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# J. MYERS BUILDERS, INC.

## Who are we?

- Construction, insulation and weatherization contractor located in Lisbon, NH
- Energy auditors and installers for NHEC and Eversource Commercial Weatherization program
- Energy auditors and installers for the residential Home Performance with Energy Star program
- Building Performance Institute (B.P.I.) certified



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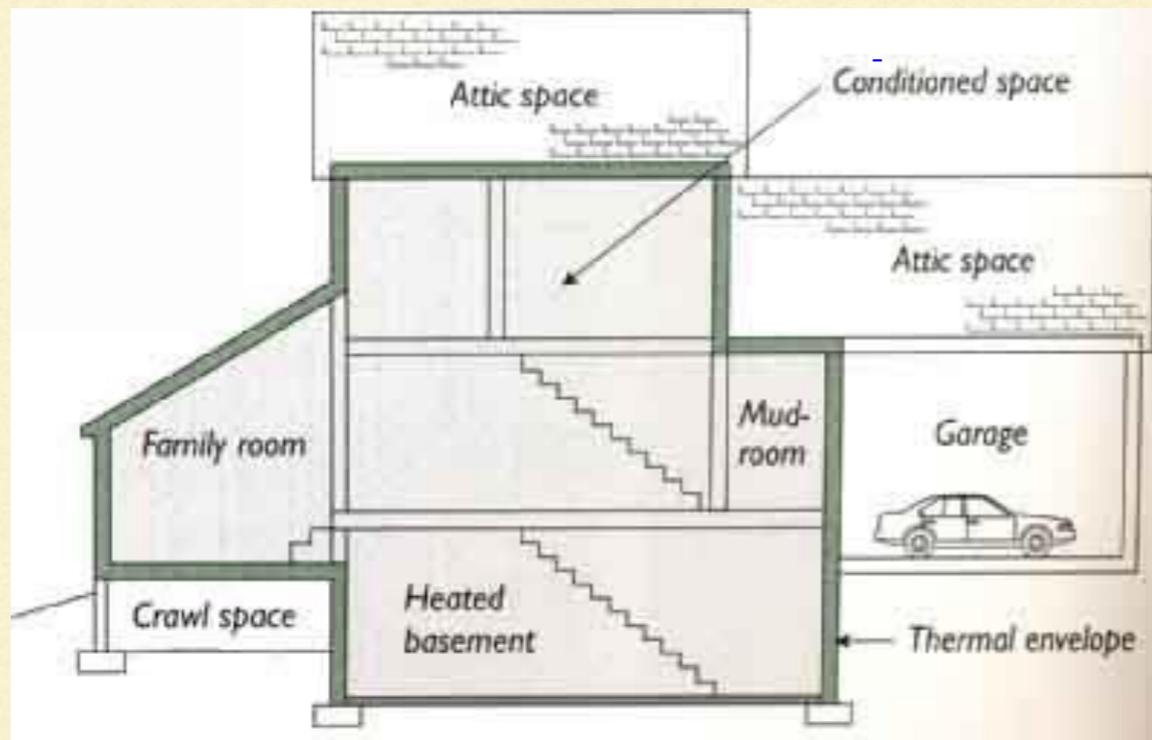
# WHAT DO WE LOOK FOR DURING THE ENERGY AUDIT?

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- Thermal envelope
- Air leakage
- Insulation
- Heating, ventilation, and air conditioning
- Moisture



