

ANN ARBOR HOUSING COMMISSION

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Executive Summary

Green and Healthy Rental Housing Demonstration Project

Overview

The Sustainable Community Challenge Planning Grant (CCPG) initiative provided \$293,000 to the Ann Arbor Housing Commission (AAHC) with a matching grant of \$50,000 from the Michigan State Housing Development Authority, to develop a plan to demonstrate sustainable affordable housing practices in Ann Arbor.

The AAHC selected an example of a poorly planned, poorly constructed public housing project site, named North Maple Estates, for redevelopment. The AAHC will demolish and replace 20 single family buildings with 42 units of multi-family attached townhouse-style units as well as renovate 2 duplexes, while adding a new community center. Within the project, AAHC outlined a demonstration of three healthy, high performance building types:

1. Seven (7) high efficiency “baseline” multi-family buildings
2. One (1) six unit multifamily “enhanced” green building
3. One (1) healthy, high performance “deep green” Community Center

The new baseline building projects will (at minimum) be built to Enterprise Green Communities standards for green building construction, and be pre- and post-tested for HERS benchmark building scores. The six-unit demonstration building will be a “deep green” interpretation of a typical floor plan utilized throughout the site, and the community center will be an opportunity to showcase building technologies, while providing an “education center” for monitoring and evaluating the impact of the building solutions.

Objectives

This effort was intended to foster reform and reduce barriers to achieving affordable, economically vital, and sustainable communities. The objectives of this project included:

- Increase affordable and sustainable housing opportunities in a fair and equitable manner;
- Increase energy efficiency and reduce housing costs;
- Provide “hands-on” learning opportunities for the local community, low-income residents, nonprofit housing developers, and construction trades;
- Utilize cutting-edge strategies and techniques that could require revision of the building code; and
- Develop methods for continuous monitoring and evaluation of the effort.

The AAHC assembled a qualified project team to assist in providing technical support and educational services consistent with the goals and objectives of the AAHC and its funders.

Project Team

The project required integration and consistent coordination between architectural, engineering, and “green” consultants to ensure this project’s success. The project team included:



- Norstar Development USA, LP (Albany, NY)
- Norstar Construction (Dearborn, MI)
- Mitchell and Mouat Architects (Ann Arbor, MI)
- Midwestern Consulting LLC (Ann Arbor, MI)
- Process Results, Inc - full-service engineering (Saline, MI)
- Ecology Center – green resource (Ann Arbor, MI)
- ProEnergy Consultants – HERS rater (Ann Arbor, MI)

The Facilities Manager for the AAHC was also a critical component in the process and was consulted in all phases of work to ensure accuracy and thoroughness of the work of the consultants.

Project Scope

The AAHC understood this project was a unique opportunity for the community. The project team developed guiding principles to provide a foundation for project decisions. These included:

1. Cost Effective Energy Solutions
2. Eliminate or Substantially Reduce Toxicity
3. Emphasize Material Durability (Extending the Life Cycle)
4. Education is a Key to Success
5. “Push the Envelope” on Green

The Ecology Center was hired to facilitate the process and they were given four primary task areas to ensure this project’s success. The tasks outlined included:

1. Integrated Project Planning
2. Community Engagement
3. Monitoring and Evaluation
4. Resident Engagement

Process

Integrated Project Planning

An integrative process has resulted in projected baseline buildings that score well above certification levels through the Enterprise Green Communities Criteria (50+ points). Furthermore, the team was able to prioritize energy efficiency and proposed buildings project a 30% (or better) reduction in energy use per unit. The “enhanced” six-unit model will feature a number of exemplary materials that are highly durable and demonstrate reduced levels of toxicity, protecting the health of residents.

The Community Center is planned to serve as a model for neighborhood-level climate resiliency. The building will provide shelter in periods of severe weather events and power outages, and offer educational opportunities towards self-reliance and food security.

Community Engagement

The project team has continually reached out and engaged the community. AAHC accomplishments include, but are not limited to: a green building workshop for minority middle school students; green and healthy home educational videos for residents developed by local high school students; and a business model for a community solar project on the site developed by University of Michigan business students.

Monitoring and Evaluation

The project team is piloting the use of WegoWise, an energy benchmarking tool, to be used to track the energy use and consumption of the new buildings on site. Additionally, the Ecology Center is working with the University of Michigan's School of Public Health to develop a plan to monitor indoor air quality and quantify occupant health impacts.

Resident Engagement

The City of Ann Arbor's Energy Office has developed a series of energy related videos, pamphlets and educational materials to assist residents reduce energy consumption. Additionally, the Ecology Center has been working with high school students on creating a set of comprehensive green and healthy household videos, describing the eight essential elements developed by the Green and Healthy Homes Initiative. The Arts Alliance has held workshops with residents of the properties to help shape the project design and incorporate community art into the project.

Next Steps

The project was awarded Low Income Housing Tax Credits by the State of Michigan in December 2014 which was critical for the project to move forward. The AAHC and the developers are close to securing all of the financing needed to begin construction. The next steps for the green construction demonstration component will include the following:

1. Work with architect and development team to finalize construction drawings
 - a. Submit project scope to Enterprise Green Communities
 - b. Develop relationships with green product manufacturers to showcase materials and provide community workshops to demonstrate installation
2. Launch community-based solar photovoltaic project
 - a. Develop and implement fund raising plan
3. Work with city building department to streamline solar permitting processResident and neighborhood participation workshops
 - a. Energy management sessions
 - b. Community food and rain gardens
 - c. Community art and design integrated into construction and landscaping
 - d. Deconstruction "hands-on" workshops and recycling Day of Action with local nonprofit recycling partner
 - i. Work to increase required Construction and Demolition debris recycling ordinance locally
4. Develop long-term monitoring process for energy use, energy savings, product durability, and product toxicity
5. Develop media and marketing campaign

The AAHC will continue to demonstrate sustainable housing practices in Ann Arbor and share lessons learned with the community and regional partners interested in green construction. The project team is convinced that the work being done at North Maple Estates will be replicable, beneficial to its residents, and inform sustainable affordable housing developments in the future.