

Learn & Grow: An Educational Garden for the Boys & Girls Club

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This project came from an interest of linking architecture and healthy eating through the design and construction of an educational garden at the local Boys & Girls Club. They had an existing garden that was sitting unused and it became an opportunity, not just to improve on the garden to make it more useful, but also to introduce the children at the Boys & Girls Club to the impact of architecture on their lives. (Figure 1)



Figure 1: Existing garden beds at the Boys & Girls Club of the Golden Triangle - Starkville, Spring 2015. (Photo by author).

INTRODUCTION

A collaborative team of educators and students from architecture, graphic design, health promotion, education, religion, and horticulture joined together to design and construct the educational garden. The aim of constructing the garden is to get the children at the Club excited about growing and cooking with homegrown foods. This project is educating children through growing their own food. An additional challenge of the project is to get the parents and community engaged through the education of the children at the Club.

This will be achieved through educational programs that use the garden spaces to conduct classes. Current classes being conducted are teaching the children about nutrition and economics, community, safety, germination, and the health benefits of foods from the garden.

Also, classes are being developed to use the built spaces to educate students about architecture and art. Project activities will include art classes where the students are exposed to artists like Andy Goldsworthy and his use of natural materials, design classes where students study elements of color, form and juxtaposition in the garden and then create designs of their own using what they are learning about nature. We will also have classes about architecture using the new built garden structures to inspire the children to think about the spaces and environment in which they live and learn.

We are similarly creating outreach events for the parents of the children at the Club, and the community. This includes events like art workshops, educational workshops on how to design your own garden at home, and healthy cooking workshops. It also includes promotional materials that are sent out to the community, local papers, and using social media to support the educational garden and its programs. The project intent is to reach out to an underserved population, which are not typical participants in other similar programs. The children and families of the Boys & Girls Club tend to be low-income and African-American, and we are interested in engaging this population to better educate and encourage them to participate in gardening and healthy habits. Despite having recently experienced significant decreases in prevalence of overweight (16.5% in 2011 vs. 13.2% in 2013) and stability in obesity estimates (15.8% in 2011 vs. 15.4% in 2013) among its adolescents, our state continues to fare worse than the United States on many obesity-related measures for its youth population. Only 19.8% of youth from our state report eating fruit and vegetables five or more times per day during the past seven days.

The collaborative team is seeking to address food insecurity through research, service-learning academic coursework, and co-curricular programming. Food insecurity, or the lack of consistent access to affordable and nutritious food, has been named one of the most important problems facing poor and underserved communities

for the 21st century. Despite this growing interest among citizens, scholars, and policymakers in these issues, though, several urban areas across the US remain underserved, with 17.6 million US households judged “food insecure” in the year 2012.

The educational garden is intended to educate about food and nutrition and how artistic fields like architecture can create spaces that foster these healthy habits. Furthermore, our university president has listed food security as a primary research focus for the university and this project becomes part of a discussion of food security at a local level. This allows us to help empower the underserved in our state to achieve healthy habits using architecture.

COLLABORATION

Community Partner

Project planning started with the creation of a collaborative team of faculty from various departments across campus that could activate and utilize the garden to teach the children, and outreach to the community. The idea being that the architecture could inspire not just interest in architecture, but a long-lasting and impactful project in many facets. Even though the design and construction was done primarily by the students in the architecture design studio, the project was not created in a vacuum. The community partner, Unit Director of the Boys & Girls Club of the Golden Triangle – Starkville, was the primary collaborator with the studio. (Figure 2) Students visited the project site before beginning the design, and presented their ideas to the Unit Director at various points throughout the semester. All feedback from the Unit Director was incorporated into the student design to make sure that it satisfied the needs of the



Figure 2: Students meeting with the Unit Director of the Boys & Girls Club of the Golden Triangle, Fall 2015. (Photo by Anna Barr)

Boys & Girls Club and that the partnership was an equal one where the students learned from the community partner while the community partner learned from the design of the project.