# IDENTIFYING THE THERMAL ENVELOPE: WHAT DO WE LOOK FOR?



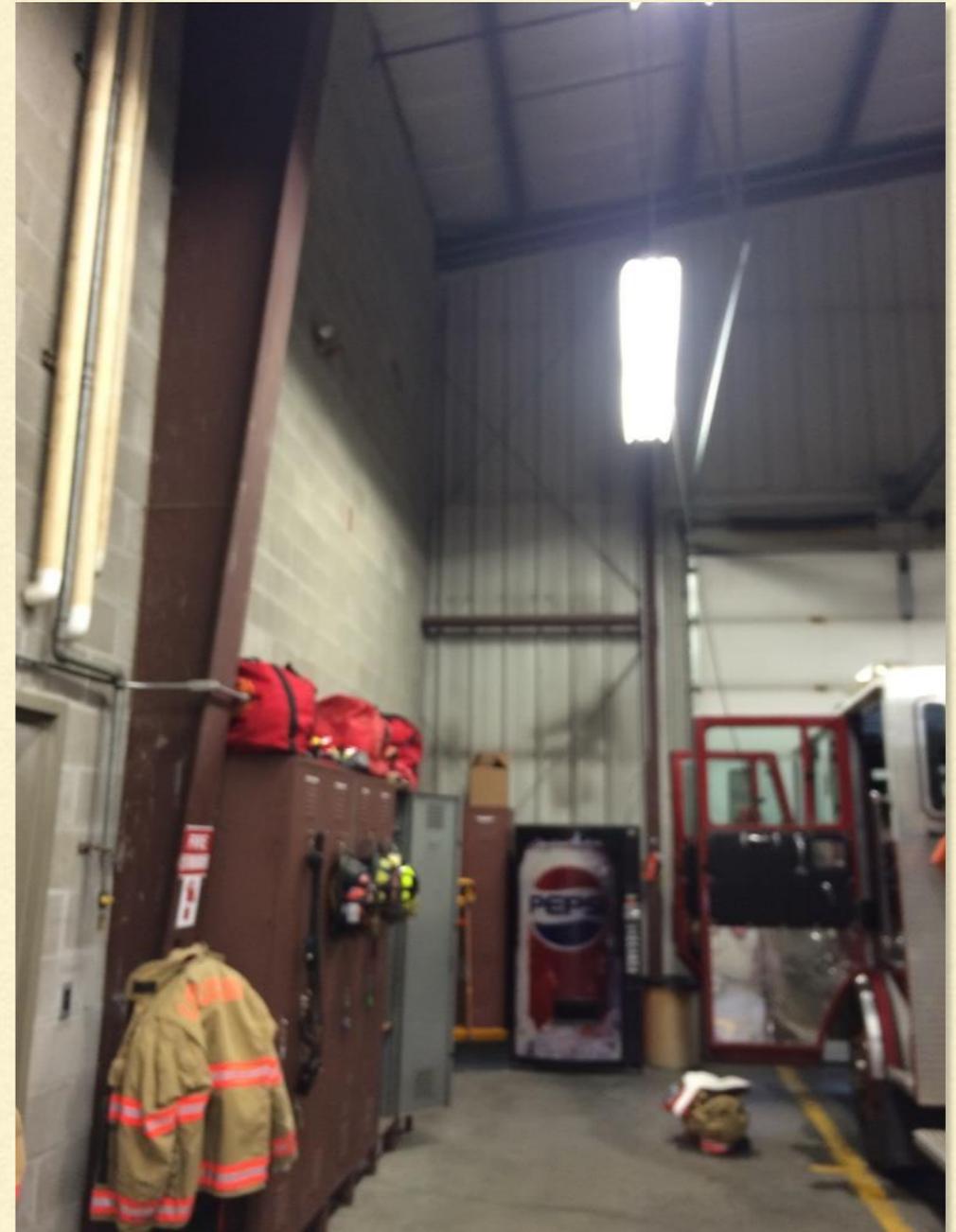
[http://www.breenhvacdeshign.com/attachments/Image/thermal\\_envelope.jpg](http://www.breenhvacdeshign.com/attachments/Image/thermal_envelope.jpg)

