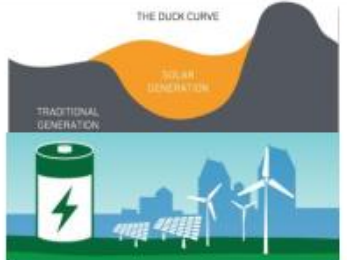




Standard 310

Why It Is Important To Raters

February 25, 2020



Load Management, Energy Generation & Storage

Pursuing Sustainability & Health

High Performance Green Structures

Better Building Practices

Code Compliance

Design & Engineering



ENGINEERING



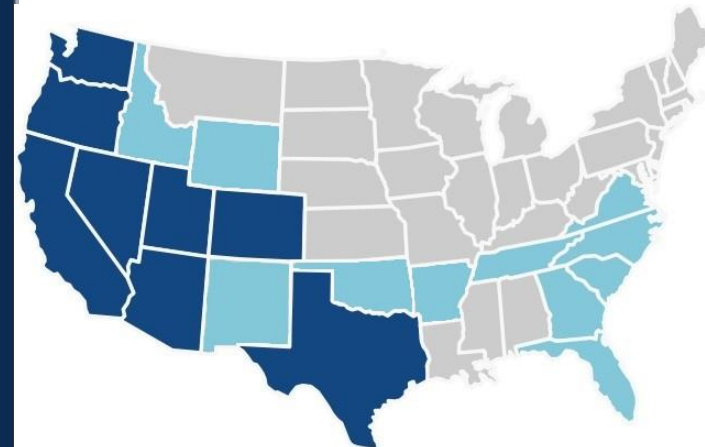
ENERGY INSPECTORS



DESIGN



RISK MANAGEMENT



Std 310 – Why It Is Important to Raters

- Easy to get started
- Improved comfort
- Added value to builder

Std 310 – Why It Is Important to Raters

- Fit with existing inspection process
 1. Duct leakage testing
 2. System airflow & static pressure
 3. Fan watt draw
 4. Refrigerant charge verification

Std 310 – Why It Is Important to Raters



Get Started

- California experience
- Checklists & tools

Designate Blower Fan Volumetric Airflow Grade

Calculate percent deviation between design-specified and field-measured Blower Fan volumetric airflow

$$Q_{dev} = \frac{(Q_{op} - Q_{design})}{Q_{design}}$$

_____ Q_{dev} (cfm) Percent deviation between design-specified and field-measured Blower Fan volumetric airflow

_____ Q_{op} (cfm) Blower Fan volumetric airflow at operating conditions as field measured

_____ Q_{design} (cfm) design specified Blower Fan volumetric airflow for the test mode, heating or cooling

Grade Designation	Qdev Range		
I	≤ 0 and $> -15\%$	or	≥ 0 and $< +15\%$
II	$\leq -15\%$ and $> -25\%$	or	$\geq +15\%$ and $< +25\%$
III	$\leq -25\%$	or	$\geq +25\%$

5. Evaluation of the Total Duct Leakage

3 Does the system have a total amount of supply ductwork or distribution building cavities that is > 10 total linear feet?

4

5 Is the system entirely in Conditioned Space Volume?

6 Does the system have < 3 returns?

7 Did testing occur at rough-in or final?

8 Enter the Conditioned Floor Area served by the system Sq. Ft.

9 Enter the total duct leakage of the system CFM25

10

11 **Total Duct Leakage Grade Designation:**

12

Grade	Leakage Limit for This System	
I	≤ 192	CFM25
II	≤ 240	CFM25
III	> 240	CFM25