University Collaboration

The architecture students also worked with a graphic design student to create a typography design that was incorporated into the architecture. Additionally, they worked with students from the university Horticulture Club, with input from faculty in the Landscape Architecture Department, to design the architecture to facilitate the proper growing of plants. This included a planting plan that was developed by the architecture and horticulture students together. (Figure 4) In addition, the project was developed to include programs and research with the Department of Art – Graphic Design Concentration, the Department of Food Science, Nutrition, & Health Promotion, the Department of Curriculum, Instruction, & Special Education, the Department of Philosophy & Religion, and the university Horticulture Club. (Figure 3) Faculty from the Health Promotion focus have interviewed staff members at the Boys & Girls Club, and both faculty and students have been working with the children in the garden. Students from the Horticulture Club are developing thornless blackberry patches and blueberry bush areas to educate the children about soil pH and raising blackberries and blueberries. Architecture students are designing a structure to build with the

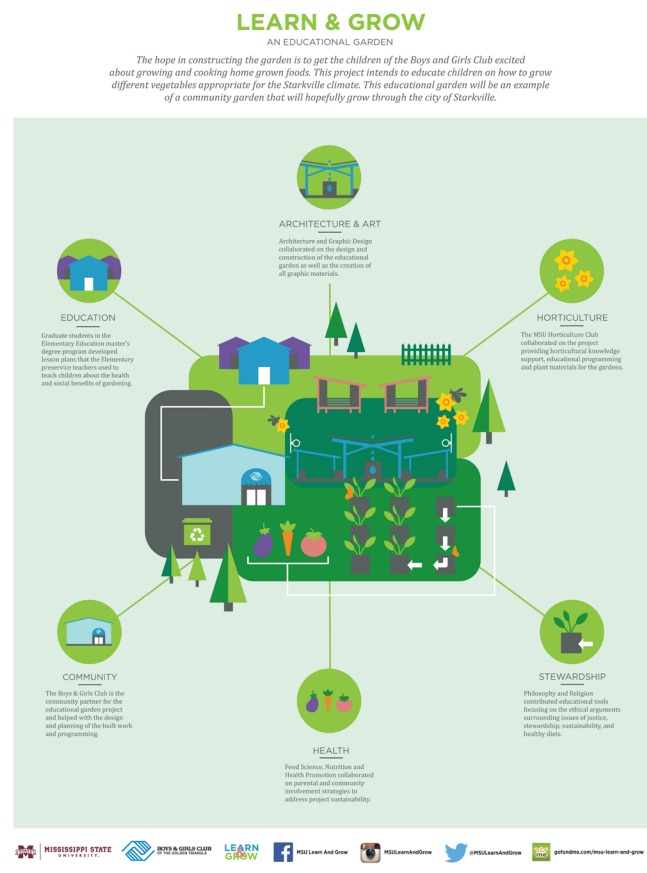


Figure 3: Learn & Grow: Educational Garden Promotional Poster, Spring 2016. (Image by Lorianna Livingston)

