Whole-Building Ventilation Systems for Existing Homes
Home Performance / Weatherization

- Addressing ventilation is the exception
- Max tightness, e.g. BPI’s “Building Airflow Standard” (BAS)
  - References ASHRAE 62-89
  - BAS = Max [0.35 ACH, 15 CFM/person], CFM50 eq.
- If BD tests show natural infiltration below BAS...
  - Ventilation must be recommended or installed.
  - SO DON’T AIR SEAL TO MUCH!
Ventilation Requirements

Ventilation systems for existing homes that are:

- Functional, meets ventilation needs
- Reliable, low O&M
- Simple to install
- Low-cost
- Efficient

Awareness of these systems!
Clark County NSP

- Buy foreclosed homes
- Audits and assessments
- Renovations (health & safety, basic functionality, cosmetics, energy)
- Target: HERS 50
Systems Considered

- Exhaust: $400
- Local ERV: $700-800
- AHU-integrated supply: $650
- Fully ducted E/HRV
  - Core hardware: $500-$1,800
  - Installation (all ducts in attic): $1,000-$1,500
  - Total: $1,500-$3,200
New Systems

- Panasonic Whisper Comfort with ducted exhaust (tests planned this year, production delayed).

- Panasonic Whisper Supply-Wall
  - 10-40 CFM, 0.03 in. w.g.
  - 3-8 Watts
Whisper Supply-Wall Questions

- At what OA temperatures do comfort problems start showing up?
- What climates?
- What control methods are practical and appropriate?
- What are wind effects?
- Installed cost range?
Higher-level Gap

- Awareness of simpler, lower-cost ventilation options among weatherization & home performance contractors.
Questions?

Steven Winter Associates, Inc.
61 Washington St.
Norwalk, CT 06854
203-857-0200
www.swinter.com

Robb Aldrich
raldrich@swinter.com

Lois Arena
larena@swinter.com
Clark County Tracer Gas Results

![Graph showing RAOA results for different cases](image)

<table>
<thead>
<tr>
<th>Case</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Doors Closed, ERV Off</td>
</tr>
<tr>
<td>2</td>
<td>Doors Closed, ERV On</td>
</tr>
<tr>
<td>3</td>
<td>Doors Closed, ERV On, AH On</td>
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<tr>
<td>5</td>
<td>Doors Open, ERV On</td>
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<tr>
<td>7</td>
<td>Doors Closed, Exhaust On</td>
</tr>
<tr>
<td>8</td>
<td>Doors Open, Exhaust On</td>
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