Improved
Comfort

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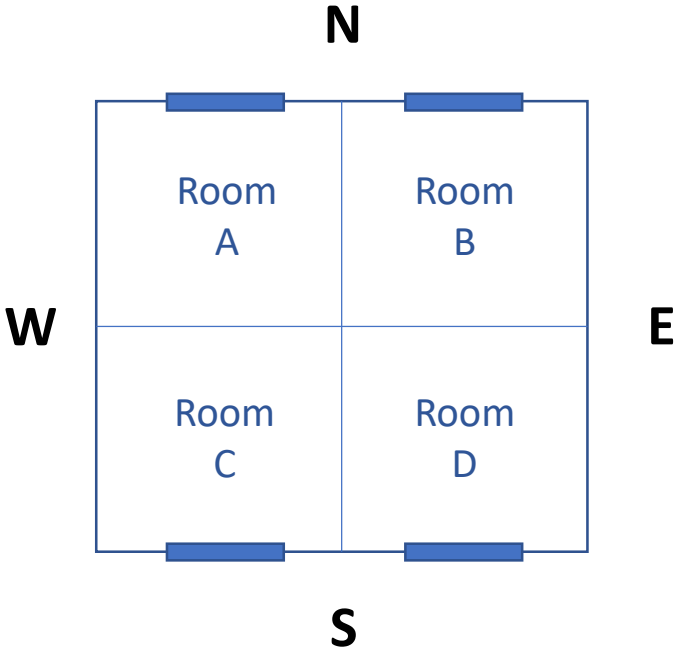
Ei

- Collaboration with mechanical contractor
- Lot/Unit-specific, room-level air balance

