

ACSA Collaborative Practice Award

2016-2017 Winner Submission Materials

Education Center for Beardsley Community Farm

JENNIFER AKERMAN & ROBERT C. FRENCH
University of Tennessee-Knoxville

COMMUNITY ENGAGEMENT THROUGH DESIGN-BUILD TEACHING AND LEARNING



EDUCATION CENTER for BEARDSLEY COMMUNITY FARM

*view of Education Center, including
welcome area for visitors to the Farm*

A NEW FORM OF DESIGN-BUILD

Design-build teaching and learning has the potential to advance both the practice of architecture and the process of educating architects. Students and faculty from [Name Redacted] developed a new form of design-build to produce public work with an engagement focus, creating an education center for a non-profit public farm specializing in sustainable urban agriculture. The design-build effort used architecture to foster meaningful community engagement, teaching students fundamental issues of design, craft, and leadership.

A unique collaborative process—led by design-build architecture students and faculty and supported by professionals, city officials, and industry partners—allowed our team to exceed bureaucratic and budgetary limits that often prevent high-quality public architecture from being possible. Students and faculty were invited to join the collaboration after pro-bono efforts of a professional architecture firm and contractor failed to meet budget through three consecutive design-bid cycles.

The design approach is characterized by a series of overlays and contrasts, just as Beardsley is itself a contrasting entity—a farm within the urban fabric. Ideas of the contemporary vernacular are situated at all scales: site, plan, and detail. The architecture is designed to strengthen the Farm’s outreach mission by making places for meaningful community engagement. Comprehensive issues of sustainability and craft were critical, as was the emphasis on design leadership and the ethical imperative of contributing to public space.

