



HONOR AWARD & MEMBERS' CHOICE
TULANE CITY CENTER | GROW DAT YOUTH FARM

Program Summary:

This project is an urban agriculture and youth education facility. The project consists of farm design, classroom and support facilities, with market and event spaces.

Program Statement:

The scope of this design project, for a local non-profit group, is vast. It is to be a farm facility for high-school age students to learn about agriculture, business management and leadership skills and is to be located in a large urban park on four acres of a former golf course. Many progressive agricultural techniques are used; water is managed on-site, crop irrigation and water sequestration are integrated with building design, waste water is treated on-site (including composting toilets) as well as the extensive use of bio-filters, and bio-remediating landscape elements/techniques.

The project uses seven recycled shipping containers and recycled steel trusses to create a large, covered outdoor classroom and supporting spaces as well a food processing and storage facility associated with the agricultural production. The containers create a buffer to a nearby highway and shelter the program spaces from solar exposure. The shipping containers require only point loaded foundations at their corners, making long, efficient spans and sparing the adjacent cypress tree roots from disruptive excavation. Extensive sun shading is created with a vine covered shade screen façade to the south and rain screen protection for each exposed shipping container.

Building Area: (sf)

6000 sf. total

4800 covered outdoor

880 sf. enclosed

320 sf. air conditioned

Cost per Square Foot:

\$45-\$55

Construction Cost

\$264,000

Date of Completion:

October, 2013



The image at left depicts the entry court at the youth farm. As an “urban agriculture” facility as well as a learning environment, the spaces serve to organize a diverse set of activities.

To the right of the image are the storage and production spaces which surround a gravel courtyard used for the “nitty gritty” activities of the farm. As students move from the agricultural areas to the classrooms, there are several stages of cleaning and cooling that proceed entry into the outdoor classroom space (visible at left).

The Mulberry tree in the center of the image still bears fruit and serves as an indication of the projects delicate relationship to the environment. Native trees were not only preserved on site, but they were woven into the sustainable systems of the project.

