

Legislative Task Force on Sustainable Building Design and Practices

June 11, 2012



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U.S. DEPARTMENT OF
ENERGY



Sustainable Building Design and Practices

What's changed





Insulated Concrete Forms (ICF)





 **smartstructures**

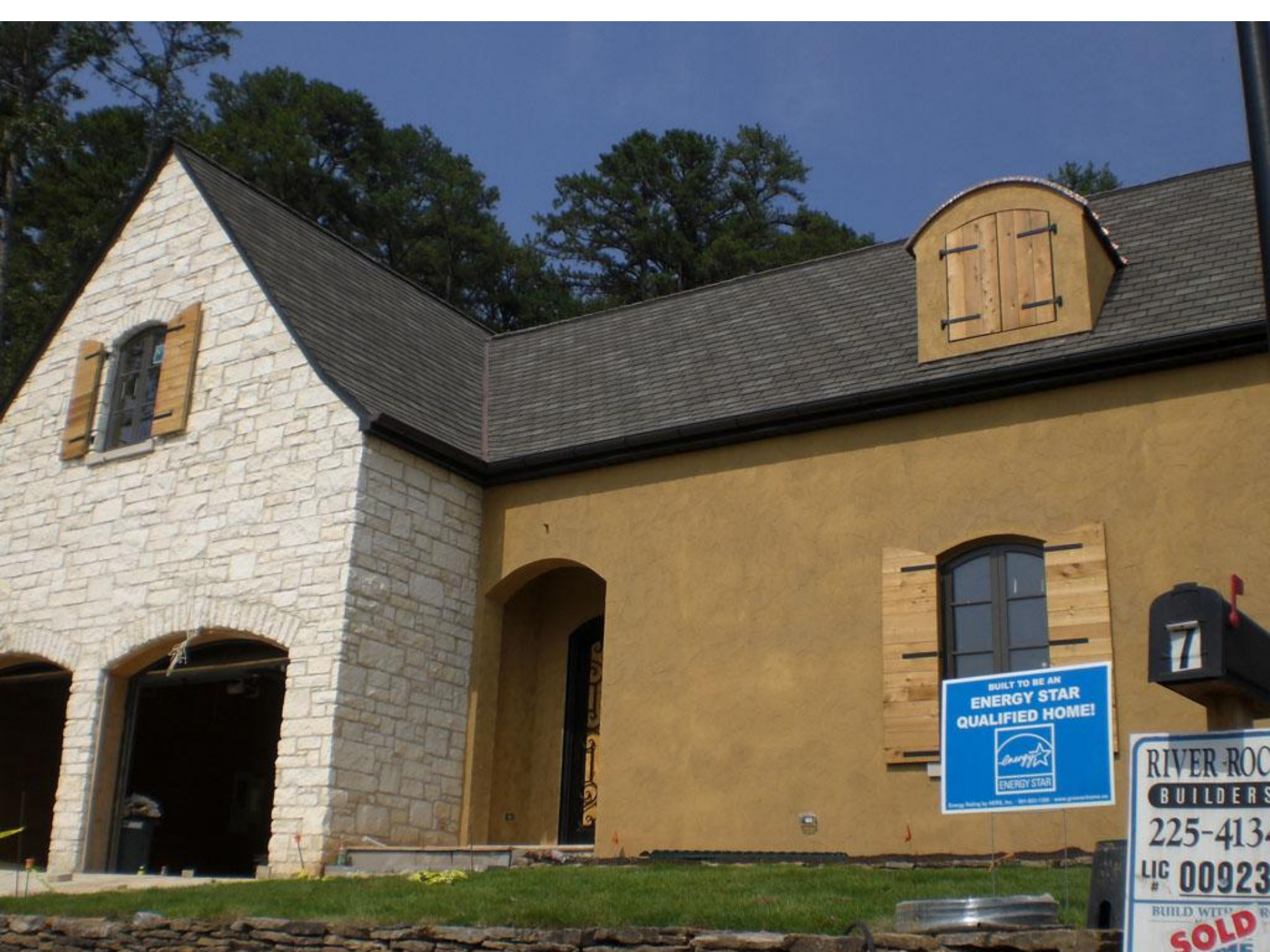

ULTRA ENERGY EFFICIENT CONSTRUCTION
Another Smart Structure Built With ECO-Block By:

Eco-Block Insulated Concrete Forms

- ❖ Ultra Energy Efficient
- ❖ Disaster Resistant
- ❖ Class A Fire Rating
- ❖ Quiet - Sound Reducing
- ❖ Reduces Air Infiltration
- ❖ Mold and Mildew Resistant
- ❖ Environmentally Friendly
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**Top Plates &
Eave Baffles**



Blown In Blanket Insulation (BIBS)





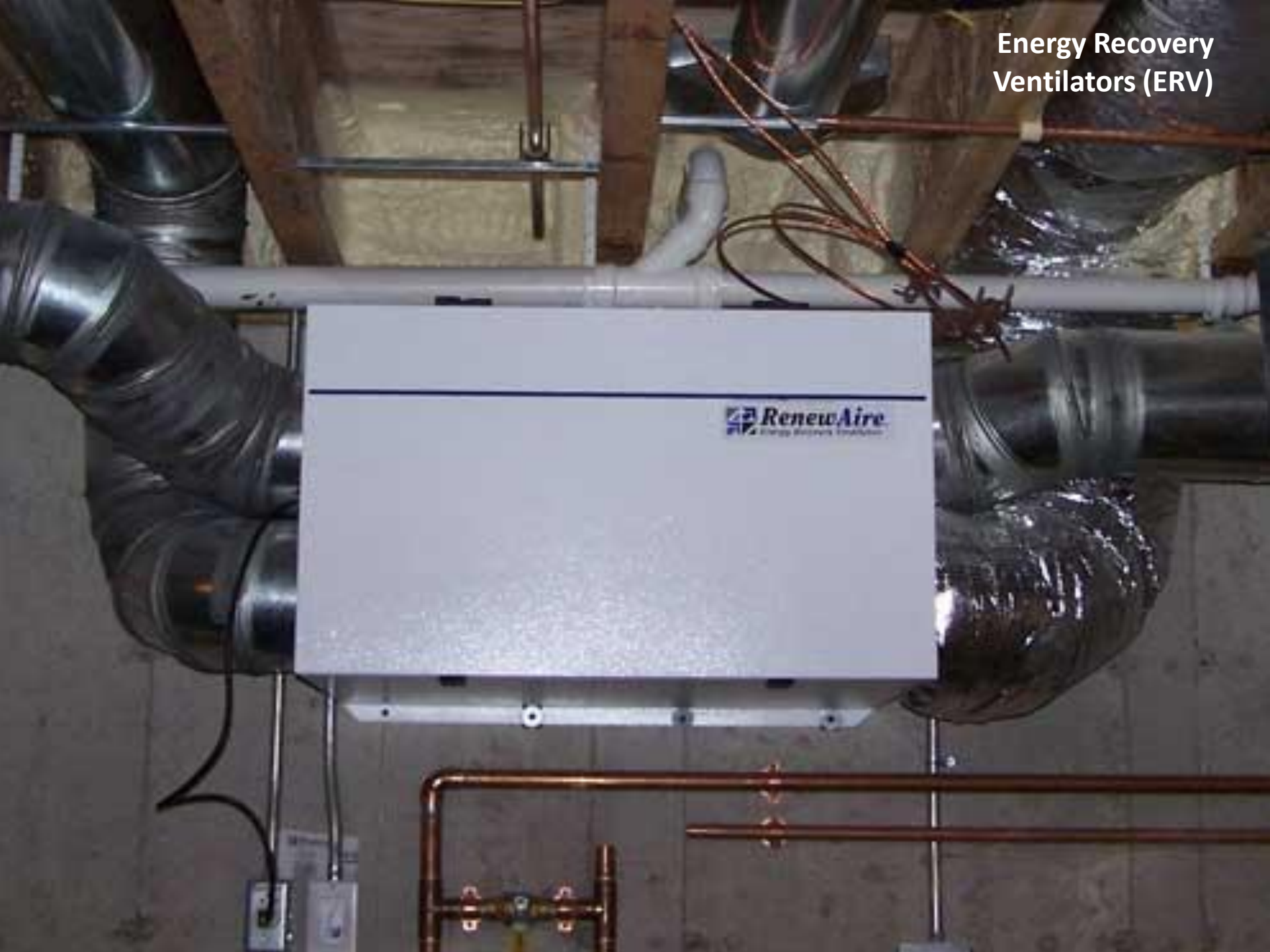
Spray Foam



Enclosed crawlspace

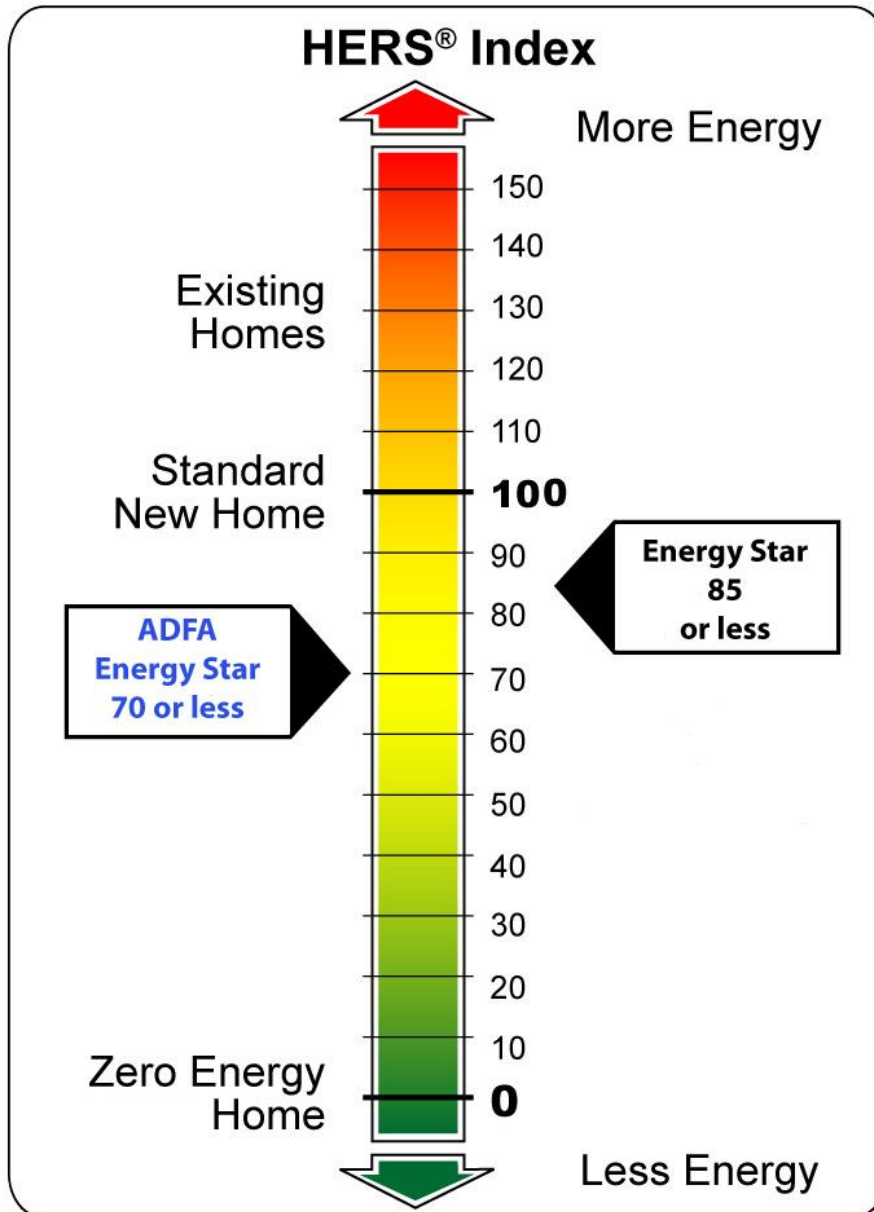


Energy Recovery Ventilators (ERV)



Blower Door & Duct Blaster





HERS Index

- Zero to 100 point Scale.
- 100 Points was 2006 IRC
Now 2009 IECC.
- 2009 IECC follows Energy
Star v.2

2009 code follows Energy Star v.2

EPA says:

- **1,066** ENERGY STAR certified homes in Arkansas to date
- **67** ENERGY STAR certified homes built 2012 to date
- **252** ENERGY STAR certified homes built in 2011



LOT 78A
6705
Austin Bay Ct.