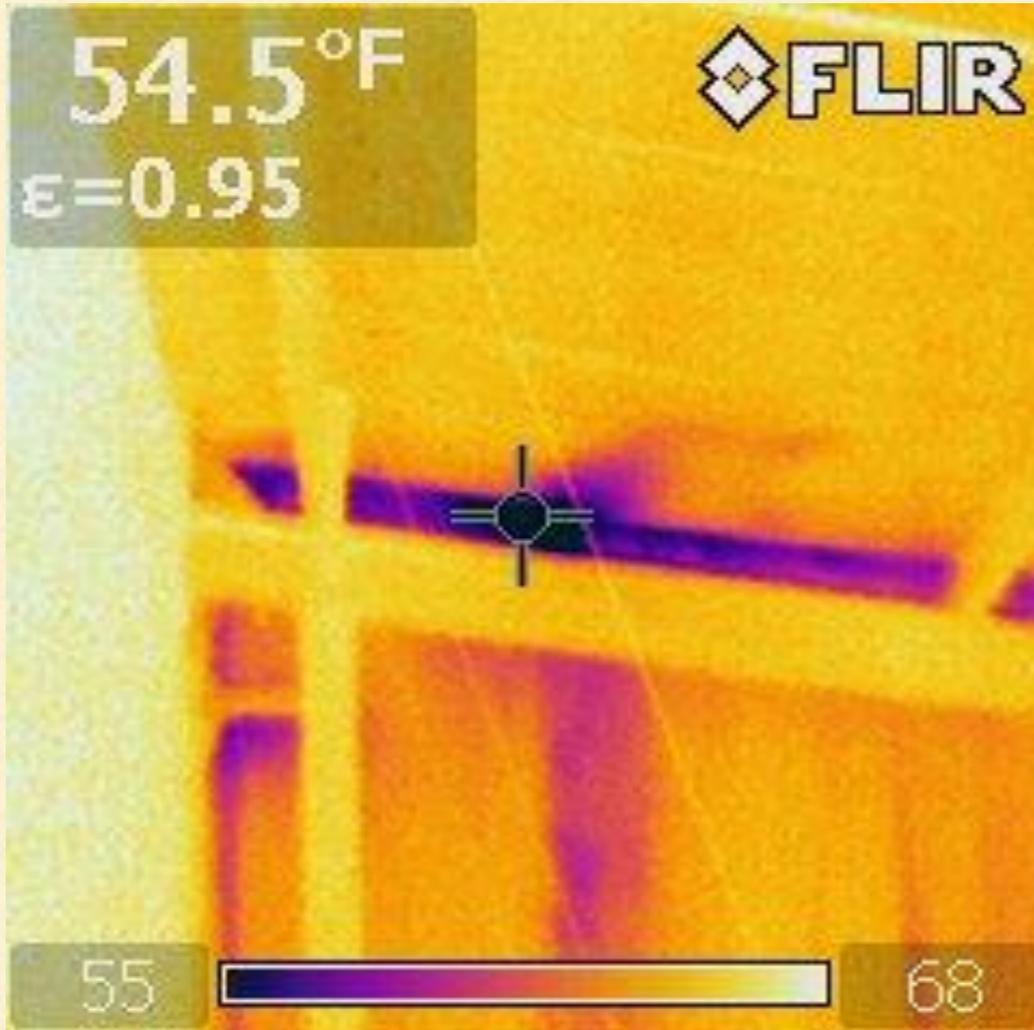
- Components of the thermal envelope:
  - Windows and doors
  - Exterior walls
  - Ceilings and/or roof
  - Foundation walls, above and below grade, or the floor
  - Crawl space walls or the ceiling
- What materials make up the thermal boundary *and* the air barrier?
- Is the thermal boundary continuous?
- Is the thermal boundary in direct contact with an air barrier?

# FINDINGS AND RECOMMENDATIONS FOR FIRE STATION



- Exterior walls of fire station and 2nd floor are double steel panel with 4"-5" gap
- Exterior walls of 1st floor have a 12" gap between the insulation and the blocks
- Roof is insulated with 3"-4" of vinyl wrapped fiberglass
- Dial thermostats
- Dryer vents into lint catcher and 2 sewer pipes terminate in the building
- Offices lack CO detectors





## Improvement Package; Spray Foam Roof

### Estimated Annual Energy Savings

**\$1,649**

Fuel	Annual Cost	Annual Savings (\$)	Annual Savings
 Electricity	\$8,346	\$0	0
 Oil #2	\$1,752	\$348	118 gallons
 Pellets (for pellet stoves, premium)	\$4,057	\$1,302	5.6 tons

### Est. Total Project Cost

**\$25,168**

### Est. Annual Energy Costs



### Package Savings Summary

#### Improvement Package; Spray Foam Roof for Best Value

Total Installed Cost	\$25,168
Annual Energy Cost Savings	\$1,649
Simple annual payback, years	15
Savings to Investment Ratio	1.1
Total Energy Savings, MMBtu	109.9

## Improvement Package; Insulate Exterior Walls

### Estimated Annual Energy Savings

**\$1,036**

Fuel	Annual Cost	Annual Savings (\$)	Annual Savings
⚡ Electricity	\$8,346	\$0	0
🔥 Oil #2	\$1,752	\$218	74 gallons
🔥 Pellets (for pellet stoves, premium)	\$4,057	\$818	3.6 tons

### Package Savings Summary

#### Improvement Package; Dense Pack Walls for Best Value

Total Installed Cost	\$19,840
Annual Energy Cost Savings	\$1,036
Simple annual payback, years	19
Savings to Investment Ratio	1.1
Total Energy Savings, MMBtu	69.0

