

## Local Food and Waste Audit

Fine Arts Cafe Herb Garden

Global Sustainability, Fall 2011

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## ABSTRACT

Our project addresses the pressing issue of unsustainable food production through the establishment of a garden, which will grow basil as a local herb source for the U.Va. Fine Arts Café. While this solution is extremely small-scale relative to the extent of the flaws of the industrial food system, it demonstrates the capability for communities to move toward localized food production. The use of local resources to help the basil grow will close the food loop, in which a sustainable method of food production is created. In turn, the environmental impact of our food system is decreased.

As part of this project, we seek to clarify the definition and importance of local, sustainable agriculture to the community through education about the garden's place in the food cycle. Our garden's mobility allows it to be used as an educational tool at schools and in the community. We chose this approach because we feel that individuals are better able to learn from an interactive and visual display rather than by simply reading about an issue's importance. On a more fundamental and human level, the basil grown will be used in specialty dish at the Café. This will let consumers reconnect with their food and visualize a more natural process of food production to plate.

## INTRODUCTION

Although the local food movement has recently experienced increasing momentum, the motives behind this campaign remain unclear to many people. Our project hopes to tackle the issue that most agricultural practices found in the United States are unsustainable, and lack of education regarding the issue is a large contributing factor. Also, our project brings to light the environmental, social and political issues that result from unsustainable agricultural production and seeks to clarify the definition and importance of local, sustainable agriculture to individuals through education. Our ultimate aim is to have a set of herb gardens for the University of Virginia's Fine Arts Cafe, which will provide basil for a signature food item and be available for use as an educational tool for the U.Va. and Charlottesville community.

This project was completed with the help of several community partners, primarily John Burnette, the director of the Fine Arts Cafe, and Kendall Singleton, the head of U.Va. Green Dining. We worked with Mr. Burnette and Ms. Singleton to determine the kinds of herbs the garden will supply, as well as how much and how often the product will be supplied to the Café. Additionally, we partnered with Green Grounds to ensure the future care and vitality of the garden.

Prior to the proposal and execution of our project, Carla Jones, along with other members Green Grounds, had already pitched a design for a garden to provide herbs for the Fine Arts Café. Their plans had originally been approved by the Architecture School, but were not followed through with due to space and location issues. We adopted their plans and modified them to be less bulky and complicated for building purposes, but maintained the mobile and visual style.

## BODY

To address the issues associated with the industrial food system currently relied on in the United States we had several objectives: Our primary goal was to build an herb garden that would provide herbs for use in a specialty dish at the Fine Arts Café. Secondly, the garden might be used to educate the University and greater Charlottesville community about sustainable food systems by acting as a model of a closed-loop system.

We accomplished these objectives by building a mobile herb garden and planning for its future care by Green Grounds, developing a marketing campaign that will be used next semester, creating a poster to display with the garden, and participating in the Local Food Show to educate the public about local food and provide publicity for the herb garden.

We chose to implement this method instead of others because as a society, we have not yet developed a means for establishing local food systems on a large scale. Creating a small-scale system is practical for the nature of this semester-long project and allows the herb garden to serve an educational purpose as well as a functional purpose.