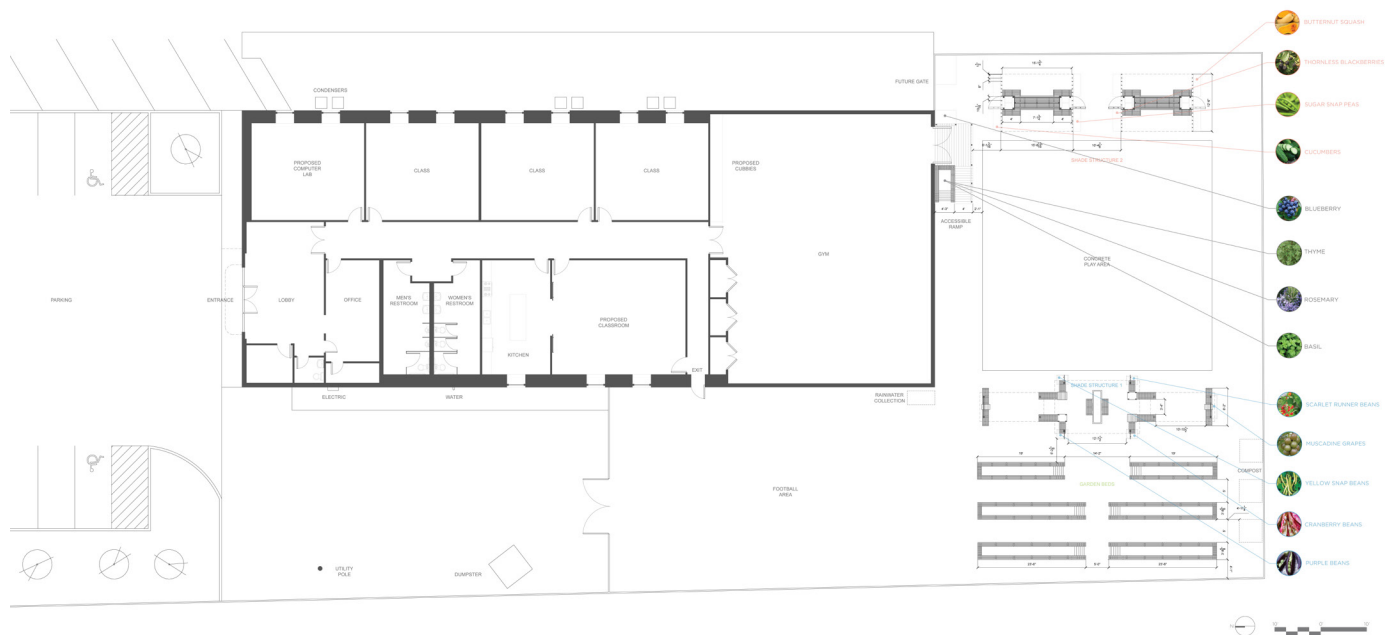


Figure 4: Planting Plan showing the garden layout with suggested plants to go with each architectural structure, Fall 2015. (Image by Ashton Aime)

children that will hold containers that the children use to carry their fresh produce home every day. Continued collaboration with other university departments and student organizations is being facilitated to ensure the sustainability of the educational garden over the long term.

Community Support

The community was also engaged in the construction and maintenance of the garden in various ways. National and local companies donated construction materials to facilitate the construction of the project with an extremely limited budget. The studio also created a crowd funding campaign through GoFundMe to raise additional money to pay for the construction of the project. This allowed friends and family from across the nation to support the project and the collaborative members involved. Lastly, the project has had many volunteers who have helped with the programming in the garden that began in the summer of 2016. These volunteers are trained in garden maintenance, and how to work with the children at the Boys & Girls Club to teach them basic garden maintenance such as weeding, watering, and plant care.

DESIGN STUDIO

Teamwork Structure

Due to the needs of the project, and the size of the studio, the students were organized to facilitate a collaborative team for the project. Students were given job descriptions for the various roles in the project at the beginning of the semester and they chose a role that they were interested in completing as part of the project team. This was intended to reflect an architecture firm and to define the role of each student in the studio. The entire class worked as one

on a design charrette for the project and then broke into teams to design the various phases of the project. Once the separate parts of the project were identified during the group design charrette the students then broke into smaller teams to design each part of the project. This is where the team roles began as the various smaller teams worked together and then as part of the larger studio to design the educational garden.

The team roles in the studio included the Studio Manager, Graphics Manager, Project Manager, Project Architect, and Construction Manager. The **Studio Manager** worked directly with the Professor, Graphics Coordinator, and Project Manager of the teams to ensure overall continuity of the project. This included the managing of the time, responsibilities, and performance of the studio. The **Graphics Manager** also worked directly with the Professor, Studio Coordinator, and Project Manager of the teams to create an overall graphic layout and design for the studio. This included all presentation boards, construction documents, final studio portfolio, and any additional graphic elements the studio determined was necessary. The **Project Manager** worked directly with the Professor, Studio Coordinator, the Graphics Coordinator, and the Project Managers for the other teams to manage the time, responsibilities and performance of their team. This included the coordination of the overall organization of the team and all work completed. The **Project Architect** worked with the Project Architects for the other teams, and Construction Manager on their team, to coordinate all construction drawings. This included additional research on detailing, materials, etc. needed to accomplish the construction of the part of the project to which their team was assigned. The **Construction Manager** worked with the Construction Managers for the other teams, and Project Architect on their team to create an overall consistency in the detailing and construction of the part of the project to which their team was assigned. This was extremely important for consistency in constructability of the project.

Communication was imperative for this project since it was a collaborative effort, and since the studio was broken out into smaller teams to design and construction the various parts of the project. Digital tools such as GroupMe and Google Drive were used to facilitate communication and file sharing. GroupMe is an online group messaging application that can be installed on smartphones to allow groups of any size to communicate. This was important because even though the studio met for four hours a day three days per week, there was a lot of work done outside of studio time that needed to have open communication between the studio members as well as the professor. Google Drive is an online cloud network that can be used to set up group folders where team members can be invited to share documents. This helped the studio create the templates for the various documents used in the project, similar to what is done in an architecture firm. Students were able to complete their work for the studio project and still manage their responsibilities outside of studio due to these digital tools that supported communication and collaboration.