### Est. Total Project Cost

**\$19,840**

### Est. Annual Energy Costs

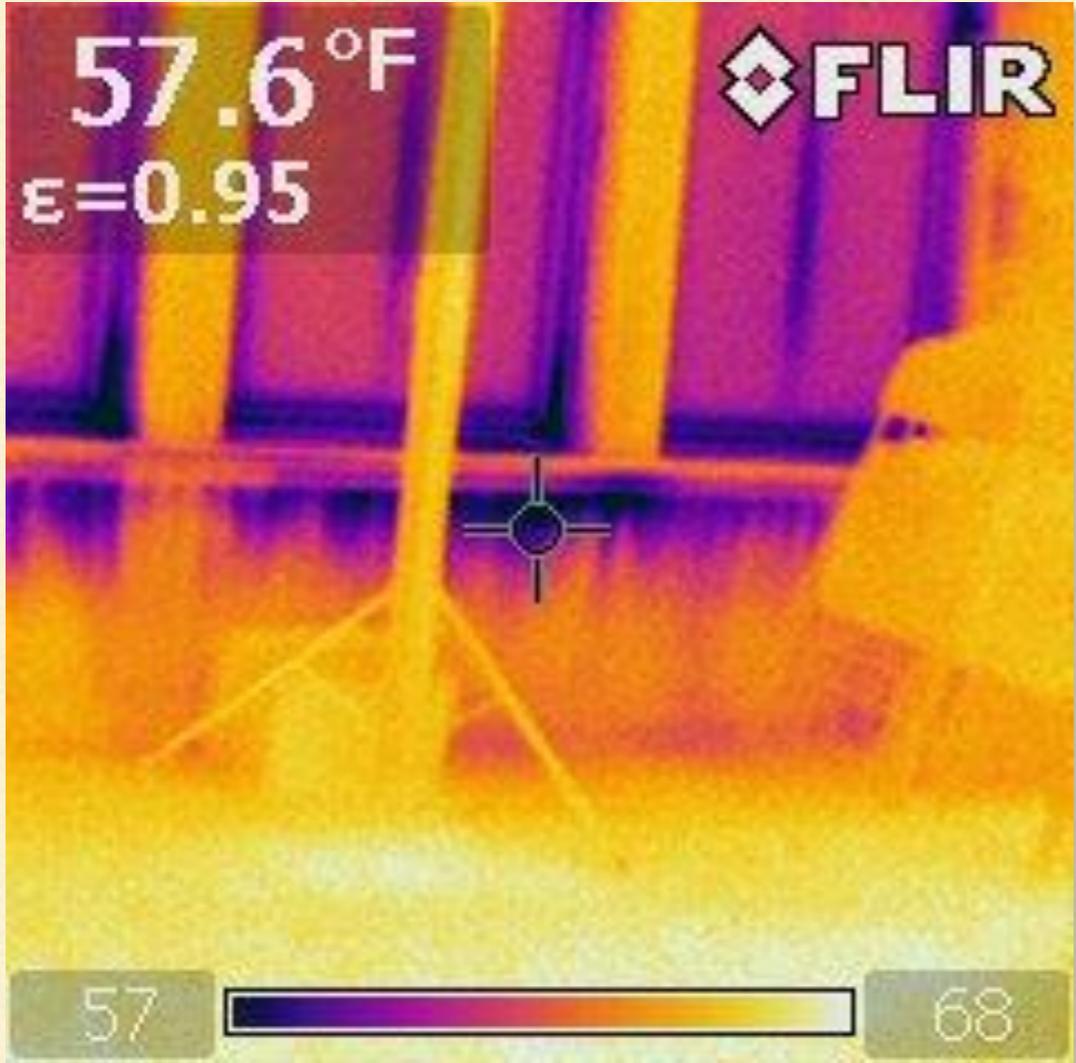


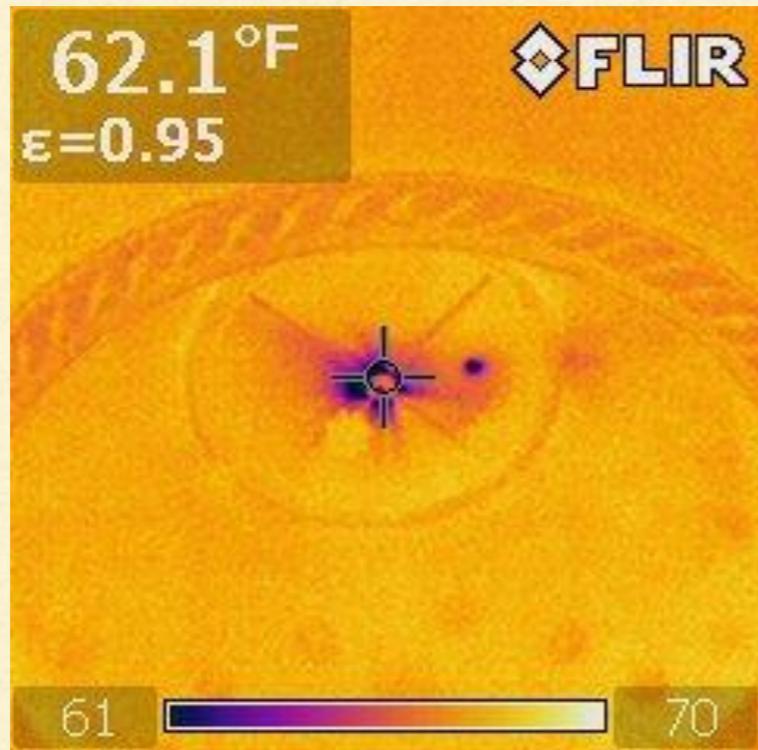
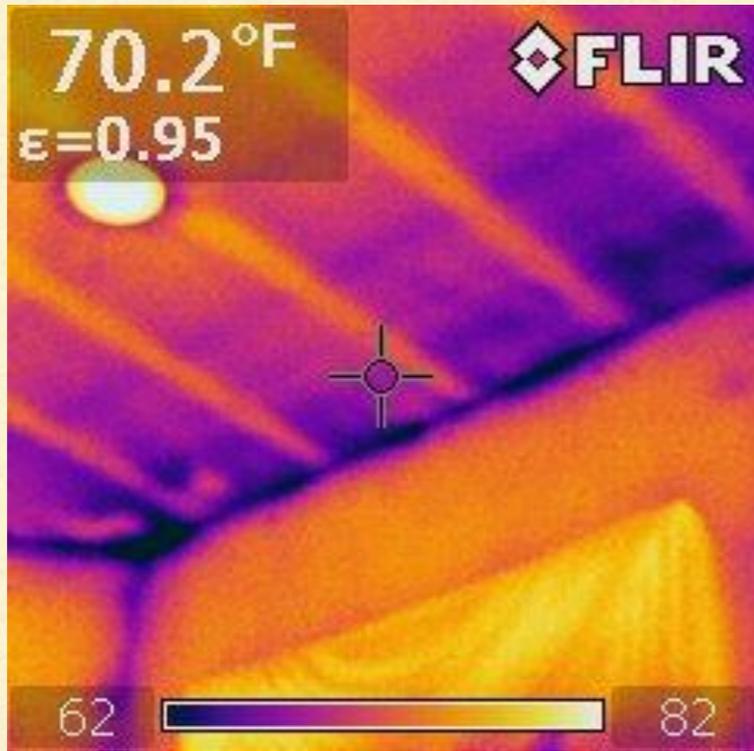
Improvement	Cost	Projected Annual Savings (\$)
Spray Foam Roof	\$25,168.00	\$1,649.00
Insulate Exterior Walls	\$19,840.00	\$1,036.00
Install Digital Set Back Thermostats	Roughly \$800.00 (obtain estimate from electrician)	
Carbon Monoxide (CO) Detectors in Offices	Roughly \$140.00 for 4	
Vent 2 Sewer Pipes to the Exterior		
Check 2 Bathroom Fan Exhausts		
Vent Dryer to the Exterior		
Improve Pipe Insulation		
Install Whole-Building Ventilation		