PROJECT LOCATION

[City/State Redacted]
Mechanicsville Neighborhood

BUILDING AREA

1,250 sq ft interior +
1,820 sq ft covered exterior,
3,070 sq ft total

COST PER SQUARE FOOT

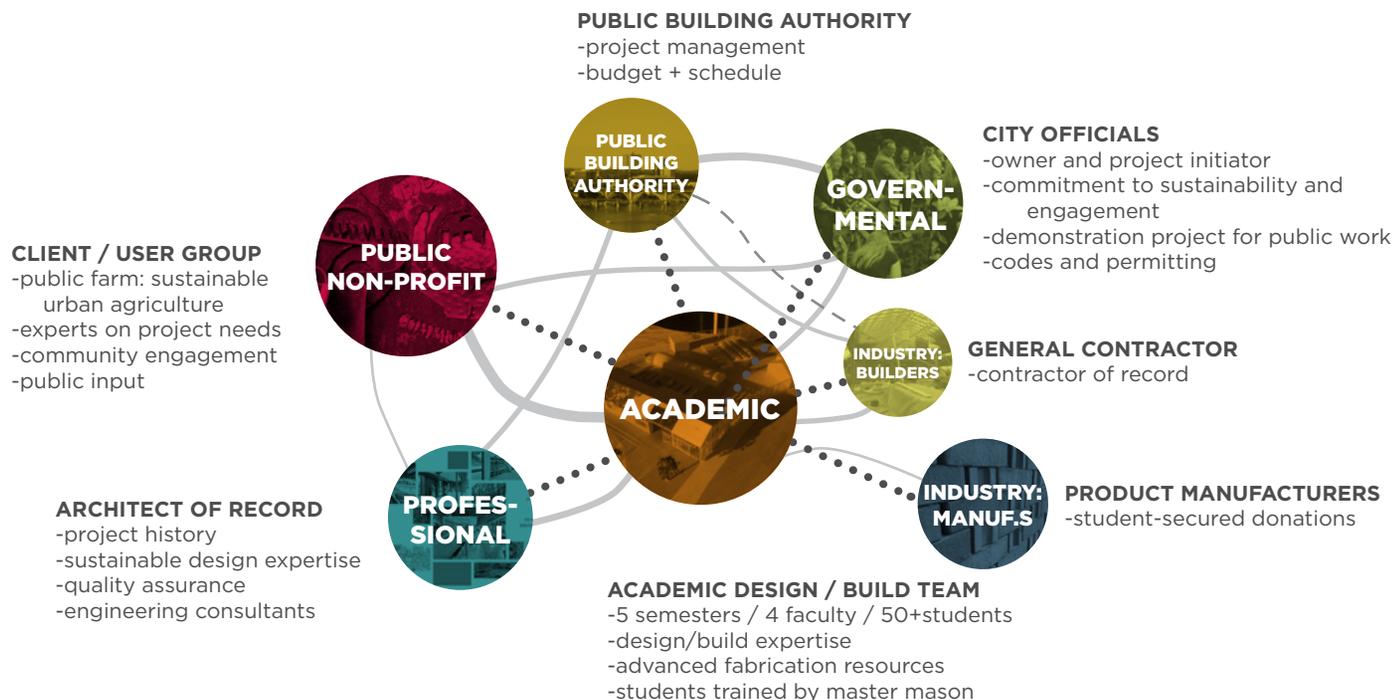
\$70 per square foot

CONSTRUCTION COST

estimated \$214,000 +
donated materials and labor

DATE OF COMPLETION

2016



collaboration network diagram tracing assumed and actual relationships

LEARNING OBJECTIVES: ETHICAL AND INNOVATIVE PRACTICE

A unique curricular structure engaged students through a design integration studio, design-build seminars, and a sustainability seminar. All told, approximately fifty undergraduate and graduate students contributed through enrolled coursework, with two becoming project research assistants post-graduation. More than fifty additional students and faculty contributed as volunteers.

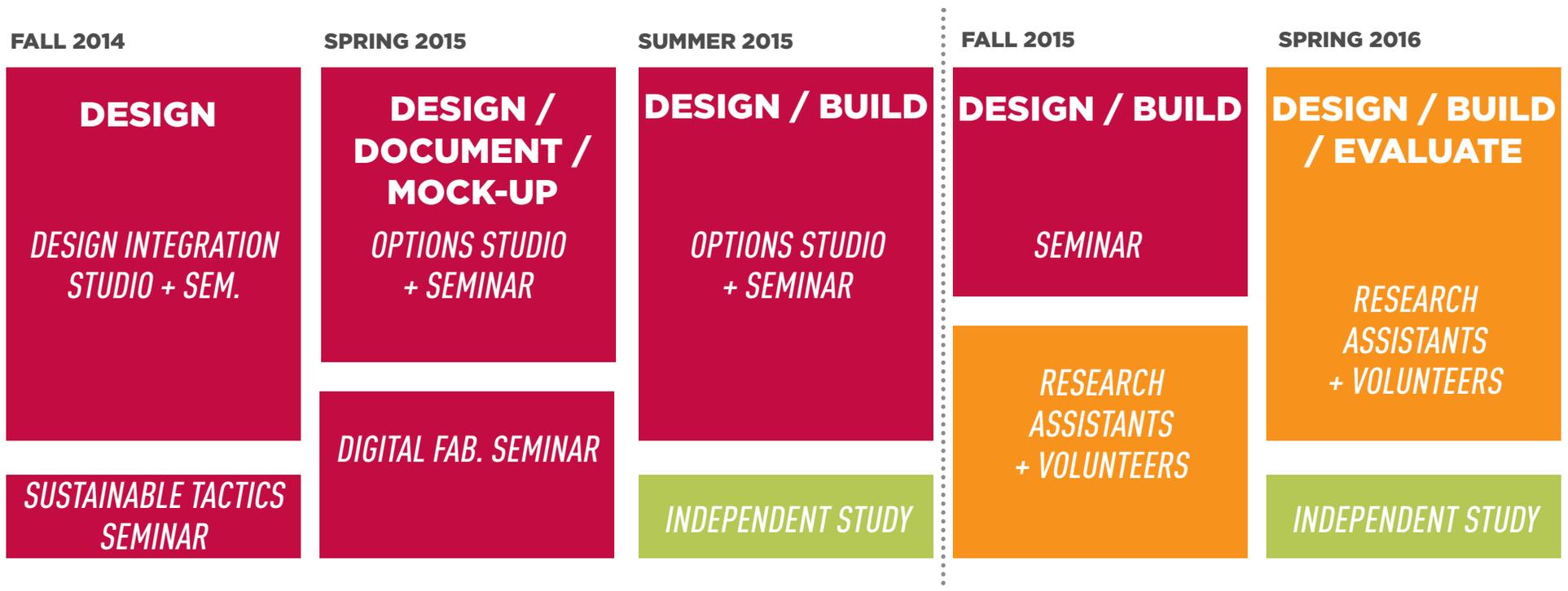
KEY LEARNING OBJECTIVES MET

PUBLIC ENGAGEMENT ETHIC Students reframed the project to one of community service based on what they learned from the farmers, residents, and from their study of a complex urban site. Students volunteered throughout design, facilitating deep understanding of needs.