Project Design

The semester began with the selection of team roles, but then moved into a studio charette where all students worked together to create the overall design for the educational garden. The students began with the basic needs of the project being raised garden beds that improved on the existing beds, storage for garden tools, and a shade structure for the teenage members of the Boys & Girls Club. The design ended up integrating storage into the raised garden beds and shade structure to give more storage options for the different tasks around the garden. The final charette design was to create four areas of design. These included the raised garden beds with storage, two shade structures, and additions/renovations to the existing building. Since the existing building at the Boys & Girls Club was a rental and not owned by the club the landlord of the building was supportive of the exterior changes that the students proposed and ultimately constructed. This included the addition of a handicapped ramp and landing at the exit from the back of the building into the garden, as well as the addition of an herb garden bed to act as a railing for the landing and ramp on one side. Other suggestions for the existing building were to reallocate space for classrooms, the expansion of the existing kitchen to allow for healthy cooking demonstrations, and the creation of a wall of “cubbies” to store the fresh vegetables the students pick each day to take home when they leave the Club.

Each of these four areas of design were supported by the smaller teams consisting of a Project Manager, Project Architect, and Construction Manager. The four smaller teams then worked with the Studio Manager, Graphics Manager, and professor to maintain consistency and open communication throughout the entire studio. There were fourteen students total in the studio that worked together with specific expectations and goals based on the team roles that were introduced at the beginning of the semester.

The overall site plan organizes the garden around the existing

concrete play area which has basketball hoops installed and gives the children a hard playing surface. The garden beds are located to the west of the site and the shade structures are located on the east and west of the concrete play area to protect the raised garden beds from stray basketballs and other sports equipment that may be used by the children. The ramp and herb garden bed is located on the north side of the site and attached to the existing building to help provide access to the garden for the children and handicapped volunteers, such as the Master Gardener that was working with the children.

All parts of the garden design were developed with the health and safety of the children in mind. Where possible pressure-treated lumber was limited to cut down on exposure to the treatment chemicals for both the children and the soils where the plants were to be grown. Alternative methods such as shou sugi ban, the Japanese wood burning technique, were used to seal the wood against weathering without chemicals or sealants. Also, wood pallets were recycled and used as the materials to create the storage units incorporated into the designs of the raised garden beds. The students also designed the project to have as many pre-fabricated parts as possible to allow much of the construction to be completed at the School of Architecture before being taken to the project site for installation.

The design studio ended up being the first phase of the design and construction of the educational garden. Due to time constraints, the raised garden beds and the ramp with the herb garden bed were the only items that were able to be constructed in the Fall 2015 semester. Shads Structure 02 was constructed in the Spring 2017 semester through an elective course that included six students from the 4th year Fall 2015 design studio and two additional students from other years. The remaining parts of the project, Shade Structure 01, the support structures of composting bins and rainwater collection, as well as renovations to the existing building are on hold pending funding from grant applications.

Construction

Since the project has extended past the initial design studio the construction of the project has been broken down into various phases and parts just as with the design of the project. During the Fall 2015 semester the students worked on excavation for the footings for the raised garden beds, ramp and herb garden, along with the prefabrication of the garden bed benches. The students then moved the prefabricated items on site and placed the garden bed materials, such as concrete masonry units, the benches, and the storage units, on the footings. The ramp and herb garden bed were constructed differently than the raised garden beds with a raised structure to help bridge the distance between the door from the existing building and the level of the ground outside to access the garden.

The Spring 2016 semester brought new construction challenges for the creation of Shade Structure 02. This structure was chosen to be constructed next because it was simpler, and less expensive than Shade Structure 02. Also, the students from the Fall 2015 design



Figure 5: Photo showing the raised garden beds, handicapped ramp with herb garden, and Shade Structure 02, Fall 2016. (Photo by Megan Bean)

studio who worked on the design of Shade Structure 02 were the majority of the students in the elective class that spring, so they had valuable knowledge on how to construct that part of the project. This semester the students excavated again for the foundation, but here they poured concrete for the footings where gravel was used for the footings for the raised garden beds. The students also created larger storage units than the previous semester, which were part of the support structure for the roof and benches for the structure.

Once more funding is secured then the remaining parts of the project will be constructed. However, the educational garden has been up and running since Summer 2016 so assessment of the existing structures will give the collaborative team valuable information for any revisions that may be needed for future construction.

OUTREACH

Many different tools were used to conduct outreach to the community to inform them about the educational garden project and how it was developing. First, was the support of the local and regional press. The university press did a story about the collaborative nature of the project and several spotlights during various phases of construction to keep the university community and the town abreast of

the developments at the garden. The local newspaper also covered the project and the impact of the project to the local community. Regionally the news station WTVA did several stories about the development of the project over the 2015-2016 academic year, and the regional magazine, *Town & Gown*, wrote about the project in their annual garden issue.

