



FOUNDATION

CASE STUDY

2009 AWARDS OF EXCELLENCE

AFFORDABLE HOUSING BUILT RESPONSIBLY

PROJECT AT A GLANCE

Location: Dorchester, MA

Project Type: Urban Infill, Mixed Use, New Construction

Ownership/Rental: Rental

Project Completion Date: Oct. 2008

Size:

43 units in multifamily building

.4 Acres (total)

113 units/acre

Affordability:

< 30% of AMI: 17 Units

31-50% of AMI: 16 Units

51-80% of AMI: 9 Unit

Retention of Affordability:

Indefinitely, based on tax credits

Project Team:

Developer: Viet-AID

Architect: Chia Ming Sze Architects

Contractor: CWC Builders

Key Partners: New Ecology

Development Cost (per unit):

Land cost: \$0

Hard costs: \$188,000

Soft costs: \$103,200

Total Costs: \$291,200

Grants/Incentives: \$256,600

Net Costs: \$34,600

Cost of Greening (per unit):

Total Cost of Greening: \$13,400

Rebates/Incentives: \$11,900

Net Cost of Greening: \$1,500

Percent of Total: 1%

Standards Used:

Green Communities – Granted

LEED for Homes – Silver

ENERGY STAR – Certified

1460 House

Vietnamese American Initiative for Development (Viet-AID)



The 1460 House is an example of urban infill and transit-oriented development. It is located on two abandoned lots, has zero off-street parking, and is separated from transit trains by only a pedestrian walkway. But because of this location, materials were chosen that mitigated sound, in addition to providing energy efficiency.

The project was also constructed through outstanding planning and coordination. The integrated design process reduced design time and improved communication as the project progressed.

Outstanding Attributes

- Excellent model for decision making: extraordinary integrated design
- Sustainable site: very high density, transit oriented, roof run-off managed on-site
- Energy Efficiency: High level of energy performance (HERS Index of 41, or 59% better than code)

Measurable Performance Achievements Relative to Code

Energy savings:	60%
Water savings:	36%
Construction waste reduction:	84%
On-site surface water capture:	100%

“The 1460 House is a real example of a sustainable transit-oriented development that has been an asset to the community and environment.”

– Project Developer



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Green Features

Integrated Design Charrette: The first design charrette included the project team and its partners. The group discussed goals, greening opportunities, and green programs to pursue. The project team then used energy model results and cost-benefit analysis to identify cost-effective strategies to improve the building envelope and mechanical systems. This energy efficiency then qualified the project for a grant for a photovoltaic (PV) system. To stay within the budget of the grant, PV was only added to units that would serve very low income residents.

A project team member reviewed all construction plans to ensure that green features were integrated and clearly represented in specifications. During construction, the contractor and Energy Star Homes staff worked with subcontractors to ensure that the design intent was carried out.

Location and Site: This project is near a light rail station, bus station with local and regional buses, retail, and health services. To improve pedestrian access, the team re-constructed a walkway to the train station with improved lighting and landscaping, and built a walkway to the bus station. Constructing on a tight site was challenging. But the resulting project has extraordinary density and facilitates alternative transportation. The team added a small courtyard with drought tolerant plants. Roof run-off is collected in an underground cistern, and slowly infiltrates into the ground.

Energy Efficiency: The team tightly sealed the building envelope and chose components (e.g., windows, insulation) that would both provide energy efficiency and mitigate sound. They used efficient heating equipment and an Energy Recovery Ventilator (ERV). Solar panels provide energy for common areas, but also for the lower-income units. The overall energy efficiency enables monthly rent for the entire building of \$750, including heat.

Partnerships

The initial design charrette included project team members and representatives from the Boston Urban Asthma Coalition, the Department of Mental Health (some residences are served by this agency), the Energy Star for Homes program, and National Grid. New Ecology reviewed construction specifications to ensure that green features were included and well represented, and continues to work with Viet-AID to track the actual energy performance of the building.

Financial Information

Funding for green measures included:

- City of Boston Dept of Neighborhood Development: \$400K for PV
- Enterprise Community Partners Green Communities program: \$5K Green Charrette Grant; \$46K Planning and Construction Grant
- Energy Star Homes program: \$49K in rebates
- National Grid: \$12K in rebates for efficient mechanical systems
- Massachusetts Technology Collaborative
- Tax credit funding and subsidies from city and state

GREEN HIGHLIGHTS

- 6 commercial spaces on 1st floor
- Super-insulated (ceiling = R40 8" poly-iso) and air-sealed building envelope
- High efficiency condensing boilers (93 percent AFUE)
- ENERGY STAR lighting and appliances
- PV solar rooftop electricity generation
- White roof
- Green Label Plus Carpet
- Low flow water fixtures
- Low VOC paints & adhesives
- No on-site parking, but tremendous access to transit

PRIMARY CONTACT

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