Filling the Hunger Gaps with Vertical Pallet Gardens
Malisia Wilkins & Allison Kelly

Photo by: Malisia Wilkins
Malisia Wilkins

• Sociology major
• Horticulture minor

• Interested in social justice, urban farming, and sustainability

Photo by: Malisia Wilkins
• Horticulture major

• Interested in landscape design and educating the public about the importance of sustainable gardens

Photo by Allison Kelly
Food Security

• Food deserts: geographic locations where due to lack of access, land, money, or transportation some people are not able to eat, or feed their children on a regular basis.

• Almost 15% of all households in the U.S. were food insecure at least some time during 2011.

The rules that define food security are known as the “5 A’s of food security”:

- (1) Availability
- (2) Accessibility
- (3) Adequacy
- (4) Acceptability
- (5) Agency
Current Community Efforts

- Community Supported Agriculture
- Community Gardens
- Farmers’ Markets
Community Supported Agriculture (CSA):

“A community of individuals who pledge support to a farm operation so that the farmland becomes, either legally or spiritually, the community's farm, with the growers and consumers providing mutual support and sharing the risks and benefits of food production.”

Community Gardens

- Community gardens require a broad cross-section of the community to participate, and it is essential for the project to be representative of the community and contribute to the growth of a community food system in order to be successful, and is also dependent on funding.

Garrett, Steven & Feenstra, Gail. (Not dated). Growing a community food system.
Farmers’ Markets

- “Are an integral part of the urban/farm linkage and have continued to rise in popularity, mostly due to the growing consumer interest in obtaining fresh products directly from the farm.”
- Farmers’ markets give consumers the opportunity to have a better understanding of where their food comes from, and it helps farmers stay financially viable.

Small-scale vertical farming is one method that could help nourish needy families, as well as educate them about food production.

Vertical farming, started and patented by Patrick Blanc, is a simple means of growing, using a technique that allows for vertical growth.
Conclusion

- Due to an increase in food insecurities, and a decrease in available funding, volunteers, and land, we have concluded that more research into small vertical farming could help to alleviate food insecurities for low-income families.
Vertical Pallet Garden

Design goals
- Sustainable
- Inexpensive to build
- Easy to use
- Little to no maintenance
- Easy to move for better production quality
- Minimal outdoor space requirements
- Enough yield to provide supplemental nutrition
- An educational tool to demonstrate food production
Photos by: Allison Kelly
Collecting pallets

Photos by: Allison Kelly
Construction time

Photos by: Malisia Wilkins
Prototype #1: Pocket Design
Cut pallet in half (full size 48” x 40”)

Photos by: Malisia Wilkins
Remove or hammer in any remaining nails and then sand down

Photos by: Allison Kelly
Fitting with hardware net for additional support

Photo by: Malisia Wilkins
Amplifying the tunes for our pallet friend

Photos by: Allison Kelly & Malisia Wilkins
Building the Pocket

Moisture Plus fabric used for soil pockets

Photos by: Malisia Wilkins
Interior: Pocket Design

Photo by: Malisia Wilkins
Prototype #2
Applying hardware net

Photo by: Malisia Wilkins
Covering the pallets

Photo by: Malisia Wilkins
Interior: Prototype #2

Photo by: Malisia Wilkins
Ready for phase 2

Photo by: Malisia Wilkins
Prototype #3: Full Pallet

Photos by: Allison Kelly
Remove every other slat, then saw off the ends of each extra slat after measuring.

Photo by: Allison Kelly
Slide new slats in and attach, producing shelves for each pallet row
Shelves are only visible from the back and above

Photos by: Allison Kelly
Covering the Pallet

Apply Moisture Plus fabric and hardware net

Photos by: Allison Kelly
Ready for Phase 2

Photos by: Allison Kelly
Ensuring the gardens are aesthetically pleasing helps to promote use.

To accomplish this, on a budget, we looked into making our own natural, organic paint, but during our search we discovered a company that had already mastered the art of organic paints.
The Old Fashioned Milk Paint Company has been producing chemically safe paints since 1974, and “is now gaining an even wider usage because it contains only ingredients that are all-natural and will not harm the environment.”

The Old-Fashioned Milk Paint Company, inc. (Not dated). *Just because you’re green doesn’t mean you have to be drab.*
Safe Paint

Colors used
• Barn Red
• Federal Blue
• Lexington Green

Photos by: Allison Kelly
Safe Paint in Federal Blue

Photos by: Allison Kelly
Safe Paint in Barn Red

Photos by: Allison Kelly
Safe Paint in Lexington Green

Photos by: Allison Kelly
Ready for planting!
Planting Day

On location: Allison’s house

Photo by: Malisia Wilkins
Plants

Photo by: Malisia Wilkins
Soil Mixture

Photo by: Malisia Wilkins
7 parts top soil
2 parts peat moss

Photo by: Malisia Wilkins
1 part Perlite

Photo by: Malisia Wilkins
• Hand mix
• Slowly add water to increase moisture in the peat moss
Finished mix: Enlarged to show texture

Photo by: Malisia Wilkins
• Add soil to pockets
• Loosely packed
• Once pockets are filled begin planting from the top down.

• Cut small holes in fabric to insert plants in front pocket.

Photo by: Malisia Wilkins
Easy to carry

Photo by: Malisia Wilkins
# 3 Big Blue Bertha

Photo by: Allison Kelly
Finished Prototypes

Photo by: Malisia Wilkins
Mission Accomplished!

Photo by: Malisia Wilkins
Our project would not have been possible without the efforts of many people, thank you for your support, and guidance.

- Dr. Ellen Vincent
- The Old Fashioned Milk Paint Company
- Ace Hardware of Clemson
- South Carolina Botanical Gardens