

City of Fort Collins 2011 Residential Environmental Program Series



City of
Fort Collins

2011 Residential Environmental Program Series

- | | |
|-----------------|--|
| Feb. 16 | Creating a collaborative community |
| March 2 | The complete home energy angler |
| March 16 | Xeriscape: beyond the basics |
| March 23 | Energy and water efficient tree choices |
| March 30 | Landscape design for water-wise beauty |
| April 13 | The lowdown on low water plants. |
| April 27 | Smart Meter Fort Collins |
| May 11 | Adventures in composting |

**City of Fort Collins
2011 Residential Environmental Program Series**

**Streamed video and powerpoints
available at**

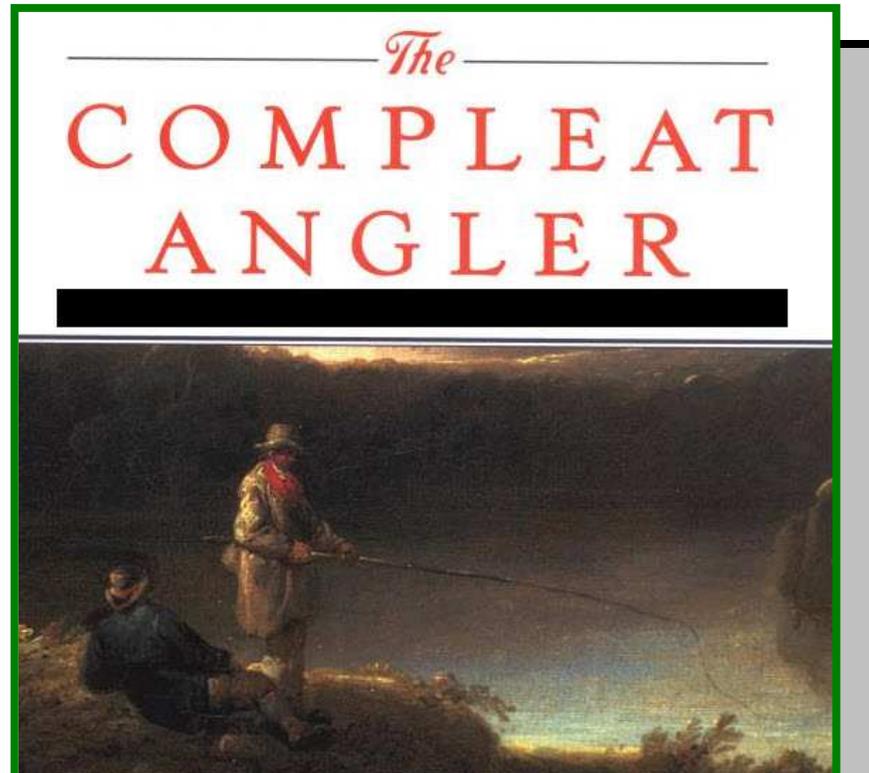
www.fcgov.com/reps

City of Fort Collins 2011 Residential Environmental Program Series

The Complete Home Energy Angler

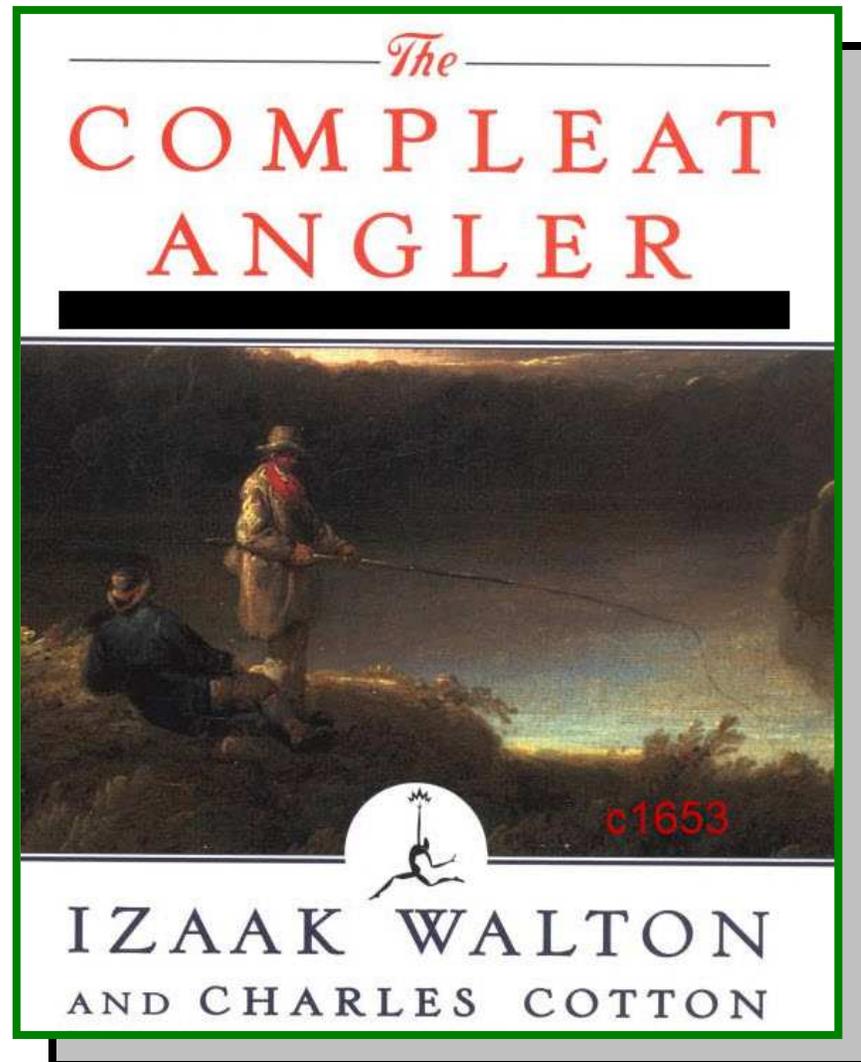


When Published, What Author?



??

A classic since 1653 !



Tonight's Agenda ...

- How do homes use energy
- What are some tools to identify opportunities
- What are some local programs to help you
- How to avoid in-effective measures
- How to participate in the community challenge

Tonight's Agenda ...

- 7pm- 8pm Homes, Energy, and Opportunities
- 10 Minute Break
- 8:10-8:15 Door Prizes
- 8:15 – 8:45 The Community Energy Challenge
- Questions

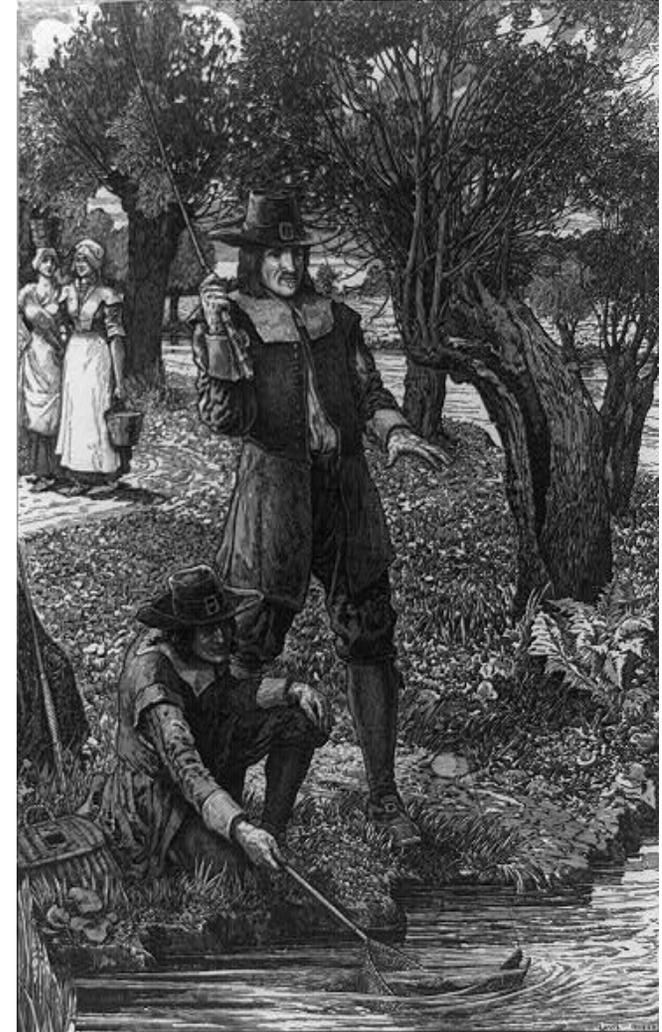
The Angling Theme ...



- How to Catch Some Savings?
 - Patterns of use – what we chose to do
 - Choosing efficient alternatives for what we do.

The Angling Theme ...

- Are there “lunkers” out there? Maybe, Maybe not!
- What are Realistic Savings estimates?
- Effective steps to take (as opposed to ineffective steps)
- Many small things can add up.



To Good to be True ...

- Are there “stinkers” out there?
A few...



- Beware (some examples)
 - DIY solar modules
 - Miracle Power Factor correctors
 - Miracle Power Generators
 - “Heat Surge”, “Cool Surge”

... More Later

The Angling Theme ...



Energy Angling Basics

Energy Units

Natural Gas

- British Thermal Units (**Btu**)
- a “Therm” = 100,000 Btu
- 1 Million Btu (**MMBtu**) = 10 Therms

Electricity

- Kilo-Watt Hour (**kWh**)
- 1 kWh = 3413 Btu

Power vs. Energy



kiloWatt-hour = quantity of electric energy

kiloWatt = rate of energy use



“ODOMETER” – **Quantity** – Miles

“SPEEDOMETER” – **Rate** - MPH

1 kWh = Ten 100Watt light bulbs burning for one hour

Cost of Energy (from the Utility)

Gas: \$0.75 per Therm

Equiv. to \$7.50 per million Btu

Electricity: \$0.08 per kWh

Equiv. to \$23.44 per million Btu

Cost of Energy (at the end use)

Example – Home Heating

Gas Furnace: 80 to 90% efficient

Electric Resistance Heat: 100%

Heat Pump: 200%

(Heat Pump draws heat from air or ground, “MOSTLY”)

Cost of Energy (at the end use)

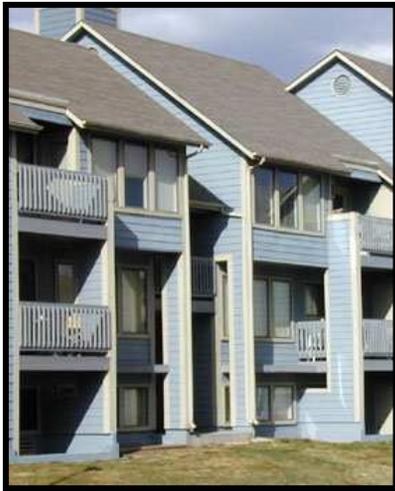
Home Heating – cost per “Usable” Btu

Gas Furnace: \$9.38 per MMBtu

Electric Heat: \$23.44 per MMBtu

Heat Pump: \$11.72 per MMBtu

What's Typical?

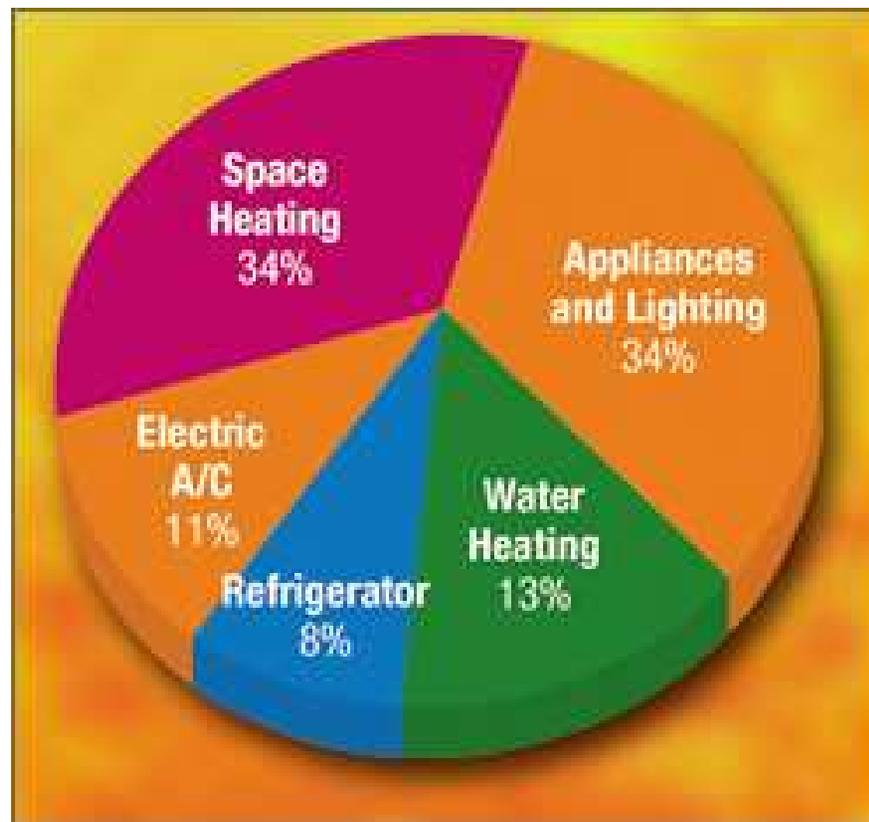


How does a typical household use energy?



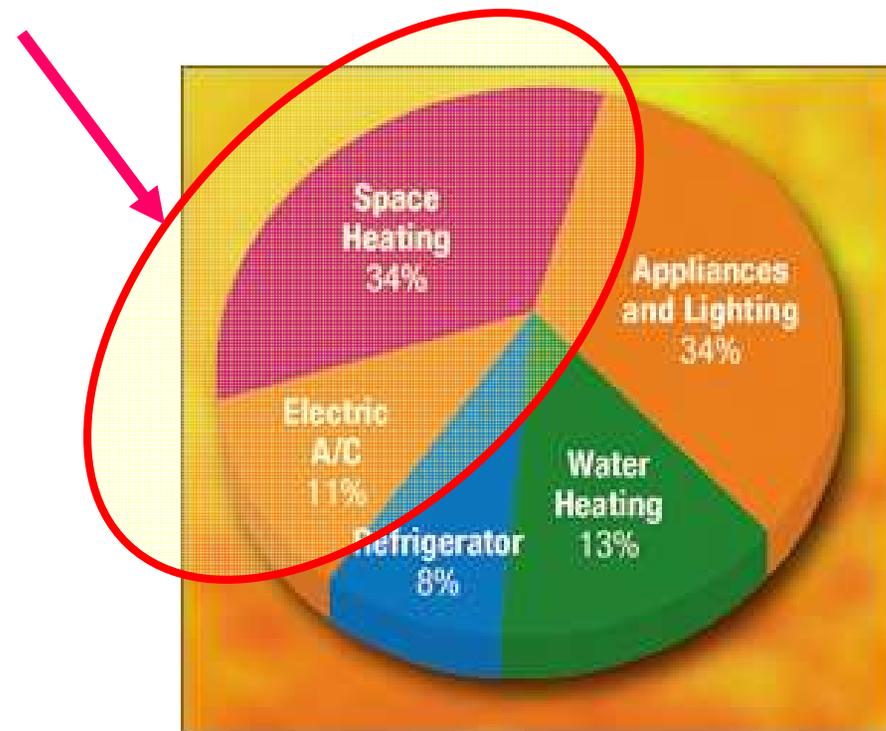
“Typical Home Energy Budget”

- First, “Typical” doesn’t help much - all homes are different



Energy Use Patterns ...

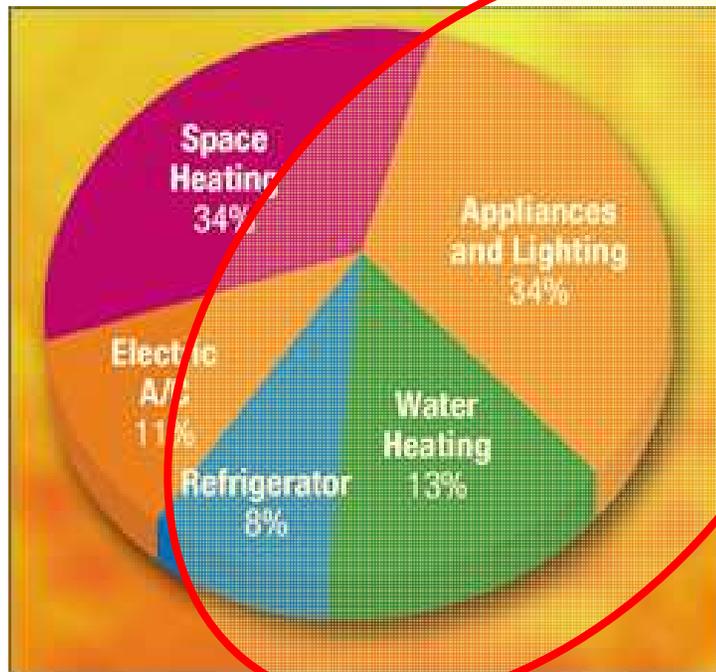
Part Depends on the House



Impact on “Comfort”

Energy Use Patterns ...

Part Depends on You



Potentially a big piece of the pie

You have control

Increasing Home Size ...

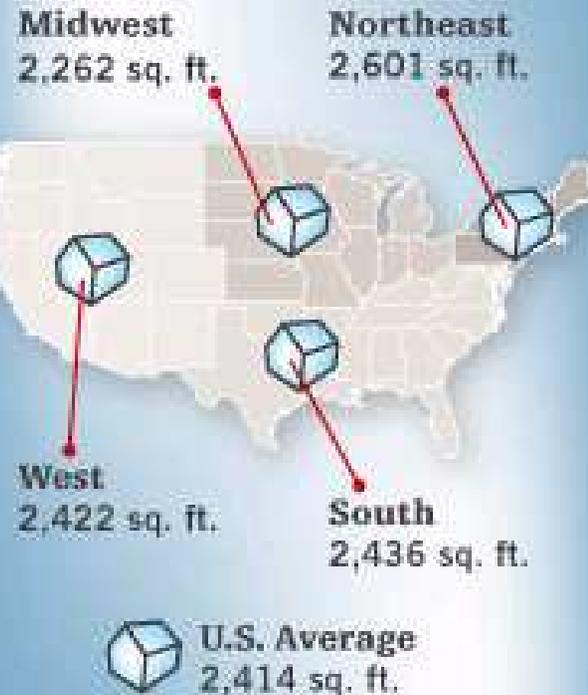
From Modest to McMansion

The average square footage of a new single-family home

1950		983 sq. ft.
1970		1,500 sq. ft.
1990		2,080 sq. ft.
2004		2,349 sq. ft.

