

# Auditor I

**DAY SIX**

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MaineHousing

A stylized, low-poly mountain range graphic in shades of teal and blue, located at the bottom right of the slide.

# 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)