

JOEGREEN ROADMAP TO ENERGY EFFICIENCY™



JOEGREEN Audit Team: Chris Henson

Audit Date: June 22nd, 2010

Town of Topsfield DPW

GOODNEWS:

We were able to diagnose the problem areas in the facility during the Audit. We have listed the specific problems responsible for your energy efficiency issues.

YOURPROBLEMS:

Based on the Joe Green Energy Audit conducted on June 22nd, 2010:

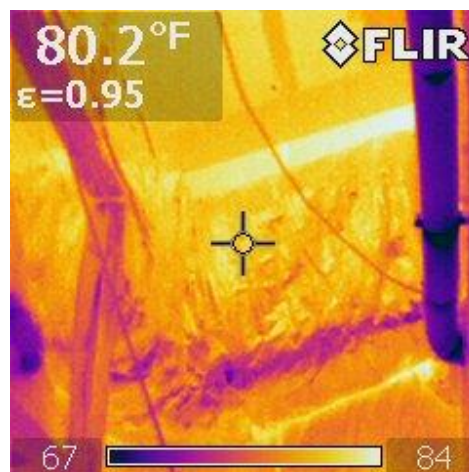
- **Ventilation , Heat Loss, And Infiltration**
 - Significant Thermal Leakage From Air Handler Space Above Break room
 - Sign Of Thermal Bridging Across Insulation In Roof
 - Significant Air Leakage From Break room Door
 - Air Leakage Throughout Garage Area
- **Water Usage**
 - Signs Of Flame-Out On DHW



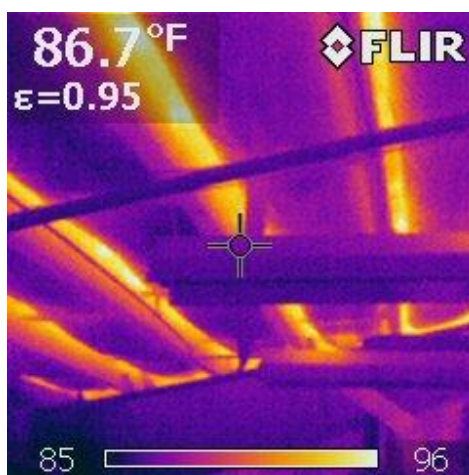
INFRARED PICTURES

*Note that darker colors = cooler areas

Air Handler Space Above Breakroom



Signs of Thermal Bridging

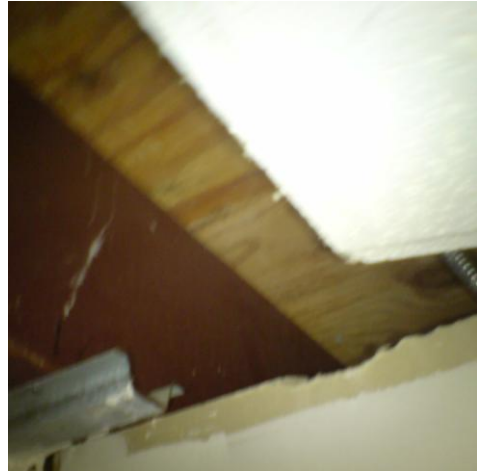


Additional Pictures can be found at <http://photobucket.com/joegreenhome-TopsfieldDPW> Password: JOEGREEN