Source: National Association of Home Builders (Housing Facts, Figures and Trends for March 2006)

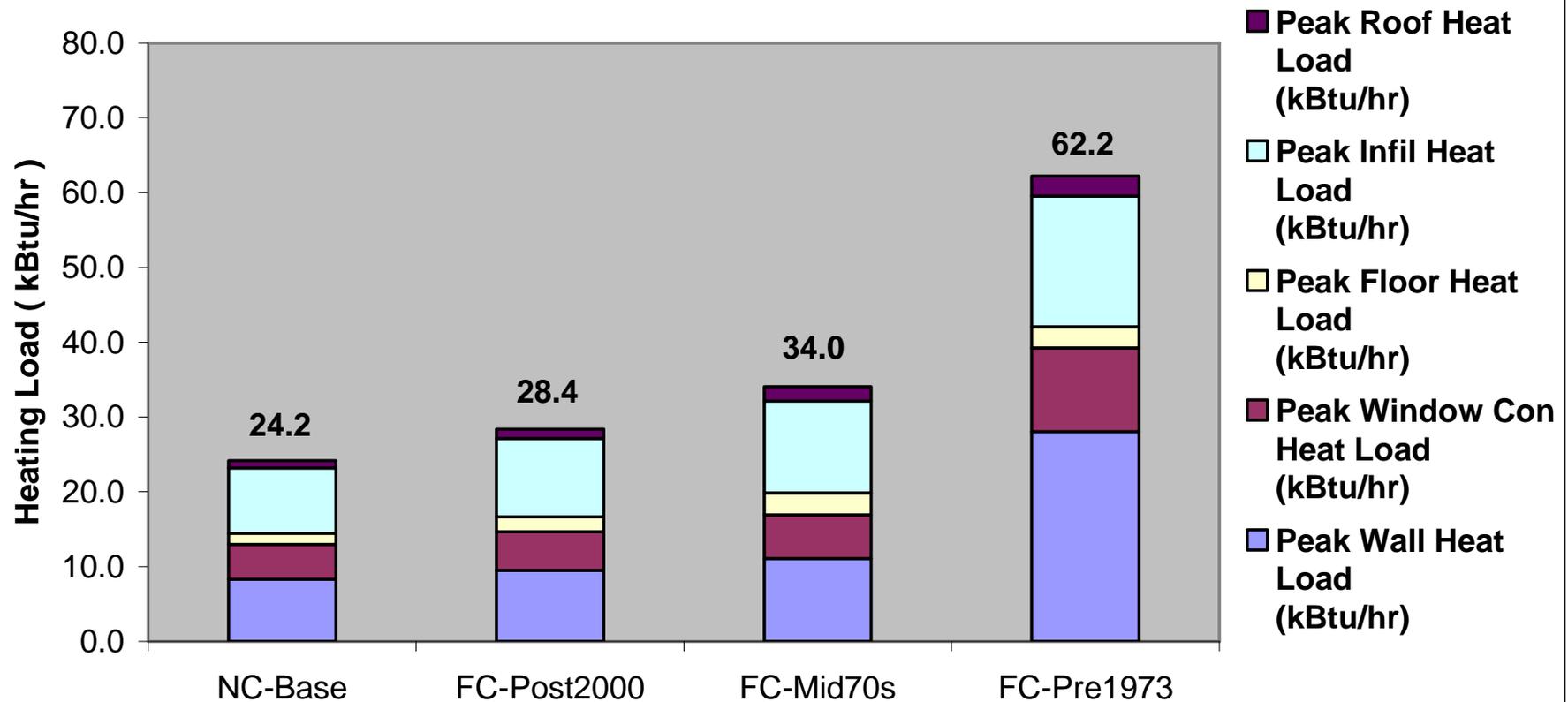
The Average Size of a New Home by Region: 2005

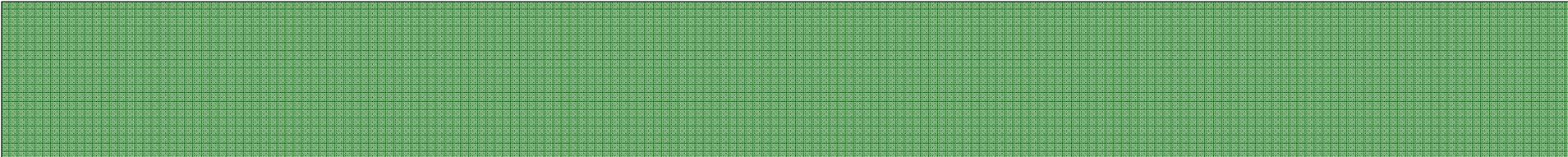


Source: National Association of Home Builders

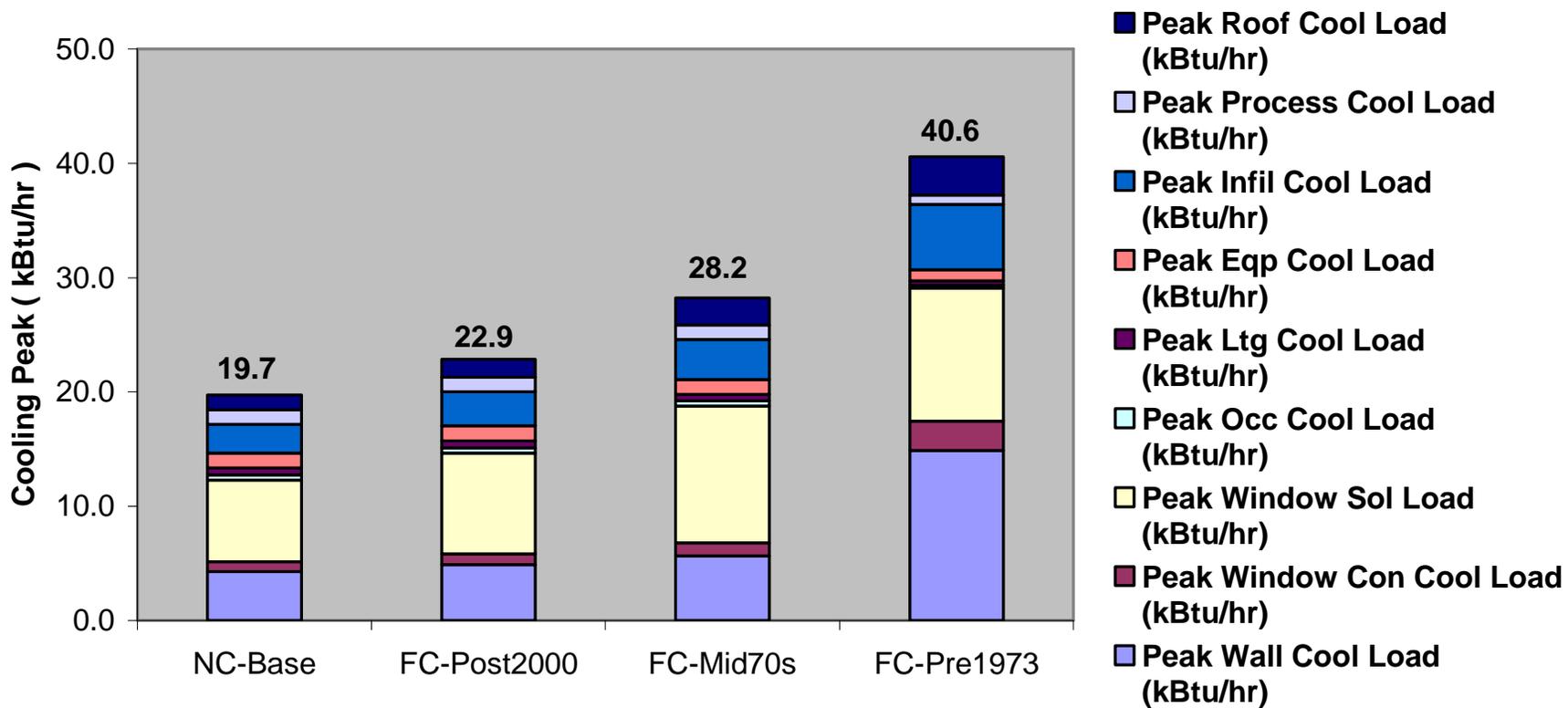
Housing Trends ...

Peak Winter Envelope Loads



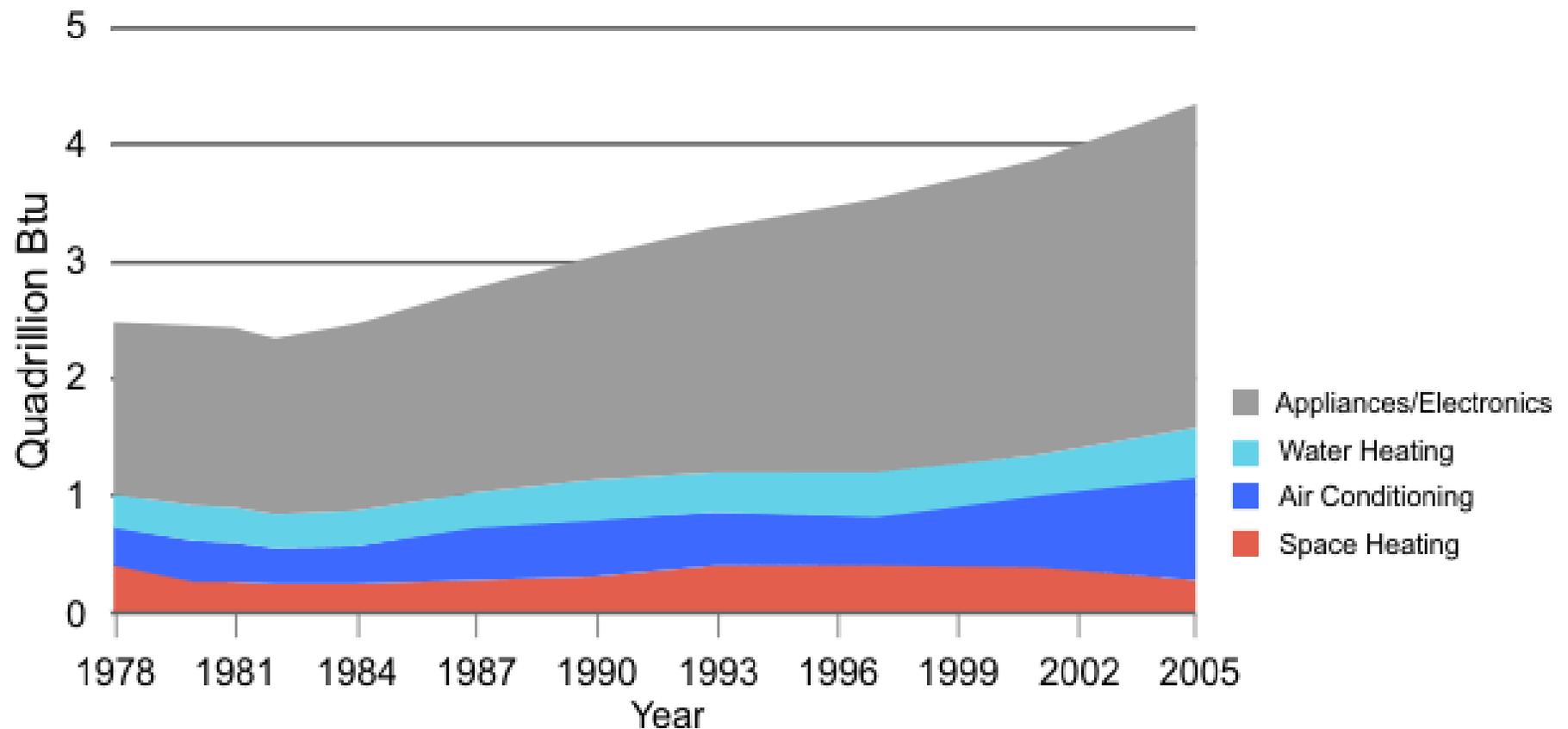


Peak Summer Envelope Loads



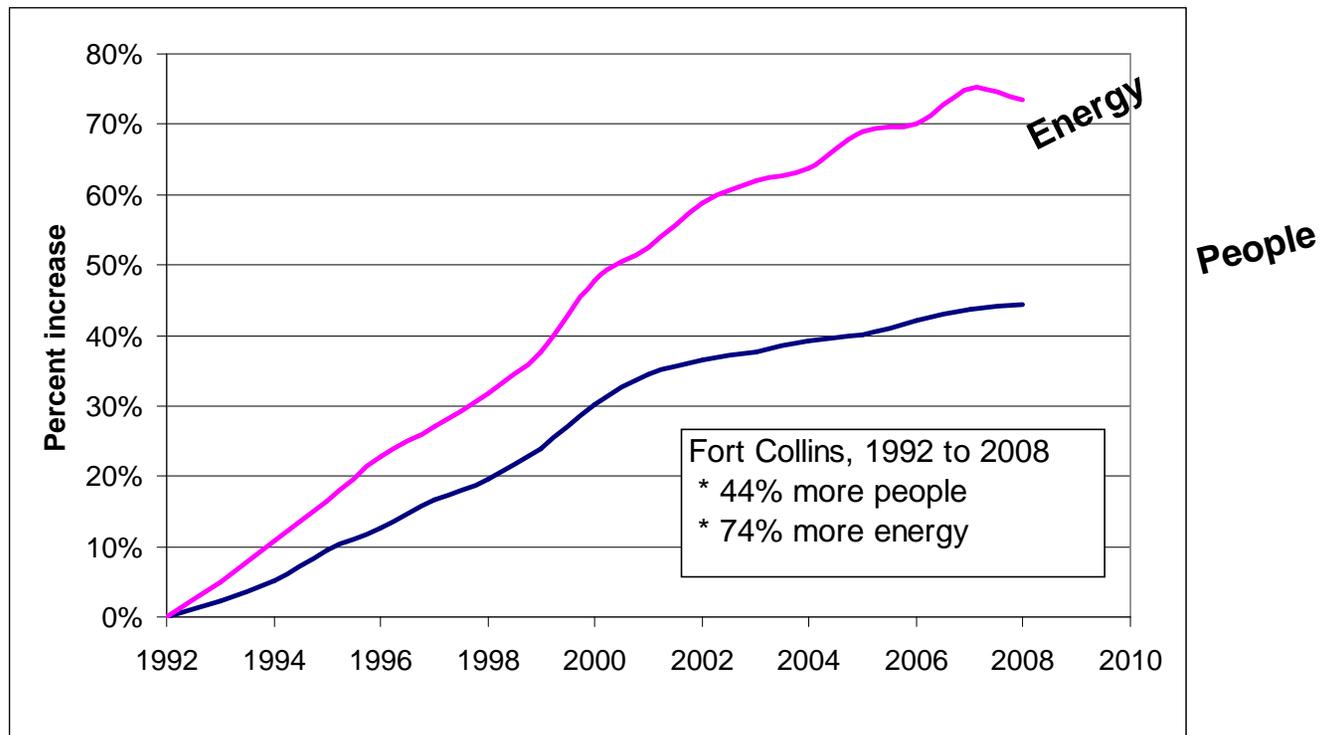
National Trends ...

Residential Electricity Consumption, By End Use, 1978-2005



Similar Local Trend – Using More

- Using 50 to 70% more energy per person compared to 15 years ago ...



More stuff, on more of the time . . .

Action?

So you want to at least understand what's
using energy

And maybe be able to find some savings.

Your Tools

- Month to month bill patterns – Gas and Electric
- The Electric Use Estimator
- Measurement – Appliance meter and whole-house monitors

Check Your Bill



Fort Collins Utilities
Customer Service
330 S. College Ave.
Hours: 8 a.m. to 5 p.m., weekdays

Phone: (970) 212-2900
E-mail: utilities@fcgov.com
Web: www.fcgov.com/utilities

Account Number	Customer Name	Service Address	Bill Date	Date Due	Amount Due
01234567-89-1	Utilities Customer	1234 Any St.	01-26-09	02-20-09	\$80.97

See reverse side for customer information and explanation of abbreviations.

Billing and Payment Summary

Payment due last billing period	\$ 113.65
Payments received since last billing	\$ 113.65
Charges for this billing period due 02-20-09	\$ 80.97
Your bank account will be drafted for the amount due	\$ 80.97

Service	Rate Code	Service Date	Days	Meter Readings	Multiplier	Usage	Charge		
Electric Energy	E100	12-17-08	01-20-09	34	47703	45535	1	832 KWH	\$59.48
Stormwater	H101	12-17-08	01-20-09	34					\$9.29
Wastewater	Q221	12-17-08	01-20-09	34				5275 WQA	\$24.66
Water		12-17-08	01-20-09	34	498627	504844	1	6217	
Base Charge	WB20								\$12.72
Tier 1	W220							6217 GAL	\$12.24
Green Energy	E731	12-17-08	01-20-09	34				1000 KWH	\$10.60
Weather Rebate	J100								-\$51.00
Sub-total								\$75.99	
City Sales Tax								\$1.98	
Total charges this billing period								\$80.97	

Water Billing History					
Read. Date	Days	Use in Gallons	Days	Read. Date	
01-20-09	34	6217	160	01-20-09	34
12-17-08	30	5897	186	12-17-08	30
11-17-08	33	6008	180	11-17-08	33
10-15-08	29	5938	204	10-15-08	29
09-16-08	29	5851	205	09-16-08	27
08-16-08	32	7072	271	08-20-08	34
07-17-08	29	7051	243	07-17-08	29
06-18-08	34	8415	276	06-18-08	34
05-16-08	28	6262	228	05-16-08	28
04-17-08	29	5726	199	04-17-08	29
03-19-08	29	4932	158	03-19-08	29
02-19-08	32	5096	178	02-19-08	32
01-18-08	35	5470	184	01-18-08	35

Electric Billing History					
Read. Date	Days	Use in kWh	Days	Read. Date	
01-20-09	34	832	24	01-20-09	24
12-17-08	30	640	21	12-17-08	30
11-17-08	33	712	21	11-17-08	33
10-15-08	29	572	18	10-15-08	28
09-16-08	27	529	19	09-16-08	27
08-20-08	34	619	19	08-20-08	34
07-17-08	29	562	19	07-17-08	29
06-18-08	34	581	20	06-18-08	34
05-16-08	28	506	18	05-16-08	28
04-17-08	29	566	19	04-17-08	29
03-19-08	29	530	18	03-19-08	29
02-19-08	32	600	30	02-19-08	32
01-18-08	35	790	22	01-18-08	35

Make checks payable to Fort Collins Utilities. Return this portion with payment to ensure proper credit. Thank you!

Account Number	Service Address	Bill Date	Date Due	Amount Due
01234567-89-1	1234 Any St.	01-26-09	02-20-09	\$80.97

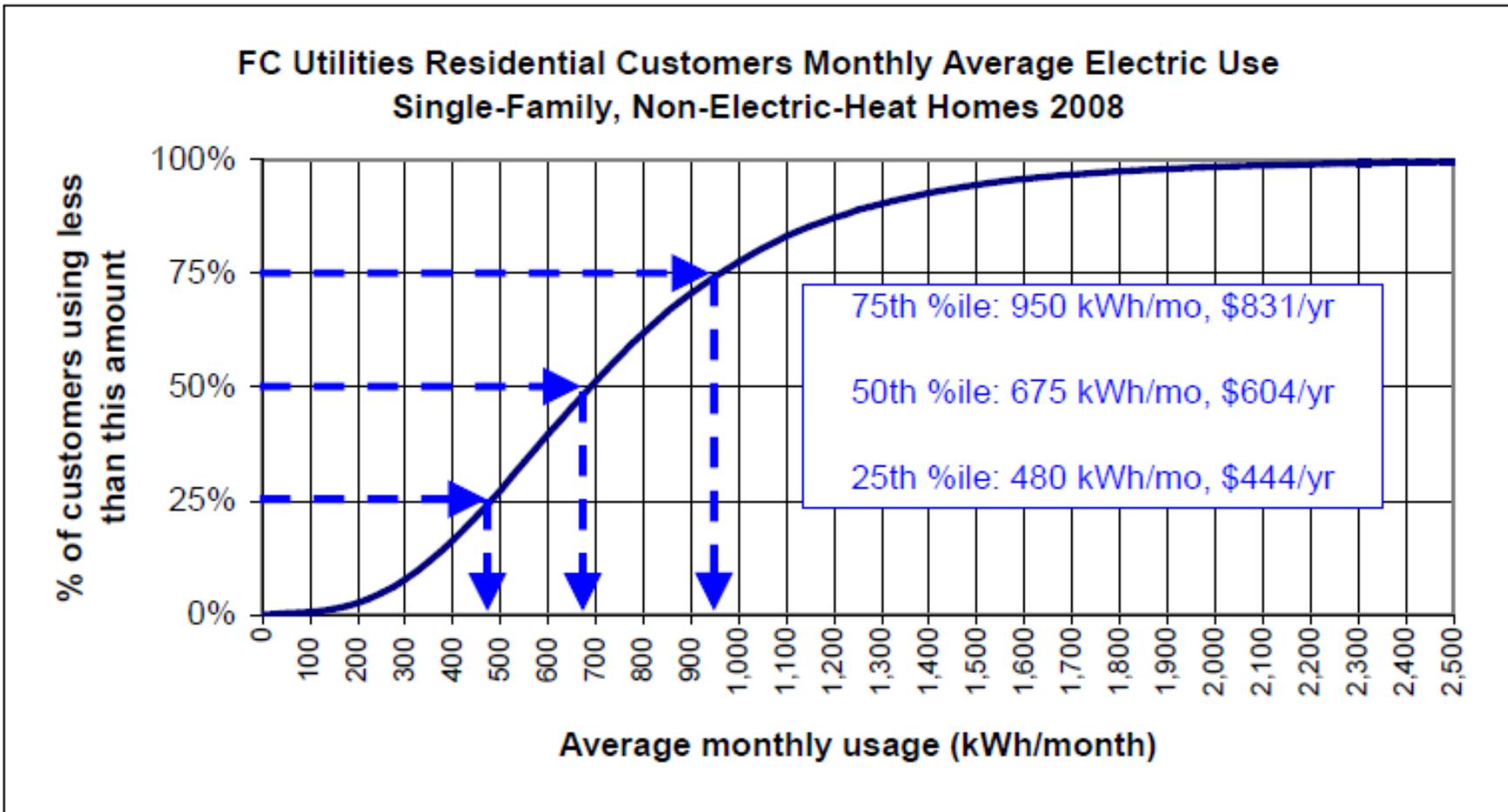
DO NOT PAY - amount owed will be drafted on the bill due date.