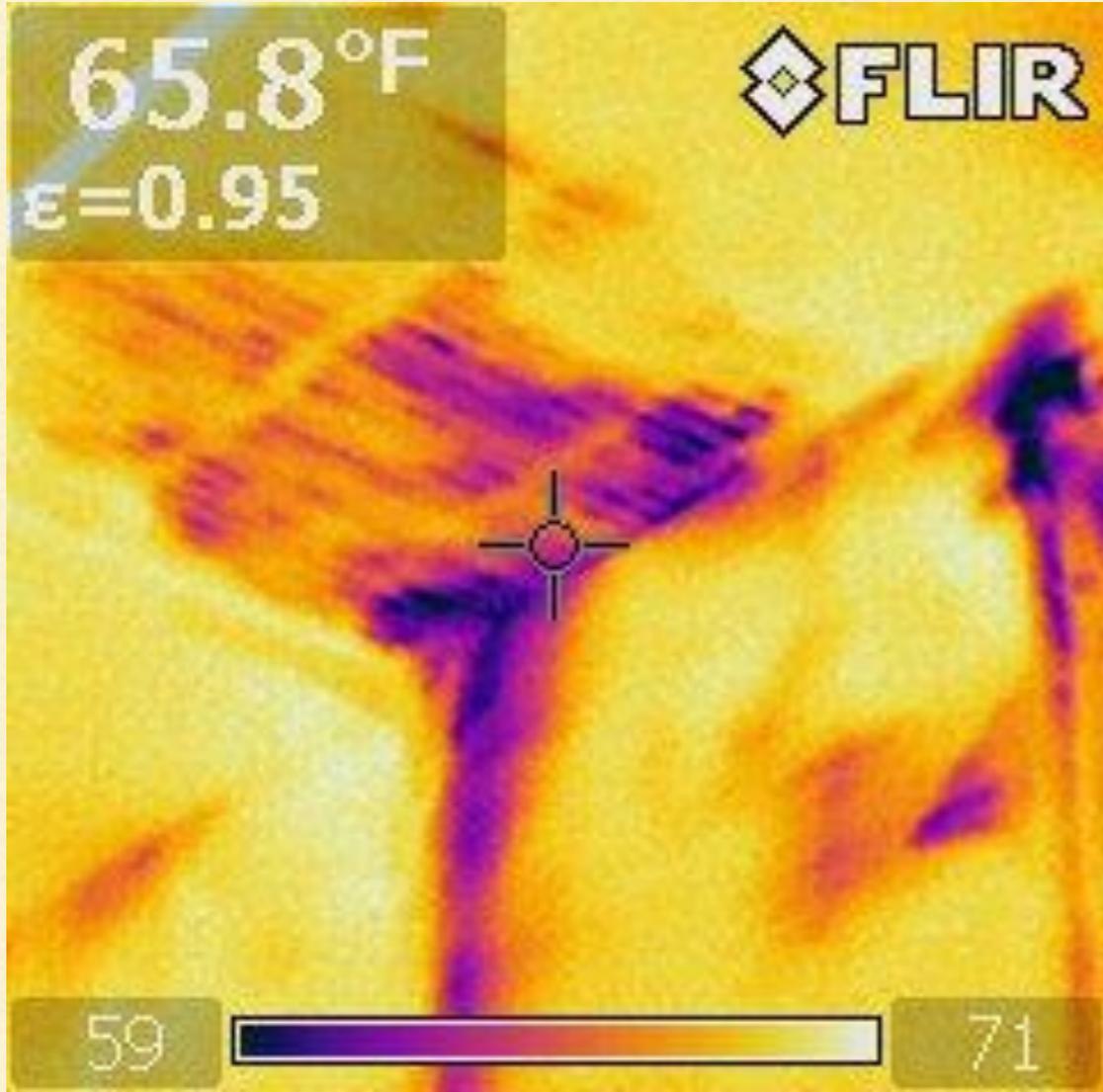
# FINDINGS AND RECOMMENDATIONS FOR OPERA HOUSE

