

## Appendix B

# Boston One Touch Project

## The 7 Sussex Street Story

*Prepared by Naomi Mermin, Naomi Mermin Consulting for the National Center for Healthy Housing*

### Background

The National Center for Healthy Housing (NCHH) is working with many partners in Boston to improve the environmental quality of Boston's affordable housing. NCHH advocates for the integrated and systemic adoption of healthy and green practices within public agencies, with non-profit, public, and private property owners, with developers, and with advocacy groups that provide health, housing, and environmental services. The project, known as the Boston One Touch Project, grew out of the conviction that we could improve the health of low-income children by more systematically connecting the public health and housing services targeted to low-income families with interventions that more holistically address housing across a green and healthy continuum. The Boston One Touch Team includes Peggy Hegarty-Steck, Program Manager with the National Center for Healthy Housing, and Naomi Mermin and Ellen Tohn, Senior Advisors to the National Center for Healthy Housing.

To identify the opportunities to directly integrate health and housing measures in Boston's affordable housing, we partnered with the City of Boston's Department of Neighborhood Development (DND) Homeowner Services (HOS) division. HOS provides homeowners with services and financing to maintain and improve their homes. The division's focus on existing housing stock in lower income neighborhoods overlaps with the families at greatest risk for experiencing housing-based health threats. We are evaluating the opportunities and costs of achieving healthy and green goals in these renovation programs.



When the One Touch team met with the HOS staff, they were very supportive of the goals, particularly on the issue of health. However, they raised the concern that “green” items tend to be “budget busters.” The HOS managers constantly grapple with prioritizing how to best invest their limited funds. In most cases, property owners are also responsible for financing a share of the housing rehabilitation. Given the focus on low- and moderate-income owners and the need to maintain affordable rents, strategic investment of funds is critical.

We agreed to try a pilot program to see if recommended changes were feasible and how the changes would impact the budget.

A program within HOS, the Residential Development Program (RDP), allows low- to moderate-income families to purchase one to three unit, tax-foreclosed properties that need complete or “gut” rehabilitation. This comprehensive rehabilitation offered the perfect testing ground to address specifications for all systems in the houses.

Approximately three to four homes a year are renovated and brought back into the market through this program. The typical two-family project is financed with \$70,000 in HUD HOME funds, plus a mortgage (taken on by the owners) of \$250,000, for a total investment of \$320,000. The city provides the property for a nominal fee of \$100 to ensure the new owners have “equity” built upon completion of the rehabilitation project. Each property that comes into the program is unique and requires a unique set of specifications.

### **The Pilot Project**

7 Sussex Street is a single-family, brick row house in Roxbury, a neighborhood of Boston, Massachusetts. It is a three-story structure (including a walkout basement) of approximately 1,230 square feet, with two bedrooms, plus one and a half baths. The NCHH team met to walk through the building with the program manager Katie Cahill-Halloway and the construction specialist Steve McKiernan. We also invited Mike Schoenfeld from the Energy Star Homes program, then run by Conservation Services Group. In addition to addressing issues related to health, water, and energy efficiency, we wanted to see if we could achieve a recognized standard like the Energy Star Homes.

The house had moisture damage in a number of locations. We started by discussing the building shell and strategies to achieve a good thermal envelope, manage moisture, and assure required air changes. Mike Schoenfeld brought a tremendous amount of expertise in energy products – particularly related to insulating materials. He suggested we consider using spray foam insulation. While the foam is more expensive than fiberglass batts – the more traditional insulation used by DND – given the small surface areas along with foam’s ability to air seal and insulate, it appeared we could offset the material cost with labor cost savings. Mike used REM rate software to put together a model of 7 Sussex Street that could achieve Energy Star. The model called for R15 foam insulation for walls (@ 4”), Windows with U values SHGC of .35/.35, Ceiling R40 foam, Skylight area 3’x4’ U SHGC of .4/.4, Boiler AFUE 92% and an integrated tank off the boiler. Eight air changes/ hour at 50 p. This set of conditions would score 71, with the Energy Star threshold being 85 or lower.

