

# 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



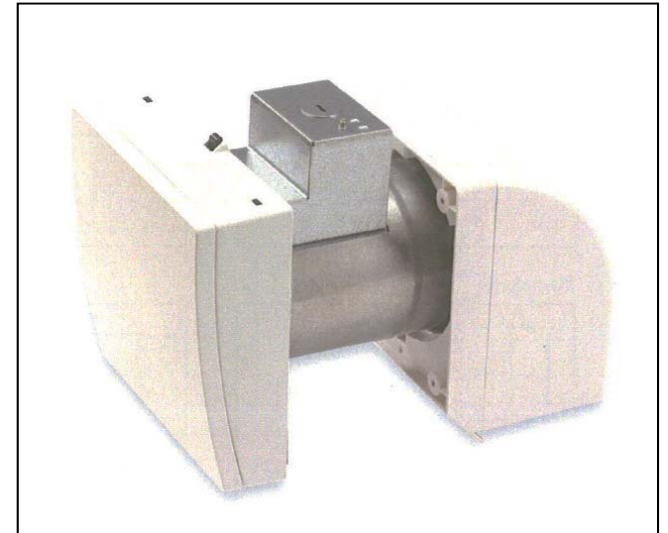
# Systems Considered

- 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



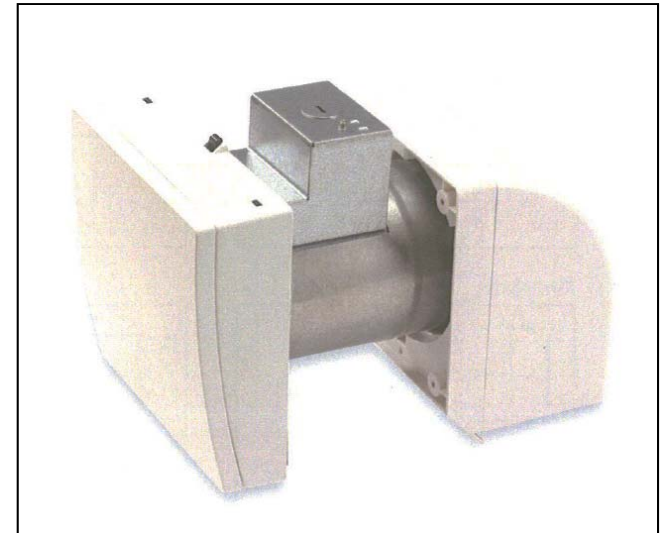
# New Systems

- 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.



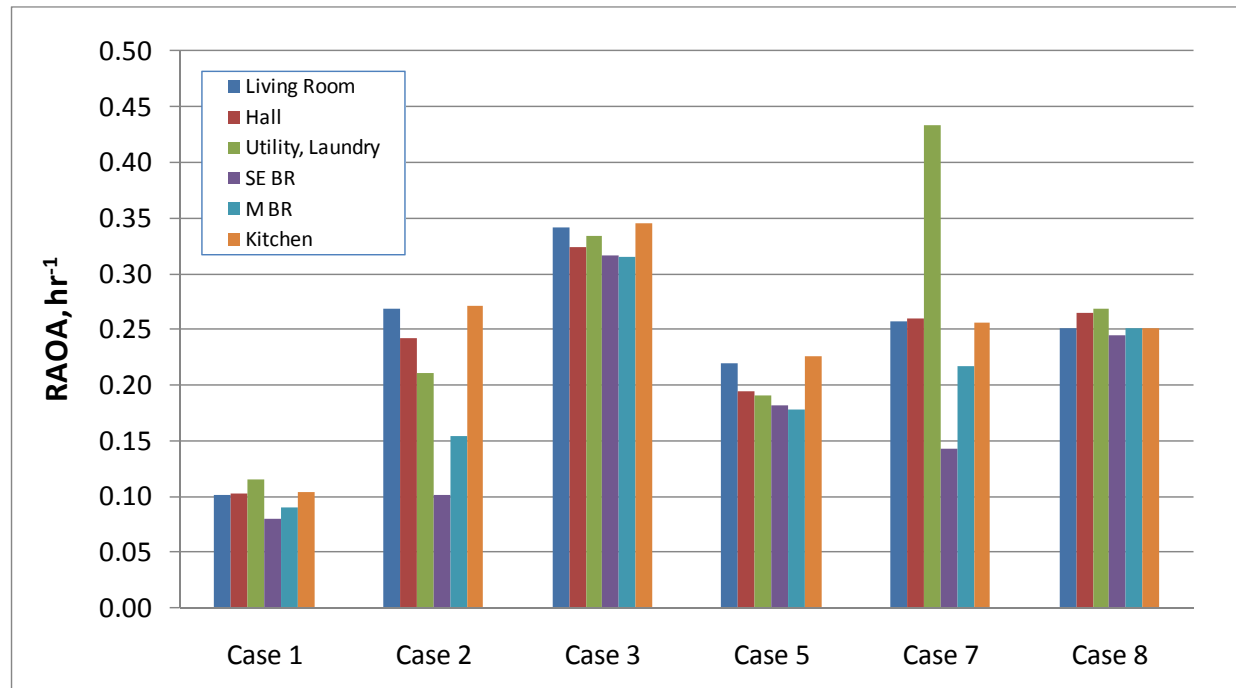
# Questions?

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# Clark County Tracer Gas Results



Case

1	Doors Closed, ERV Off
2	Doors Closed, ERV On
3	Doors Closed, ERV On, AH On

Case

5	Doors Open, ERV On
7	Doors Closed, Exhaust On
8	Doors Open, Exhaust On