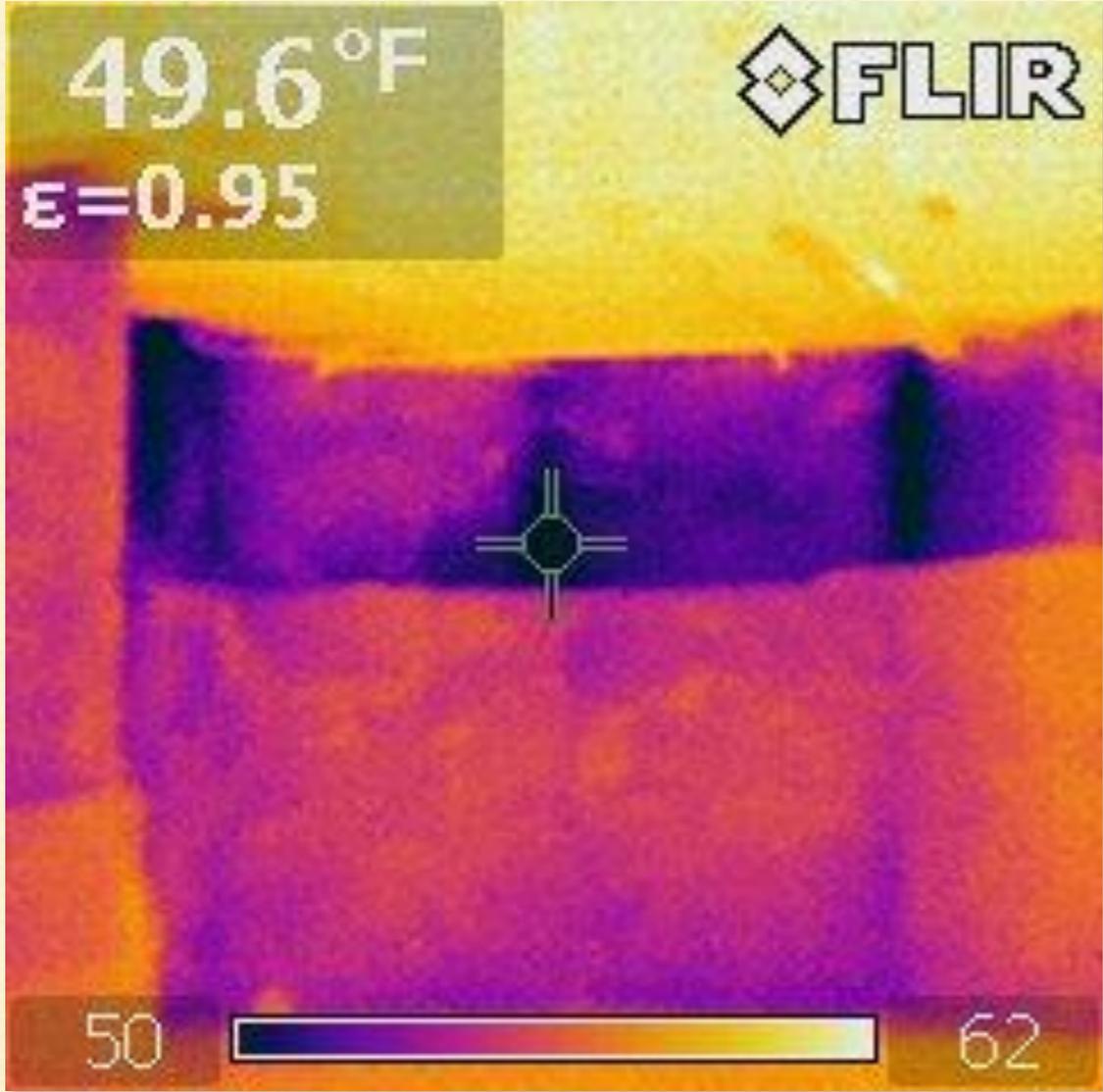


- Interior air leakage around windows and doors, interior trim, and the ceiling of the top floor
- The attic is insulated with 13” of blown fiberglass, but the air barrier and insulation can be improved
- The floor of the clock tower is poorly insulated and air sealed
- The ductwork for the heating and cooling system for the opera house is above the fiberglass, and the insulation is allowing for heat loss into the attic









## Air seal and insulate the attic

### Estimated Annual Energy Savings

**\$677**

### Est. Total Project Cost

**\$11,468**

### Est. Annual Energy Costs



Fuel	Annual Cost	Annual Savings (\$)	Annual Savings
⚡ Electricity	\$7,535	\$23	153 kW
🔥 Propane	\$18,151	\$653	311 gallons

### Package Savings Summary

#### Air seal and insulate the attic for Best Value

Total Installed Cost	\$11,468
Annual Energy Cost Savings	\$677
Simple annual payback, years	17
Savings to Investment Ratio	1.3
Total Energy Savings, MMBtu	28.9

## Duct Insulation

### Estimated Annual Energy Savings

**\$1,045**

Fuel	Annual Cost	Annual Savings (\$)	Annual Savings
 Electricity	\$7,535	\$15	100 kWh
 Propane	\$18,151	\$1,030	490 gallons

