Day Six – Week two

Tools & equipment
Audit forms & protocols
  What are we trying to learn about the building?
  Energy use vs. energy waste?
  Building degradation issues.
MEAFF
“Must-have” Tools & Equipment

- Personal identification
- Pen & audit form or note pad
- Blower door
- Ladder
- Basic hand tools:
  - Tape measure
  - Flashlight
  - Assorted screwdrivers - adjustable wrench - pliers - etc.
  - Plastic crochet hook - probes - etc.
Nice stuff to have!

- Digital camera
- Battery powered driver/drill w/assorted bits
- Electrical circuit analyzer & tracer
- Electrical use meter (i.e. Brultec)
- Indoor/outdoor thermometer w/RH
- TI86 graphing calculator with WxWare™ software
- Fiber optic or fixed tube boroscope
- Infrared camera
- Moisture meter
- Spare batteries!
WHERE TO GET IT!

- Blower door
- DG-700 Pressure & Flow gauge (digital manometer)
- Exhaust Fan Flow Meter (pressure pan)
- Infrared
  - The Energy Conservatory
    5158 Bloomington Avenue S.
    Minneapolis, MN 55417
    (612) 827-1117

- TI-86 & software
  - R. J. Karg, Assoc.
    220 Meadow Road
    Topsham, ME 04086
    (207) 725-6723

- Airtrack® control
  - Tamarack Technologies, Inc.
    320 Main Street
    PO Box 963
    Buzzard’s Bay, MA 02532
    (800) 222-5932

- Airtrack® control (significantly less expensive)
- Various other fan controls
- Panasonic (& other) fans
- Two part foam (many types)
- Air sealing products
  - EFI
    40 Washington Street
    Westborough, MA 01581
    (800) 876-0660

- Infrared
  - Monroe IRT - Flir Systems - Bret Monroe
    Kennebunk
    (800) 221-0163

- Brultech ECM 1200 Energy Consumption Monitor & Logger
  - Brultech Research Inc.
    12L67 Harbourview Road
    Port Colborne, Ontario
    L3K 5V4
Audit forms & protocols

What are we trying to learn about the building?

- Energy use vs. energy waste?
- Building degradation issues.
- Potential to save (MEAFF).

Basic auditing methods

- Top down or bottom up!
- Clockwise or counter clockwise!
- IR scan, blower door, IR scan

Develop a system that works for you!
At the House…..

- Sketch building
  - Floor area, story height, heated bldg height
  - Total square ft of windows & doors by R-value
  - Determine conditioned, partly conditioned & unconditioned spaces

- Complete a MEAFF
  - Blower door section
  - Fuel use:
    - Combustion appliance – IAQ section (MEAFF page II)
      - Record tag info on heating system.
    - Insulation location & amounts (MEAFF page III)
In the basement

- Note general condition.
  - Record anything unusual.

- Check paperwork:
  - The installer must leave the manual & an efficiency test result.
  - Record installation & most recent service dates.
  - Record nozzle firing rate, pump pressure & efficiency.

- Identify the system, fuel type & delivery method.

- Obtain rated output capacity (tag on appliance)
Homework

- Sketch building with dimensions.
- Complete a MEAFF
  - BTU/Sq’/HDD
  - Heated volume
  - Pollution/Moisture assessment
  - Appliance survey
    - What is heating system?
    - BTU output?
    - How many zones?
  - How is domestic water heated?
  - R values – what’s where?
- How many CAZ? Where are they?
  - CAZ test result

Complete an Audit Exercise Report (work order)