CONCEPT-TO-REALIZATION PROCESS Fundamentals of design-build bridged ideation to realization, in both the built artifact and collaborative process.

CONSTRUCTION INNOVATION Students designed and built a novel triple-wythe brick wall assembly that provides structure and environmental performance, among other innovations.

LEADERSHIP



BEARDSLEY FARM SHELTER



STUDENT DESIGN-BUILD PROCESS

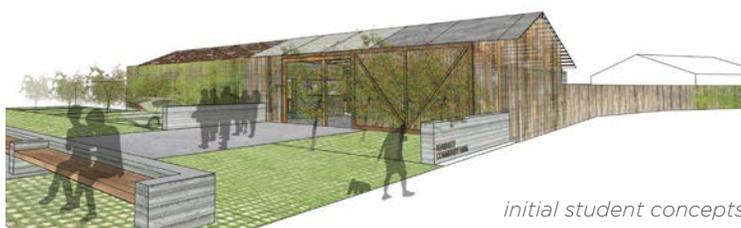
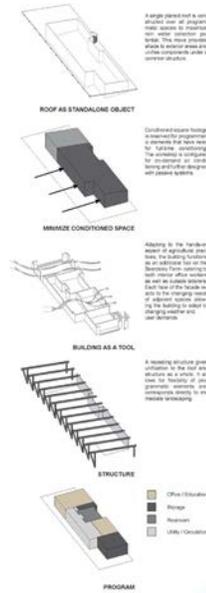
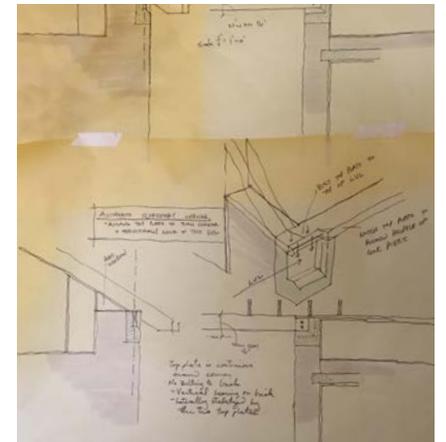
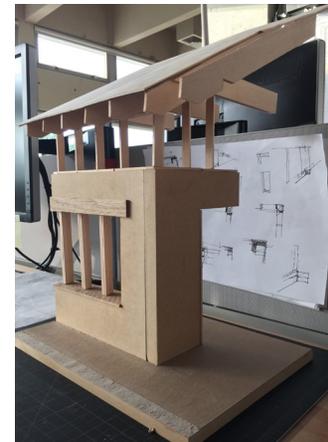
Students worked collaboratively to arrive at a unified approach, converging twelve independent ideas into one team-generated design. Concept and design refinement continued throughout construction.



Rock+Tree design scheme



detail development



initial student concepts



masonry training



DESIGN INTENT: SOCIALLY RESPONSIVE DESIGN-BUILD

“Thank you for reminding us that this is about more than making a modest shelter to support Beardsley.”

—[Name Redacted], Mayor's Representative, Head of Public Works, [City Redacted]



A FARM IN THE PARK

Beardsley Community Farm promotes food security and sustainable agriculture through education and community outreach. They have operated out of a public park in an economically-challenged urban neighborhood for eighteen years, making do with very limited resources. The median annual income in Mechanicsville is \$6,000. With the help of volunteers, the Farm provides 10,000 pounds of food annually to other community-oriented entities nearby. Though progress has been made, tensions exist between the farm and its neighbors.



