

# Building America Opportunities for Raters

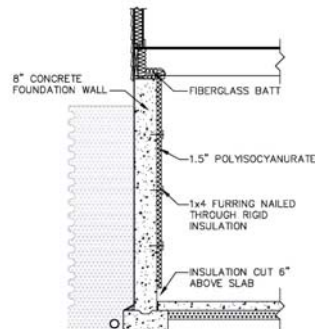
RESNET Conference  
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## Building Systems Research

- Cambridge Homes, Chicago
- Moisture & thermal performance



## Solar Homes

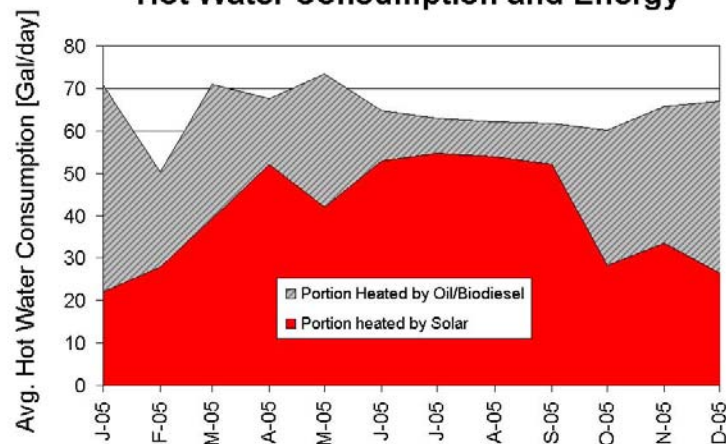


Partnership with Western Massachusetts Electric Co.



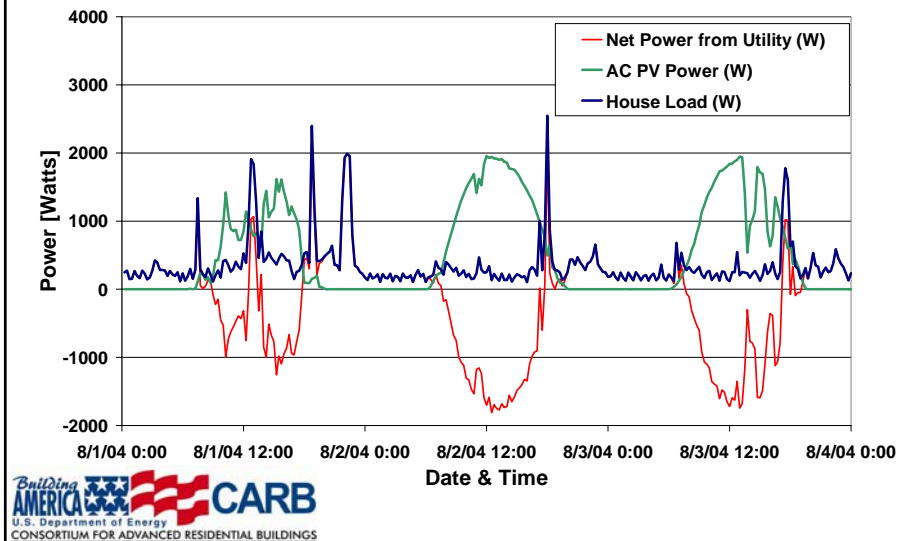
## Solar System Performance

Hot Water Consumption and Energy



## Utility Costs & Benefits

Electric Power Profile  
Three Days in August



## Lakewood Ranch, Sarasota, FL

- Helped design & implement “green” development and building standards for community.
- 30,000 Homes over 15 years
- All Energy Star
- All “Green” per FGBC Standards



## Veridian Homes: Achieving 40% Goal

### Based upon Previous Prototype

- Advanced Framing
- Engineered Duct System
- Basement Insulation to Sill (R-5 minimum)
- R-40 Attic Insulation
- Vinyl, Double Pane, Low e windows
- Air Sealing to Reduce Infiltration
- All Ducts in Conditioned Space & Tightly Sealed
- Direct- or Power- Vented Mechanical Equipment