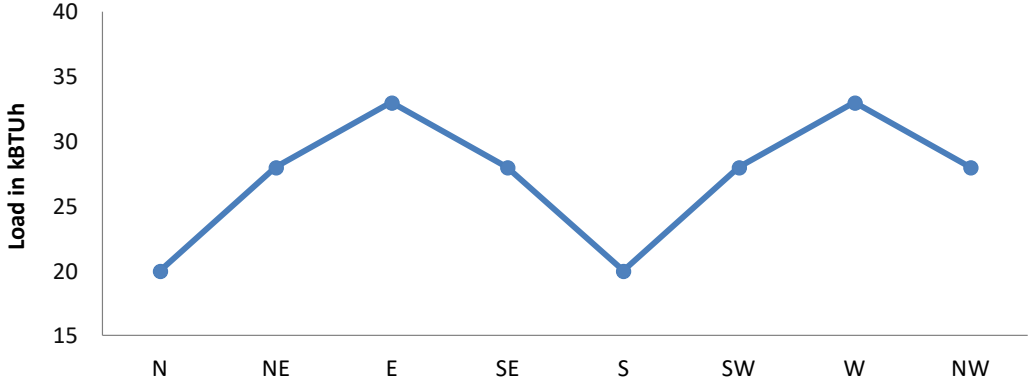
Lot-specific, Room-level Air Balance

Improved
Comfort

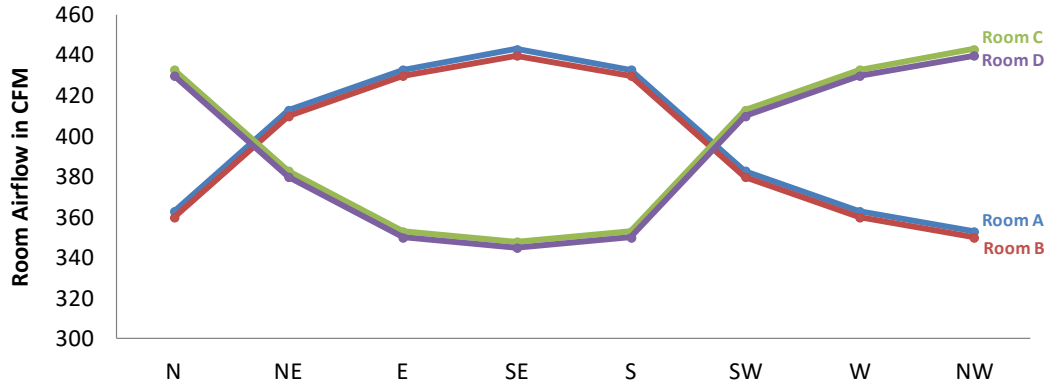
House #1: Concentrated Glazing



Load Varies Greatly with Orientation



Room Airflows Aligned

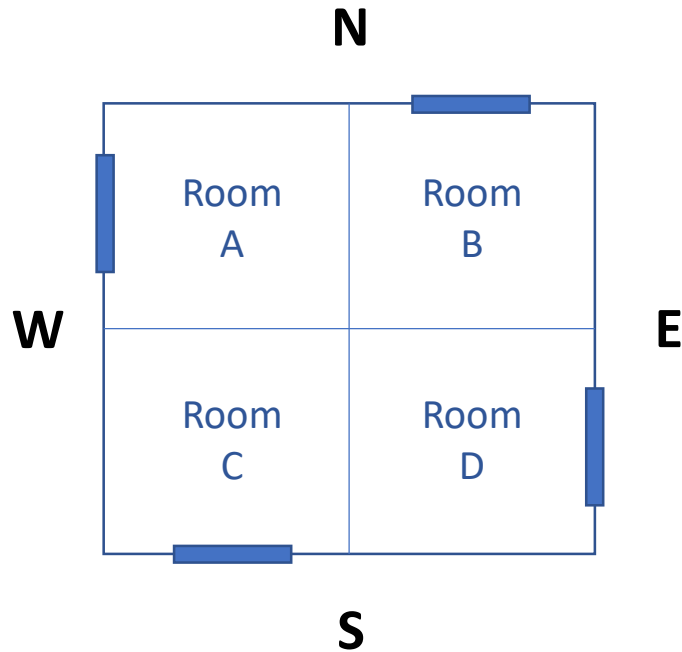


Improved
Comfort

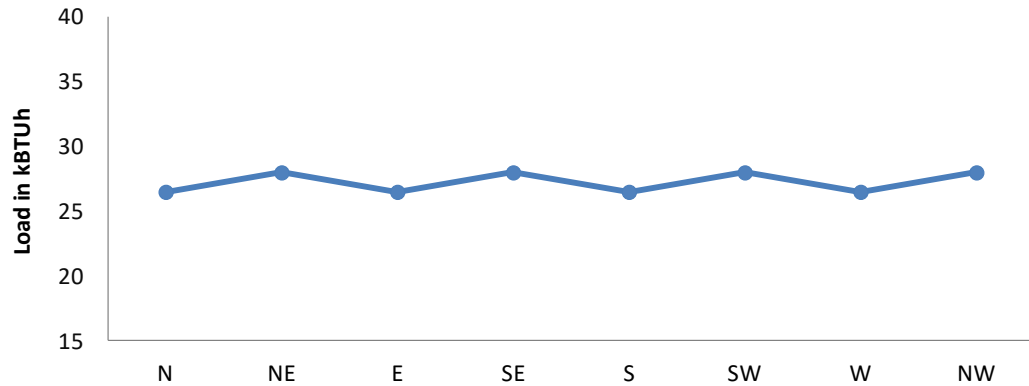
Lot-specific, Room-level Air Balance

Ei

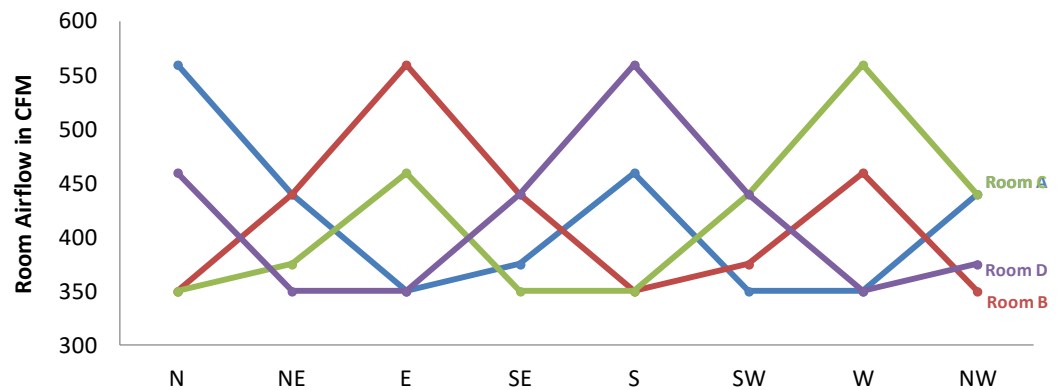
House #2 Diverse Glazing



Load Consistent Across Orientations



Room Airflows Independent



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Added
Value

- Est. 4 – 6 HERS/ERI point improvement
 - Hot climates
 - Mixed climates with heat pump equipment
 - Lowest cost HERS/ERI points available
- Energy Star On-ramp
- Utility Rebates
- 45L Tax Credit
 - \$2,000 per home
 - 50% above 2006 IECC



Questions

Questions?



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