### Herb Garden

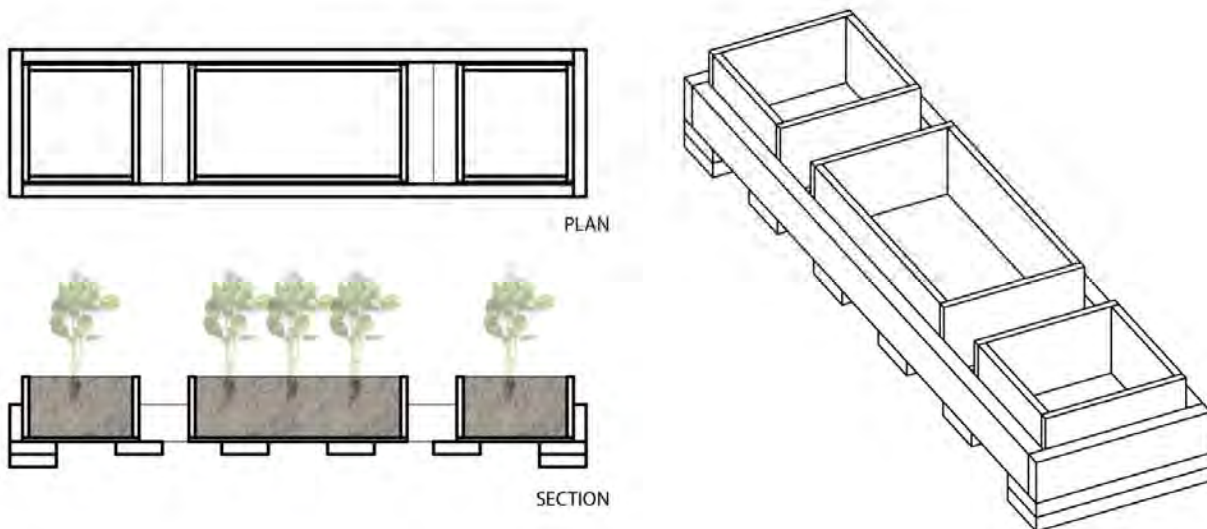
The main component of our project was the construction of a mobile herb garden that will provide basil for tomato basil soup, a specialty dish that will be served at the Fine Arts Café. We established that we would only plant basil for the soup after discussions with the Fine Arts Café about what herb and dish they had in mind. John Burnette from the Fine Arts Café told us that they will require approximately 16 cups of basil per week for this dish. It is extremely difficult to estimate how much basil the plants will provide until they are ready to be harvested, as this amount is based on the growing success of each individual plant. We will have a better estimate of the portion of basil the garden will provide for the Cafe's dish once the garden's vitality is realized.

We will maximize the garden's success through careful upkeep according to sweet basil growing instructions. Each basil plant requires around 10" of space for roots and 10" of spacing between the plants themselves in quick-draining soil. Because Charlottesville experiences warm-hot weather for most of the year, we will include a thin layer of mulch over this soil. We have accounted for these requirements in our garden design, with added depth for mulch and for gravel to ensure drainage. It is necessary that the plants receive 6-8 hours of sunlight a day, which the area outside the Fine Arts Café will be able to provide. It is also necessary that they are watered every other day to ensure that the soil is moist but not totally saturated. Once the basil has been growing for six weeks, the center shoot of the plant should be pinched off to force side growth and to prevent early flowering. If flower stalks do develop, they must be cut off. Fortunately basil is normally a pest-free plant, so we will not need to worry about the use of pesticides in our garden. The best time to harvest is well before flowers bloom, when the plant starts to bud. The leaves and branches should be snipped off, or if need be the entire plant can be cut about 6"-8" above the ground, leaving at least one node with two young shoots intact for further growth. After this, the basil should be ready to harvest again several weeks later (National Gardening Association Editors). In total, we expect to see these plants grow to heights between twelve and eighteen inches. Green Grounds will follow these instructions in the upkeep of the garden when they assume care in the spring.

Originally, our herb garden design consisted of a variety of sizes of individual boxes (3'x3', 3'x1', 2'x1', and 1'x1') to maintain a relatively manageable number for building, transportation, and displaying purpose. All of the boxes were 18" deep to allow for root growth and drainage. Holes in the bottom of the box allowed for adequate drainage, as well as layer of gravel under the soil. The total dimensions were 4'x4', which would provide room for about 16-25 plants, depending how large they grow. We would also attach wheels to the feet so the cart itself can move about, while the individual boxes can be removed for more careful transport of the plants themselves. By designing the boxes to be removable, the plants could be displayed in the Fine Arts Café or at various venues as part of our education initiative. The design plan for the original version of the herb garden is shown below:

We originally planned to obtain the wood for this garden from Gaston & Wyatt, using the scrap wood they have available to Architecture School students. However, this wood was not available in the quantity that we needed when our construction began. In addition, after speaking to Vinnie Accardi and Kelly Woodward (who both have extensive construction experience), we learned that this wood would not be strong or sturdy enough to support the weight of the soil and plants. They also reviewed our designs and determined that the garden would be too heavy and bulky at this size to be easily moved, which would make it impossible to accomplish one of our fundamental goals. For these reasons, we made several drastic changes to the design of the herb garden.