crops grow in the park; playground and public housing visible in background

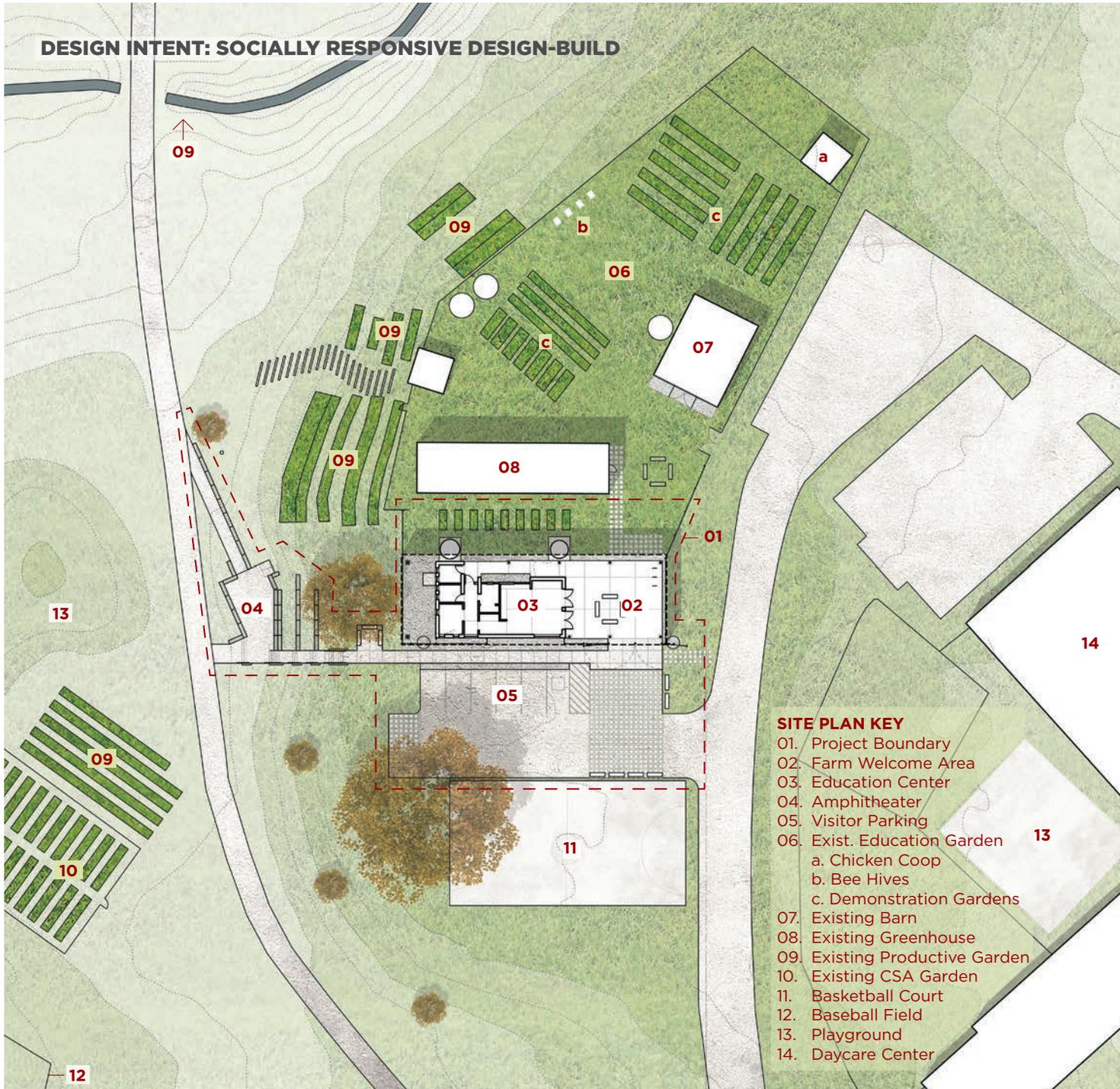


first student visit to the farm



design students volunteer at the farm

DESIGN INTENT: SOCIALLY RESPONSIVE DESIGN-BUILD



SITE PLAN KEY

- 01. Project Boundary
- 02. Farm Welcome Area
- 03. Education Center
- 04. Amphitheater
- 05. Visitor Parking
- 06. Exist. Education Garden
 - a. Chicken Coop
 - b. Bee Hives
 - c. Demonstration Gardens
- 07. Existing Barn
- 08. Existing Greenhouse
- 09. Existing Productive Garden
- 10. Existing CSA Garden
- 11. Basketball Court
- 12. Baseball Field
- 13. Playground
- 14. Daycare Center