UTILITIES CUSTOMER
1234 ANY ST
FORT COLLINS CO 80525-1637

FORT COLLINS UTILITIES
PO BOX 1580
FORT COLLINS CO 80522-1580

2009 Program "Your Electric Bill- Take Control" at www.fcgov.com/reps

Your Home's Budget?





Fort Collins Utilities
Customer Service
 330 S. College Ave.
 Hours: 8 a.m. to 5 p.m., weekdays

Phone: (970) 212-2900
 E-mail: utilities@fcgov.com
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Service	Rate Code	Service Date From To	Days	Meter Readings Previous Present	Multiplier	Usage	Charge
Electric Energy	E100	12-17-08 01-20-09	34	47703 48535	1	832 KWH	\$59.48
Stormwater	H101	12-17-08 01-20-09	34				\$9.29
Wastewater	Q221	12-17-08 01-20-09	34			5275 WQA	\$24.68
Water		12-17-08 01-20-09	34	498627 504844	1	6217	
Base Charge	W820						\$12.72
Tier 1	W220					6217 GAL	\$12.24
Green Energy	E731	12-17-08 01-20-09	34			1000 KWH	\$10.60
Washer Rebate	J100						-\$50.00
Sub-total							\$76.99
City Sales Tax							\$1.98
Total charges this billing period							\$80.97

Read Date	Days	Use in Gallons	Gal/Day
01-20-09	34	6217	180
12-17-08	30	5857	196
11-17-08	33	6508	197
10-15-08	29	5928	204
09-16-08	29	5931	205
08-18-08	32	7072	221
07-17-08	29	7051	242
06-18-08	34	9415	276
05-15-08	28	6292	224
04-17-08	29	5726	199
03-19-08	29	4502	156
02-19-08	32	3596	114
01-18-08	35	6470	184

Read Date	Days	Use in kWh	kWh/Day
01-20-09	34	832	24
12-17-08	30	640	21
11-17-08	33	712	21
10-15-08	28	572	19
09-16-08	27	529	19
08-20-08	34	679	19
07-17-08	29	962	19
06-18-08	34	681	20
05-15-08	28	306	18
04-17-08	29	566	19
03-19-08	29	330	18
02-19-08	32	655	20
01-18-08	35	790	22

**Electric
 billing
 history**



Make checks payable to Fort Collins Utilities. Return this portion with payment to ensure proper credit. Thank you!

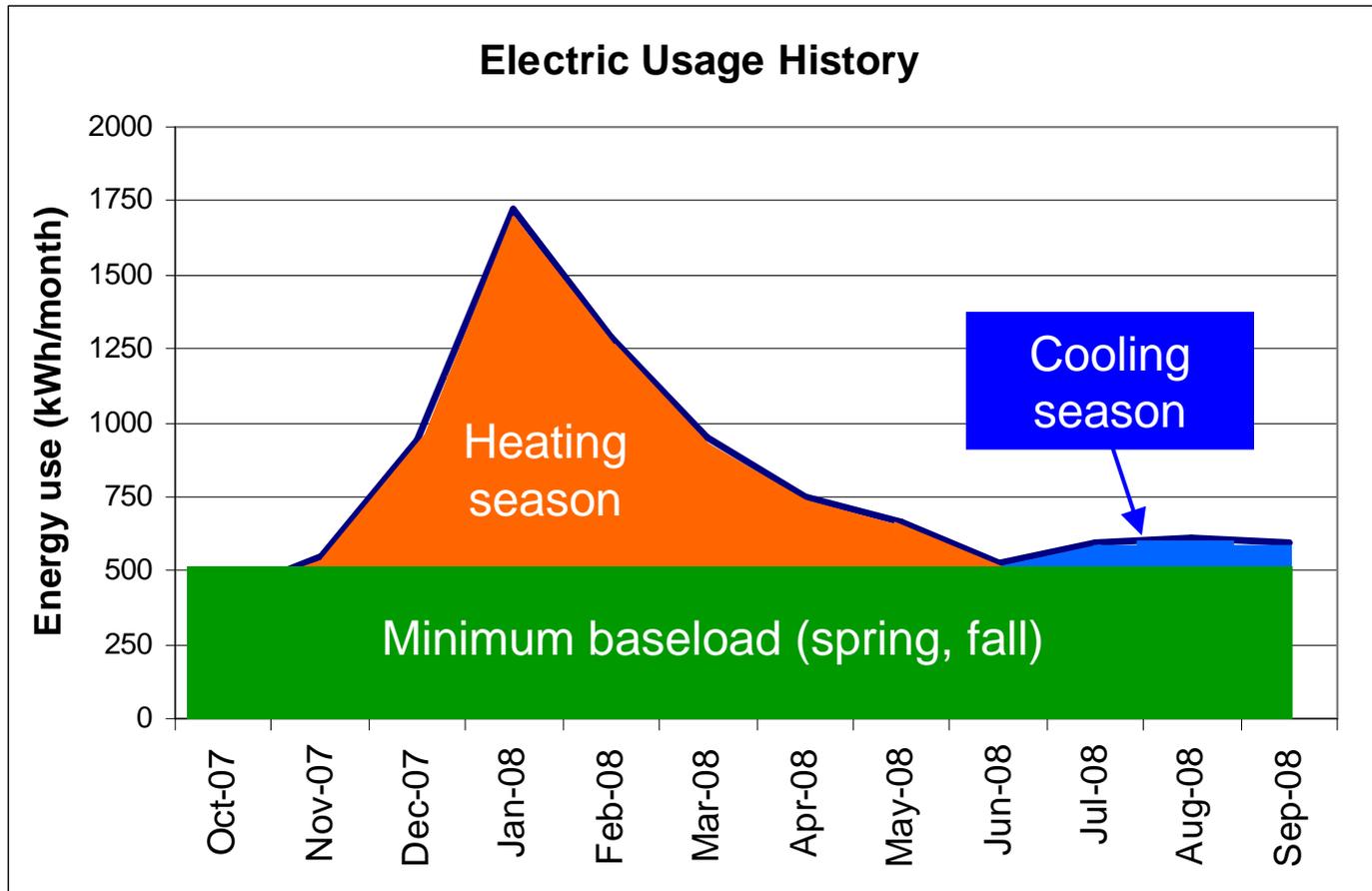
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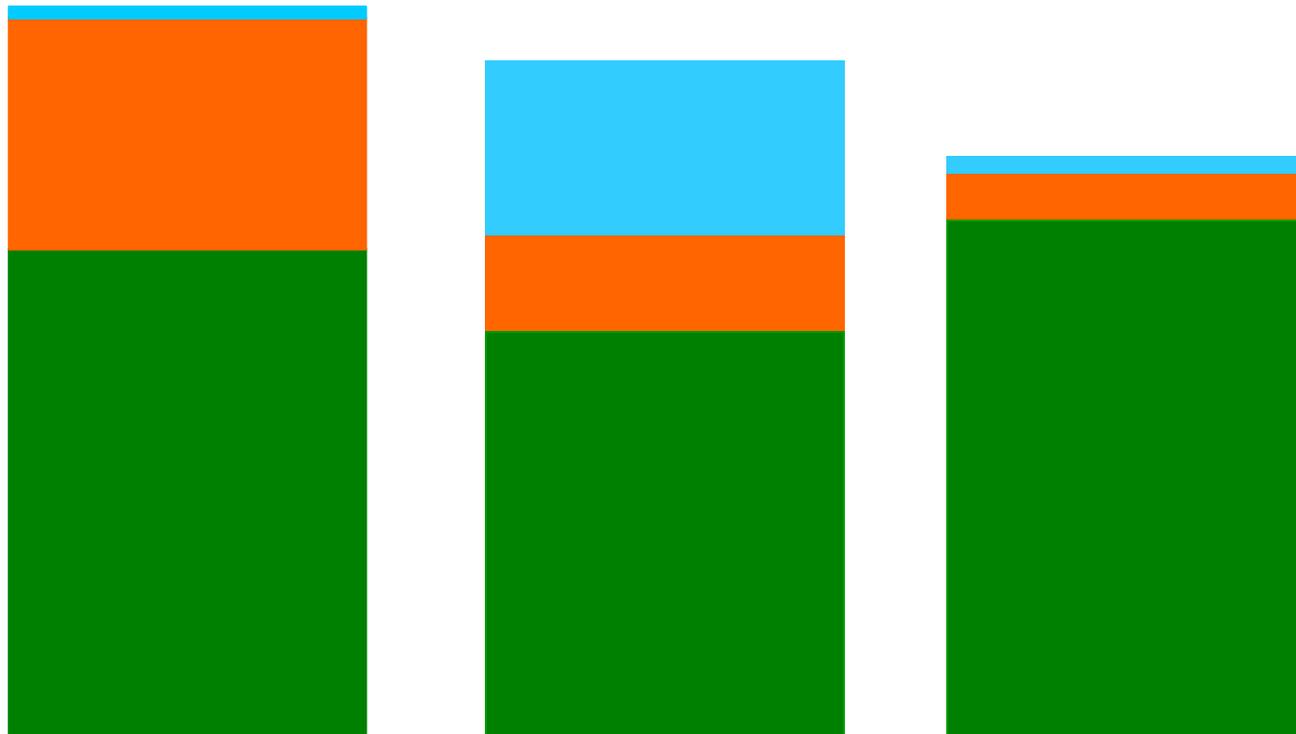
UTILITIES CUSTOMER
 1234 ANY ST
 FORT COLLINS CO 80525-1637

FORT COLLINS UTILITIES
 PO BOX 1580
 FORT COLLINS CO 80522-1580

Seasonal Patterns



Where to Look First?



House 1

Family 1

House 2

Family 2

House 3

Family 3

Electric Usage Inventory

Fort Collins Utilities Residential Electric Use Estimator



Tab 1 Estimator Introduction

Introduction

The purpose of this tool is to correlate a home's electric bill with its estimated breakdown of electric use to help identify monthly bills and may deserve further attention. Wattage estimation surveys as well as zone analysis by Fort Collins Utilities. For additional information, please contact the City of Fort Collins.

Suggested Procedure

- To get started, select your home's electric rate and heating type in the "Home Information" tab.
- The next step is to input quantities for all electric-using items in your home.
 - Left-click the green tab labeled "Tab 2 - Inventory" at the bottom of the tool.
 - Walk through ALL rooms, look at ALL outlets and tally what you plug.
 - Enter the quantities of each item into the corresponding green tab.
 - If you don't find an exact match, make your best guess and/or adjust it.
 - The tool uses these quantities to calculate individual electric use and total electric use.
- Once done, the tool will summarize the calculated data and display it on the "Results" tab.
 - Left-click the red tab labeled "Tab 3 - Results" at the bottom of this tool.
- If interested, the Heat Steps tab offers ideas for additional analysis.
 - Left-click the tan tab labeled "Tab 4 - Heat Steps" at the bottom of this tool.

Home Information

Electric Rate		Energy Co.	Energy Co.	Energy Co.
Energy Rate (\$/kWh)	Energy Co.	Energy Co.	Energy Co.	Energy Co.
Demand Rate (\$/kW)	Energy Co.	Energy Co.	Energy Co.	Energy Co.
Energy Rate (\$/kWh)	Energy Co.	Energy Co.	Energy Co.	Energy Co.

Your average monthly electric use for a 12 month period:

Fort Collins Utilities Residential Electric Use Estimator



Tab 2 Electric Use Inventory

Inventory

Inventory Items	Item Information			
	Quantity	Wattage	Wattage	Wattage
Appliances				
Oven	1	1,200	12	2,000
Gas Heated	1	1,200	12	1,000
Range	2	1,200	12	100
Electric Range	1	1,200	12	1,000
Microwave	1	1,200	12	1,000
Standard	1	1,200	12	1,000
Small	1	1,200	12	100
Dishwasher	1	1,200	12	1,000
Low Heat	1	1,200	12	1,000
High Heat	1	1,200	12	1,000
Charger	1	1,200	12	100
Washer	1	1,200	12	100
Dryer	1	1,200	12	100
Charger	1	1,200	12	100
Dehumidifier	1	1,200	12	100
Other	1	1,200	12	100
Gas	1	1,200	12	25
Traveler Oven / 4-slice Toaster	1	1,200	12	1,000
Coffee Maker	1	1,200	12	100
Ventilation Hood	1	1,200	12	25
Refrigeration				
1578u (22 Ft³)	1	24	12	285
1578u (22 Ft³)	1	24	12	168
1578u (22 Ft³)	1	24	12	183
2000u (22 Ft³)	1	24	12	57
2818u (18 Ft³)	1	24	12	34
2818u (22 Ft³)	1	24	12	46
48 Ft³	1	24	12	34
Water Heating				
Electric	1	24	12	192
Gas Power Vented	1	1	12	238
Electronics				
58" (Plasma)	1	3	12	348
58" (LCD)	1	3	12	288
42" (Plasma)	1	3	12	278
42" (LCD)	1	3	12	178
32" (LCD/Plasma/CRT)	1	3	12	125
18" (CRT)	1	3	12	72
Cable/Satellite Receiver	1	3	12	45
VCR	1	3	12	58
DVD Player/Recorder	1	3	12	44
DVD/VCR Combo Player	1	3	12	68
Cable DVR	1	3	12	58
External DVD	1	3	12	58

Fort Collins Utilities Residential Electric Use Estimator



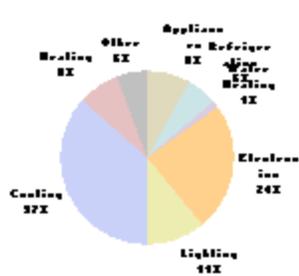
Tab 3 Electric Use Results

Results

Category	Number of Items Included	Estimated Annual Use			Percent of Electric Use	
		Req (kW)	Demand (kW)	Cost (\$)	Year Demand	Year Demand Compared to National
Cooling	2	3,081	3.2	\$227	37%	19% Higher
Electronics	21	2,021	1.0	\$149	24%	8% Higher
Lighting	32	888	1.2	\$65	11%	5% Lower
Appliances	9	687	5.0	\$51	8%	4% Lower
Heating	1	651	0.3	\$48	8%	2% Lower
Refrigeration	6	499	0.1	\$37	6%	4% Lower
Other	5	464	0.4	\$34	6%	2% Lower
Water Heating	1	34	0.2	\$6	1%	9% Lower

Summary Data	
Year Demand	Annual Total
698	\$,378
10	\$,170
\$51	\$,617
Annual Cost Allocated to Standby Loads	\$75 (12%)

Your Home's Electric Use Breakdown



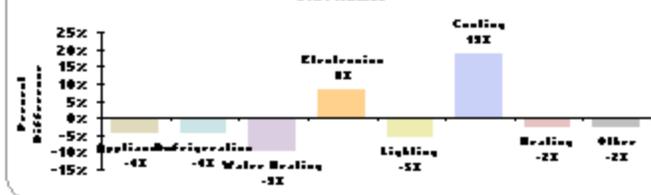
Items with Highest Annual Cost

- \$227 For 2,081 kW Year Cooling Req
- \$48 For 12,000 Ft³ Year Forced Air Gas Furnace
- \$37 For 1 CRT Monitor Computer
- \$37 For 1 2000u (22 Ft³) Refrigerator
- \$28 For 1 Cable DVR

Items with Lowest Annual Cost

- \$1 For 1 Ventilation Hood
- \$1 For 1 Gas Heated Oven
- \$1 For 1 Speaker
- \$2 For 1 Scanner
- \$2 For 1 Phase Returning Machine

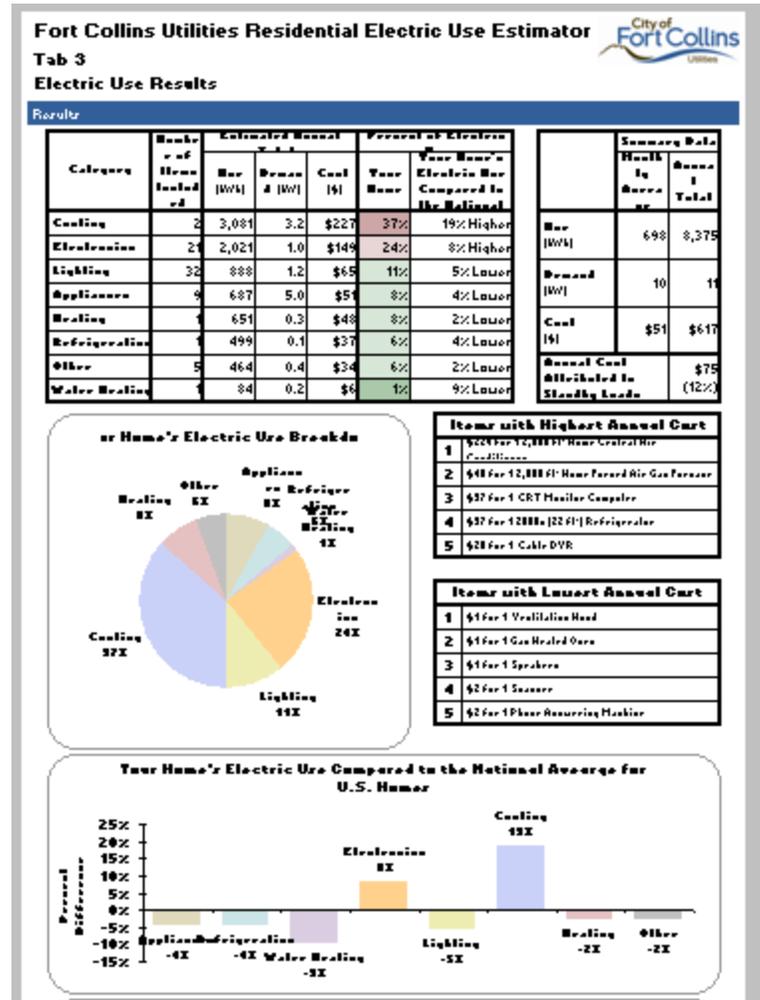
Your Home's Electric Use Compared to the National Average for U.S. Homes



Electric Usage Inventory

Your Tally –
typical wattage
and use hours of
use based on
national statistics

A quick way to get a sense of
the breakdown of use before
going to more involve
appliance or whole-house
measurements



Electric Usage Estimator

Four Sheets

- Intro / Rate Choice
- Tally Sheet
- Summary
- Next Steps

Fort Collins Utilities Residential Electric Use Estimator

City of Fort Collins Utilities

Tab 1
Estimator Introduction

Introduction

The purpose of this tool is to correlate a home's electric bill with a list of electricity using items. The goal is to provide an estimated breakdown of electric use to help identify high use items, which contribute to monthly bills and may deserve further attention. Wattage estimates come primarily from national surveys as well as some analysis by Fort Collins Utilities. For additional ideas and more advanced options, refer to the "Next Steps" section on Tab 4.

Suggested Procedure

- 1 To get started, select your home's electric rate and heating type in the "Home Information" section below.
- 2 The next step is to input quantities for all electric using items in your home.
 - Left-click the green tab labeled "Tab 2 - Inventory" at the bottom of this tool.
 - Walk through **ALL** rooms, look at **ALL** outlets and tally what's plugged in, including lights (interior & exterior), etc...
 - Enter the quantity of each item into the corresponding **green shaded cells**.
 - If you don't find an exact match, make your best guess and/or adjust quantities for special circumstances.
 - The tool uses those quantities to calculate individual electric use and cost estimator for each item.
- 3 Once done, the tool will summarize the calculated data and display it on the Results tab.
 - Left-click the red tab labeled "Tab 3 - Results" at the bottom of this tool.
- 4 If interested, the Next Steps tab offers ideas for additional analysis.
 - Left-click the tan tab labeled "Tab 4 - Next Steps" at the bottom of this tool.