To deal with the issues of weight and bulkiness, we designed a new exterior shape for the garden. Essentially, we divided the original garden into two identical 70" x 16" frames with heights of 6". Inside each of these larger frames there are now three small removable boxes in a variety of sizes, an idea which was pulled from the original design. Two boxes are 14" x 14" and have a height of 10". There is also a larger box with the dimensions 26" x 14" and 10" in height as well. Each of these boxes has holes for drainage, as the original design did. However, we decided to make the boxes slightly shorter in height; due to the hardness of basil, we found that our original 18" height was excessive. We also used slats of wood instead of an entire piece of wood to support the bottom of the main box of the garden. This allows for proper and complete drainage and will minimize rotting or damage to the wood. We covered the slats of wood with metal chicken wire to provide additional support and drainage. The diagram for the final design of one of the gardens is shown below:



For the aforementioned reasons, we also needed another source of wood. Because we discovered relatively close to our deadline that Gaston & Wyatt would not be able to provide the necessary resources, we found an anonymous donor to provide the majority of the funds. This donation was used to purchase wood and hardware from Lowe's. We are in the process of speaking to John Burnette from the Fine Arts Café about being reimbursed partially or in full for the funds needed to construct the second half of the garden. However, as a group, we are willing to pay for the garden as there are long-term benefits associated with its establishment that are more important to us than the upfront costs. A full budget list and materials list are included in the appendix.

We completed the construction of half of the garden (one of the two mobile gardens) between December 3rd and December 9th using the woodshop located in the Architecture School. The woodshop supplied all of the necessary tools and assistance we needed. During construction, we decided not to build the garden in a cart-like form for

aesthetic and functional reasons. First, we decided that we preferred the design of a rolling garden similar to a traditional, low-to-the-ground garden over than a tall and awkward cart. In addition, after speaking with Mr. Accardi and Mr. Woodward, we found that the garden would most likely be unstable if it were elevated on four legs to support the weight of wood, wire, soil and plants.

Below are photos of the construction process:



Below is a picture of the final product:



Benji Fitts, the Marketing Director of Twin Oaks Community Foods, will provide the seeds that will be used for the garden. Mr. Fitts has just asked that in return, we send him weekly pictures of the garden's progress so that he is able to promote Twin Oaks community initiatives, as well as promote the Fine Arts Café itself.

Green Grounds is a U.Va.-affiliated Contracted Independent Organization (CIO) that works to promote sustainable building and landscaping practices on Grounds. They have agreed to fully care for and manage the garden upon its completion. This includes planting the basil, watering the basil as necessary, and caring for the garden in the winter months. However, our group would like to continue our involvement with the garden and will likely put work into the care and upkeep of the garden as well.

The herb garden will be placed on the patio outside the Fine Arts Café so that it can easily be associated with the Café and so that the Café staff has easy access to it. Since the garden is mobile, it can be moved to various locations depending on the amount of sunlight available and the time of year.

### Educational Poster

Below is the poster we will display alongside our garden at the Fine Arts Café. This poster highlights the closed-loop food cycle as made possible with the use of compost from the Café waste, which fertilizes the basil grown for their food.



## Marketing Campaign

Early in the semester we developed a marketing campaign for the garden to promote awareness and education about the herb garden and its purpose. In the preliminary report, we planned to put up posters and email U.Va.-related listservs a short paragraph of information about the garden. We chose to put up the posters on November 9th and send out information to listservs on November 30th. However, as those deadlines approached, we realized that this information would be sent out months before the garden would actually be put to use. We wanted to get the information out early in order to move forward with our project; however, it occurred to us that the information was going to be distributed as finals began and would be quickly forgotten or ignored by students. For this reason, we have chosen to put up the posters and email the blurb to listservs after the last frost when the basil is planted or potentially even later when the tomato basil soup is actually available.

The poster for marketing and the blurb to be emailed to listservs are below:

love the fine  
arts cafe?