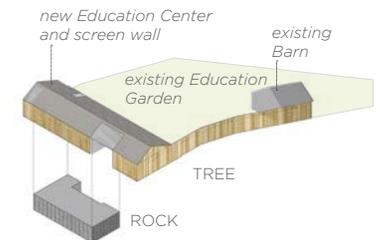
COMMUNITY ENGAGEMENT

The project is understood to be more than a modest farm shelter. Rather, everything is designed to be a teaching tool operating in service to the Farm's mission. Design goals include:

- Design as Catalyst for Engagement
- Minimize Conditioned Footprint / Maximize Public Space
- Contemporary Vernacular
- Providing Identity for the Farm in the Community they Seek to Serve

ROCK AND TREE

The rock represents a durable heart embedded in the earth, while in the foreground the tree shrouds the rock with dappled light. As a group we agreed that the simple palette of rock and tree emphasizes an agrarian aesthetic and the economy of means inherent in a vernacular ethic.



"ROCK + TREE" DESIGN STRATEGY

“This is a public farm. It’s yours and it’s ours. When the door is open, the farm is open.”

—[Name Redacted], Client Representative, Head of Urban Agriculture for [City Redacted]

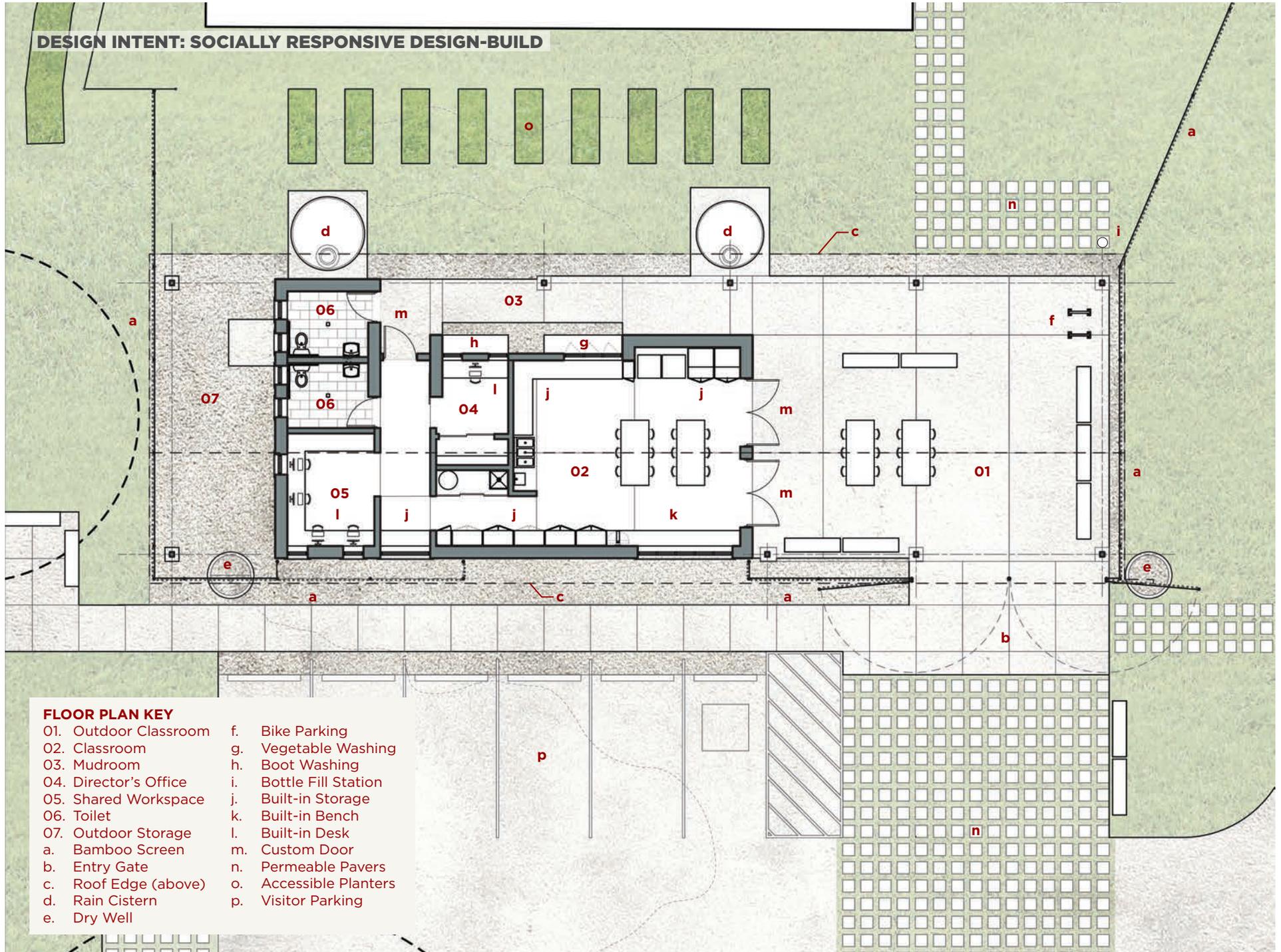


student design rendering