Home Information

Electric Rate				Heating Type		
Energy Rate [C100]	<input checked="" type="radio"/>	Energy Cost	1.874 \$/Wh	Energy Cost is based on the lowest [Wh] of electricity used each month.	Electric	<input type="radio"/>
Demand Rate [C110]	<input type="radio"/>	Energy Cost	1.837 \$/Wh	Demand Cost is based on the highest rate [Wh] of which electricity is used each month.	Non-Electric	<input checked="" type="radio"/>
		Demand Cost	4.53 \$/kW		Hybrid	<input type="radio"/>

in your system. For more information, click on the link below.

version 01.08.01 Def. Build 3.1

Tab 1 - Introduction / Tab 2 - Inventory / Tab 3 - Results / Tab 4 - Next Steps

The Inventory Sheet

All the action
is in the
Quantity
Column

Fort Collins Utilities Residential Electric Use Estimator
Tab 2
Electric Use Inventory

City of Fort Collins Utilities

Inventory

Inventory Items	Quantity	Runtime		Wattage Estimate		Electric Use (kWh)	Electric Demand	Total Cost (\$)	
		hours per Day	months per Year	On	Standby				
24 / 7 Ventilation (low speed)		24	12	150	0				
Heating									
Forced Gas Furnace	500 ft' Home		8	8	187	1			
	1,000 ft' Home		8	8	211	1			
	2,000 ft' Home	1	8	8	331	1	651	0.3	\$47.99
	4,000 ft' Home		8	8	477	1			
Electric Baseboard Heating	2 ft		8	8	350	0			
	4 ft		8	8	700	0			
	8 ft		8	8	1,400	0			
Space Heater	Standard		2	8	1,440	0			
	Small		2	8	700	0			
Other									
Hot Tub	Standard		24	12	262	0			
	Large		24	12	500	0			
Humidity Control	Humidifier		4	8	200	0			
	Dehumidifier		4	4	350	0			
	Standard Bath Fan		1	12	75	0			
	Advanced Bath Fan		1	12	40	0			
Control	Thermostat	2	24	12	5	4	88	0.0	\$6.46
	Security System			12	25	3			
	Garage Door Opener	1	0	12	400	5	83	0.4	\$6.10
Radio Fan	Irrigation Timer	1	2	12	0	27	118	0.0	\$8.72
	Low Head	1	24	12	20	0	175	0.0	\$12.91
	High Head		24	12	50	0			

The Summary – Part 1

Fort Collins Utilities Residential Electric Use Estimator

Tab 3

Electric Use Results



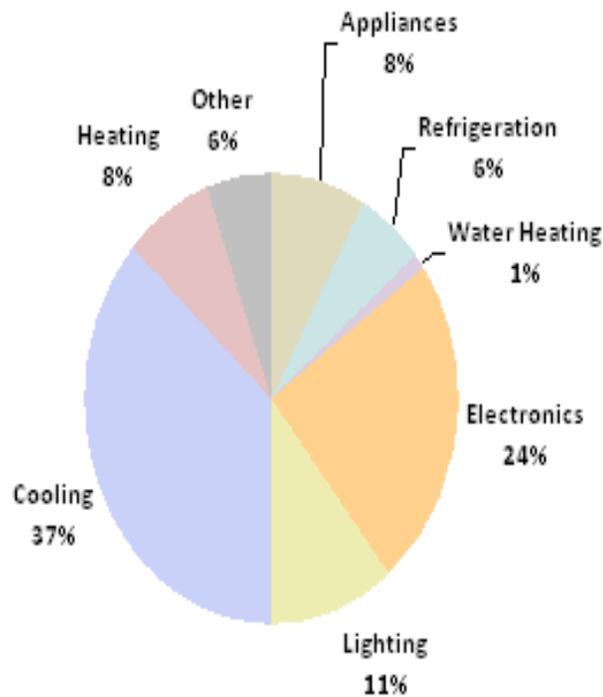
Results

Category	Number of Items Included	Estimated Annual Totals			Percent of Electric Use	
		Use (kWh)	Demand (kW)	Cost (\$)	Your Home	Your Home's Electric Use Compared to the National Average for U.S. Homes
Cooling	2	3,081	3.2	\$227	37%	19% Higher
Electronics	21	2,021	1.0	\$149	24%	8% Higher
Lighting	32	888	1.2	\$65	11%	5% Lower
Appliances	9	687	5.0	\$51	8%	4% Lower
Heating	1	651	0.3	\$48	8%	2% Lower
Refrigeration	1	499	0.1	\$37	6%	4% Lower
Other	5	464	0.4	\$34	6%	2% Lower
Water Heating	1	84	0.2	\$6	1%	9% Lower

	Summary Data	
	Monthly Average	Annual Total
Use (kWh)	698	8,375
Demand (kW)	10	11
Cost (\$)	\$51	\$617
Annual Cost Attributed to Standby Loads		\$75 (12%)

The Summary – Part 2

Your Home's Electric Use Breakdown



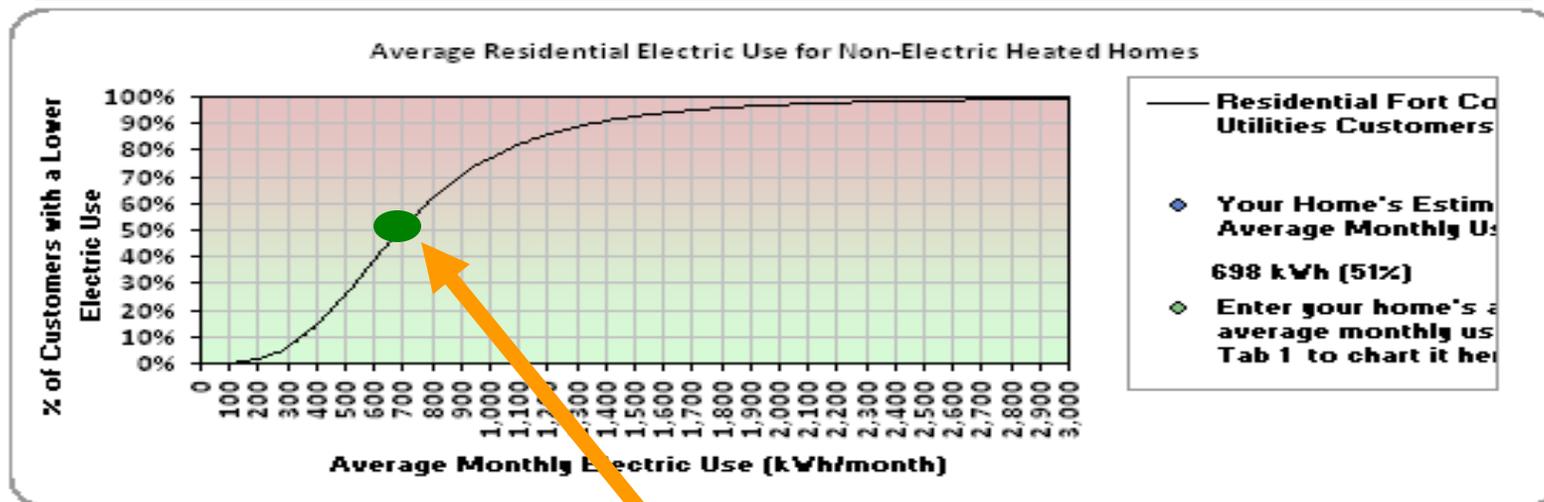
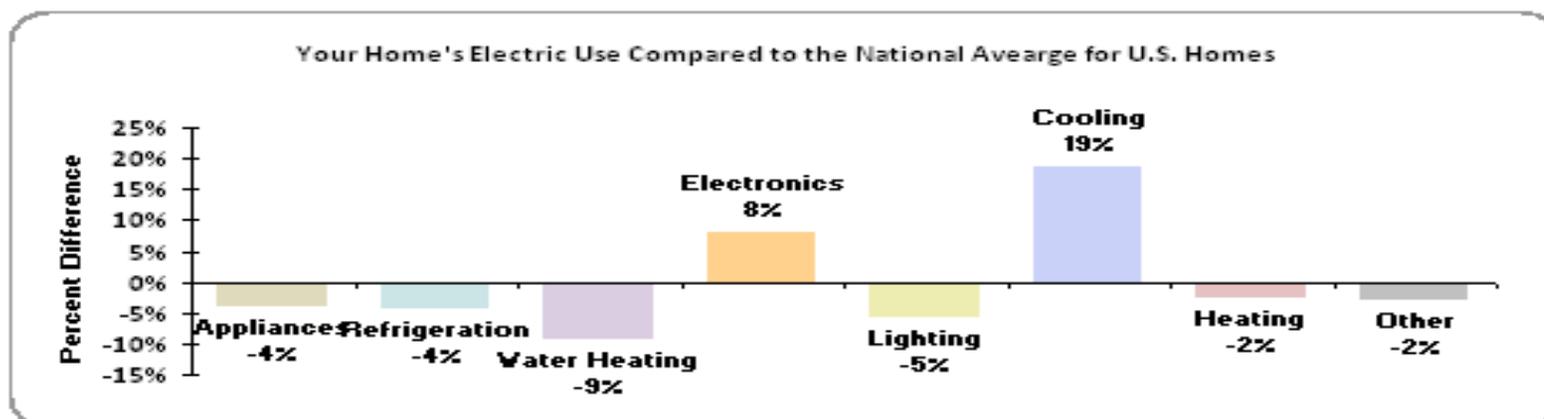
Items with Highest Annual Cost

1	\$224 for 1 2,000 ft ² Home Central Air Conditioner
2	\$48 for 1 2,000 ft ² Home Forced Air Gas Furnace
3	\$37 for 1 CRT Monitor Computer
4	\$37 for 1 2000s (22 ft ³) Refrigerator
5	\$28 for 1 Cable DVR

Items with Lowest Annual Cost

1	\$1 for 1 Ventilation Hood
2	\$1 for 1 Gas Heated Oven
3	\$1 for 1 Speakers
4	\$2 for 1 Scanner
5	\$2 for 1 Phone Answering Machine

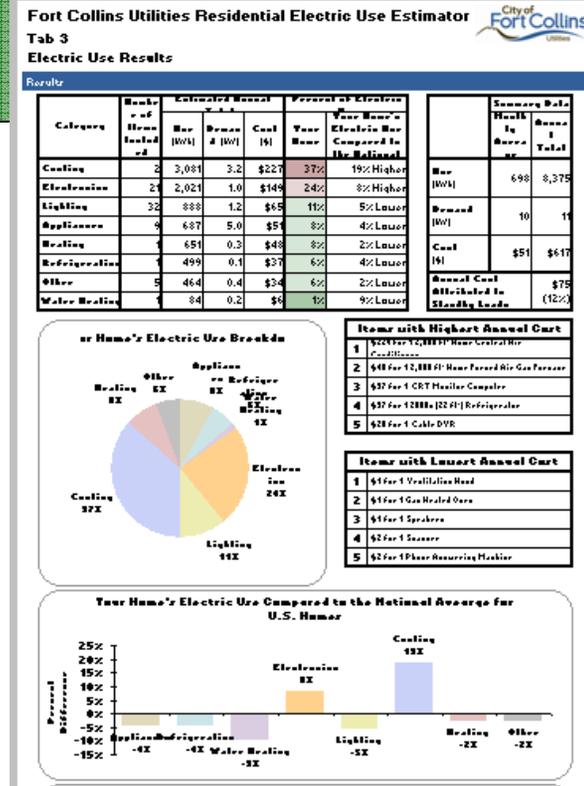
The Summary – Part 3



Where your household falls relative to other Ft. Collins households

Key Points

- Highlights uses to look at more closely.
- Good at alerting you to something way out of line — example —baseboard space heater left on
- “What-if” on impact of various appliances



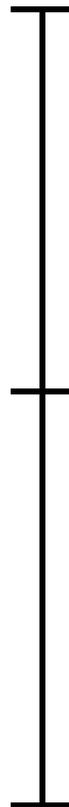
After Estimating - Measure



Total Geek

**Motivated
Energy Sleuth**

**Regular
Jane/Joe**

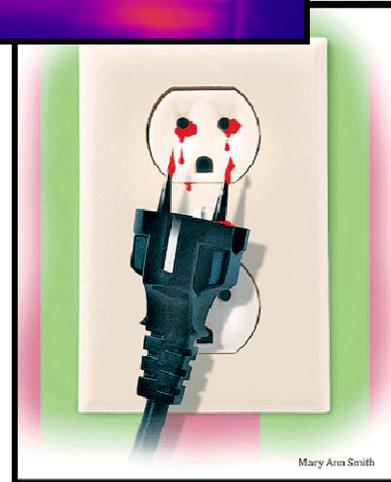
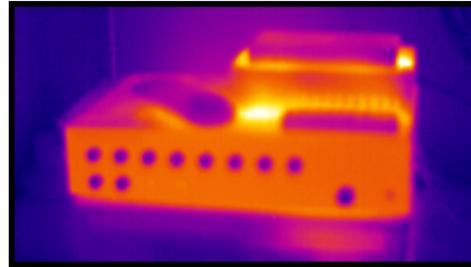


Data logging,
individual circuit
measurements

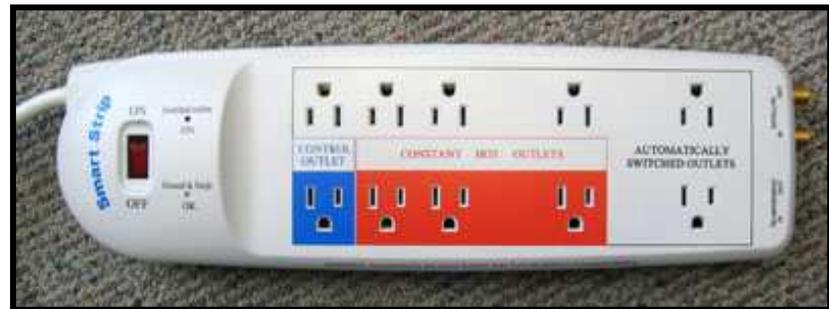
Whole-house
monitor

Appliance meters

Measure and Act ...



- Lights
- Appliances
- PCs



Whole-House monitoring



Countertop Displays



Panel-box Transmitters



Rebates and Incentives

- Home Efficiency Audit and Rebates
- Consumer Product Rebates

Home Efficiency Program

Discover Your Home's Potential.

Reduce energy and water costs and increase the comfort of your home with Fort Collins Utilities' low-cost Home Efficiency Audits:

- focus on energy and water efficiency;
- home-specific improvement recommendations;
- approved contractors;
- rebates for select efficiency improvements; and
- individualized coaching.



See <http://www.fcgov.com/homeefficiency>

Home Efficiency Program Overview



Audits

Improvement
Projects

Evaluation

Qualified
Contractors



Home Efficiency Program Incentives

- \$60 comprehensive energy audits
- Insulation & Air Sealing (typical \$200 to \$750 depending on ...)
- Windows Upgrades (as much as \$500 to \$1000)
- HVAC (motors, system upgrades, water heaters, etc. \$150 to \$500 ...)
- Additional rebates from Xcel Energy and Governor's Energy Office ("GEO"), federal tax breaks

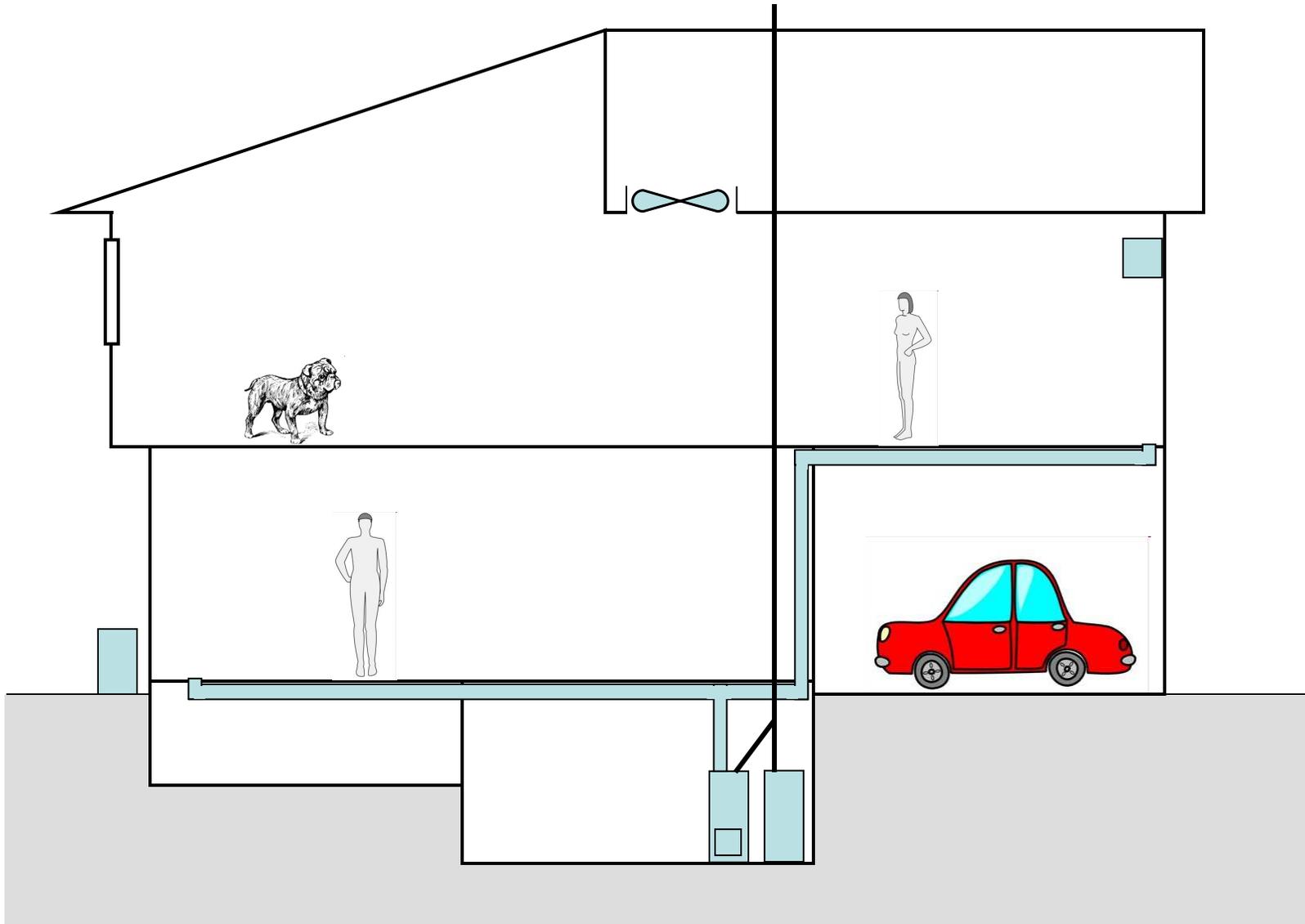


... Reel 'em in!