### Added Features

- Blown-In Insulation (R-23)
- Solar Water Heating System
- 100 % Fluorescent Lighting
- ECM Motor on Furnace
- Energy Star Appliances
- Home Energy Monitoring System



## Blue Sea Construction

- CARB project in 2001: Develop specifications for affordable Energy Star homes.
- 375 units in NYC, 79 more in 2006



## Simpler QA

- Blower Door Testing
- Duct Blaster Testing
- Balancing



Building  
AMERICA  CARB  
U.S. Department of Energy  
CONSORTIUM FOR ADVANCED RESIDENTIAL BUILDINGS

## Ventilation Commissioning

- Check flow of Exhaust Fans
  - Flows often <50% of rated flows

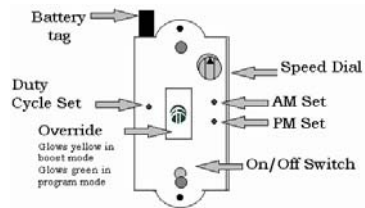


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## Ventilation Commissioning

- Check Controls
  - Timer settings
  - Other specialized controls



## Ventilation Commissioning

- Proper
- Operation
  - Installation
  - Ducting



## Combustion Testing

- Combustion Efficiency
- Safety
  - CO levels
  - Proper draft
  - Spillage



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## Refrigerant Charge

- Necessary for proper capacity and efficiency
- EPA Certification



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# LEED-H



LEED  
for HOMES



Project Checklist			Minimum Points
Project Name			City, State, ZIP
Address (Street/City/State)			
1.0	1.1	1.2	1.3
2.0	2.1	2.2	2.3
3.0	3.1	3.2	3.3
4.0	4.1	4.2	4.3
5.0	5.1	5.2	5.3
6.0	6.1	6.2	6.3
7.0	7.1	7.2	7.3
8.0	8.1	8.2	8.3
9.0	9.1	9.2	9.3
10.0	10.1	10.2	10.3
11.0	11.1	11.2	11.3
12.0	12.1	12.2	12.3
13.0	13.1	13.2	13.3
14.0	14.1	14.2	14.3
15.0	15.1	15.2	15.3
16.0	16.1	16.2	16.3
17.0	17.1	17.2	17.3
18.0	18.1	18.2	18.3
19.0	19.1	19.2	19.3
20.0	20.1	20.2	20.3
21.0	21.1	21.2	21.3
22.0	22.1	22.2	22.3
23.0	23.1	23.2	23.3
24.0	24.1	24.2	24.3
25.0	25.1	25.2	25.3
26.0	26.1	26.2	26.3
27.0	27.1	27.2	27.3
28.0	28.1	28.2	28.3
29.0	29.1	29.2	29.3
30.0	30.1	30.2	30.3
31.0	31.1	31.2	31.3
32.0	32.1	32.2	32.3
33.0	33.1	33.2	33.3
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35.0	35.1	35.2	35.3
36.0	36.1	36.2	36.3
37.0	37.1	37.2	37.3
38.0	38.1	38.2	38.3
39.0	39.1	39.2	39.3
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45.0	45.1	45.2	45.3
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47.0	47.1	47.2	47.3
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53.0	53.1	53.2	53.3
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55.0	55.1	55.2	55.3
56.0	56.1	56.2	56.3
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65.0	65.1	65.2	65.3
66.0	66.1	66.2	66.3
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94.0	94.1	94.2	94.3
95.0	95.1	95.2	95.3
96.0	96.1	96.2	96.3
97.0	97.1	97.2	97.3
98.0	98.1	98.2	98.3
99.0	99.1	99.2	99.3
100.0	100.1	100.2	100.3

## Solar Systems

- Still not common, but commissioning is key.





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Building America Program:  
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