### Package Savings Summary

#### Duct Insulation for Best Value

Total Installed Cost	\$4,220
Annual Energy Cost Savings	\$1,045
Simple annual payback, years	4
Savings to Investment Ratio	3.7
Total Energy Savings, MMBtu	45.1

### Est. Total Project Cost

**\$4,220**

### Est. Annual Energy Costs



## Interior Air Sealing

### Estimated Annual Energy Savings

**\$173**

Fuel	Annual Cost	Annual Savings (\$)	Annual Savings
 Electricity	\$7,535	\$1	6 kWh
 Propane	\$18,151	\$171	81 gallons

### Package Savings Summary

#### Interior Air Sealing for Best Value

Total Installed Cost	\$2,295
Annual Energy Cost Savings	\$173
Simple annual payback, years	13
Savings to Investment Ratio	1.1
Total Energy Savings, MMBtu	7.5

### Est. Total Project Cost

**\$2,295**

### Est. Annual Energy Costs



■ Current Energy Cost  
■ Proposed Energy Cost

## Insulate the exterior walls of level 2 storage room

### Estimated Annual Energy Savings

**\$6,930**

Fuel	Annual Cost	Annual Savings (\$)	Annual Savings
⚡ Electricity	\$7,535	\$0	0
🔥 Propane	\$18,151	\$6,930	3,300 gallons

### Package Savings Summary

Insulate the walls level 2 storage room for Best Value

Total Installed Cost	\$9,268
Annual Energy Cost Savings	\$6,930
Simple annual payback, years	1
Savings to Investment Ratio	17.5
Total Energy Savings, MMBtu	301.3

### Est. Total Project Cost

**\$9,268**

### Est. Annual Energy Costs



## Insulate the wall of the 3rd floor storage room

### Estimated Annual Energy Savings

**\$17**

Fuel	Annual Cost	Annual Savings (\$)	Annual Savings
 Electricity	\$7,535	\$0	0
 Propane	\$18,151	\$17	8 gallons

### Package Savings Summary

#### Insulate the wall of the 3rd floor storage room for Best Value

Total Installed Cost	\$1,287
Annual Energy Cost Savings	\$17
Simple annual payback, years	76
Savings to Investment Ratio	0.3
Total Energy Savings, MMBtu	0.7

### Est. Total Project Cost

**\$1,287**

### Est. Annual Energy Costs



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# PORTFOLIO OF SIMILAR PROJECTS

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- Bristol Community Services
  - The Franconia Municipal Building
  - Monroe Consolidated School
  - Ashland Town Building
  - Attitash Grand Summit Hotel
  - Boys and Girls Club, Lisbon
  - Bethlehem Municipal Building
  - The White Mountain School
  - AHEAD projects: Lisbon Inn, McKee Inn, Groveton Housing, Notre Dame Senior Housing
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**MyPortfolio**

Sharing

Planning

Reporting

Recognition

Congratulations! You have successfully associated meters to your property(ies).

## Bristol Community Services

24 Pleasant St, Bristol, NH 03222 | [Map It](#)

Portfolio Manager Property ID: 4592406

Year Built:1970

 [Edit](#)



Not eligible to apply for [ENERGY STAR Certification](#)

### Weather-Normalized Source EUI (kBtu/ft<sup>2</sup>) [Why not score?](#)

**Current EUI:** 65.3  
(42.9% lower than median.)

**Baseline EUI:** 105.0  
(8.3% lower than median.)

Summary

Details

Meters

Goals

Design

### Notifications (0)

You have no new notifications.

### Property Profile

You haven't created a profile for your property yet. Profiles are a way to supplement the information in Portfolio Manager with additional information about your property, including a photo.

### Metrics Summary [Change Time Period](#)

Metric	Baseline (Oct 2014)	Current (Sep 2015)	Change
ENERGY STAR score (1-100)	<a href="#">Not Available</a>	<a href="#">Not Available</a>	N/A
Source EUI (kBtu/ft <sup>2</sup> )	106.1	65.3	-40.8(-38.5%)
Site EUI (kBtu/ft <sup>2</sup> )	105.1	64.7	-40.4(-38.4%)
Energy Cost (\$)	4,967.83	2,059.64	-2908.19(-58.5%)
Total GHG Emissions (Metric Tons CO <sub>2</sub> e)	12.4	7.6	-4.8(-38.7%)