Thoughtful Redesign and Engagement for Higher Education Communities (TREE-C)

Principal investigator: Eric W. Ford, MPH, Ph.D.; Professor; UAB School of Public Health
Contact information: email: ewford@uab.edu; phone: (806) 787-3267.

The Challenge(s): All universities are facing two major challenges. The first, and most widely recognized problem is reduced public subsidies for higher education and research that are squeezing budgets. A second issue is the need to remake the traditional college campuses into a more sustainable form – ecologically, socially and financially. The two problems are converging to create a *grand challenge* of how to transform a community' built environment while receiving fewer resources from traditional sources. In order to address these challenges, universities are having to fundamentally change the way campus ecosystems operate to maximize efficiency.

The purpose of this project is to create a consortium that helps universities transform their built environment more quickly and more sustainably through better community engagement. The **Thoughtful Redesign and Engagement for Higher Education Communities** (TREE-C) project will bring together community funders, green-builders, sustainable material sources and institutional planners to construct mixed-use living facilities. Background on the problem, the construction innovation, the new funding model, the impact on Alabama and how the program can be extended to other communities are discussed.

Background: Many universities are undertaking efforts to bring the populations that spend the most time on campus closer to it physically. For students, some colleges are striving to ensure that all undergraduates have on-campus housing for the duration of their enrollment. For employees, reducing the distance they live from campus to one that can be completed without a personal vehicle is a common goal (i.e., 'work where you live' programs). Some colleges have gone as far to build alumni retirement communities adjacent to campus in order to promote diversity and generate revenue. The potential benefits of such programs are many and include:
- Creating a more dynamic, inclusive and diverse campus community;
- Utilize existing university infrastructure (e.g., classes, dining outlets) more fully;
- Reducing the need for parking facilities which are expensive to build, environmentally unsound and increase risk to pedestrians by virtue of bringing traffic on campus;
- Improving town-and-gown relationships by reducing the draw on community resources (e.g., police and social services) and creating 'student slums' that serve a transient population.

Despite the potential of these programs, they tend to be modest in scope and take many years for the benefits to be realized due to limited funding.

Adaptations and Innovations (Desired outcomes): There are two major adaptations and innovations being proposed. The adaptation is to improve the way mixed-use buildings are designed, sourced and constructed to be more sustainable and community engaged. The innovation is to create a new funding mechanism that creates an investment opportunity for university employees and the community through a public-private partnership.

The construction adaptation has already been proven as a proof-of-concept for campus housing applications. The process is to use cross-laminated timber (CLT), a super-strong plywood, made by gluing different pieces of wood together to form a composite that rivals the strength of steel. Paired with precision milling processes, the new product allows architects to build with timber on a much larger scale than traditional applications. Builders can use traditional wood working tools which simplifies the process. CLT's environmental properties make it attractive; wood acts like a lock box for carbon dioxide, sequestering excess carbon dioxide (CO_2) from the air.

The program at-hand would be to design a mixed-use building that would have both employee and student housing available. Having employees living on campus is a tradition at many institutions but has not been commonly built into the campus ecosystem in modern universities – such as UAB. Including employee housing on or near campus creates a sense of community and engagement that cannot be replicated any other way. In high-cost markets like New York and Los Angeles, on-campus housing is one of the most coveted perquisites. However, such housing is typically treated as a rental and does not allow the employee an opportunity to gain equity through home ownership. Correcting that issue would dramatically improve the value of the endeavor. Having a mechanism that encourages savings through home equity is critical.

The major innovation of the new project is to creating a new funding mechanism that allows university employees to invest in and directly benefit from the campus-development project. The university would form a Private Real Estate Investment Trust (PREIT) for employees. Typically, such investment vehicles are only available to wealthy individuals or institutional investors. Making one available to the campus community would be unique benefit. To begin, 75 percent of the investment (total assets) would be equity shares in the PREIT. The PREIT would borrow the remaining 25 percent in the form of a mortgage. All gross income for the PREIT would be in the form of rents. At least 90 percent of net income would be paid as dividends to shareholders. The target number of shareholders will exceed 100 individuals or entities.

There will be two classes of share issued – all restricted to the university community. One set of shares would be for faculty and staff that reside in the facility and be treated as a form of home equity accrual and require regular share purchases – similar to a mortgage. At the end of their tenancy, the PREIT would buy-back their shares using a prescribed schedule designed to maintain affordability for future employee tenants. The second class of shares would be for employees that want to invest in the PREIT as part of the benefits package. The shares could pay a dividend that is superior to most bond offerings, but less than the payouts normally demanded by institutional investors (a win for both the employees and university). The PREIT will contract with the university to lease the land for an extended period and manage the facility once it is built similar to other dormitory arrangements.

Importance to Alabama: One of the state's leading exports is timber products. The further those materials can be processed into the end-product in the state, the more profit is collected from that renewable resource. In addition, one of the nation's leading dormitory construction firms is here in Birmingham. Creating synergies among Alabama industries is a positive.

The university-community PREIT model can also be monetized with Alabama legal and financial firms having unique expertise gained through this experience.

Team members: There are seven partners that will be needed to begin the demonstration project.

1. UAB Leadership: The university partner will benefit from the infrastructure development, by providing an opportunity for employees to invest and save in their own community and by creating a more sustainable and engaged campus.
2. An investment management organization: Bringing in a firm such as TIAA-CREF that already manages many universities' benefits would be one option.
3. Construction contractor: Alabama is home to one of the nation's leading dormitory and multi-use builders – Capstone Building Corp. (https://bit.ly/2JxNKlt)
4. Green-building innovation partner: Auburn University's School of Forestry and Wildlife is already a leader in promoting the use of CLT products (https://bit.ly/2Jvh4ZY).
5. Professional lawyers and architects: In addition to the UAB representatives, we will work with local firms to build a model that can be easily replicated elsewhere.
6. Faculty and staff stakeholders: UAB has already embarked on a 'Live where you work' initiative and bringing that group into the project would be a logical choice.
7. Students: Having end-users of the product engaged from the beginning is the best way to ensure we are meeting a community's specific goals and needs.