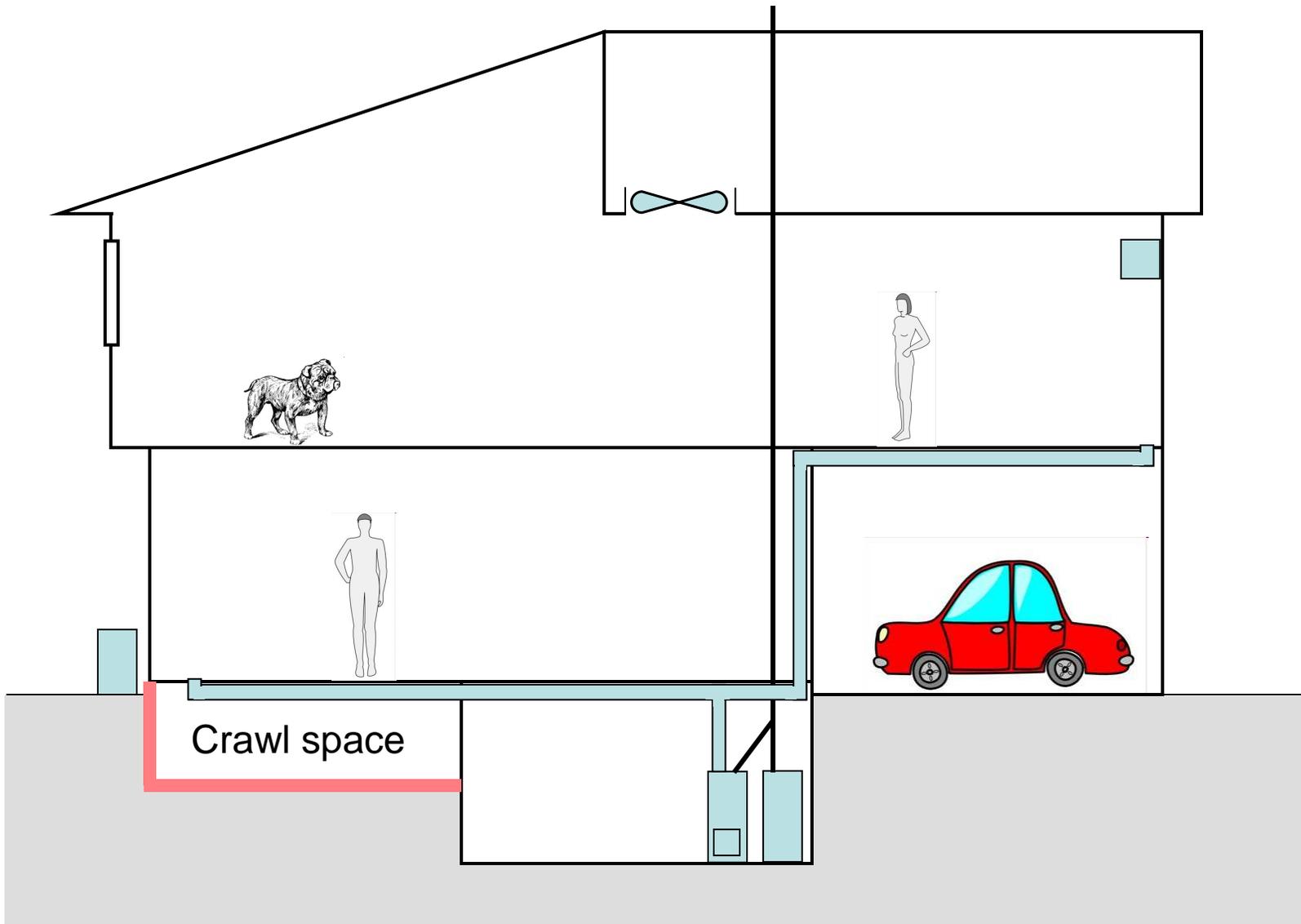
Whole House Mindset

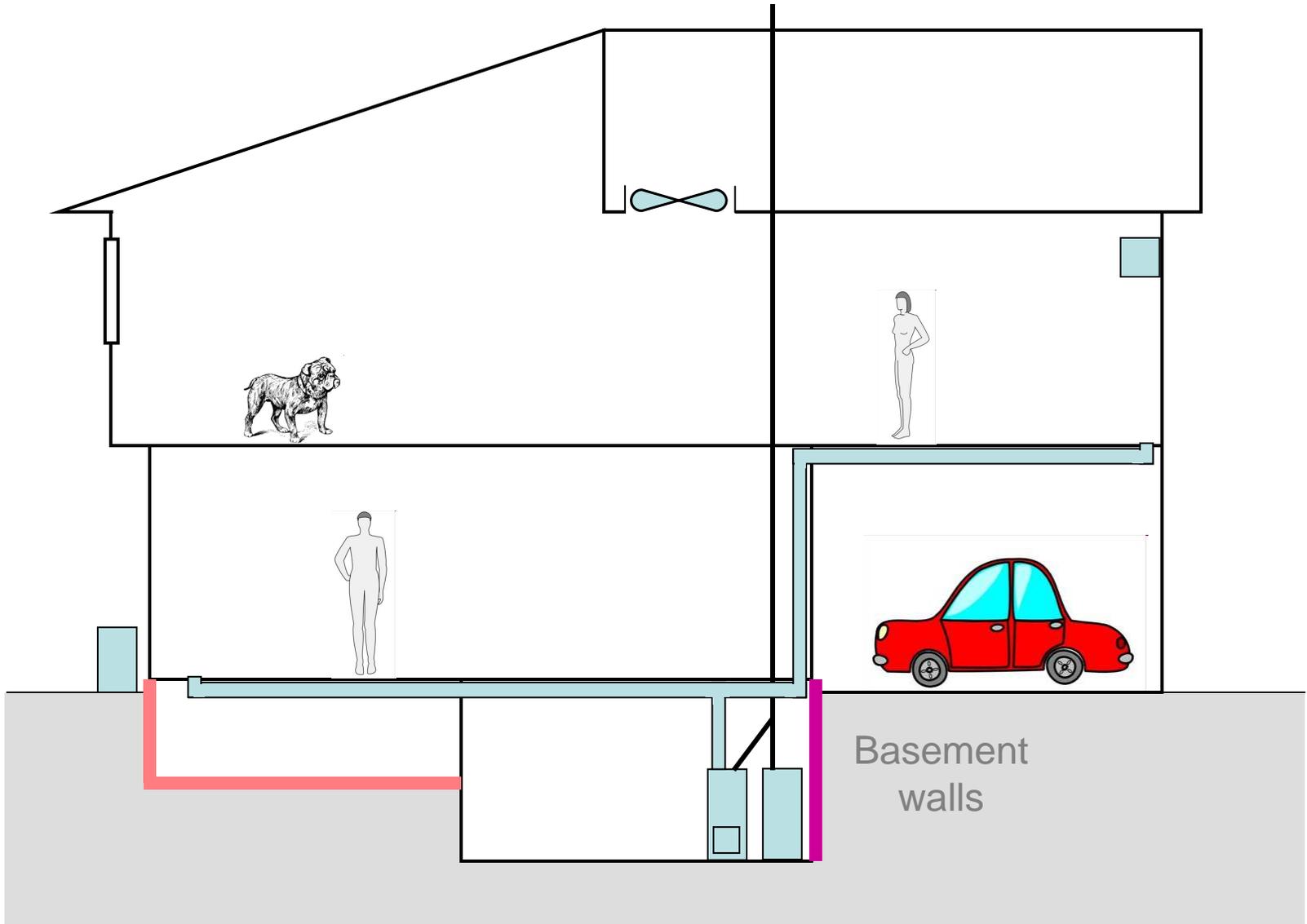
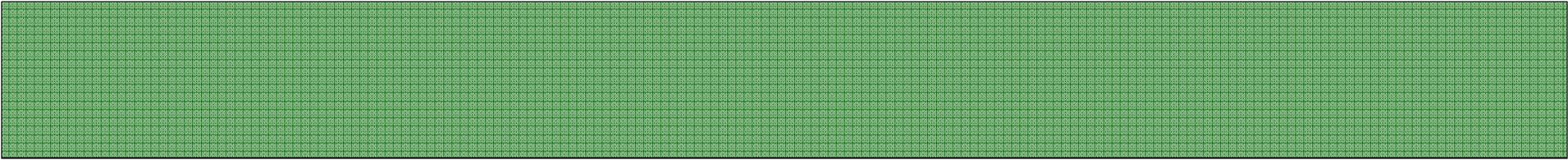
- Many categories of incentives, But...
- Independent audit guides you to prioritize the steps to take and make informed choices avoiding high cost or low-value measures.
- Installation by qualified participating contractors that understand and agree to high standards of installation.
- Quality Control follow-up

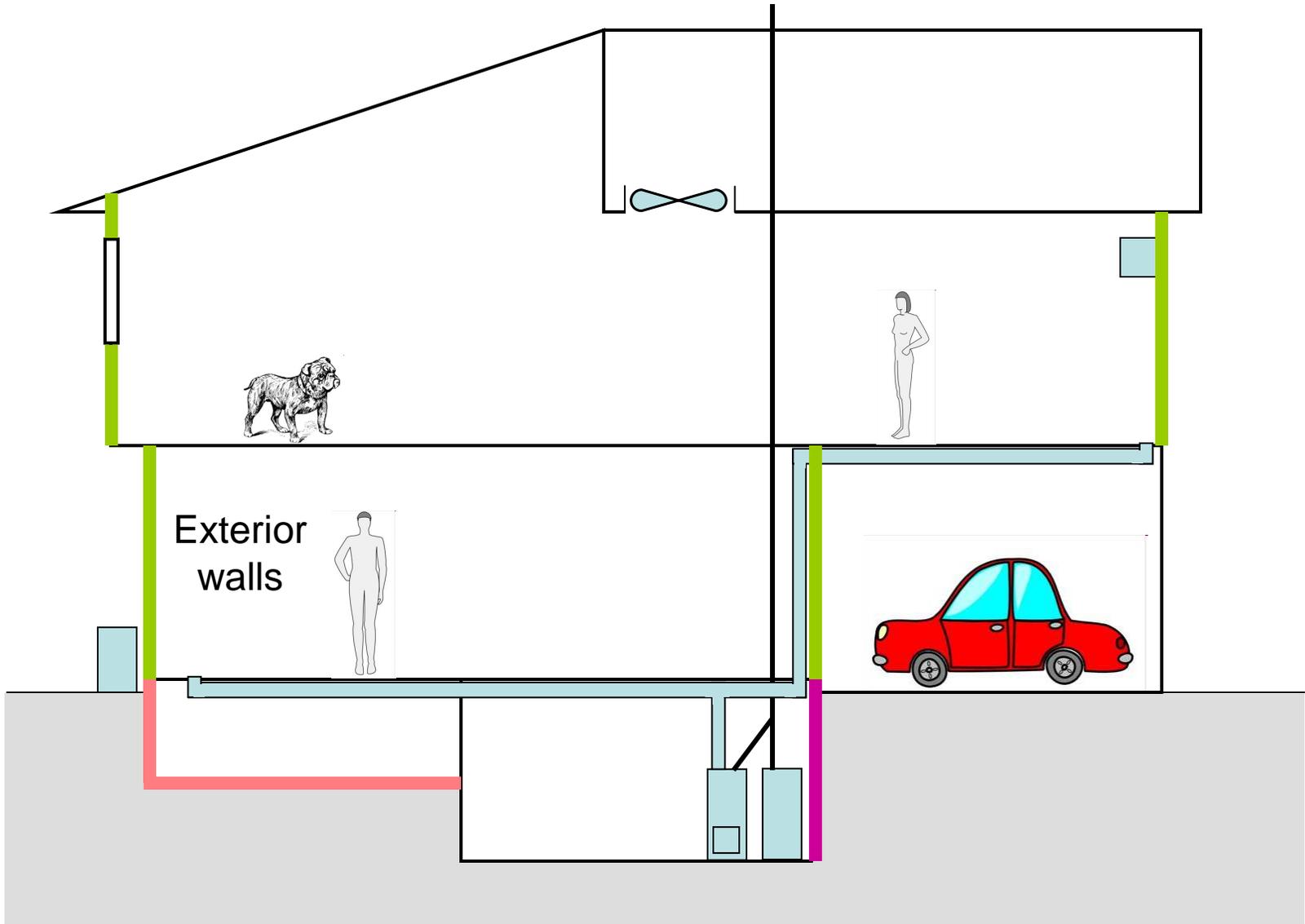
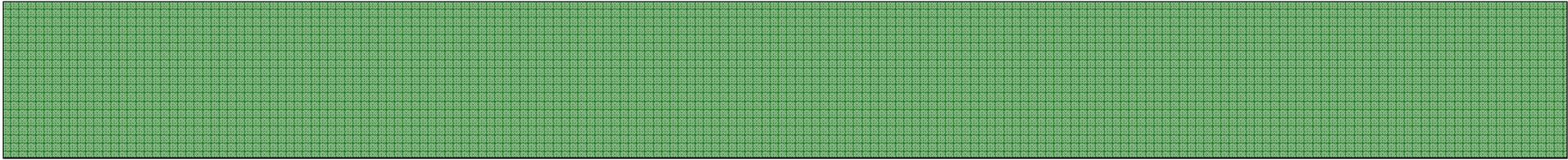
Eligible Improvements

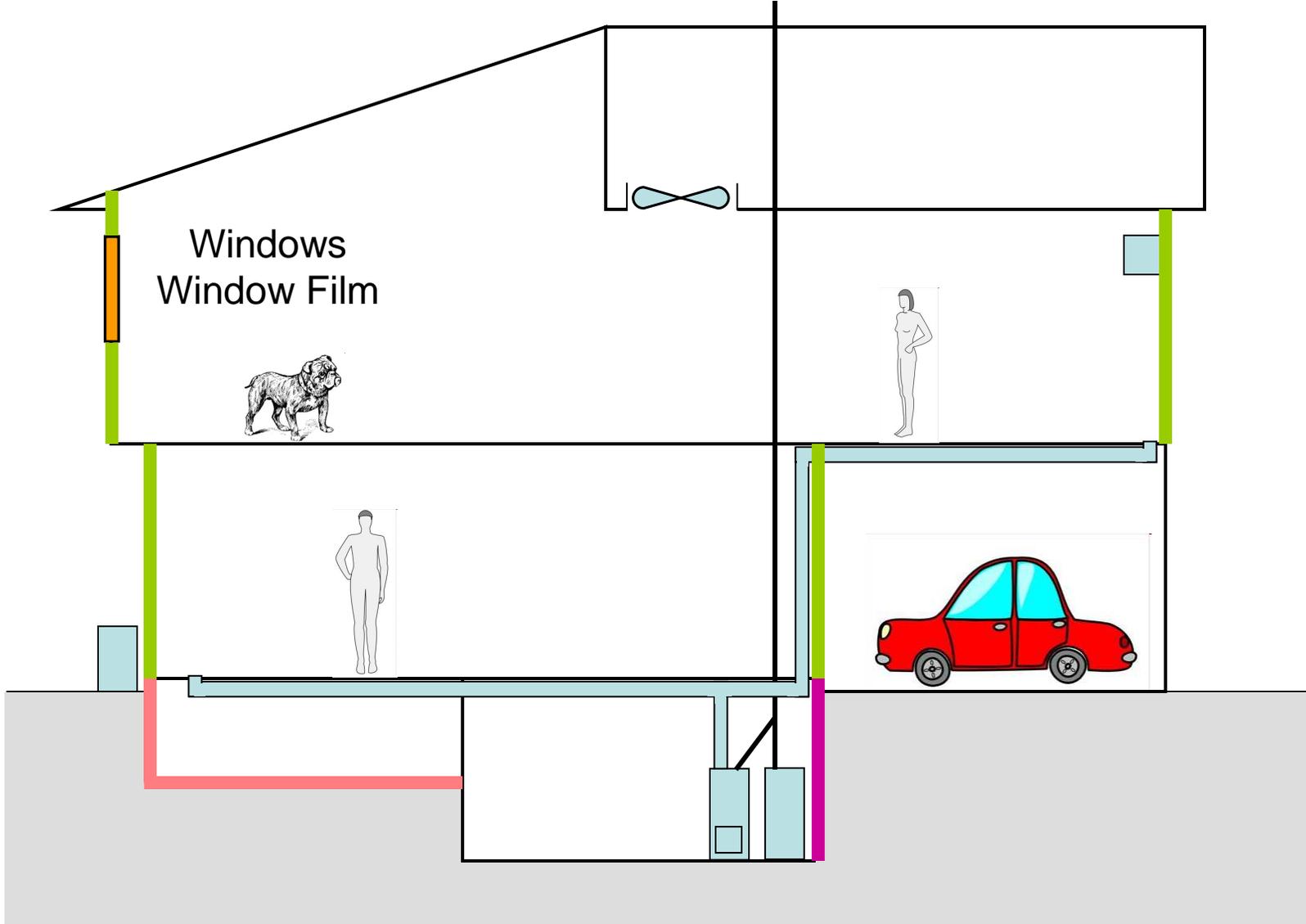
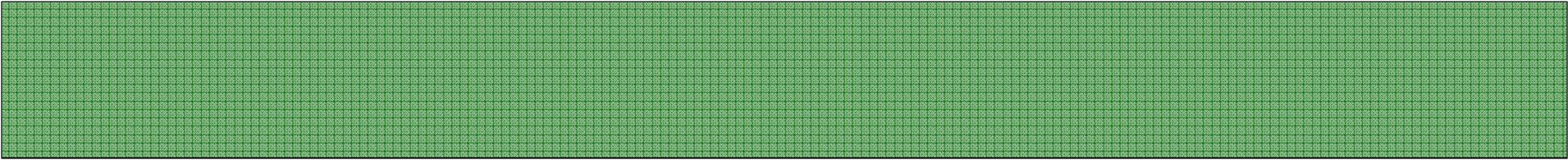


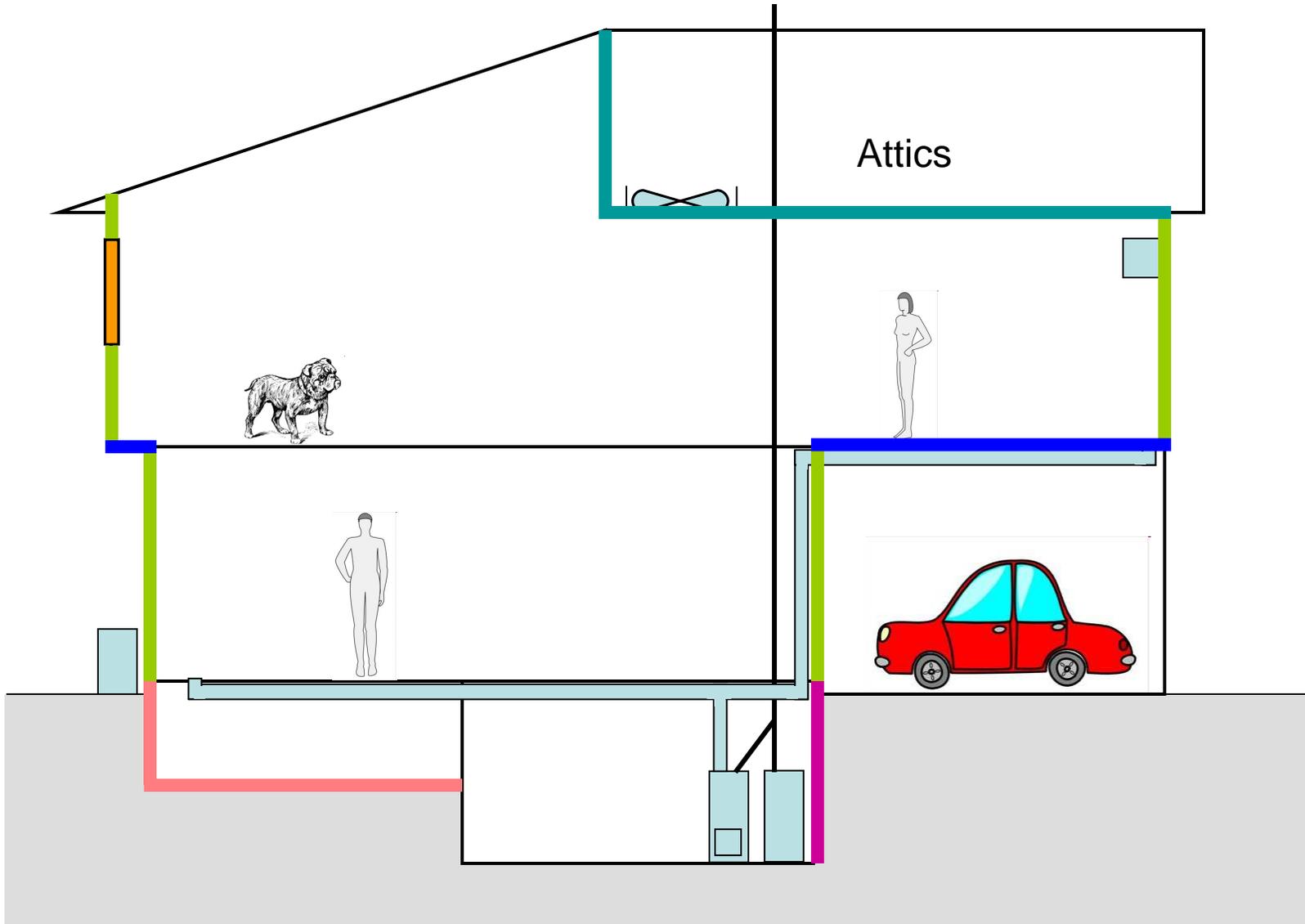
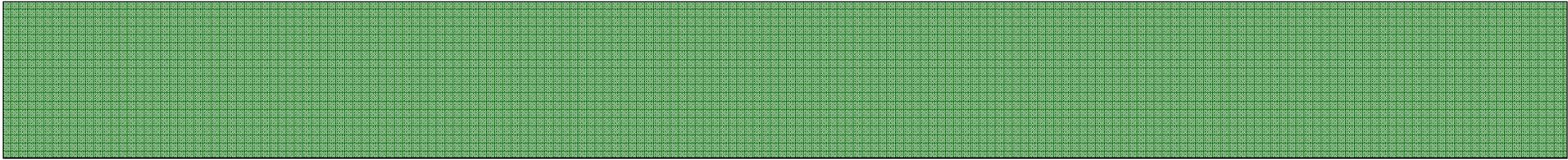
Thermal Shell