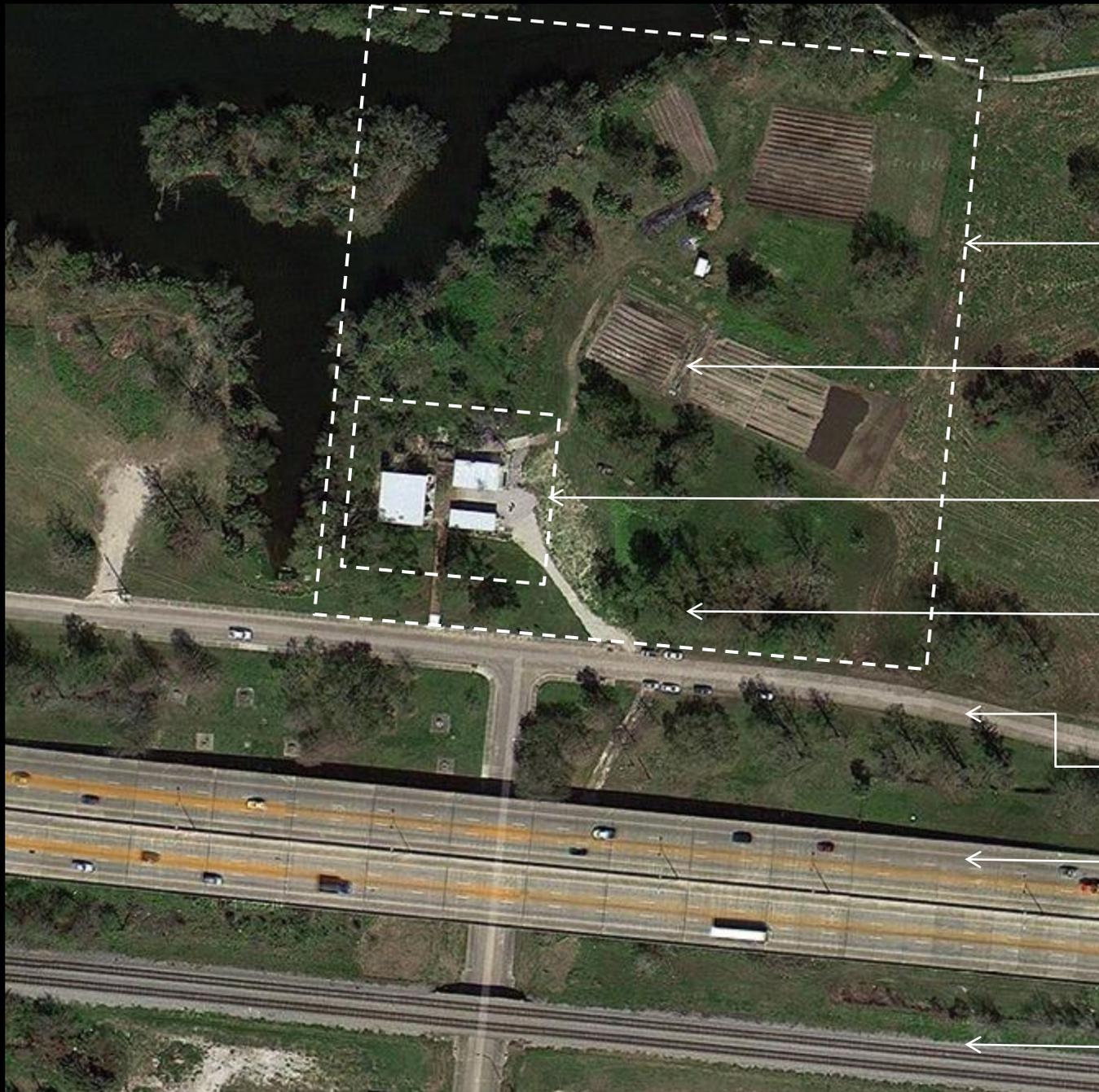


The larger plan of the four acre site was created by adjusting a 50' x 50' crop grid to the constraints of the existing topography. A single gravel road provides access to the planted areas while all existing trees on the site are maintained.

A swale is created at the south (front) of the site to store water gathered from the roofs of the farm buildings. The swale weaves through the existing cypress trees which shade the buildings and function well in wet environments.

All building components of the project are located at the southwest corner of the site in an area which cannot support crop growth.

The plan also indicates several areas of particular natural beauty on the site (located along the west edge adjacent to the lagoon) which have been left as shady rest areas for the hardworking student workers.



This four-acre urban agriculture and youth education facility is located near an interstate highway on the site of an older, now abandoned golf course.

Approximate site boundaries including the brackish lagoon adjacent to the site. The lagoon creates a natural barrier to "agricultural pests"

These areas are under cultivation and produce about 25,000 pounds or produce, grown by high-school aged students, each season.

