



RURAL STUDIO FARM

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Rural Studio Farm was established in 2010 to raise the question: “How should we eat in rural settings?” The project is the brainchild of Rural Studio, an off-campus design and build architecture program, part of Auburn University School of Architecture, Planning and Landscape Architecture, in Alabama. Located in Newbern, a village 150 km north-west of Montgomery, Rural Studio initiated its activity in Hale County, one of the poorest regions in the United States. The focus is set on students’ education, while assisting the underserved local community, suggesting that everyone, deserves the benefit of good architecture, sustainable design and permaculture. By designing, building and working at the farm, students learn to be critical architects and educated consumers, while giving the local community an alternative vision to the large-scale American food system. The idea is to plant a philosophy, beyond planting food. (Barthel & Freear, 2014)

self-efficiency / passive architecture Design and build / community based architectural program

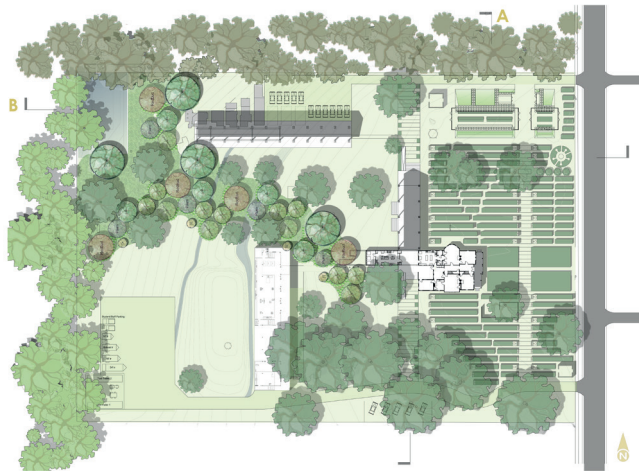


Figure 1. Rural Studio Farm Layout Plan and farming organization © Rural Studio, 2010

HALE COUNTY: A POWERFUL PAST BUT A FRAGILE PRESENT

Since the demise of King Cotton, the regional economy withered and became reliant on low-wage agricultural industries. Today, one third of the population lives below the poverty line, facing the consequences of inhabiting one of the country's largest food deserts. In two decades, if nothing changes, 80% of the local population is expected to become obese (Norwood, 2014). The same residents mostly rely on large-scale food systems, representing a diverse form of contemporary poverty, with irreversible impacts on the community's health, environment and economy. In the last 80 years, Hale County's fresh food availability has deteriorated in lock-step with its landscape, inevitably devolving into unsustainable sub-rural sprawl: small towns to retire or to commute, with no economic strength. Alabama's rural areas are more than places for holiday homes, and critically, more than resources to sustain cities through extraction with little return. Extraction of local resources, leaves in its wake endemic poverty as well as a sense of abandonment. This contemporary occupation of rural settlements tragically alienates the original nature and identity of most of the southern regions.

Since the beginning, Rural Studio has been an advocate for the development and protection of rural areas, designing and constructing public buildings along with



Figure 2. Rural Studio Farm Horticultural Garden and Solar Greenhouse © Rural Studio, 2019

affordable homes and community open spaces. Its work demonstrates that a public University, once located inside a small rural community and supported by the local democratically elected officials, can facilitate significant improvements. Rural Studio brings young designers face to face with rural challenges with the “can do” and “use what is around you” attitudes, together with an unwavering commitment to the place. It’s 30-year-deep roots in Hale County and its history of sustainability gives the Studio a unique voice to help shape an ethical future for Hale County.

RURAL STUDIO: THE PROJECT DEVELOPMENT

In 2010 Rural Studio, started the construction of a small-scale homestead named Rural Studio Farm. Today the Farm feeds 50 students, three days a week, giving the Studio the opportunity to be self-efficient in food production. The Studio understands self-efficiency as a way to think and act locally, with a holistic attitude where the synergy between its parts is greater than their sum.

Rural Studio Farm, is an interdisciplinary laboratory for organic agriculture, passive architectural strategies and construction methods, with low-energy consumption and emissions. The Farm’s prototypes as the solar greenhouse, the horticultural



Figure 4. Greensboro Farmers Market © Timothy Hursley, 2010

garden, the gravity fed irrigation system, and the farmers market stands, are all transferrable and adaptable within other social, economic and environmental conditions of West Alabama.