Steve McKiernan took the information from Mike’s model and developed the required specifications, using the city’s SpecMaster program. The NCHH team and CSG agreed to review the specifications and make adjustments. When the specifications came back, the Energy Star Homes contract had moved from Conservation Services Group to ICF International. Dave Boettcher from ICF then joined the project as our energy expert.

Key Healthy and Green Specifications:

- Insulation and air sealing required insulation work to conform to the Energy Star Thermal Bypass Checklist. Required general contractor (GC) to notify RDP construction specialist when the

insulation is complete, but before the dry wall is installed to allow time for the Energy Star rater to inspect the work. Required GC to call the Energy Star rater for inspections when they arrived at the punch list stage with all mechanical systems operating for final inspection.

- Water-saving toilet (TOTO Aquia dual flush or equivalent), low flow shower head, and sink faucet no greater than 1.5 gpm
- Quiet, programmable Energy Star bathroom fan (Panasonic .5 sone)
- Sealed combustion appliances (boiler and water tank)
- Energy Star appliances (stove, refrigerator, washer, dryer), higher efficiency windows, boiler, and water tank
- Drainage pan for hot water tank
- Venting of fans, dryer, boiler, and water tank to exterior
- Pan flashing of all doors and windows
- Energy Star dehumidifier connected to drain for basement
- Required that the warranties and other materials be packaged in a 3-ring binder with appropriate envelopes/storage for each warranty, along with clear identification of where the product is installed in the home. Contractor to provide any maintenance information required for continued proper function of materials or products installed. All information keyed to a floor plan.
- Required that all interior paints and varnish must meet Green Seal Standard G-11, such as Benjamin Moore Eco-Spec.
- Detailed language on carbon monoxide detectors (MA law requires photoelectric smoke alarms within 20 feet of a kitchen or bathroom). Combination smoke and fire alarms must have simulated voice and tone alarms that clearly distinguish the two types of emergencies. (It wasn't clear that you could achieve both requirements, so we wrote it out specifying that if the technology wasn't available, then separate smoke and CO alarms would need to be included.)
- Required solid pine or exterior-grade plywood for closet shelves, and specified low or no-urea formaldehyde cabinetry for kitchen and bathrooms.

We helped identify rebates available both for recommended products and ones such as thermostats which were already specified.

The project went out to bid, and the bids came back well within range. They will be able to target the home to a family with a qualifying income between \$37,000 and \$46,000. They can potentially receive \$1,125 in rebates (Munchkin boiler, SuperStor water heater and programmable thermostat). They may achieve an additional \$750 incentive if they meet the Energy Star Homes criteria, and potentially the owners will get a \$2,000 tax credit if the energy efficiency gains are very significant. The energy efficiency and water efficiency measures will continue to save the family money, ensuring that more is available for the other necessities of life.

We will continue to follow the 7 Sussex story as the renovation is undertaken. We now know that specifications for health, indoor air quality, moisture control, water, and energy efficiency can be achieved without burdening projects with unreasonable costs, and that healthy and green need not limit affordability. Susan DiMatteo, Assistant Director of HOS, noted, “The savings are real. The \$800 plus on rebates alone for heating and hot water systems is an immediate return to the owner.”

The One Touch model supports the cross disciplinary work (health, green, affordable) tied to the real work the city program tackles every day. We were able to maximize the health and financial benefits for a family while achieving larger affordable housing and environmental goals. The HOS program “touches” over 1,000 units every year, offering the opportunity for over 1,000 families to be healthier and more economically secure while creating a greener, healthier city.

*For further information or updates on the 7 Sussex Street project contact Naomi Mermin, Naomi Mermin Consulting at [NMermin@maine.rr.com](mailto:NMermin@maine.rr.com) or 207-775-1927.*