**Look out next semester for a new  
local weekly menu special!**

**The Fine Arts Cafe will soon be  
home to a moveable herb garden  
that demonstrates a closed loop  
local food system and provides  
basil for the new specialty dish -  
tomato basil soup!**

**If you have any questions/concerns, please contact  
maa5pf@virginia.edu.**

**This project is a collaborative effort between The Fine Arts Cafe and  
students as a part of the ARCH 2150/COMM 3880/ENGR 2595/ETP 2020/  
ARCH 5150 Global Sustainability course.**

## Love the Fine Arts Café???

Look out next semester for a **NEW AND LOCAL** weekly special on the menu! The Fine Arts Café will soon be home to a moveable herb garden that will provide basil for a yummy **tomato-basil soup**. The garden will demonstrate **close-loop food systems** and the beauty of **sustainable food production**. Stop by the Café next semester to learn more!

Questions? Comments? Ideas?!? Contact [maa5pf@virginia.edu](mailto:maa5pf@virginia.edu)

Finally, to further promote our project we attended and presented our project at the Local Food Show on November 9th, 2011. This was held by another project group in our workshop. We had a poster and a small basil plant displayed and spoke to anyone with questions about our project. This was beneficial in publicizing our project to individuals already interested in local food.

## CONCLUSION

We accomplished the principle goal of this project, which was to build the herb garden. We found a space to house the garden on the patio outside the Fine Arts Café. After talking with John Burnette, who plans the menu at the Café we chose to grow basil as our pilot herb, which will be featured in a signature dish, tomato basil soup, once a week at the Café. We resolved any liability issues that might arise in sourcing the Café with local herbs by limiting the amount of basil our garden will produce. We partnered with Green Grounds to establish a long-term plan for the upkeep of the garden and developed a marketing campaign to inform the community about how the garden works and how it represents a sustainable food system. Our plans were presented at the Local Food show held by our peers in November. The materials necessary for the garden to be used as an educational tool were assembled: the garden itself (with removable inserts), posters and a listserv blurb that advertise the garden, and a poster that will be displayed with the garden to explain its purpose and importance for the community.

Although the garden is now complete, we still have several issues to address. We need to acquire the materials to actually plant the basil, including the seeds themselves. We also need to plant the basil in the spring after the first frost. We are planning on building the second half of the garden, which will be a replica of the first, by the end of winter break. We still need to determine the extent to which the garden will be used as a marketing and educational tool. It is our hope that other groups such as the U.Va. Community Garden, Slow Food, and members of the community, will use it to demonstrate a local, sustainable, closed-loop food system.

After outlining our goals in the project definition, we documented our progress in our conceptual design and preliminary report. Further documentation of our work includes our designs for the garden, our posters advertising the garden, the posters used at the Local Food Show, and the completed garden itself. A challenge we face is our inability to fully measure the success of our project until the basil is planted, begins to grow, and is used in the Café next semester. Only then will we be able to evaluate the extent to which our project can localize food production and create a closed-loop food cycle.

## FUTURE WORK

There is still much work to be done on our project. This is primarily because basil cannot be planted in the garden until the spring. Because we changed our garden design into two smaller versions of the original 4'x4' box, we made only one of these two gardens instead of the complete garden. During winter break, we will build the second garden. In addition, we will procure the basil seeds from Benji Fitts, the marketing director of Twin Oaks Community Foods, who has agreed to donate seeds for this project.

Upon our arrival back to U.Va, we will plant the seeds and begin the marketing campaign. We chose not to begin the marketing campaign at the beginning of December as planned because we would have been sending out information during finals about a project that was not yet complete. It is more appropriate to distribute information and do publicity about the garden after it is set up and complete. In addition, Mr. Fitts will contribute to our marketing campaign. In agreeing to donate seeds for the herb garden, Mr. Fitts asked that we send him weekly pictures of the herb garden and the basil's growth. This will be used as a joint marketing campaign for Twin Oaks Community Foods and the Fine Arts Café.

We expect the infrastructure for the garden to be complete by the end of winter break as we have already completed one of the gardens in a timely manner. We now know exactly how to build the garden so the second one should be built at an even faster pace. We will plant the seeds based on the type of basil provided by Mr. Fitts and as weather permits.

There is potential for the Fine Arts Café to use the garden for herbs other than basil as the menu changes over time.