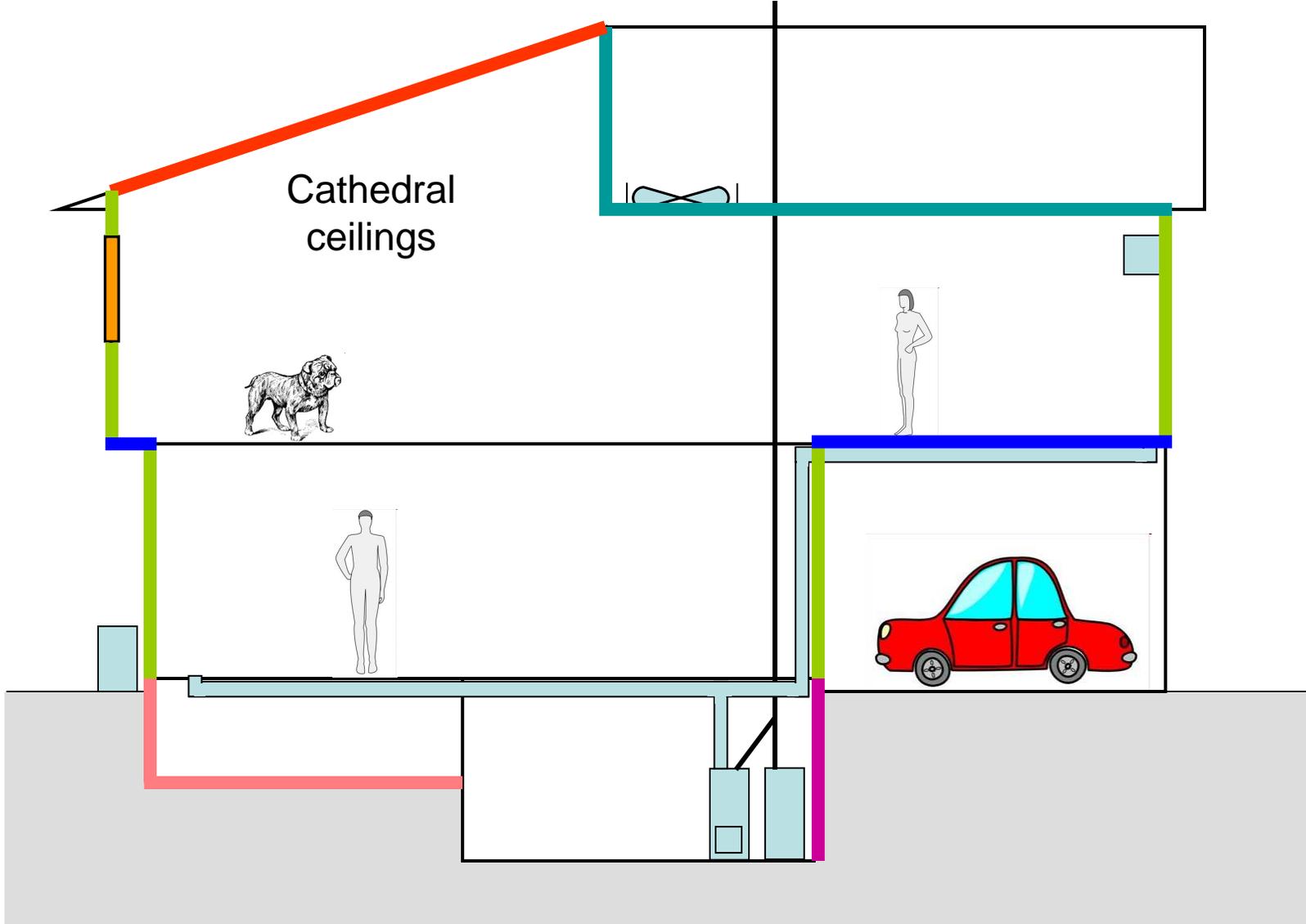
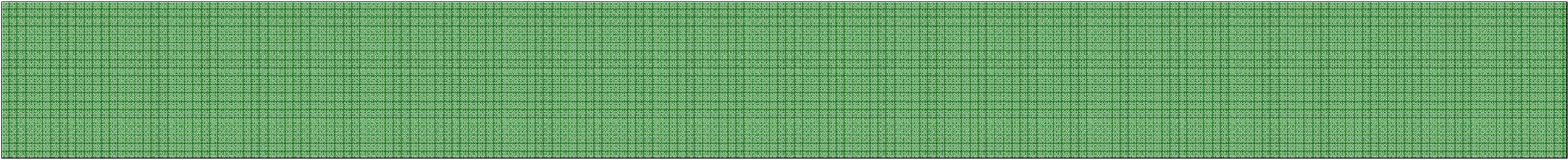




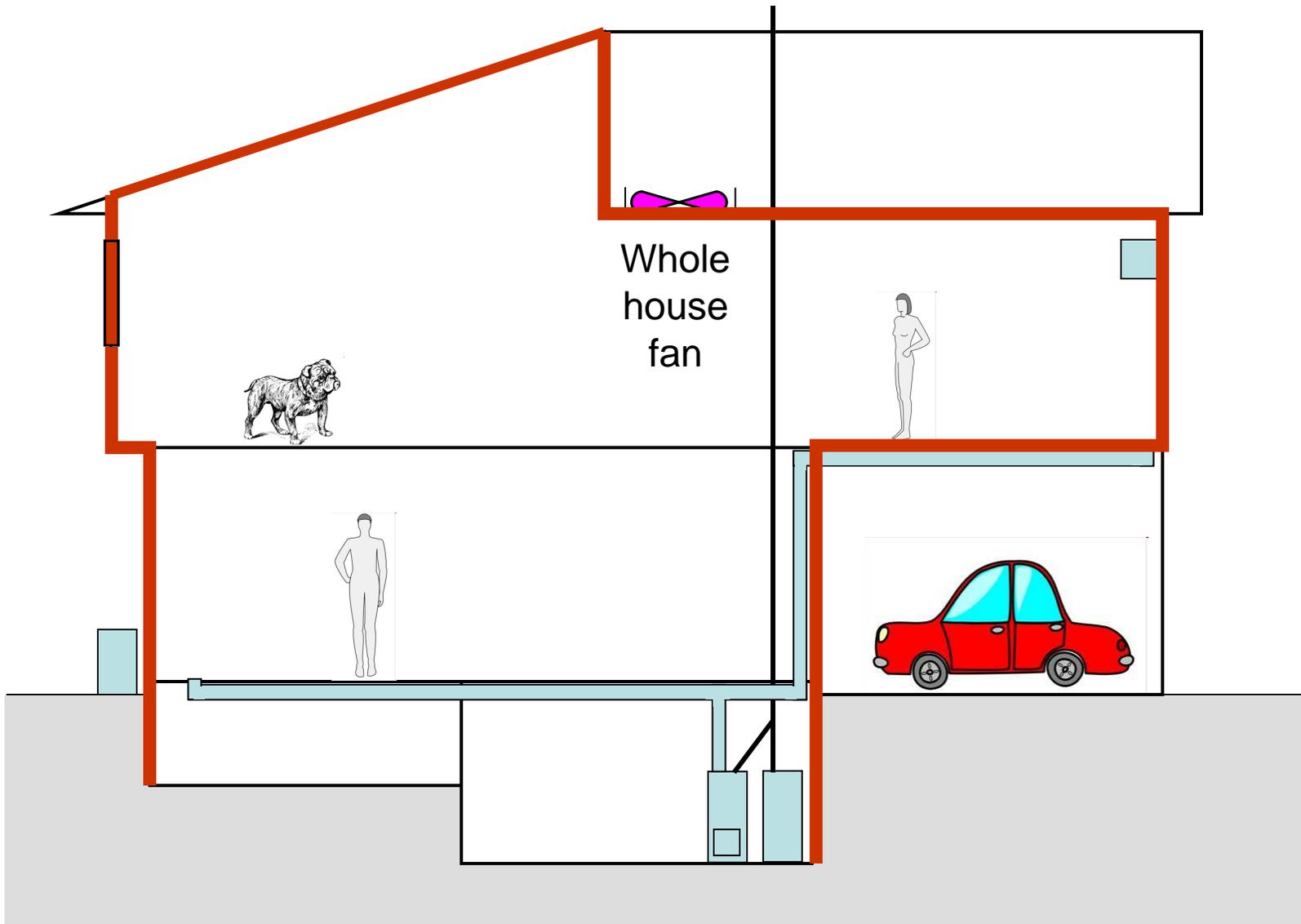


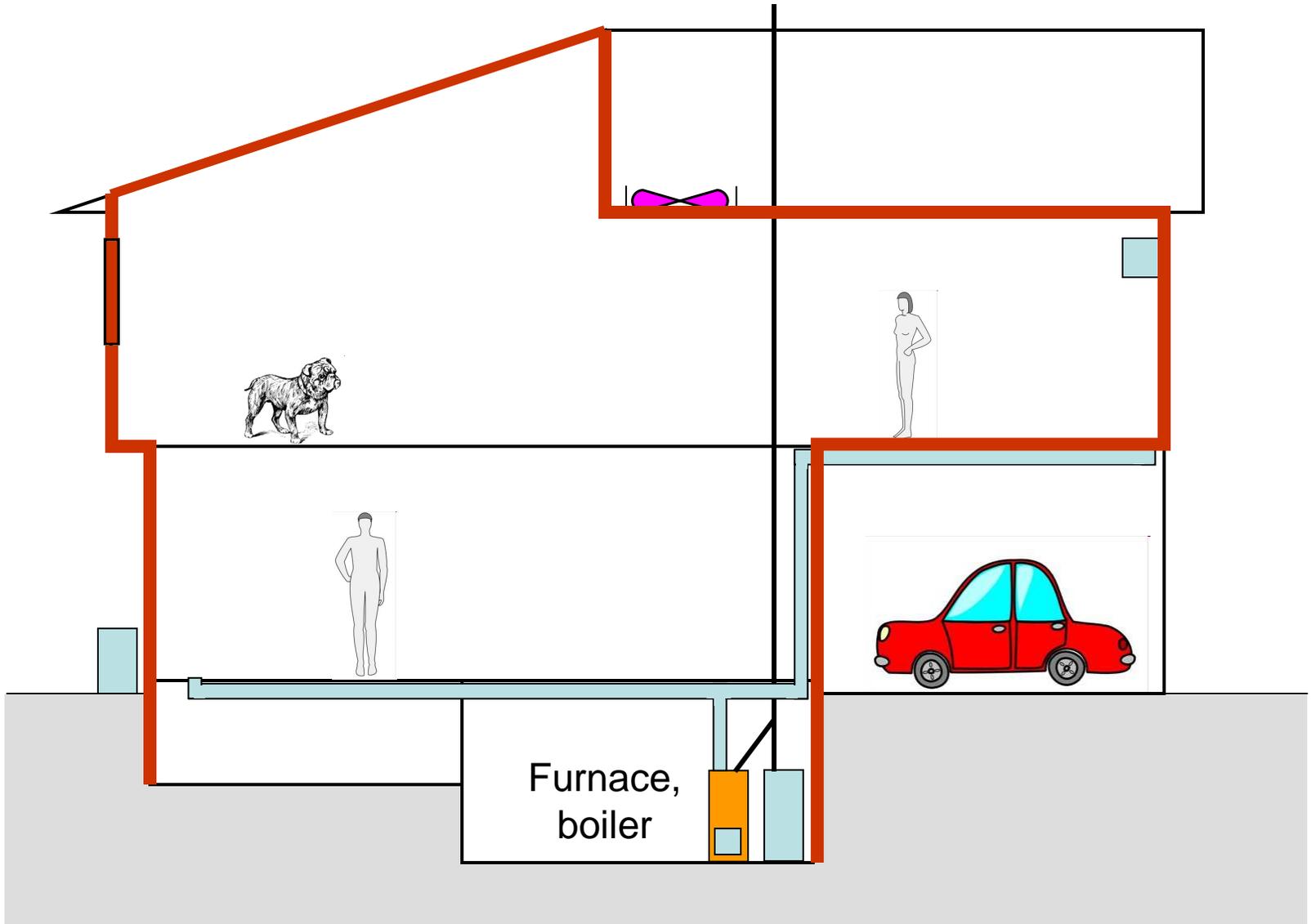
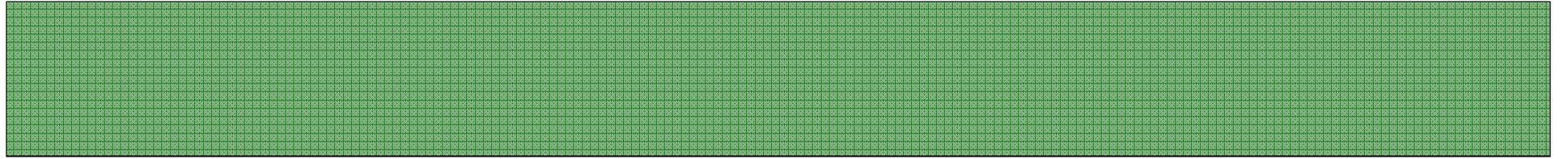


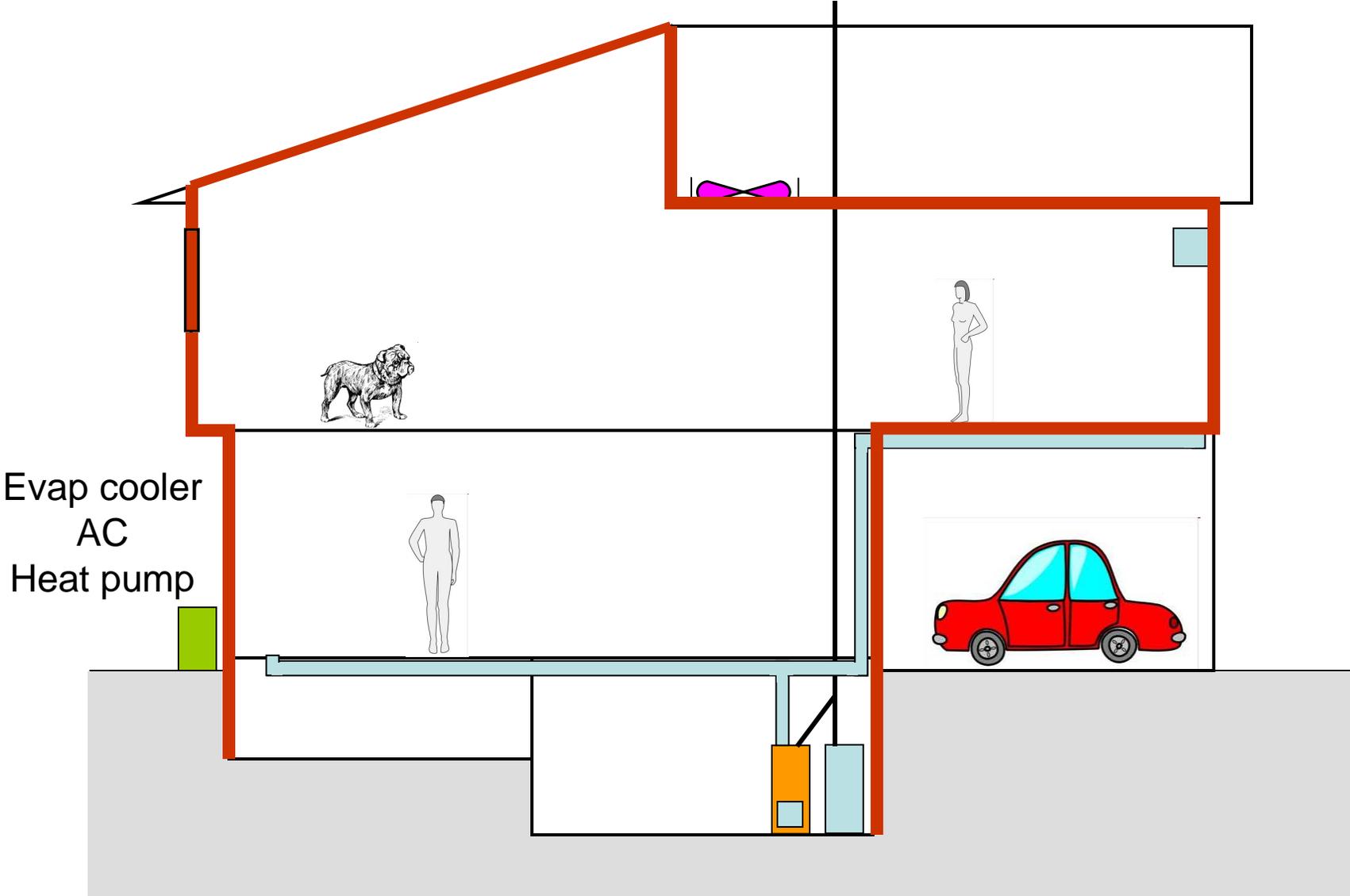
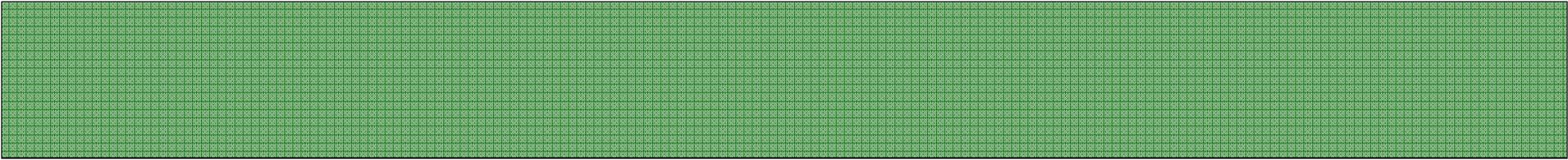
Attics

