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―オーバーン大学における住宅アフォーダビリティ研究の方法

Rural Studio and Front Porch Initiative: Methods of Housing Affordiblity Research at Auburn University

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RURAL STUDIO AND FRONT PORCH INITIATIVE: METHODS OF HOUSING AFFORDIBLITY RESEARCH AT AUBURN UNIVERSITY

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Auburn University Rural Studio gives architecture students a hands-on educational experience while assisting the underserved communities of Alabama's Black Belt region. Since 1993, this fiercely place-based program, operates within a 25-mile radius of its home base in Newbern, Alabama. During their third and fifth years of undergraduate studies, Auburn University architecture students have the option to move off main campus and relocate to Newbern for an immersive design-build experience. Students design and build projects with varied scales and programs, including homes, community centers, farmers' markets, a library, a fire station, and a town hall; totaling over 200 built works. After 26 years of performing place-based learning, Rural Studio is pursuing opportunities to extend its research agenda beyond the on-the-ground student experiences. Through the Front Porch Initiative, the Studio is beginning to externalize its housing affordability research and developing methods to transfer of knowledge between external partners and place-based student researchers.

Rural Studio's first projects were custom homes for people. Less focused on replicability or affordability, the homes were a recognition that good housing is not always affordable, but that people deserve it anyway. After years of designing custom homes for local families, the Studio began to question if the resources put into the projects could be used to affect greater change. Following the University's service and outreach mission, in 2004, Rural Studio began development of the 20K Home, an affordable, replicable house prototype. The original goal of the project was to design a home that could be built for $20,000 USD, the estimated loan that a person living on average social security could afford through the United States Department of Agriculture (USDA) 502 Direct Loan program. However, as the project has continued to evolve, the Studio's focus has shifted to examining the total cost of homeownership: both the cost of construction and the ongoing costs of operations and maintenance.

20K PROJECT

The 20K Home began as and remains a student research project. Depending on year level, students interact with the project in different ways. At the 5th-year level, the coursework is designed to provide advanced students with a comprehensive design and construction experience. Each year, a new team of approximately four students tackles broad ideas around increasing access to quality, affordable housing. Over the course of 12 months, they design and build a complete home. Focusing on the general needs of

affordable housing, a client is not assigned to the team until after the design work is largely complete. The concepts 5th-year students use to develop their design brief are based on observations of need, aggregated data, and experience gained from previous projects. Often, students are able to create linkages between seemingly unrelated issues through their designs. For example, in Turner's Home, students designed a home that could accommodate individuals with ambulatory disabilities. The raised home features a ramp integrated into the front porch, a roll-in shower, and increased clearances and turning radii throughout the house. Intelligently, the student team recognized that if a home is designed to accommodate a person with an ambulatory disability, then that person may have trouble seeking shelter during a tornado. Therefore, Turner's team designed an above-ground tornado shelter, which is accessible from inside the house. The ability to shelter in place for homeowners with limited mobility makes a home more livable and life more resilient.

Building on the technical coursework taught during their 2nd-year, the 3rd-year students apply lessons of structural, environmental, and material assembly design to a real building. Students engage with a real client and site, performing a methodical analysis of client need and field conditions. These projects contribute to the larger body of 20K research by testing alternative structural strategies, enclosure details, and plan layouts based on their analysis of the site and client. Practically, starting with one of the prototypes, helps the Studio meet its goal of completing the house on schedule. The focused third-year research can compare and analyze the built details and performance of the existing prototypes, quickly test and improve alternative architectural details, and record and catalogue alternative systems for future study. The relationship with a real client is key to the 3rd-year research. They record what they observe through meticulous, hand-rendered elevations which highlight particular aspects of life that translate into design criteria. Often, these observations become evidence for careful plan modifications, door arrangements, or porch configurations that respond to the particular needs of the client. This close observation of how clients use their current homes frequently improves the usability of the prototypes.

FRONT PORCH INITIATIVE

Front Porch Initiative – an outward-facing branch of Rural Studio – is dedicated to addressing housing quality and affordability, while promoting homeownership in rural communities. The Initiative provides added capacity to Rural Studio; the work is in addition to the Studio's academic mission. Built on 16 years of place-based research, Front Porch Initiative has developed a three-pronged approach to addressing housing affordability. First, the Initiative offers products – in the form of prototype designs – that link home performance to affordability. Second, the Initiative advocates for policies which facilitate equitable opportunities for homeownership. And, third, the Initiative works with partners to extend the impact of Rural Studio's housing affordability research.

Through the Front Porch Initiative, Rural Studio's reach has expanded to a regional area that encompasses the southeastern United States. Through a series of "field tests," Rural Studio engages with housing providers, also referred to as "field test partners," by supplying the partners with house prototypes and technical assistance. In exchange, the field test partners agree to work closely with Rural Studio, providing feedback and data about project implementation. Currently, Front Porch Initiative is actively engaged in projects with housing providers in Alabama, Florida, South Carolina, and Tennessee. Additionally, the Initiative works with governmental, industry, and subject matter experts to engage the non-architectural barriers to housing affordability, including financial, insurance, and land use considerations. The relationship between Rural Studio student research, Front Porch Initiative, housing provider partners and housing policy stakeholders is defined by reciprocal knowledge-building and information sharing.

Design research from the 5th-Year and 3rd-Year Programs is transferred to the faculty-led Front Porch Initiative team, where it is adapted for use with field test partners. This is an ongoing and dynamic process, with the work continually informed and evolved through the most recent student projects. As material selections, building assemblies, and detailing are refined at Rural Studio, those findings are integrated into the expanding library of information that Front Porch Initiative utilizes when working with housing providers. Rural Studio's research not only covers the design aspects of the home, but expands beyond the conventional purview of the architect into the means and methods of construction. Just as the design of a building assembly can be refined to improve its thermal performance, the process

of constructing that assembly can be refined to streamline coordination between trades, shorten the construction schedule, or facilitate other construction management outcomes.

In addition to the design of home prototypes, Rural Studio's applied research offers valuable transferable research that informs a larger understanding of rural housing. In many ways, the object of the house provides a way to illustrate unseen linkages, patterns, and systems. These observations, gained through years of living and working in rural West Alabama, provide insight into the specific challenges and opportunities of rural living. Though observed locally, many of these concepts translate to other rural communities across the country. The transference of knowledge to know-how, through the designing and building of a structure is a key learning outcome for Rural Studio students. In the same manner that students learn from the built projects that precede them at Rural Studio, the homes built by field test partners expand the knowledge base and library of precedents for future student teams. The integration of research gathered through the Front Porch Initiative into Rural Studio's student projects is ongoing. Both academic outcomes and research findings have benefitted from the relationship. The applied, place-based research performed at Rural Studio contributes to the body of knowledge and research around housing affordability and sustainable rural living.