## LESSONS LEARNED

Throughout the semester we encountered and overcame several barriers in working to accomplish our goals. Our initial design proved to be unrealistic in terms of our educational intent, as it would have been too heavy and bulky to be moved about easily. We reworked our original design and developed a simpler and more well thought-out plan. In following through with construction of this revised design, we successfully built a sturdy, mobile, and functional garden. Establishing a plan for the upkeep of the garden was a bit of a challenge. Ultimately, however, we were able to connect with Green Grounds, whose members will oversee the long-term care of the garden. Securing a budget for the garden is another issue that we are still in the midst of working out. As a group and with the help of private donations, we have been able to fund this project. We are now hoping to work with John Burnette and Green Grounds to procure funding for the construction of the second of the two gardens.

We were able to successfully complete all of the goals outlined at the start of the semester. Our final tasks are to build the second half of the garden and to plant and cultivate the basil. We intend to have the entire garden built by the beginning of next semester and to plant after the last frost early next spring. In retrospect, we were able to work steadily throughout the semester, despite encountering a few challenges. If we were to begin this project again, we would consider the design, in terms of construction and functionality, more thoroughly earlier on in the process. This would have allowed us to secure a budget in advance and to have built the second half of the garden.

We have gained a greater appreciation for the work, effort, and planning necessary to create a small-scale garden. We have also learned that there is a significant amount of red-tape to overcome and communication required to translate such a simple garden from design to reality. Although we cannot yet plant the basil, the Fine Arts Café has projected a demand of about sixteen cups for their signature weekly drink. We hope that our basil will be able to meet these modest needs so that we can demonstrate the closed-loop cycle of a local, sustainable food system.

However, a bit of self-reflection and criticism is required to evaluate the long-term success of our garden. For example, eventually it would be beneficial to grow other herbs besides basil to provide a healthier environment for the plants, as biodiversity in nature enhances ecosystem vitality. We also recognize the relatively profound limitations of sourcing such a small amount of product from a garden of this size. In order for the Fine Arts Café to be completely sustainable, we would need significantly more access to land, funding, and extensive other resources. As the Café, and other food establishments, trend in this direction, it is important to recognize that a much more extensive system of local food sourcing is necessary to ensure their sustainability. Although our project will successfully address the issue of unsustainable food production, it will only do so on an extremely small scale. Considering the time and energy that went into what will only be a negligible dent compared to the vastness of the industrial food system, we are left with several questions: In today's economy, is it possible to localize food production on a nationwide scale? How profoundly would other industries, and in turn society, be impacted if they were to lose manpower to the production of sustainable food? Most importantly, would it contradict the fundamentals of sustainability if we were to create local food systems large enough to support our growing population?

## APPENDICES

### Materials Used

Purchased:

2x10x10 Top Choice #2 Sedar	2 x \$7.98
2x6x8 Top Choice KD White Cyprus	2 x \$5.16
1x8x8 Cedar Board	3 x \$19.48
½" Industrial Caste Wheels (with breaks)	2 x \$5.97
½" Industrial Caste Wheels (without breaks)	2 x \$5.27
12 x 2-1/2 Brass Wood Screws	2 x \$7.78
10 x 1-1/2 Phillips Head Flathead Brass Wood Screws	2 x \$6.58
6 x 1-1/2 Phillips Head Flathead Brass Wood Screws	\$5.58
24"x10'-1/2" Chicken Wire	\$11.87
3M Coarse Grit Sanding Sponge	\$2.97
½ 2x2 Birch Wood	\$7.44
Oly Max Cedar 550 Wood Stain	\$13.48
12x1-1/2 Phillips Head Flathead Brass Wood Screws	\$7.78
3" General Purpose Waterproofing Brush	\$6.48

From The Architecture School Woodshop:

Drill  
Screwdriver  
Belt sander  
Table saw  
Radial arm saw

### Budget

Total Cost: \$191.52

Total Cost with Tax: \$201.15

Many thanks to the following people for their help and support of our project:

Vinnie Accardi  
John Burnett (UVA Dining)  
Jack Cochran  
Benji Fitts (Twin Oaks Community Foods; Southern Seed Exposure)  
Carla Jones (The Green Grounds Group)  
Local Food Show Group  
Kendall Singleton (UVA Green Dining)  
UVA Architecture School Woodshop Staff  
Kelly Woodward

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