







Vermont Healthy Homes Demonstration Project

Collaboration of:

-  Vermont Housing & Conservation Board
-  Vermont Department of Health
-  UVM School of Nursing
-  Boston Public Health Commission
-  Asthma Regional Council of NE
-  U.S. Dept. of Housing & Urban Develop.

Background

- ☞ HUD awarded the Asthma Regional Council (ARC) and its partners a \$766,355 Healthy Homes Demonstration Grant.
- ☞ HUD awards about \$5 million per year for demonstration programs that address health and safety issues in residential settings.
- ☞ Advocates pushing HUD/Congress to substantially increase funding.

ARC Project Objectives

- 📄 Create and disseminate guidance for the design, renovation and maintenance of asthma-safe homes.
- 📄 Encourage publicly-funded housing agencies to utilize asthma-safe practices and materials during construction, renovation, and maintenance.

ARC Project Objectives

- ☞ Evaluate the benefits of assessing and mitigating common asthma triggers in the homes of asthmatic children.
- ☞ Increase awareness among families, physicians, and others about potential asthma triggers in the home.

Housing Interventions

- 📄 The City of Boston has administered a Healthy Homes Program and completed asthma trigger interventions for a number of years.
- 📄 Vermont was included in this grant to better understand conditions in rural housing compared to inner-city neighborhoods.

Housing Interventions

- Under this grant, Boston completed 75 interventions and Vermont completed 27.
- Study protocols and data collection were coordinated to allow comparison of data between Boston and Vermont.
- Boston collected some environmental data that Vermont did not.

Vermont Interventions

☰ Goal to assess and mitigate 25 homes of asthmatic children

☰ Participants recruited through outreach to pediatricians, asthma specialists, school nurses, Section 8 tenants, and lead hazard reduction program participants













Vermont Interventions

- 📄 1-on-1 education of parent/guardian
- 📄 Written information and general guidance on maintaining a healthy home
- 📄 Inspection of home to identify asthma triggers and other health or safety issues
- 📄 Written report of specific findings & recommendations
- 📄 Low level treatments where appropriate

Equipment Provided:

- ☞ Vacuum - HEPA-filtered canister style with beater bar attachment for carpets
- ☞ Air purifier - HEPA & carbon cloth-filtered
- ☞ Bedding for child - dust mite resistant
- ☞ Digital thermometer / hygrometer
- ☞ CO and smoke detectors/alarms
- ☞ Dehumidifiers (if appropriate)





Observations - Physical

- 📄 Carpets that harbor dust & allergens
- 📄 Lack of bath ventilation causing excessive mold and mildew problems
- 📄 Improperly vented dryers
- 📄 Plumbing leaks / sewer gas issues
- 📄 Moist earthen and gravel basements
- 📄 Structural issues / roof leaks
- 📄 Safety - heating and/or electrical problems