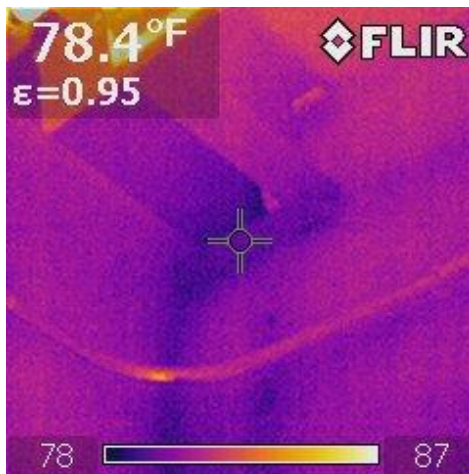
Break room Door

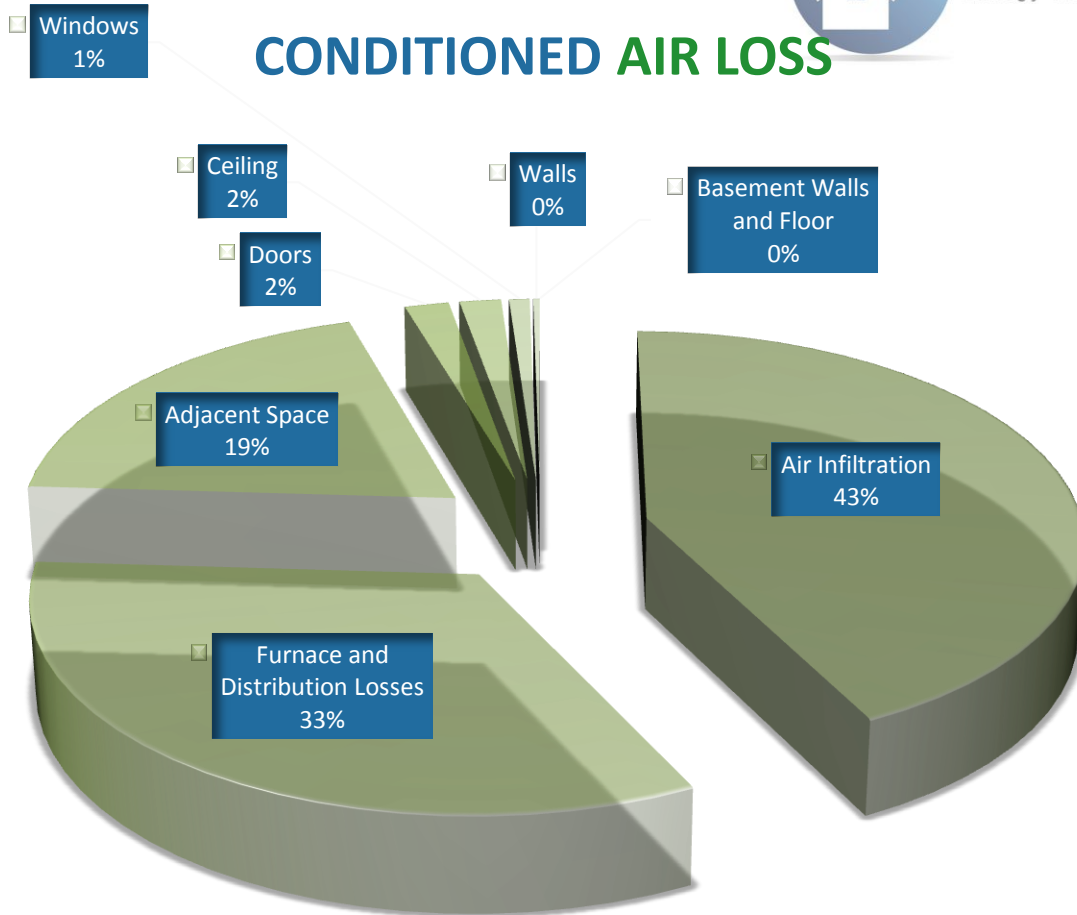


Thermal Breakpoints



Thermal Breakpoints





SOURCE	% of USAGE
Air Infiltration	43%
Furnace and Distribution Losses	33%
Adjacent Space	19%
Doors	2%
Ceiling	2%
Windows	1%
Walls	0%
Basement Walls and Floor	0%

YOURSOLUTIONS:

	<i>Initial Investment</i>	<i>Per Year Savings</i>	<i>% of Energy Savings</i>
Add More Insulation To Air Handler Area	\$642.05	\$123.25-\$147.90	10%-12%
Replace With On-Demand Hot Water System	\$2477.27	\$86.28-\$110.93	7%-9%
Install A K-Shield-Type Solar Reflector Across The Roofline Of The Garage To Prevent Thermal Bridging Across The Rafters	\$3181.82	\$61.63-\$86.28	5%-7%
Weatherstrip Doors In Break room	\$155.68	\$36.98-\$61.63	3%-5%
Insulate Or Caulk Thermal Break-Points Throughout Garage Area	\$603.41	\$36.98-\$61.63	3%-5%
Install Solar PV On Roof Line (Side With Large Garage Doors Is South Side)	\$26562.50	-	-

*These calculations are derived using proprietary software that models the energy usage of the building based on the conditions found at the time of the audit. Although behavioral variance has been accounted for, it cannot be fully predicted and may affect the actual savings achieved. **Please be aware that the percentage reductions achieved by each action are based upon that specific action alone. When multiple actions are taken the total percentage reductions achieved will be different from an arithmetic sum of the individual actions. Please be especially sensitive when adding projected dollar savings together as they are produced by multiplying the percentage savings by the historical dollar outlay resulting in a total that is only related to that one specific action and cannot be added to other projected dollar savings in a meaningful fashion.***