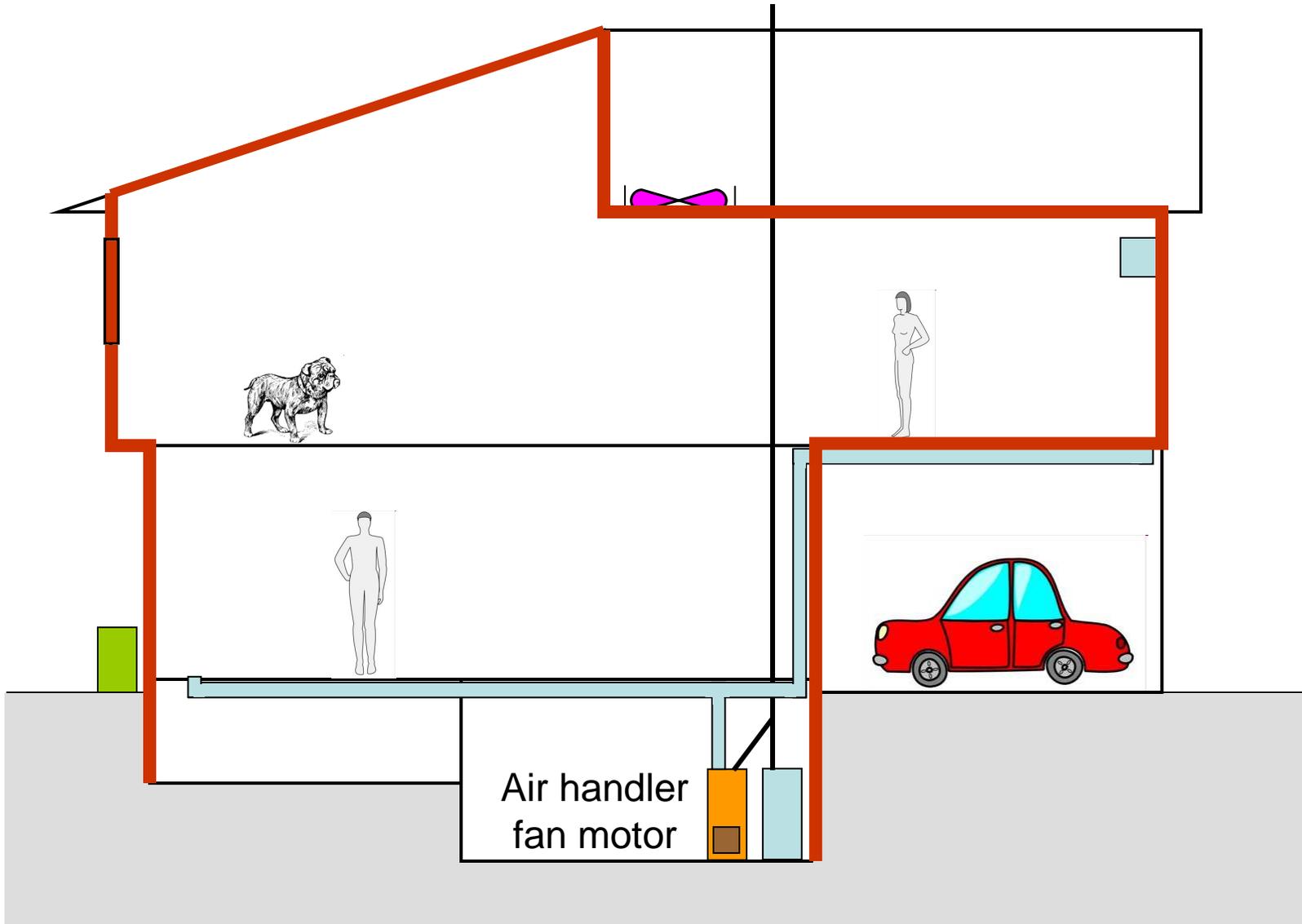
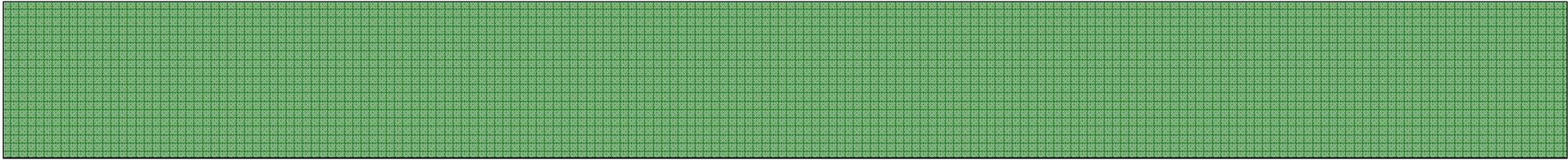


Mechanical Systems

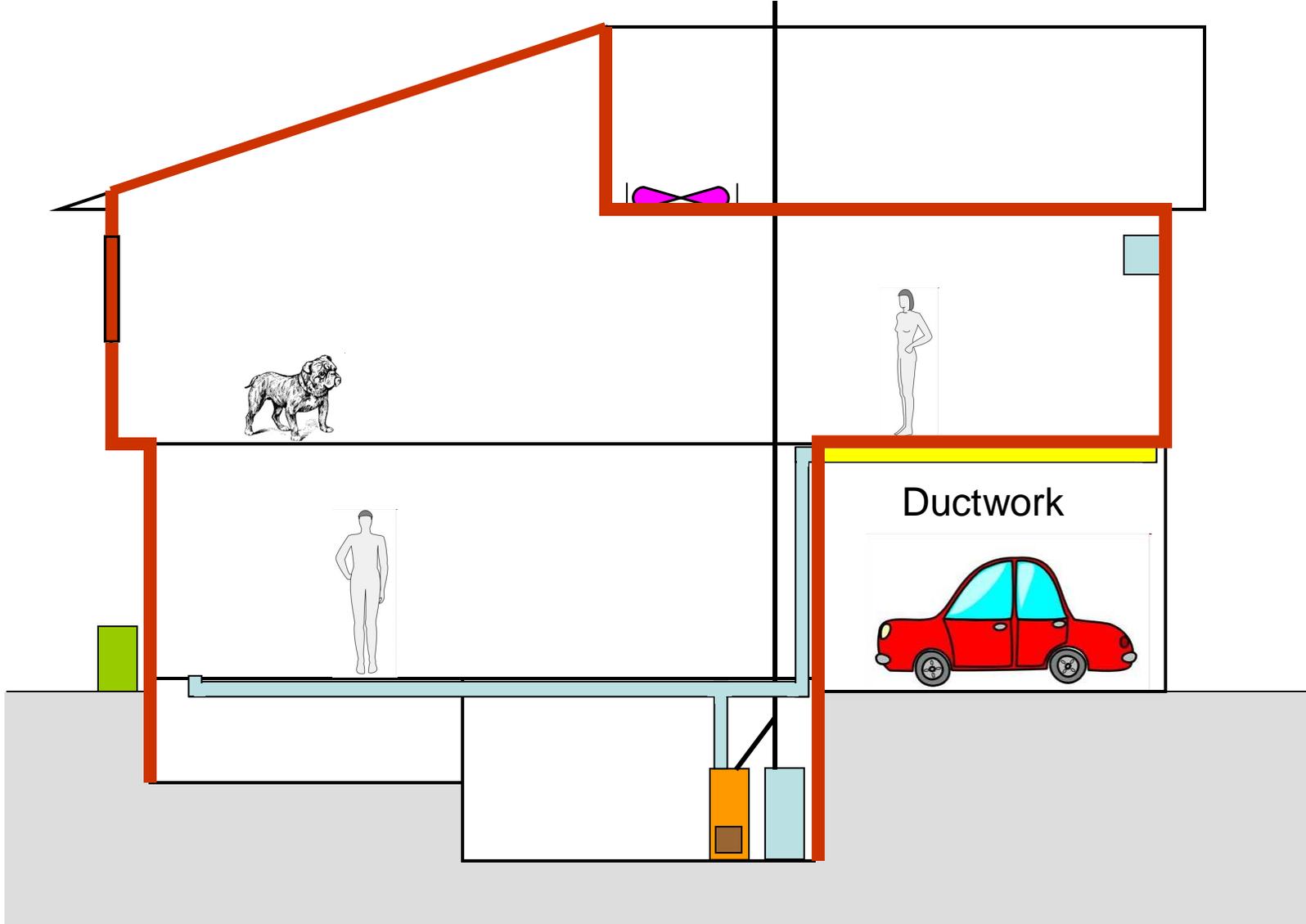
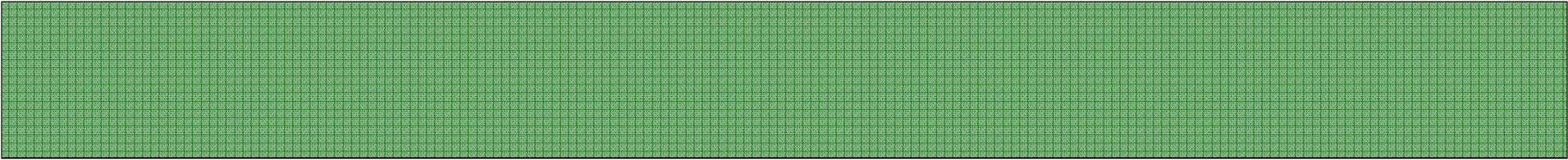






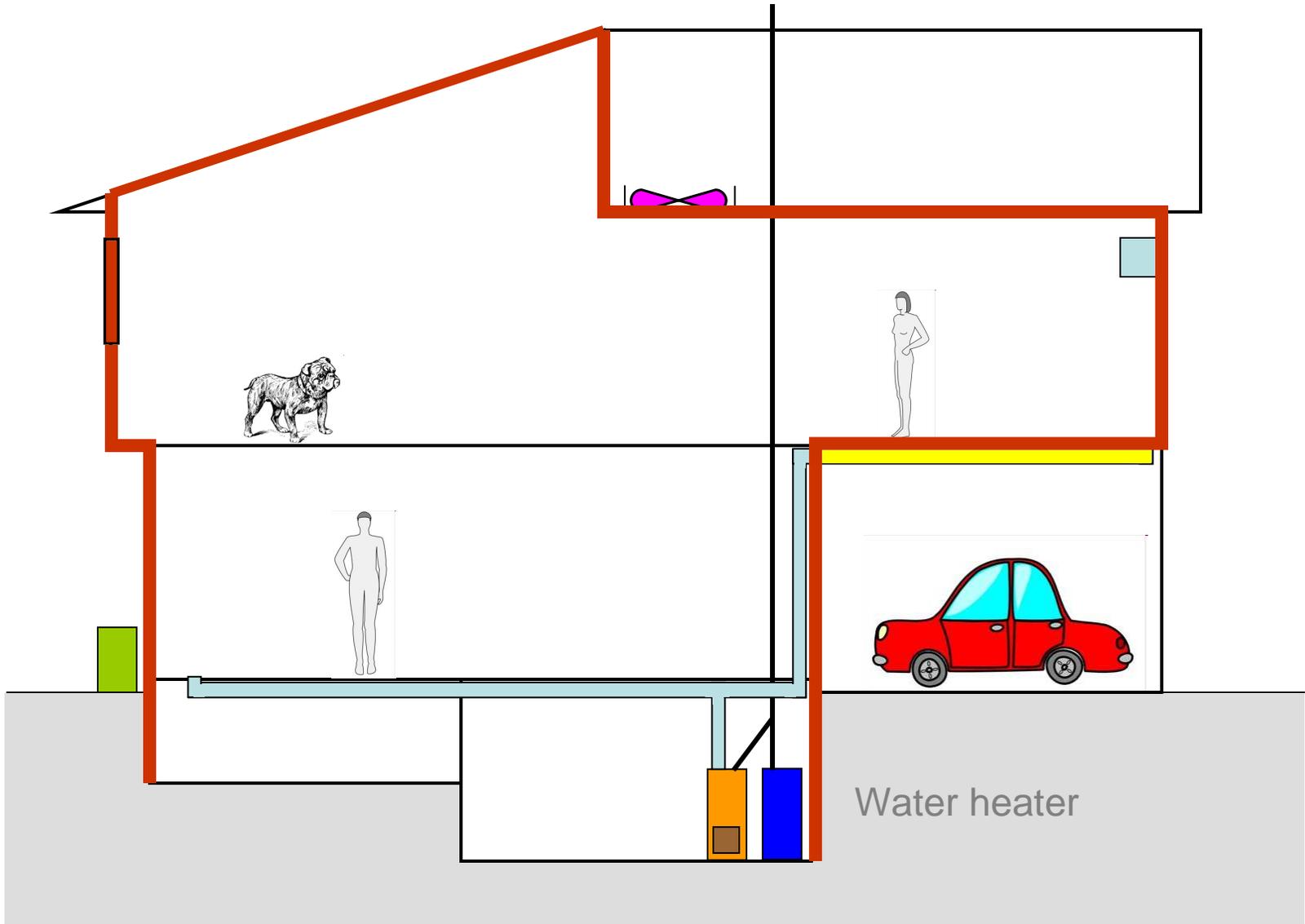
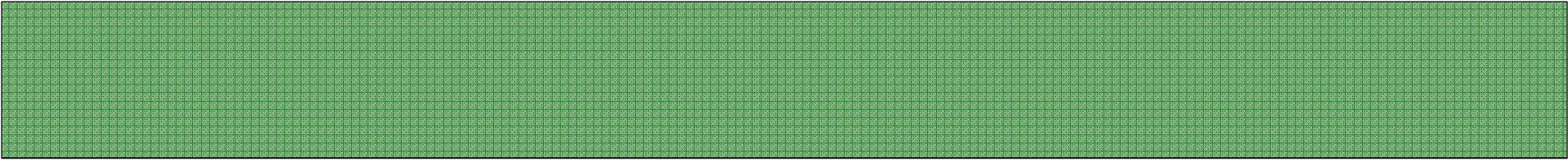


Air handler
fan motor

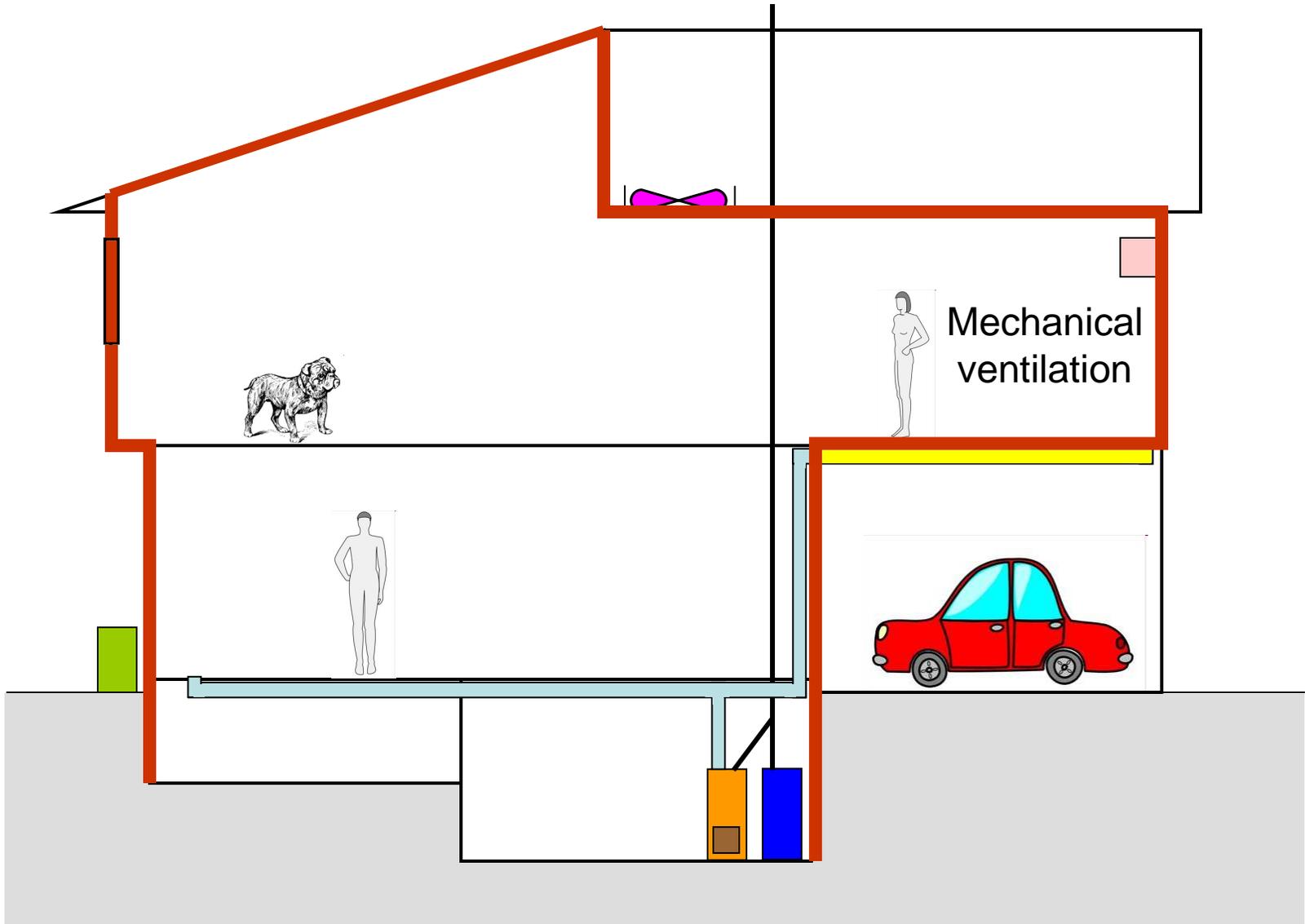
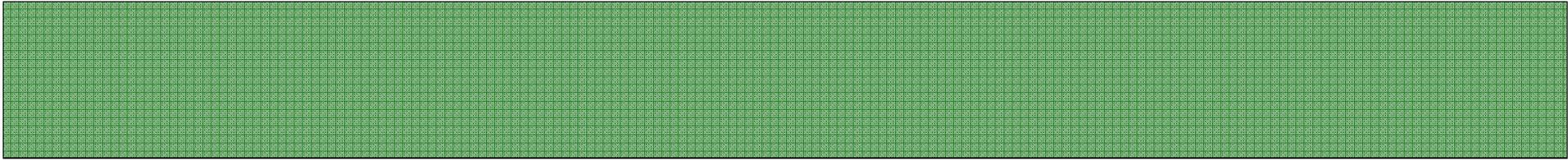


Ductwork





Water heater



Consumer Product Incentives

Shrink Your Usage and
Save

Make Efficient Choices.
Discover Your Home's Potential.

Lighting, Appliances, Water ...



Make Efficient Choices.

Check Out Utilities' Clothes Washer Rebates.



fcgov.com/FortCollinsConserve

Utilities for the 21st Century



<http://www.fcgov.com/utilities/residential/conserv/rebates-programs>

Realistic Savings?

- A test case or two ...

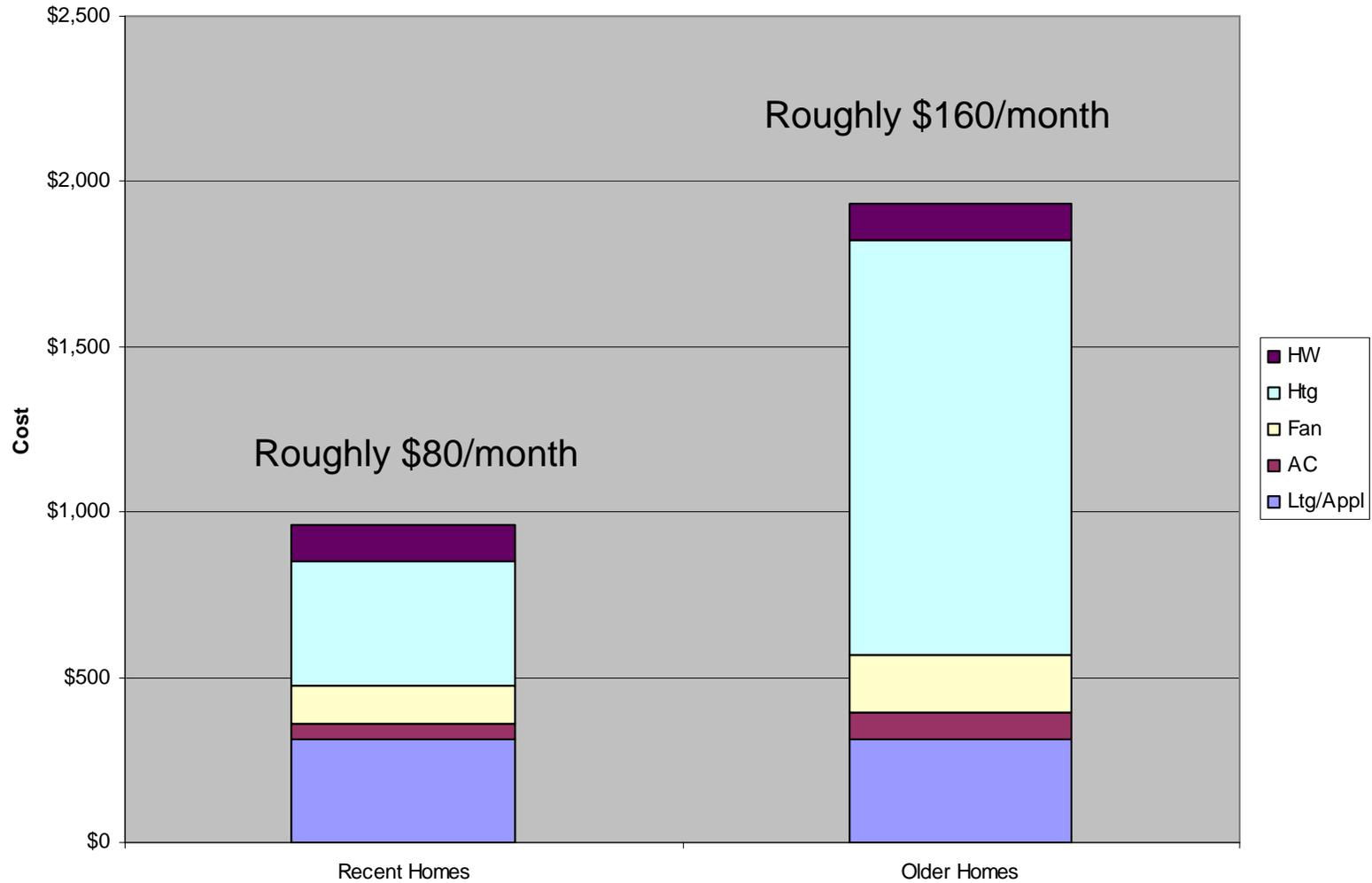
Our Reference Budget

2000 sq. ft home

- Recent Vintage Home: \$1000 /year total
\$500/year Elec.
- Older Homes: \$2000/year Total
\$600/year Elec.