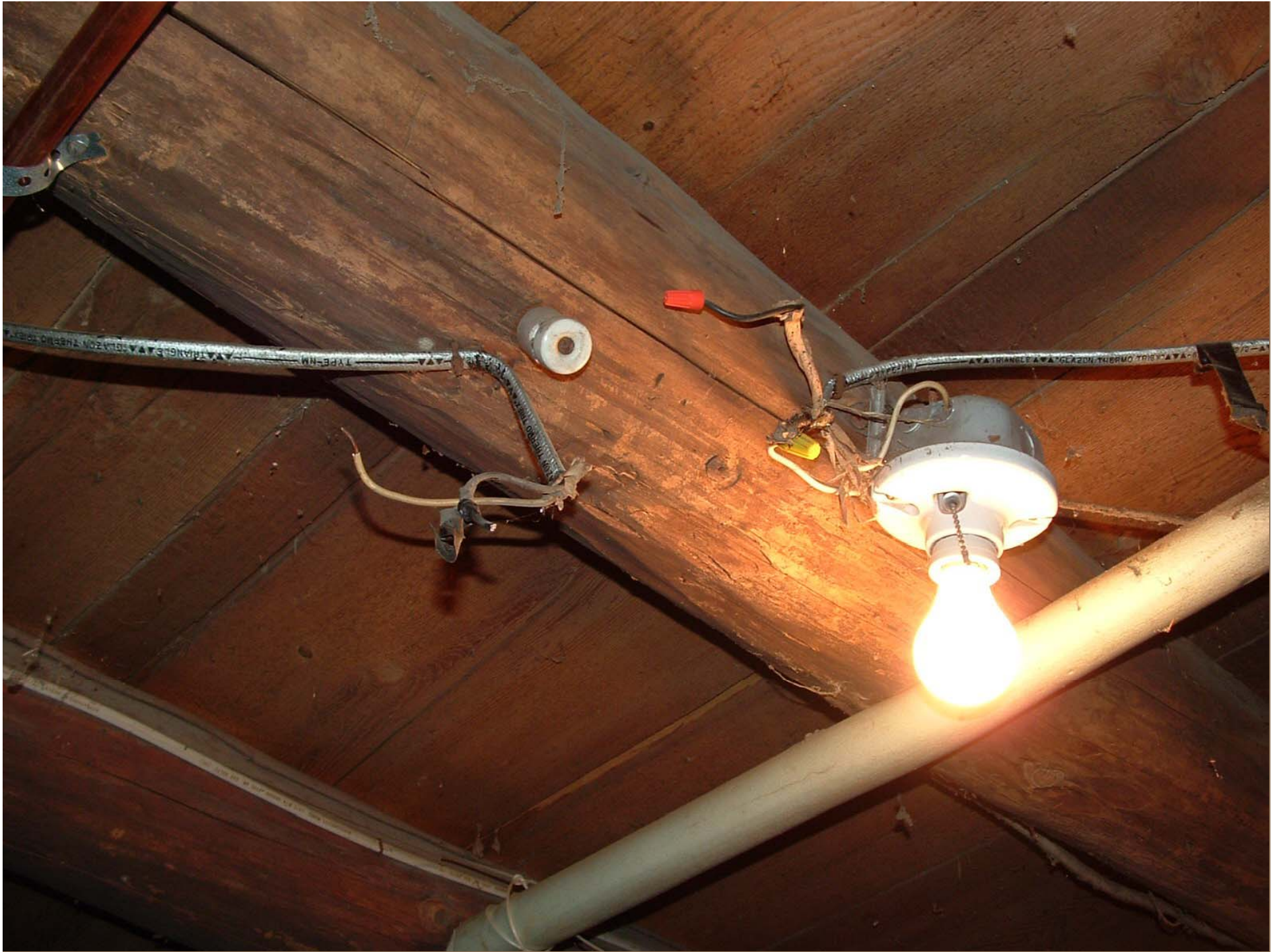






TRAMEX
PROFESSIONAL EQUIPMENT
Moisture Encounter
Scale 1 - Wood, Timber
Scale 2 - Drywall, Flooring
Scale 3 - Plaster, Brick
Non-Destructive Moisture Detection

Property of UHCO
Paul Brown 605-5261





TRAMEX

**PROFESSIONAL
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**Moisture
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Scale 1 - Wood, Timber.
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Non-Destructive Moisture Detection

Property of UICCB
David Hogan 08-5064

Observations - Family Practices

- ☞ Wood stoves - large source of particulate matter, fire safety issues
- ☞ Perfumes and personal care products
- ☞ Air fresheners (i.e. plug-in VOC dispensers)
- ☞ Cleaning products / aerosol disinfectants
- ☞ Dust and debris from renovations
- ☞ Poor cleaning practices



















Holmes.
AIR PURIFIER/IONIZER







GLOROX
BATHROOM CLEANER
with **Teflon**
surface protector
NET WT 1LB 8 OZ
(680 g)
KEEP OUT OF REACH OF CHILDREN
WARNING: CONTAINS BLEACH
READ ADDITIONAL PRECAUTIONS











Observations - Pests

- ☞ No sightings or evidence of cock roaches
- ☞ Evidence of mice common / no rats
- ☞ Ants a common problem
- ☞ Cluster flies
- ☞ Earwigs / Silverfish
- ☞ Ladybugs
- ☞ Integrated Pest Management (IPM) info given to participants

Treatments

- Project had about \$2500 per property for mitigation
- Carpets in children's bedrooms replaced with wood or laminate
- Bathroom ventilation installed
- Plumbing problems addressed
- Basement moisture addressed











Data Collected - Initial

- Information on family cleaning practices and efforts to control asthma triggers
- Health survey of asthmatic children
- Potential asthma triggers identified during site inspection
- Temperature and humidity readings
- Carbon monoxide (CO) levels

Data Collected - Follow-Up

- 📄 Follow-up health survey of children conducted by telephone interview at 2 months, 4 months, and 1 year.
- 📄 Additional survey at 1 year included questions about use of equipment, following recommendations in report, etc.

Findings

- 📄 Follow-up health survey data indicate asthmatic children experiencing less respiratory distress since intervention.
- 📄 Children had significantly fewer episodes of wheezing, coughing, tightness, did not have to stop playing due to asthma attacks.
- 📄 Children did not wake up at night as often.

Findings

📄 The caregiver did not wake up as often or need to change plans due to child's asthma symptoms at the 2 and 4 month follow up. By twelve months, this change was no longer significant

📄 Children missed less school due to asthma at the 2 month follow-up but this was no longer significant at the 4 and 12 month follow-up.

Findings

- ❏ No significant change in medication use observed.
- ❏ Families did not get rid of pets.
- ❏ Family cleaning habits did not change significantly as self reported in telephone survey.
- ❏ Use of candles and air fresheners did not change significantly.