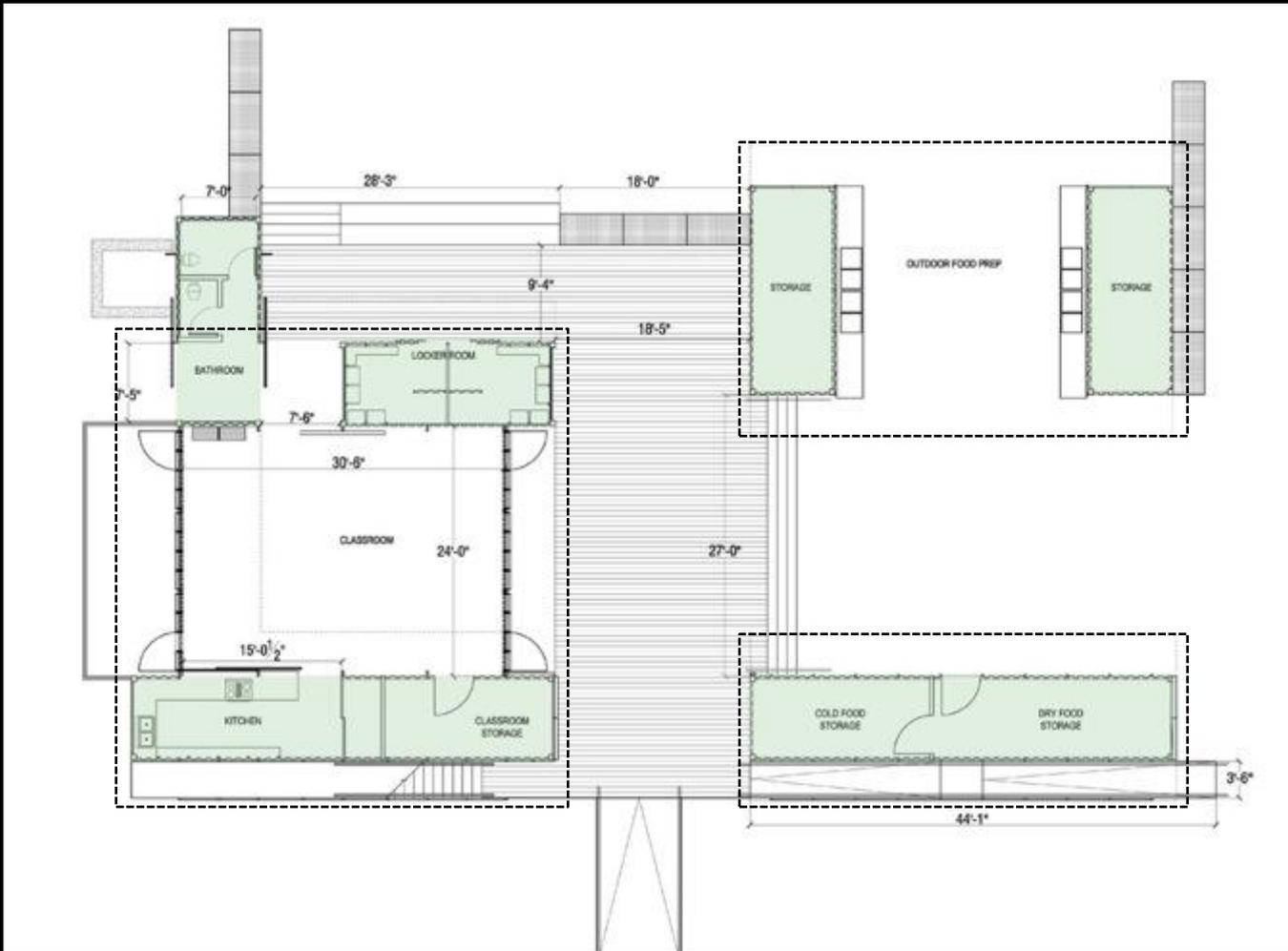
The area depicted with the dotted line is shown in detail on the next image slide. This is the farm facility itself and it is located on the site of a former "infestation" of an invasive tree species that was removed to protect the native trees in the area.

All storm water run-off is sequestered on the site and used in the agricultural processes. In extreme rain events, water is stored in a bio-swale where it is purified through natural processes.

The road at left runs through a large urban park and provides access and power for the site.

The interstate highway has made this portion of the large urban park undesirable for recreational activities and thus the urban agriculture facility does not occupy land desired for other purposes.

An old rail line passes through the area as well.



The site houses a large, covered outdoor classroom, offices, meeting areas and the storage and processing areas associated with farm production.

The project consists of seven standard shipping containers positioned to create courtyards and covered outdoor spaces between them.

Each of the shipping containers holds specific functional spaces that require secure enclosure when the farm facility is uninhabited.

Each shipping container is supported by a simple concrete pier at each corner. These piers support the gravity loads of the project and resist the wind up-lift forces created by the large canopy roofs.

Each large canopy roof (shown with dotted lines) is supported by a tube steel frame fastened to the sides of the shipping containers and shading the metal containers from the sun.

Only the cold storage room, and the upstairs office and conference rooms are conditioned spaces. All others are cooled by passive means including the shade canopies, the adjacent tree canopy, the east-west breeze on the site and mechanical fans in the large covered spaces.



The small massing drawing at left shows the relationships between the containers and the covered outdoor spaces supported by them. The interstate highway is visible at the extreme left of the massing study.



The image at left shows the covered outdoor classroom space in use between formal class meetings. The concrete floor rests on corrugated metal decking on recycled bar joists which are, in turn, bearing on the steel shipping containers. This structural system allows the entire structure to bear on a few point-loaded piers at the corners of each shipping container. Avoiding linear foundations allowed the complex to be located in the midst of a heavily wooded area without interrupting the root structures of the existing trees.

The classroom space is used for a variety of events beyond simple classes, including demonstration cooking in the small kitchen at left and small group meetings on the mezzanine above.