neighborhood residents using basketball court, playground, park, and housing complexes visible in distance

DESIGN INTENT: SOCIALLY RESPONSIVE DESIGN-BUILD



FLOOR PLAN KEY

- | | |
|-----------------------|------------------------|
| 01. Outdoor Classroom | f. Bike Parking |
| 02. Classroom | g. Vegetable Washing |
| 03. Mudroom | h. Boot Washing |
| 04. Director's Office | i. Bottle Fill Station |
| 05. Shared Workspace | j. Built-in Storage |
| 06. Toilet | k. Built-in Bench |
| 07. Outdoor Storage | l. Built-in Desk |
| a. Bamboo Screen | m. Custom Door |
| b. Entry Gate | n. Permeable Pavers |
| c. Roof Edge (above) | o. Accessible Planters |
| d. Rain Cistern | p. Visitor Parking |
| e. Dry Well | |

STUDENT DESIGN-BUILD SCOPE

Students were primarily responsible for building, fabricating, and installing the following in collaboration with faculty, builders, and fabricators:



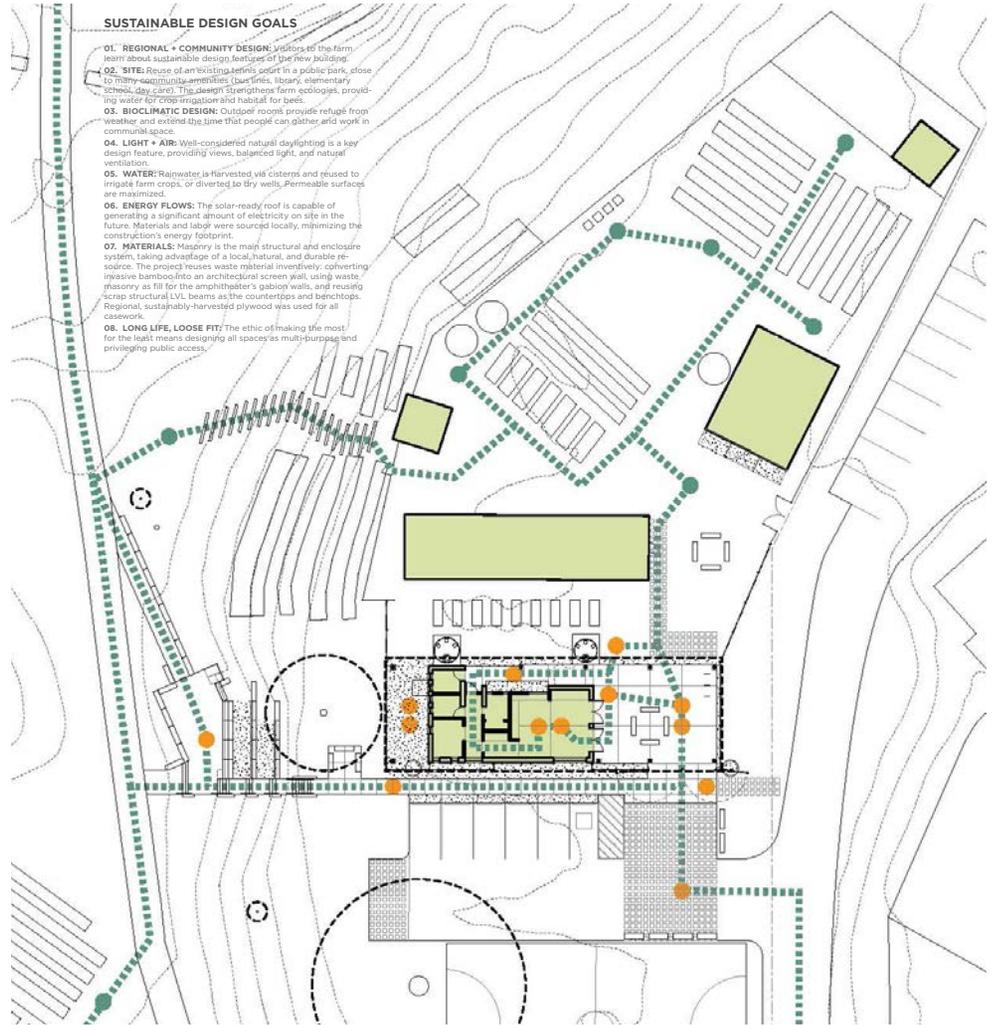
student design phase exploded axon diagram of building components

