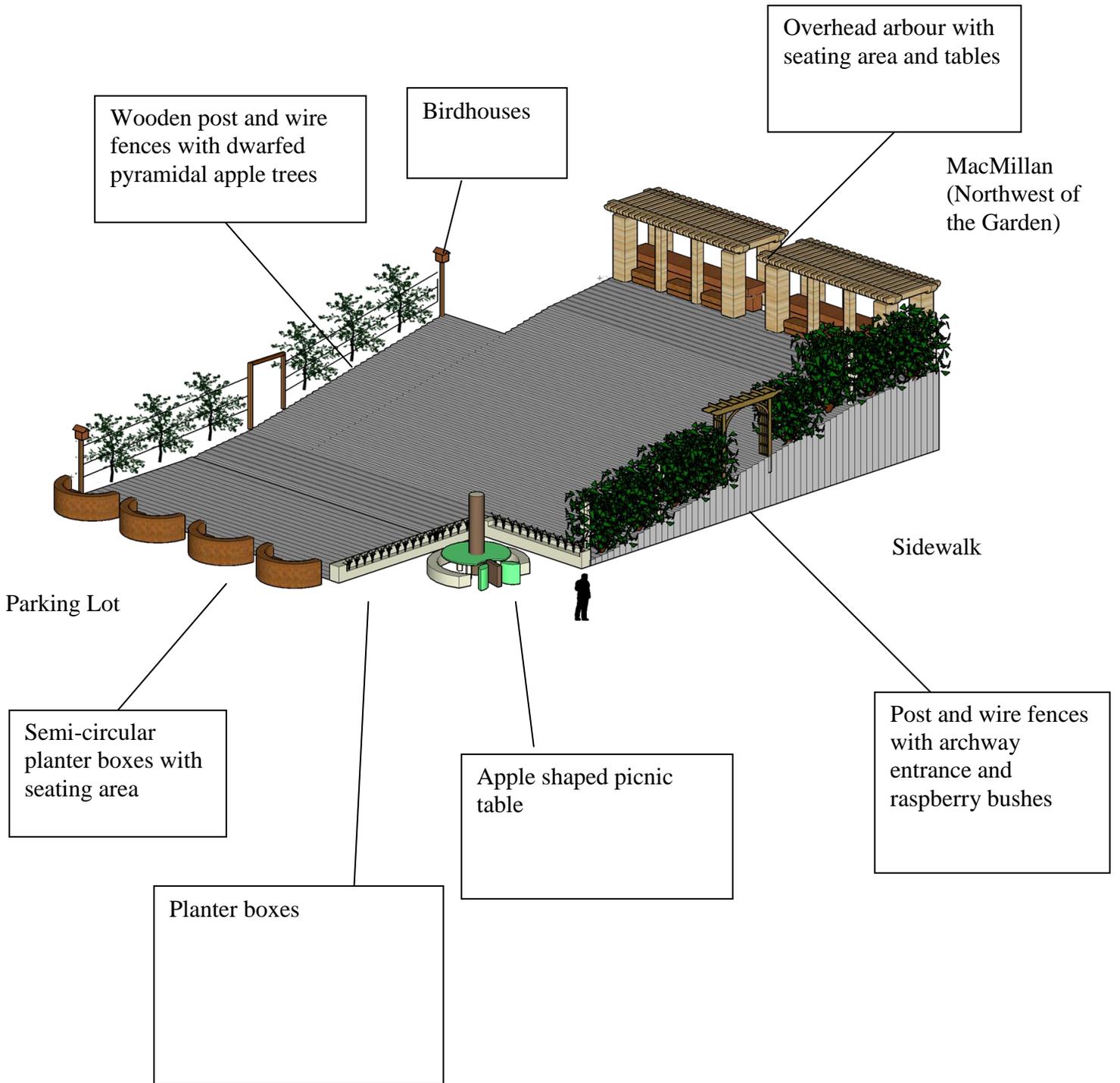
kiwifruit for the overhead arbor and pollinator gardens or berry production for the planters. These recommendations should be considered and researched but future groups should feel free to make planting decisions based on what they determine to best suit the site at the time and for the future.

We recommend that future classes use each of the productions edges as educational tools. Seminars can be designed to explain the specifics of fruit production including planting, pruning, harvesting and preserving of products. If pollinator gardens are planted in the raised beds they will provide learning opportunities throughout the growing season and seminars can be provided on how others can build their own pollinator gardens and the benefits of doing so.

Working to design and build a fence around the Orchard Garden has been an interesting and valuable experience for all members of our group. We have all progressed in our understanding of the concepts behind design, the steps required in the design process and the technicalities of building. It is our hope that this fence presents new and interesting opportunities for those working through LFS to enhance the role of urban agriculture, and that the fence is an important tool in helping the Orchard Garden achieve true significance and value to the greater UBC community.

APPENDIX 1

Our Fence (Group 2)



APPENDIX 2

The Collaborative Fence