By designing, building and working at the farm, students learn to be critical architects and educated consumers while giving the local community an alternative vision to the large-scale American food system. The idea is to plant a philosophy, beyond planting food. The farm explores sustainable farming techniques. It is a demonstration farm and an interdisciplinary laboratory to instigate graduate and undergraduate architectural students to think, design and build with sustainable methods and in support of the local community. (Barthel & Freear, 2014)

The farm production is based on permaculture design strategies, no tilling farming techniques along with healthy cooking methods. The self-built infrastructures, designed as prototypes by students, aim to progressively investigate how to develop such systems, based on onsite resources as variables of a cohesive ecosystem. Each project aims for the most appropriate use of the existing landscape conditions, sunlight exposure, above and below ground water resources and soil qualities. In the long term, the role of Rural Studio demonstration farm will be assisting local farmers to implement these strategies, ensuring the best practices in Alabama's Black Belt region.



Figure 5. Greensboro Farmers Market © Timothy Hursley, 2010

PASSIVE TECHNOLOGIES AND SELF-CONSTRUCTION METHODS

The whole process from self-design to self-construction allow the Rural Studio staff to closely observe and adjust each phase of the prototypical farm as it grows, while teaching young architecture students. The various facilities are the manifestation of the educational programme, where cultivating, building, and co-designing are intended as parallel symbiotic systems, driven by the same holistic ethic: to live off of the land, while creatively using it, as a precious resource. To secure the farm with limited cost in operation and maintenance, the students design, test, and construct systems based on modular functions, passive energy power sources and recycled construction materials, all to be implemented in different phases, according to seasonal needs.

The solar seed and greenhouse are designed to be replicated in modules based on four components: 200 litres drum thermal mass wall; a metal roof structure with tempered roof glass panels; an enclosure system with prefabricated metal windows and French doors. In winter, the thermal mass, warmed by the daily sunlight, provides the temperature needed to sustain the warmth of the greenhouse and seed house at night. In summer, the enclosure system keeps the building tempera-

ture low, by using natural cross ventilation and a roof shading device.

Rain catchment and storage in cisterns represents an important low impact development practice. Taking advantage of gravity, the water is collected off the roof, through a large gutter and stored inside underground cisterns. A solar pump pushes the rainwater from the tanks into a water tower that gravity feeds the raised bed drip irrigation system. The only power input in the system is solar energy and gravity. The rain catchment system is designed to be replicated and expanded accordance with the size of the farm's roof surface.

COMMUNITY ENGAGEMENT AT FARMER'S MARKET

In collaboration with the Alabama Department of Public Health, and the city of Greensboro, Rural Studio Farm has supported, since 2010, small food systems facilitating the establishment of a local farmer's market and the design and construction of mobile farmers stands to be replicated regionally. The prototypes include a cooking demonstration stand and an on wheels enclosed stand to provide local fresh food year-round to West Alabama's rural territories. Because the markets generally only operate in the summer the stands can be left on site even when the market is closed. They become a constant and stable presence in town all year long, provide municipalities with a more permanent infrastructure that entices more growers to participate in local markets, and ultimately encourage better community health.

BIBLIOGRAPHY

- Barthel E., Freear A. (2014) *Rural Studio at twenty. Designing and building in Hale County, Alabama*. New York, Princeton Architectural Press.
- Beaulac J., Kristjansson E., Cummins S. (2009) "A Systematic Review of Food Deserts, 1966-2007." *Preventing Chronic Disease* 6, no. 3 (2009). Available online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2722409/> [Accessed 21.07.2020]
- Norwood J. (2014) *Fresh Food for All. Improving Access to Healthy Food in Alabama*. Emerging Change Makers Network, Mobile. Available online at: https://dusp.mit.edu/sites/dusp.mit.edu/files/attachments/project/ECN_report_5.pdf [Accessed 21.07.2020]
- Rural Studio (2013) "Invernadero in Alabama". In: *Dossier Design/Build* n.165. Barcellona, Architettura Viva, p.p.76-79.
- Surdam D. (1998) "King Cotton: Monarch or Pretender? The State of the Market for Raw Cotton on the Eve of the American Civil War". In: *Economic History Review*, vol. 51, pp. 113-132. Available online at: <https://www.jstor.org/stable/2599694> [Accessed 15.07.2020]
- Syrkett A. (2013) "County Fare". In: *Food design from farm to table* 07-2013. New York, Architectural Record, p.57.
- Tullos A. (2004) "The Black Belt". In: *Southern Spaces*. Emory Center for Digital Scholarship: Atlanta. Available online at: <https://southernspaces.org/2004/black-belt/> [Accessed 15.07.2020]