SUSTAINABILITY

Students addressed sustainable design comprehensively. The project is designed to achieve LEED Silver certification and it addresses guidelines from AIA's Committee on the Environment and the Living Building Challenge.



student research into Living Building Challenge Petal Certification

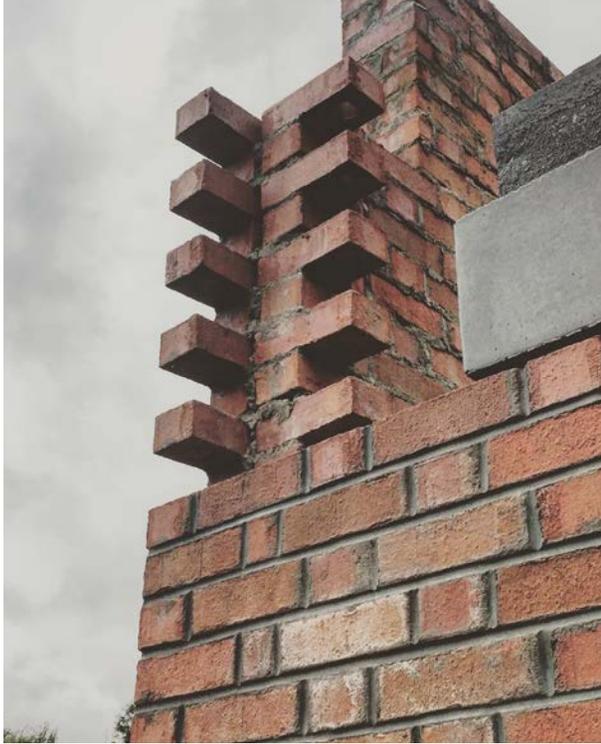


student diagram on visitor education: full farm tour (green path and dots) with "Eco Pit Stops" (orange dots) where sustainable design features are discussed



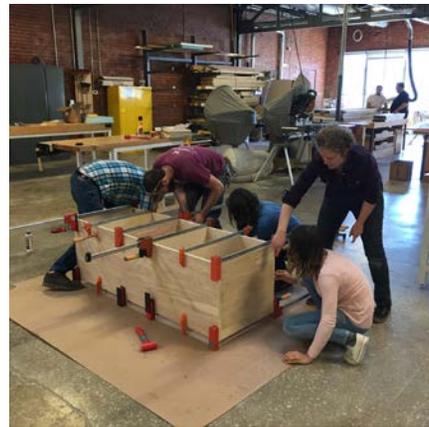
DESIGN-BUILD PROCESS

student masons at work: triple-wythe structural masonry walls with moisture/thermal controlling cavity





DESIGN-BUILD PROCESS





DESIGN-BUILD PROCESS

*amphitheater for park engagement:
gabion walls filled with reclaimed/waste masonry*



