

Building Strategies in Energy Efficiency Retrofits

BUILD RELATIONSHIPS WITH COMMUNITY PARTNERS & PLAN A PROJECT TOGETHER & EXECUTE A PROJECT TOGETHER

This case study focuses on a multi-sector partnership involving local government, academia, non-profits, and community organizations to implement energy efficiency retrofits in underserved neighborhoods, enhancing residents' quality of life while fostering long-term community resilience.

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The "Building Strategies in Energy Efficiency Retrofits" project in Thomasville Heights started with an effort to address the high energy burden faced by low-income households in one of Atlanta's most underserved neighborhoods. Through a collaboration between the City of Atlanta's Mayor's Office of Sustainability and Resilience, Georgia Tech's High-Performance Building Lab, Morehouse School of Medicine, Focused Community Strategies, and the Partnership for Inclusive Innovation, the project sought to reduce energy costs for 16 owner-occupied, single-family homes by implementing a package of standardized energy efficiency interventions. These measures, designed to be both cost-effective and scalable, were aimed at preserving legacy homeownership, preventing displacement, and helping households better cope with Atlanta's increasing urban heat challenges.



Energy Jeopardy activity
Credit: Katie O'Connor

Community engagement was crucial to the project's success. Focused Community Strategies, a local non-profit already working in the community, played a vital role in organizing over 20 stakeholder meetings, ensuring that the interventions were aligned with the needs and preferences of the homeowners. This active participation of residents in the decision-making process fostered trust and allowed the project to meet its goals effectively while respecting the community's unique context. The involvement of private sector contractor partners also brought technical expertise to the table, ensuring the interventions were carried out efficiently and to a high standard. The project's success demonstrated the power of multi-sector partnerships in addressing complex challenges in low-income communities.

To achieve significant cost savings compared to traditional energy auditing methods, the project employed innovative diagnostic techniques. Drones equipped with remote sensing instruments analyzed the building envelope exteriors, minimizing the need for invasive interior inspections. This approach helped overcome homeowner hesitancy, making it easier to recruit participants and deploy interventions more rapidly.

CER Principles in Action

- » C1 - Trust: Build long-term, mutually respectful relationships with community partners; show up for each other to build trust, meet people, and see where things lead. Be an octopus: grow your tentacles.
- » E2 - Sustainable Outcomes: Design project outcomes that will continue to support the community's vision for the future after the project ends.
- » F3 - Capacity Building: Provide technical assistance, technology, and infrastructure which should ultimately strengthen community relationships and power. Prioritize community preferences regarding the use and ownership of all data, tools, and resources.

LESSON LEARNED

"The "Building Strategies in Energy Efficiency Retrofits" project offers key insights for community-engaged researchers. First, it's essential to embrace innovation that directly addresses community needs. The use of drone-based energy audits in this project made interventions more effective and less intrusive, showing how technology can reduce participation barriers while enhancing impact."

The standardized package of energy efficiency measures, including improvements to insulation, air infiltration, and heating and cooling systems, led to a 25% decrease in air leakages, a 9% reduction in weather-normalized energy usage, and a 79% decrease in building envelope anomalies. Most importantly, residents reported a 92% improvement in their ability to cool their homes during the summer months.

The project's success in Thomasville Heights has laid the groundwork for broader applications across Atlanta through the WeatherRISE ATL program, which is now being deployed in other distressed Atlanta neighborhoods.

LESSON LEARNED

"Building strong, trust-based relationships with community partners was crucial to the project's success. Actively engaging with the community, listening to their concerns, and fostering trust through Focused Community Strategies, and already-known entity in the neighborhood, ensured effective collaboration and community buy-in. Researchers should prioritize these relationships, as they are vital to the success of any community-based initiative."



Tarek Rakha (School of Architecture) presenting a drone to community members
Credit: Katie O'Connor

The "Building Strategies in Energy Efficiency Retrofits" project exemplifies the community engagement principle of building long-term, mutually respectful relationships with community partners through its commitment to collaboration and trust-building. By involving Focused Community Strategies, a key non-profit partner with strong ties to the Thomasville Heights neighborhood, the project ensured that the voices and needs of residents were central to the planning and execution process. This approach went beyond merely delivering services; it focused on fostering a sense of partnership and shared purpose.

The project team "showed up" for the community by organizing over 20 stakeholder meetings, which were essential for understanding the specific challenges faced by the residents and tailoring the interventions accordingly. These meetings were not just formalities; they were opportunities to meet people, listen to their concerns, and demonstrate the project's commitment to improving the community's quality of life. By consistently engaging with residents, the project built the trust needed to encourage participation in energy efficiency interventions, which are often met with skepticism. Moreover, the project's willingness to "see where things lead" was evident in its adaptive approach to challenges. For instance, the use of innovative, minimally invasive diagnostic techniques not only made the project more efficient but also addressed community concerns about the disruption that traditional energy audits might cause. This flexibility and responsiveness helped strengthen the relationship between the project team and the community, paving the way for future

collaborations that can build on this foundation of trust and respect.

In essence, this project didn't just deliver immediate energy savings; it invested in the long-term relationship with the community, ensuring that residents felt valued and heard, which is crucial for any sustainable and impactful community engagement effort.

In terms of designing project outcomes that support the community's vision for the future, the project was structured to have a lasting impact beyond its immediate goals. The retrofits were not just a one-time intervention; they were part of a broader strategy to preserve legacy homeownership, prevent displacement, and improve the overall quality of life in Thomasville Heights. By lowering utility costs and increasing property values, the project contributed to the long-term stability and resilience of the community. Moreover, the lessons learned from this pilot phase are being used to scale up the program city-wide through the WeatheRISE ATL initiative, ensuring that the benefits extend to other vulnerable neighborhoods in Atlanta.

The project's focus on scalability and local workforce employment also speaks to its commitment to the community's future. By prioritizing the involvement of minority and disadvantaged business enterprises in future iterations, the project not only aims to create jobs

but also to strengthen the local economy. This approach ensures that the economic benefits of the project remain within the community, supporting its vision for sustainable development and long-term prosperity. Through these efforts, the project lays the groundwork for a future where the community is more self-sufficient, resilient, and empowered to shape its own destiny.

Additionally, this project exemplifies the principle of providing technical assistance, developing technology, and building infrastructure that strengthens community relationships and power by integrating cutting-edge, minimally invasive diagnostic techniques into the retrofitting process. By employing drones equipped with remote sensing instruments to analyze building exteriors, the project not only made energy audits more efficient but also reduced the burden on homeowners, making them more likely to participate. This innovative approach empowered residents with access to advanced technology that directly improved their living conditions, thereby fostering a stronger connection between the community and the project team. Additionally, the technical training and education provided as part of the program equipped community members with valuable knowledge about energy efficiency, enabling them to take ownership of the improvements in their homes and advocate for further advancements.

Related Resources:

- [Community Partnerships Playbook: How to Create Equitable Partnerships between Technical and Community Experts](#)