Large sliding backboard walls can enclose the kitchen spaces when the facility is not in use. All sliding doors are fabricated on site using the cut-out corrugated metal from the shipping containers.

All steel spans are based on the typical dimensions of steel and of the shipping containers used in the project. Thus 40' steel beams, and 24' recycled bar-joists are used without cutting and without waste.

according to the Trust for Americas Health:

[33.5%]
of high school students are
either overweight or obese

New Orleans is one of the America's
largest urban food deserts

[10]
supermarkets serve a
population of 340,000

in short: *in New Orleans there are few jobs for teens, inadequate access to food,
and poor eating and lifestyle habits resulting in chronic diseases*

In 2011 the Bureau of Labor reported a:

[42.1%]
unemployment rate among
black teenagers

of the adults in New Orleans' African
American Community:

[7 of 10]
are overweight

and are twice as likely as whites to be diagnosed with
chronic diseases such as diabetes

Key to understanding this project is the somewhat unusual program aimed at addressing societal problems with a "social entrepreneurship" venture. The program calls for a facility carefully connected to the program of youth-employment through the meaningful work of growing food.

Thus the project is a farm and a classroom – a learning/working environment intended to operate without substantial external aid. The work of the students produces a marketable commodity and introduces them to healthy living and eating choices. For many students of the youth farm, the farm develops leadership skills as well as responsible habits.

The architecture of the project is tuned to the dual nature of the activity, allowing a flexible environment which engages the students, facilitates revenue generation with public events and gatherings, and supports environmentally responsible stewardship of a public site.



The students involved in the program were consulted extensively (as well as the program leaders) in the design of the permanent facility depicted here.

These students come from a broad range of backgrounds and, for most, work at the youth farm is their first job. The students work as interns and are paid for their work.

The produce grown by the students is sold and donated to local food banks and retirement homes. Students sell 60% of what they grow and donate the remaining 40% - with the sales proceeds supporting the compensation each student receives.



Classes teach students about agriculture – but also, teach healthy food preparation, marketing and sales skills, as well as leadership and social responsibility.



The outdoor classroom is depicted in the upper image at left. The classroom serves many purposes over the course of a day and a season and is host to demonstration cooking, musical events, weddings, small group meetings and fundraising events as well as the normal compliment of more traditional classes in agriculture.

The roof canopy above is made using recycled steel members and wood joists and purlins creating a vast covering for the classroom as well as the office spaces, conference rooms, kitchen, bathroom and locker facilities which surround the classroom proper.



The classroom is shown at left in an early evening photograph before an evening event begins. A youth farm student is receiving instructions on her assignments during the event. Students from the youth farm participate in a wide variety of the events of the facility – all are part of the learning environment.



The food processing area is shown in the upper image. Produce is brought in from the surrounding fields and washed, sorted and dried before being packaged and prepared for delivery to local area restaurants and green markets.

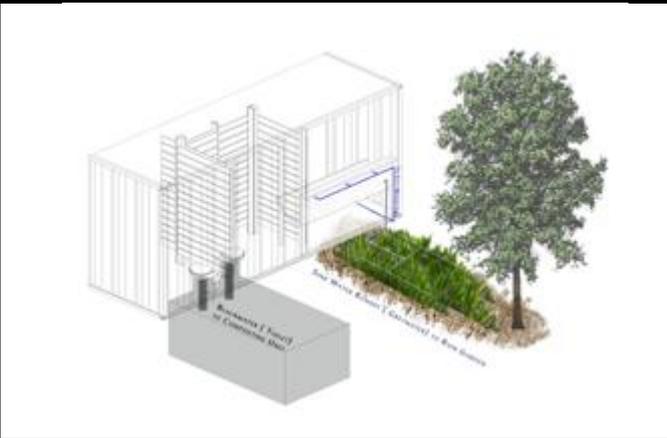
As in the outdoor classroom, the space for food processing is created by spanning a canopy between two point-supported shipping containers. The containers to the left and right of the area are tool storage buildings which are easily secured for times when the facility is not in use.

The water runoff from the food processing is filtered through a bio-swale where it is recycled back into the irrigation system of the farm.



The massing drawing at the far left shows the food processing area to the right of the image. Food processing occurs in a 14' tall space in contrast with the 22' ceiling height in the outdoor classroom. This gives the classroom the hierarchy needed to "elevate" the lessons presented there.