A MODERN URBAN FARM



outdoor classroom, custom entry doors; mudroom and public restroom in background

A MODERN URBAN FARM



transparency of layered facade from south-west



exterior details



outdoor classroom with Farm resident and custom doors beyond



mudroom and public restroom

A MODERN URBAN FARM



east elevation of outdoor classroom



A MODERN URBAN FARM

window-seat library, custom doors



shared workspace



casework detail



multipurpose classroom

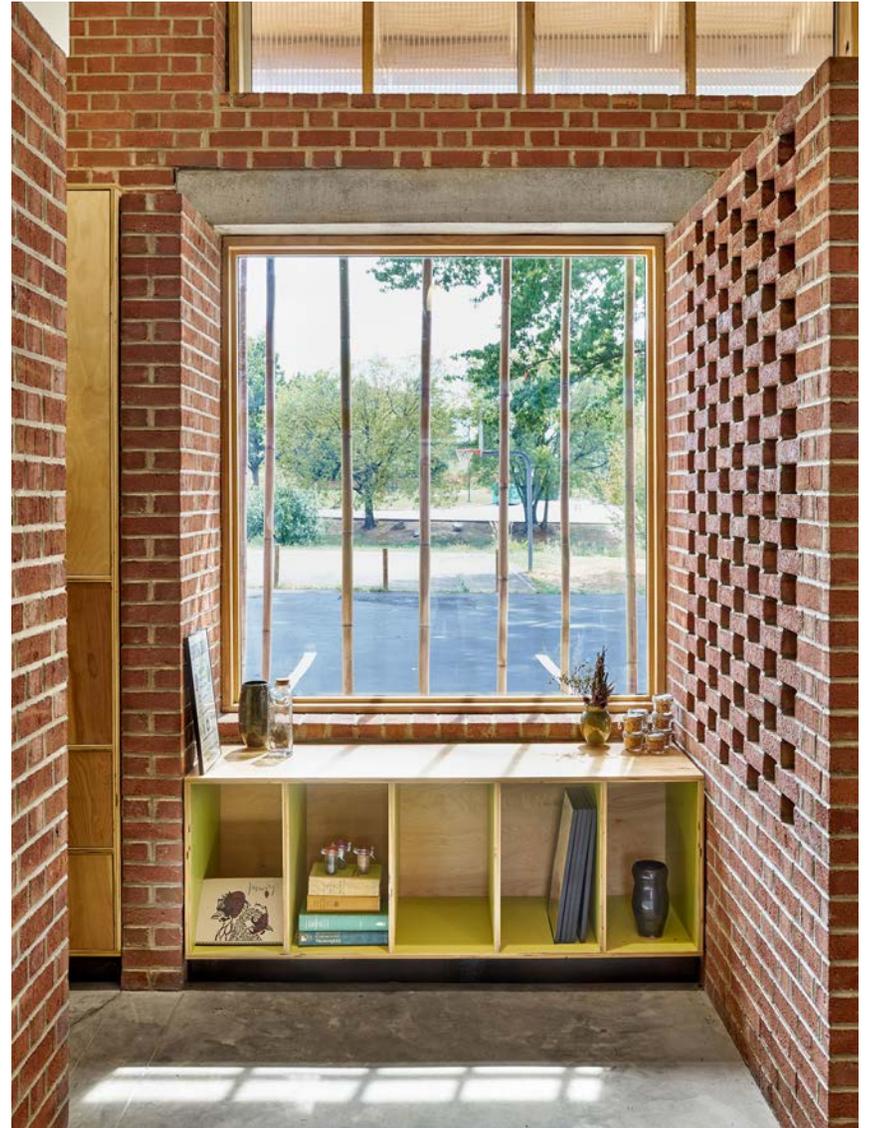


mudroom vegetable wash

A MODERN URBAN FARM



custom casework in storage hallway looking toward shared workspace



custom casework looking toward basketball court and farm plots



CONCLUSIONS

Though a remarkable project was achieved and a cohort of young architects is now motivated to design, build, and serve, this was not a perfect process. Because of the academic team's leadership, the city went further than they would have in backing a project that foregrounds engagement and design excellence. But, pressure within the collaborating team to fulfill differing goals—quality vs budget vs schedule—limited what could be achieved. Tensions between the farm and neighbors remain, evidenced by sporadic vandalism. But now when the Farm is open, basketball players visit to seek shade, get water, and use the restroom, suggesting the architecture is eroding boundaries and facilitating dialog between the farm and the community it seeks to serve.



view of Education Center at dusk