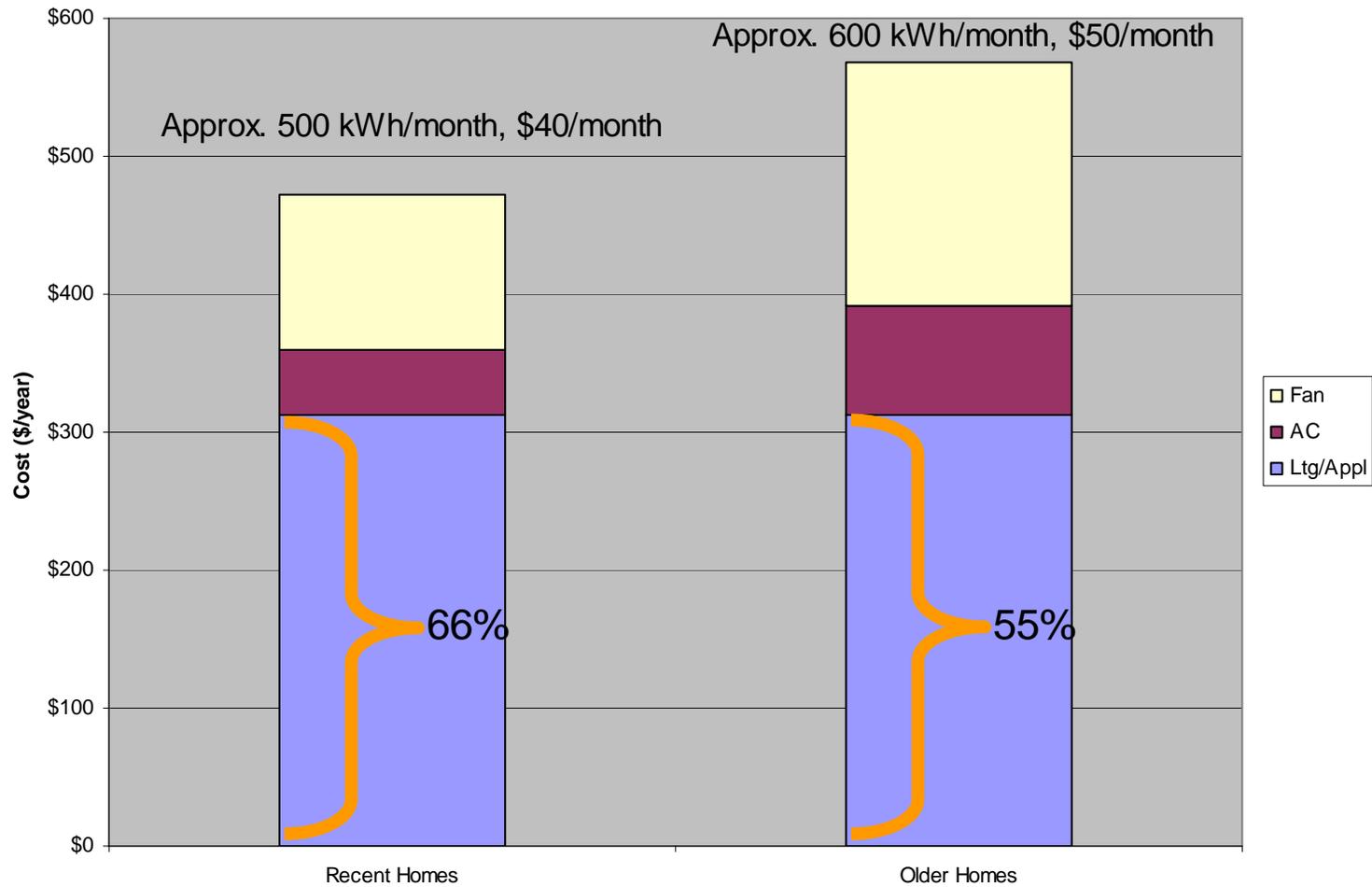
Annual Energy Cost

Breakdown of Total Household Energy Cost



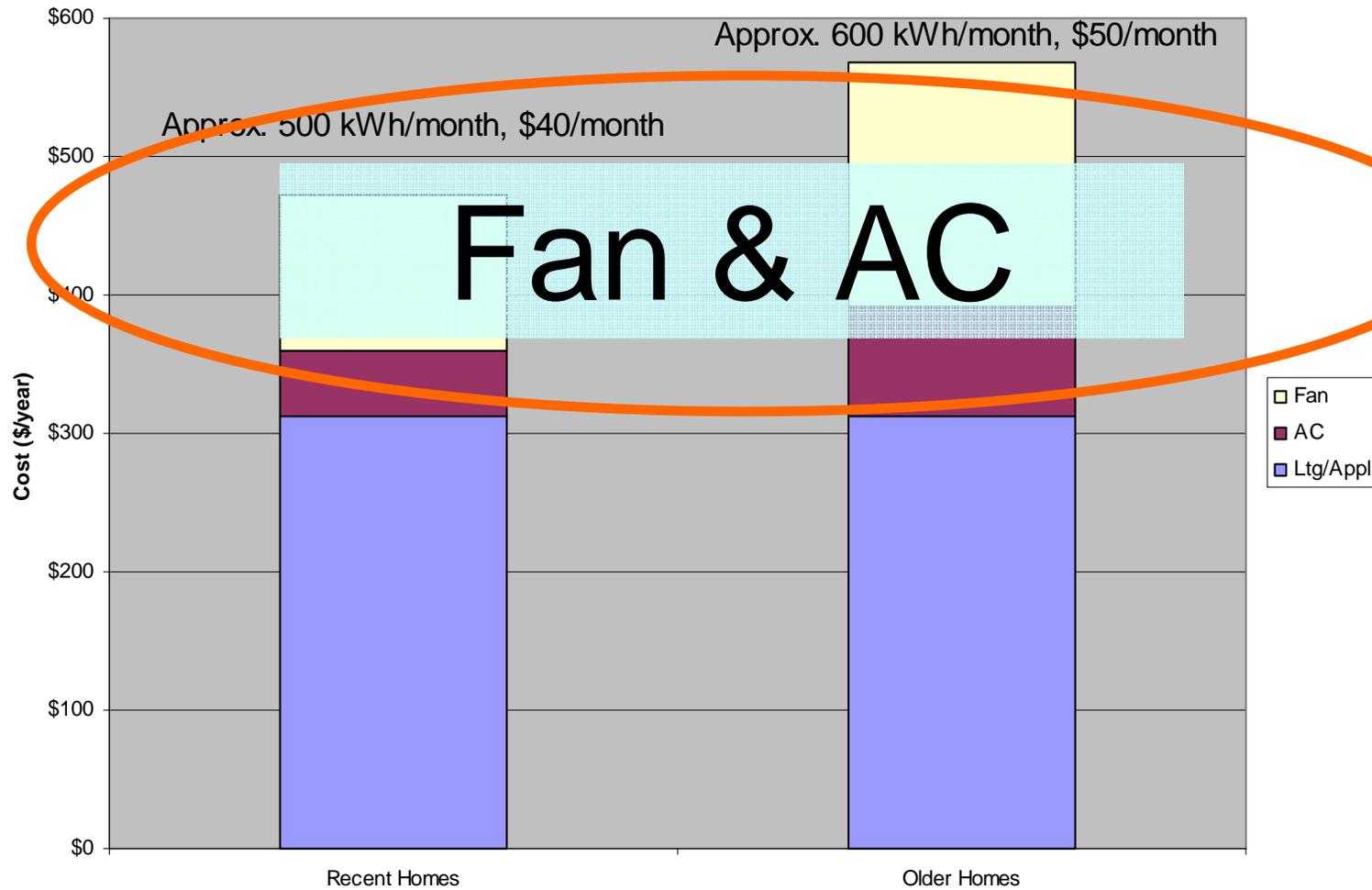
Household Electric Costs

Breakdown of Electric Costs



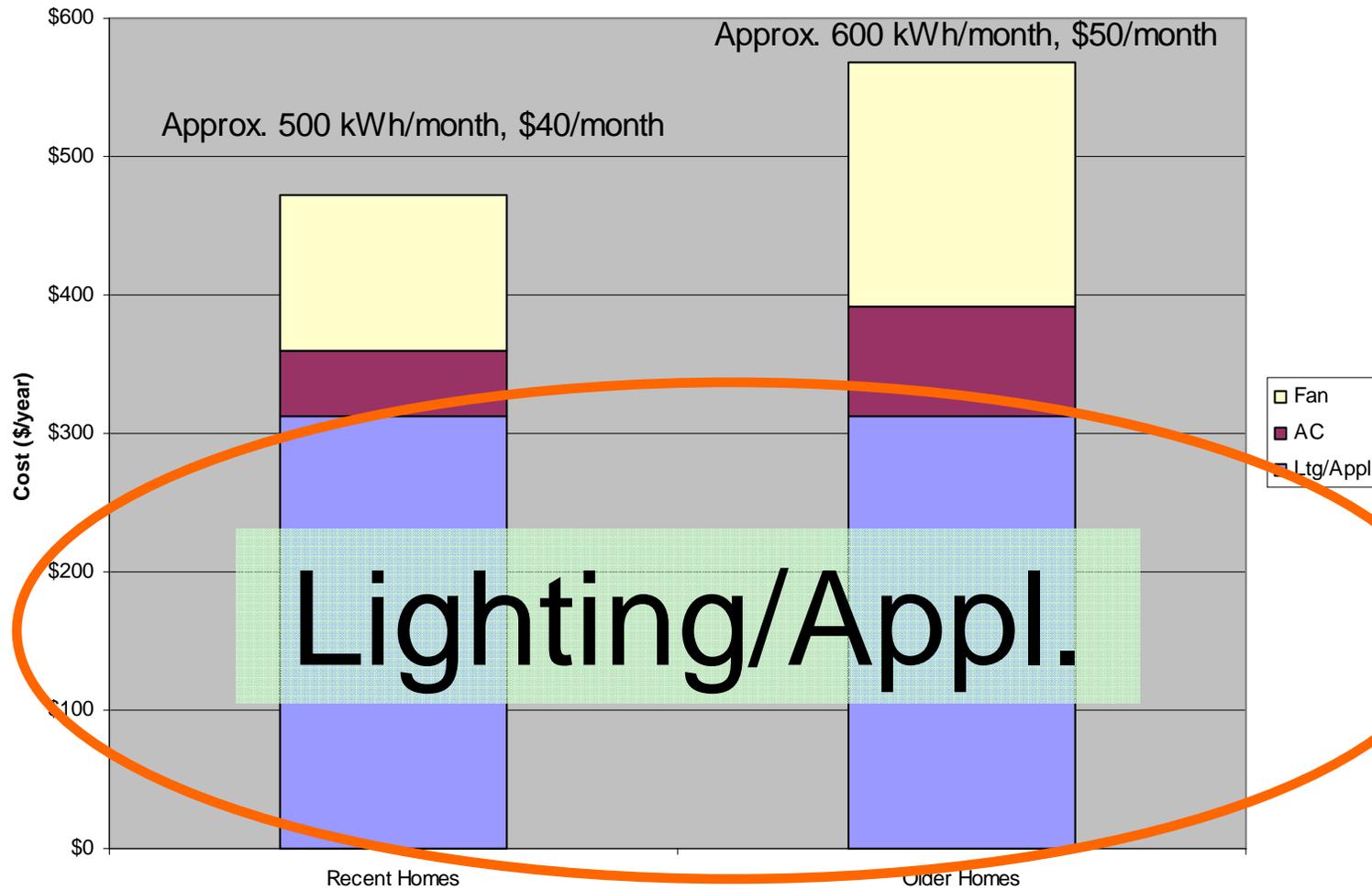
Household Electric Costs

Breakdown of Electric Costs



Household Electric Costs

Breakdown of Electric Costs



AARP simple tips?

The AARP logo is displayed in a bold, red, sans-serif font.

The Magazine

AARP HOT DEALS

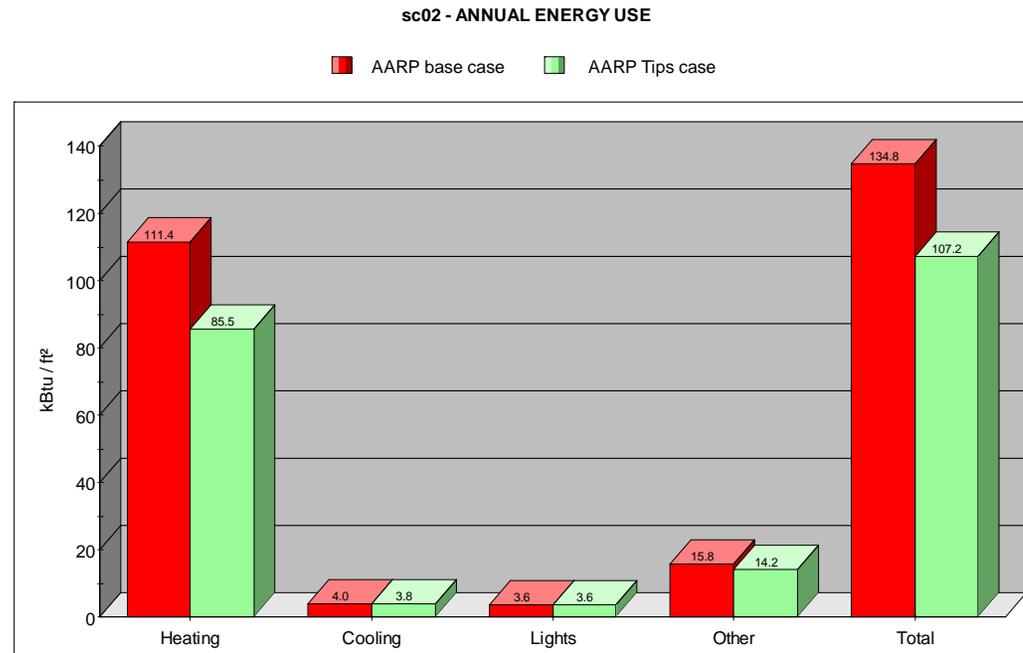
GET THE NEWSLETTER >

Slash Your Energy Bills

- Plug Wall Openings
- Weatherize windows and doors
- Programmable Thermostat
- Water Heater blanket
- Seal and wrap ductwork
- Fireplace doors and draft block

Spend roughly \$320, Save \$1000 per year! ?

Modeling Results



- Models estimate 21% energy use reduction
- 17% energy cost reduction
- \$430 savings per year

Beware!

- Are there “stinkers” out there?

A few...

- Beware (some examples)
 - DIY Solar and Windmills – “Earth4Energy”
 - Dolphin Smart Elec. Saver
 - Eco Power Generator
 - “Heat Surge”, “Cool Surge”

“... stop throwing money out the window and start generating our own electricity.”

Restorations
sureCARE™
Comprehensive Care Package

40% Energy Savings Guarantee

Sunrise Windows guarantees a 40% savings on the energy necessary to heat and cool your home during the first year after installation, when you replace all of the windows and patio doors in your home with Restorations Windows with Ultra-U^{vss}, UltraKr90, or SunSmart

If yo
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MAKE YOUR OWN SOLAR PANELS

SAVE MONEY | GO GREEN | EASY DIY PROJECT



Tuesday 1. Mar 2011

Revealed:

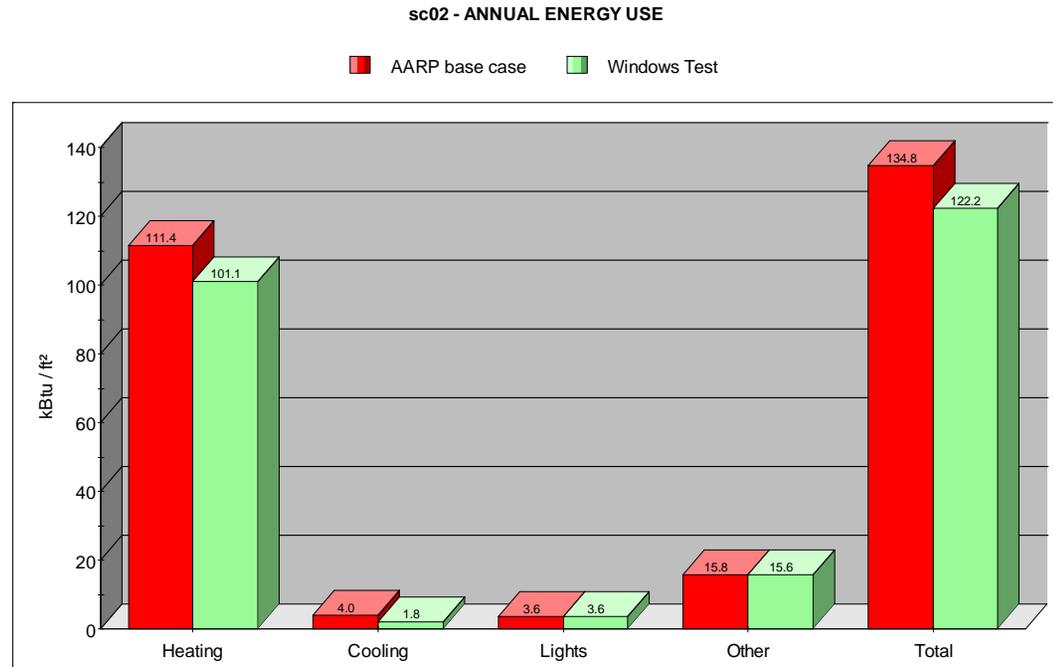
**"Make Your Own
Solar Panels And
Save \$\$\$"**

http://open4energy.com/forum/home/scam/energy_saving_scams

http://www.ehow.com/how_4737537_spot-energy-efficiency-scam.html

Window model results

Modeling a home with single pane windows replaced with double low-e all around.



10% Energy Reduction, likely some noise and comfort improvement but other heat loss paths remain unaddressed.

Summary

- A short-cut to energy savings is often the long road. The value of a good diagnostic energy audit is to identify simple and sometimes hidden problems easily solved and realistically assess more costly measures.
- Ft. Collins Home Eff. Program exists to help offset some of the cost to take action.
- Check out an appliance meter and become an energy sleuth.

Online Links

www.fcgov.com/reps

Your Electric Bill: Take Control" <http://www.fcgov.com/reps>

<http://www.fcgov.com/utilities/residential/conserves/rebates-programs>

<http://www.fcgov.com/homeefficiency>

http://open4energy.com/forum/home/scam/energy_saving_scams

http://www.ehow.com/how_4737537_spot-energy-efficiency-scam.html

Catch some Savings...

Fini