In the lower left image, a gabion wall is shown. All soil retention and grade changes on site are supported by the porous gabion walls to help facilitate water movement from the back of the site to the bio-swale near the front. The gabions are filled with broken concrete from nearby demolitions to help recycle the normally wasted material.



The bathroom facility uses a composting toilet for black-water and a bio-remediating swale to filter grey-water from a large lavatory.

Gray-water passes through the bio-remediating swale into the surrounding wooded area – helping to nourish the tree canopy which acts as a primary cooling system for western light.



The use of composting toilets and gray-water filtration is rare in the metropolitan area surrounding the youth farm – but has been done legally in this instance. The facility therefore serves as a demonstration project for the use of these water and energy conserving practices.

The project also seeks to disprove some of the myths that surround gray-water treatment and presents the ecologically sound practice without any of the imagined odor or unpleasant appearances formerly associated with the practice.



The forecourt between the gravel courtyard and the covered outdoor classroom is depicted here. A native mulberry tree has been left in place – as have all native trees on the site.

Large louvered screens partially enclose the classroom space and provide shade in the parts of the day when the classroom is in use. The surrounding shipping containers have been repurposed as small storage and service spaces while lending their tremendous structural rigidity to the lateral support of the structure.



The small image at left shows the gravel courtyard in use in a fundraising event with a “food truck” pulled up to enclose the open courtyard end. Many events are staged at the youth farm – all are part of the general effort to support the educational role of the facility and help to make the program self-sustaining. Between the sale of produce and the events on site, the program generates the majority of its own operating budget.



The entry façade faces south and is covered by a vine armature. Approaching the project from this side involves crossing a bridge over the bio-swale and passing between the upper and lower areas of the complex. The bio-swale is planted with native irises and presents a garden-like zone before the working elements of the farm are revealed.

As the rendering of the project depicts, the project is at home in the park setting and works to maintain continuity with the surrounding park structures.



In the photograph at left, the vine screens can be seen before the planted vines have become established. Still, the irises and other bio-swale vegetation have grown in and help to soften the “public edge” of the farm and classroom spaces.

Spaces between the roof canopies and shipping containers can also be seen in this image. These spaces allow cooling breezes to pass through the project while shading the metal containers from direct exposure to the sun.



The mezzanine level of the project looks down to the classroom space below. The small interior view (rendering) at left shows the louvered shade screen of the classroom and the open space below. The larger photograph provides a view of the simple material pallet of recycled steel and treated wood structure. Since most material connections were left exposed in the final project, great care was taken to align fasteners and create clean seams between elements.

Project Name:
Grow Dat Youth Farm

Photographer(s):
(please list which specific slides get credited to each photographer(s) listed).

Project Location:
150 Zachary Taylor Drive
New Orleans City Park
New Orleans, Louisiana

Photograph on A-265.01: none

Photograph on A-265.02: Will Crocker

Owner/Client:
Grow Dat Youth Farm/
New Orleans City Park

Photograph on A-265.03: TCC Students

Photograph on A-265.04: Google Image

Architect(s) of Record:
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New Orleans, LA 70118

Photograph on A-265.05: TCC Students

Photograph on A-265.06: Will Crocker

Photograph on A-265.07: Emilie Taylor

Project Team:
Tulane City Center
Scott Bernhard, AIA (architect of record)
Emilie Taylor, AIA
Dan Etheridge
Seth Welty
Zack Lamb
+ 52 Architecture Students from the
Tulane School of Architecture

Photograph on A-265.08: Emilie Taylor

Photograph on A-265.09: Will Crocker
Emilie Taylor

Photograph on A-265.10: Will Crocker
TCC Students

Photograph on A-265.11: Will Crocker
TCC Students

Landscape Architect:
Abigail Feldman – Landscape Architect
Leo Gorman – Farm Director

Photograph on A-265.12: Will Crocker
Emilie Taylor

Consultants:
Dr. Walter Zehner – Structural Engineer
Dr. Mark Baily – Eco-systems Engineer

Photograph on A-265.13: TCC Students
Will Crocker

Photograph on A-265.14: TCC Students
Will Crocker

General Contractor:
Tulane City Center

Photograph on A-265.15: Will Crocker