DESIGN/BUILD
TRANSFORMING LIVES
When bricks and mortar become awareness and outreach and when lumber and nails enable healthy life choices, we’re doing something right. Likewise, when sweat on the brow is valued as highly as ink in a plotter and swinging a hammer as highly as wielding a marker, you know something good is happening.

**INTO THE REAL WORLD**

Momentum is building at the University of Tennessee College of Architecture and Design to move design from the studio into the real world—actually building something for the public good. When students move ideas from abstraction to reality, they build courage and confidence, and this transformation demonstrates their readiness for the professional world.

**THROUGH THE UT DESIGN/BUILD PROGRAM**

- Students get hands-on experience by building what they design.
- Communities benefit from innovation that spurs economic development and solves problems for the common good.
- Faculty explore research frontiers, leading to new discoveries.
In 1965, a new era in design education began at UT when the School of Architecture was founded. First located in Estabrook Hall, the school would grow from twenty students to today’s 420 located in the award-winning Art + Architecture Building. From humble beginnings to a powerful force, the College of Architecture and Design transforms not just students but also communities, families, and the world.

Faculty member Gorden Mertz started a studio to design and build solar houses. Three houses were constructed the following year, employing solar, passive, and thermal storage.
URBAN OUTREACH

Stroud Watson founded UT’s Urban Design program and received funding from the Lyndhurst Foundation to establish an urban design studio in downtown Chattanooga. Student work over the next twenty-two years impacted today’s award-winning public places in the city and on the riverfront.

THE UPSIDE

David Fox’s studio engaged high school students in the revitalization of their neighborhoods in inner-city Chattanooga and Knoxville. In Chattanooga, college and high school students worked shoulder to shoulder to design and help build innovative housing through UPSIDE (Urban Program in Sustainable Design Education), turning civic engagement into opportunities for economic development.
DECADE OF INNOVATION: UTZERO, LIVING LIGHT HOUSE, AMIE

For a decade, curious faculty and students have been investigating net-zero buildings. The first, called UTZero, was a 300-square-foot prototype designed and built by students in a series of electives taught by Edgar Stach and James Rose. It set the precedent for future projects with its focus on photovoltaic power, use of shading devices, efficient translucent enclosure, and exploration of floor-mounted LEDs to supplement daylighting.

Following UTZero, the college’s Institute for Smart Structures, led by James Rose, embarked upon the design and build of the Living Light Solar House for the US Department of Energy’s 2011 Solar Decathlon. With its transparent double façade, passive heating, integrated lighting, and electric car charging station, Living Light was a predecessor to AMIE.
AMIE, Additive Manufacturing Integrated Energy, is a 3-D-printed energy-efficient, -harvesting and -producing prototype system designed in part by students in James Rose’s studio. AMIE is a project of the Governor’s Chair for High Performance Energy Practices in Urban Environments, an unprecedented partnership of the college, Oak Ridge National Laboratory, and Skidmore, Owings & Merrill. AMIE is the mature form of UTZero and Living Light, with a solar array system that works in conjunction with a paired hybrid vehicle to power both the vehicle and structure.
AWARD-WINNING INNOVATION

Students led by faculty members Tricia Stuth, Robert French, and Richard Kelso designed and built A New Norris House, one of the first in Tennessee to earn LEED Platinum certification from the US Green Building Council. Its innovative and sustainable design earned it numerous national awards, and the AIA Committee on the Environment named it one of the nation’s top ten examples of green design in 2013.

RECLAIMING HISTORY

In 2009, college faculty and students led by Katherine Ambroziak joined the East Knoxville community to reclaim and reanimate Odd Fellows Cemetery, a deteriorating African-American burial ground that dates back to 1880. This initiative addresses the negative physical and social influences affecting the area and offers the community a safe, engaging, and respectful environment to rediscover its heritage.
REAL LIFE

Every year since 2010, John McRae’s studio has traveled to Haiti to design and build safe and affordable structures, including a schoolhouse, medical facility, and housing. Students have designed fourteen houses for the Fond-des-Blancs community, and one has been constructed by students, faculty, and Haitian residents using locally sourced sustainable materials. Research in this work has led to the publication of a LIFEHouse guidebook, which addresses the urgent need for adequate building standards in the country and showcases how Haitians can build secure and healthy homes using local materials and methods.

DESIRE TO SERVE

Students led by Jennifer Akerman and Robert French used their hands and design ingenuity to impact the health of many in Knoxville. The Community Action Committee Beardsley Community Farm is a nonprofit urban farm promoting food security and sustainable agriculture through community outreach. That outreach was hindered in bad weather because the farm had no covered areas—until now. With a desire to serve, students designed and built a 1,200-square-foot education center and amphitheater classroom.
A BASIC NEED

In Clay County, Kentucky, 9,000 families now have access to clean drinking water, thanks to a water kiosk designed and built by students in John McRae and Michelle Mokry’s seminar. The structure contains two water dispensers, a covered area for a farmer’s market, and a cistern for rainwater collection for use in an adjacent greenhouse.

GREEN OAK

In 2015, Ted Shelton and his students found that green oak—the typically unused part of this abundant harvested hardwood—is an extremely low-energy, carbon-friendly, and beautiful wood product for structural elements in sustainable buildings. This EPA-funded research is opening opportunities for students to test design norms and learn new uses of sustainable materials.
The college’s Fab Lab is a maker space that supports the design/build program and work of students and faculty in all three schools: Architecture, Interior Design, and Landscape Architecture. Industry partners who want to be part of the design/build program or to support the Fab Lab can contact Dean Scott Poole, 865-974-5267, scott.poole@utk.edu. For more information about the College of Architecture and Design, visit archdesign.utk.edu.

COLLABORATION

The College of Architecture and Design influences design around the world to improve society through innovative research, transformational design education, and hands-on learning. The design/build program is an important part of that commitment, and its success depends on partners who share the vision of innovation, stewardship, and discovery. Virtually every college, many departments, and hundreds of students at UT, as well as industry and governmental partners and generous donors, collaborate with the college’s faculty and students to bring positive change to communities through the design/build program.