

“Whole Building Performance and Energy Codes”

**2006 RESNET Building Performance
Conference**

March 1, 2006

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Need to Shift Thinking to Optimized Systems Engineering

**Most Builders Rely on Compliance With Minimum
Prescriptive Codes**

This results in:

- **Missing Integrated Solutions That Address System Interactions**

Optimized System Strategies Will Result in:

- **Higher Levels of Energy Efficiency**
- **Efficient Use of Resources**
- **Greater Durability**
- **Improved Comfort**
- **Greater Long Term Value to Consumer**

Performance Method

- + Recognizes and Rewards Innovation**
- + Gives Builder Greatest Flexibility to Incorporate Most Cost Effective Features That Makes Most Sense in the Local Housing Market**
- + Construction Savings More Than Makes Up for Cost of Verification**

Performance Method

**Where Viable Option Builders Will Choose
Performance**

2004 ENERGY STAR Homes Verification (131,763 Homes)

- **93% Performance Based (HERS)**
- **7% Prescriptive Based**

Source: Environmental Protection Agency

Moving to Whole Building Performance

First & Biggest Step Already Taken

Adoption of DOE RICC Proposal – Chapter Four IECC 2004 Supplement

Created viable and robust performance path to IECC

Performance Method

Will Now Become More Attractive To Builders

- **Alignment Between (HERS) and Chapter 4 of the IECC 2004 Supplement**
- **Dynamic Growth in ENERGY STAR Homes and Home Energy Ratings**
- **Ratings Most Practical Tool for Performance Compliance Documentation (Accredited Rating Programs in 50 States)**
- **Federal Tax Credit for Energy Efficient Homes That is Performance Base and Based Upon the IECC**

What Should be Considered as Next Generation of Codes?

Whole Energy Use

- + Heating/Cooling/Water Heating 49% of Home Energy Use – Will Decrease As Code is Made More Stringent**
- + HERS, ENERGY STAR Homes, & DOE Building America Program Moving to Total Energy Use of Home**
- + Codes in Future Need to Consider Total Energy Use of Home**

Expanded HERS Score

- **HERS “Expanded” score based on:**
 - **Heating, cooling, hot water,**
 - **Lighting and appliances, and**
 - **On-site power generation.**

Why Important?

Whole Energy Use

End Use

**Heating/Cooling/
Water Heating**

IECC Home

49%

Lighting

14%

Misc. Electric

37%

Soure: NREL - 2005

In Conclusion ...

- + Need to Shift Goal From Minimum Compliance to Optimal Performance**
- + Move to Consideration of Whole House Energy Use**

For More Information ...

RESNET's Web Site on Energy Codes
www.resnet.us/codes