Second, more digital tools were used to outreach to the community while other digital tools were being used to help organize the design studio creation of the project. As mentioned earlier, crowd funding through GoFundMe was used to engage the community in the project through donations for construction materials. However, social media tools were also used to keep the community updated on the design, construction, and programming for the educational garden. Students and faculty would regularly post to Facebook, Instagram, and Twitter to keep all followers informed about the project development.

Outreach to the children at the Boys & Girls Club, and their families through the children, is currently being conducted with projects in the educational garden where the children work with volunteers, faculty, and students to plant seedlings and learn about compost and bugs in the garden. Art projects, such as the creation of garden signs to identify the plants being grown and making containers to carry home fresh produce are being conducted with the children as well. Student organizations like the Horticulture Club, American

Institute of Architecture Students, National Organization of Minority Architecture Students, and the Student Dietetic Association are planning future projects with the children to utilize the garden to teach the children about plants, architecture, and healthy eating.

CONCLUSION

While this project is still developing and evolving, the impact to the children at the Boys & Girls Club has been noticeable very quickly. (Figure 5) The children are very excited for the assigned days that the volunteers, faculty, and students come to work with the children in the garden. They get possessive of “their” vegetables that they pick from the garden and have a lot of fun participating in the art projects, watering the garden, and even helping with weeding. Some of the children have even told this author and several volunteers how they would like to be an artist and a farmer after being exposed to this project. Research is currently being conducted by one of the collaborative faculty members in the form of focus groups, so we will have more solid information on the impact of this project in the future.

Despite these positive anecdotes, there are still challenges and obstacles that the project, and the collaborative team have encountered. Funding has been a major obstacle as different faculty members of the collaborative team have applied for several grants, and have not yet been successful. The team is working on future grant applications, and working with the Boys & Girls Club to apply for grants of their own for garden maintenance and to hire a staff member to facilitate the university-to-community partner relationship further. Currently one faculty member of the collaborative team is in this role, but with teaching, research, and service requirements it has become hard to continue that work outside of the design and construction of the initial garden project. Also, the staff at the Boys & Girls Club sees these new volunteers and programs coming in as an additional burden that they have to bear, even though the collaborative team has been working hard to ensure that this is not the case. The collaborative team is working with the Director of the entire Boys & Girls Club of the Golden Triangle, which includes another unit in an adjacent town, to create an updated “Healthy Habits” program for the staff. This existing, and required, program of the Boys & Girls Club can integrate the educational garden into the required work that the staff already do with the children to alleviate the concerns and work that all parties may be doing currently. The addition of a staff member to help with communication between the university and the Boys & Girls Club will also help to assuage the concerns of the current staff by having someone who is part of both entities to keep programs, volunteers, and the garden organized for everyone. However, the Unit Director of the Starkville Boys & Girls Club, Jeffery Johnson, sees the importance of the project:

“I know our kids aren’t as exposed to nutrition and gardening as they should be. So this project will definitely get the community involved, will get the parents involved, and will give us the opportunity to change our focus.”

—Jeffery Johnson, WTVA Interview, November 24, 2015

Further outreach to the parents of the children and the community-at-large is also still needed and is being developed by the collaborative team. This is important both for the continuity of the educational garden, but also to assess the impact of the garden programming and for further program development. Future projects that the collaborative team hope can be developed out of the educational garden are container garden kits to send home with the children at the club to transfer the lessons learned home to help the families of the children create their own gardens at home and access more fresh fruits and vegetables.

Lastly, the impact on the architecture students has also been important to the development of this project. Design-build projects are very common in our program, but rarely do the students get to work directly with the client and see the impact of the project on the client. This is important because another goal of this studio project was to encourage our students to work with community partners in the future, whether in class projects or as architects when they graduate. Some selected comments from the course evaluations of the Fall 2015 design studio show this impact:

“Great experience this semester. It was good to have an actual client and get some construction experience.”

“Doing a service-learning project was a great idea...”

“Enjoyed the studio organization that resembled a firm. It was fun working directly with the client. I enjoyed my role in the studio project.”

“It was nice to actually have interactions with a client.”

“It was fun working with client.”

The collaborative team will continue working on the educational garden with the Boys & Girls Club and will continue to gather data and assess the project. We hope that this project will carry on for many years to come and will help the children and the community learn and grow.

ENDNOTES

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