

NEW EDUCATION CENTER CAC BEARDSLEY COMMUNITY FARM UTK DESIGN-BUILD-EVALUATE PROJECT



Rendering of the new building's main entry court. The Education Center acts as a new entry gate to the demonstration farm. Its screen wall—formed of reclaimed bamboo reed diverted from the city's waste stream—unifies what was once a disparate site, and creates an expressive identity for Beardsley Farm.

Project Overview: CAC Beardsley Community Farm is a non-profit urban farm promoting food security and sustainable agriculture through practice, education, and community outreach. It is located in the Mechanicsville neighborhood of Knoxville, approximately two miles north of the University of Tennessee, Knoxville, campus. Beardsley's mission is to educate people of all ages about the possibilities and methods of organic and sustainable urban gardening. In typical years, Beardsley Farm grows more than 10,000 pounds of healthy vegetables grown in their four acres of farmland located in a public city park. All the food they grow goes directly to the community via other non-profit organizations.

Students and faculty have been working with Beardsley and with local professional architects, engineers, and contractors to design and begin building a new education building to support the farm. The new building of approximately 1,200 square feet, includes a flexible classroom, administrative space for farm staff, and restrooms. This project is understood to be more than a service building—it is expressly designed to create a real community place and to help Beardsley more effectively engage the residents of this community. Designed as a teaching tool, the shelter will educate farm visitors and volunteers about sustainable design principles. In support of this, the design heightens sustainable strategies such that they become elegant and essential features of the place. The City of Knoxville envisions certification through the U.S. Green Building Council's LEED rating system (Gold Level), and wishes the project to serve as a flagship of sustainable design for future public work. We believe key design qualities of the architecture will enable Beardsley Farm to create a place truly for the community, to strengthen its outreach and engagement mission, and to promote a broader sustainability rooted in equity, health and wellness, and environmental stewardship. This includes design elements where the farm meets the park intended to welcome the public and foster community engagement.

Schematic Design and Design Development were completed in Fall 2014, and Contract Documents were finalized in Spring 2015. The project broke ground in June 2015 and construction is ongoing, with substantial completion expected by Spring 2016.

Benefits of Design-Build Education

How Students and Faculty Benefit:

- The practice of architecture is complex and becoming more so. The melding of art and science, long understood as the territory of architecture, today requires a much broader range of knowledge than was necessary even a few decades ago. Design/build/evaluate projects undertaken by students and faculty are a key opportunity for participants to develop imbedded knowledge through the process of direct problem solving, and seeing their design intention come to fruition.
- Through the project at Beardsley Farm, faculty and students are developing new methodologies for project delivery, for teaching and learning, and for evaluating the efficacy of community-oriented design.
- The project is an example of applied research in the use of structural brick mass walls as the primary building material. This brings many sustainable design benefits related to life-cycle assessment, use of locally-sourced materials, use of durable materials, and reducing the cooling load of the building.
- To date, three dozen undergraduate and graduate students (architecture, landscape architecture, and environmental studies) participated directly; we project 20+ future direct student participants.

How the Public Benefits—local residents, CAC Beardsley Community Farm, and the City of Knoxville:

- The public will gain a significant community space in an underserved neighborhood, designed and evaluated following innovative metrics.
- CAC Beardsley Community Farm will gain an innovative and productive building, helping them more efficiently educate the public about the benefits of sustainable farming.
- The City of Knoxville has taken the initiative to pursue student/faculty-driven DBE as a non-traditional project delivery path, recognizing the potential to achieve a building far surpassing the basic need. We anticipate this serving as a model for a series of mutually-beneficial collaborations between the City Parks Department and UTK CoAD's Design-Build-Evaluate Initiative.

Partners: We see this project as a model for future collaborations between the City, the University, and the profession. The full project is a collaboration of the UT Design/ Build/ Evaluate Initiative (DBEI) of the College of Architecture and Design, the City of Knoxville, the Public Building Authority, Elizabeth Eason Architects, and Merit Construction. The construction budget is funded primarily by the City of Knoxville, with generous material donations from local industry partners and businesses—including General Shale Brick, Harrison Concrete, Paulk + Co, Stonepeak Tile, and Keene Building Products and the East Tennessee Chapter of the American Institute of Architects. UT architecture faculty include Jennifer Akerman, AIA, Robert French, RA, Tricia Stuth, AIA, and Ted Shelton, FAIA, with masonry instruction from J.C. Newman. Undergraduate and graduate students of architecture, landscape architecture, interior design, civil engineering, and environmental studies have performed the bulk of the design and construction effort.

Opportunities to Help: The City of Knoxville has put forward a limited construction budget, but it does not cover the full cost of construction materials or non-student labor, nor does it support UT research assistants who are critical to maximizing the students' work. Any additional funding goes a long way toward supporting the students' design-build learning experience, and improves the quality of the building the Farm will receive. We're working hard to do a good thing for a great cause, and welcome partnerships with local businesses and philanthropists in support of this engaged learning experience.



Progress photos from the Beardsley Community Farm Design-Build-Evaluate Studio and Seminar, Summer/Fall 2015.



Site Plan. BCF is an urban demonstration farm located within a public park in Knoxville's Mechanicsville neighborhood.



A small amphitheater within the park is conceived as a public space that can be used by members of the community as well as volunteers and visitors of the farm. A universally-accessible ramp connects the park and farm.