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**\$155-\$160/Sq Ft
vrs. \$100 infill, \$120 typical,
\$130 Turnberry (most similar)**



Barriers to more efficient homes

- Design
- Building Trades
- Real estate agent
- Appraisal
- Lender
- Mortgage insurer
- Codes & Enforcement

Barriers to Implementation

- Cost (prescriptive)
 - \$1086 Zone 3
 - \$1690 Zone 4
 - Positive cash flow in year 2
- Enforcement
- Education

2009 IECC: Two compliance paths

- **Performance:** An Energy Rating report by a certified HERS Energy Rater.
 - Equals or exceeds the prescriptive code reference home based on the overall U/A or annual \$/cost .
- **Prescriptive** code plus duct and envelope leakage requirements
 - A) duct leakage testing (8 CFM/100ft² to outdoors)
 - B) a completed envelope air barrier/insulation checklist or blower door test (7ACH50).

Energy Ratings and Builders

- Start with plans
- Performance testing
- Interim inspections
- Estimates annual energy costs
- HERS Index (MPG for houses)
- Code compliance and enforcement
- Utility incentives
- Education

Systems Thinking





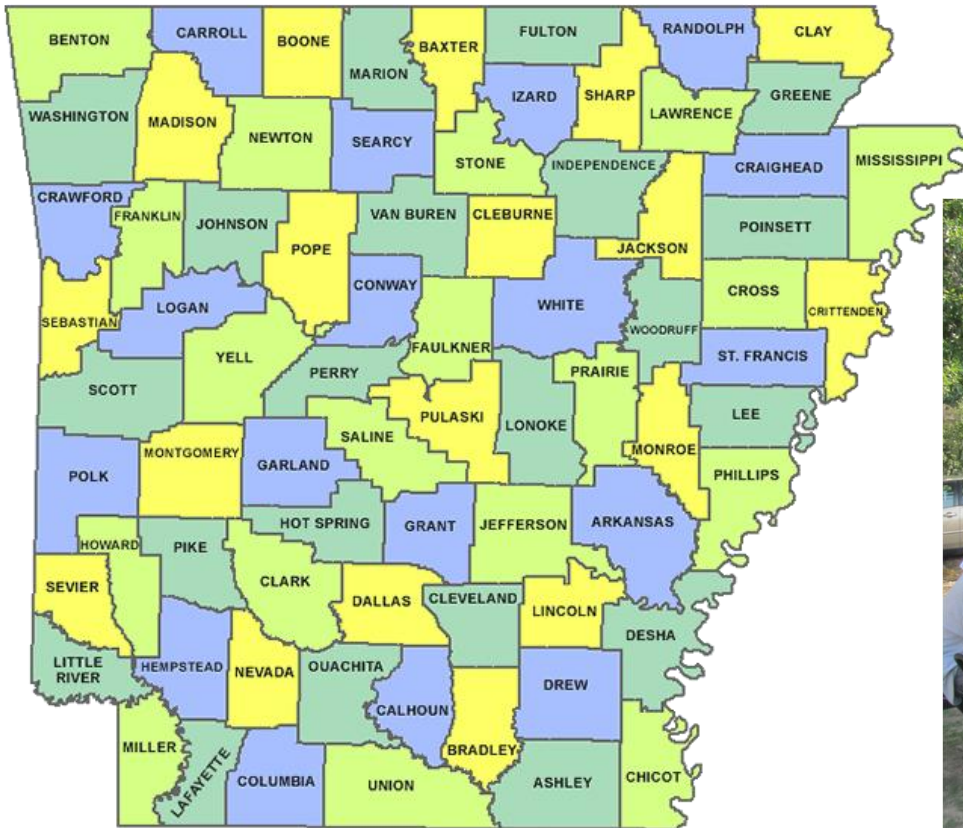
Training the Housing Industry

- Architects
- Trades
- Real Estate Agents
- Appraisers
- Lenders
- Mortgage insurers
- Code officials
- Utilities

Training the Raters

- Raters
- Rater Field Inspectors
- Building Performance Certificates
- BPI certified contractors
- 14 Weatherization Agencies
- Degree programs

NWACC and PTC Training state-wide

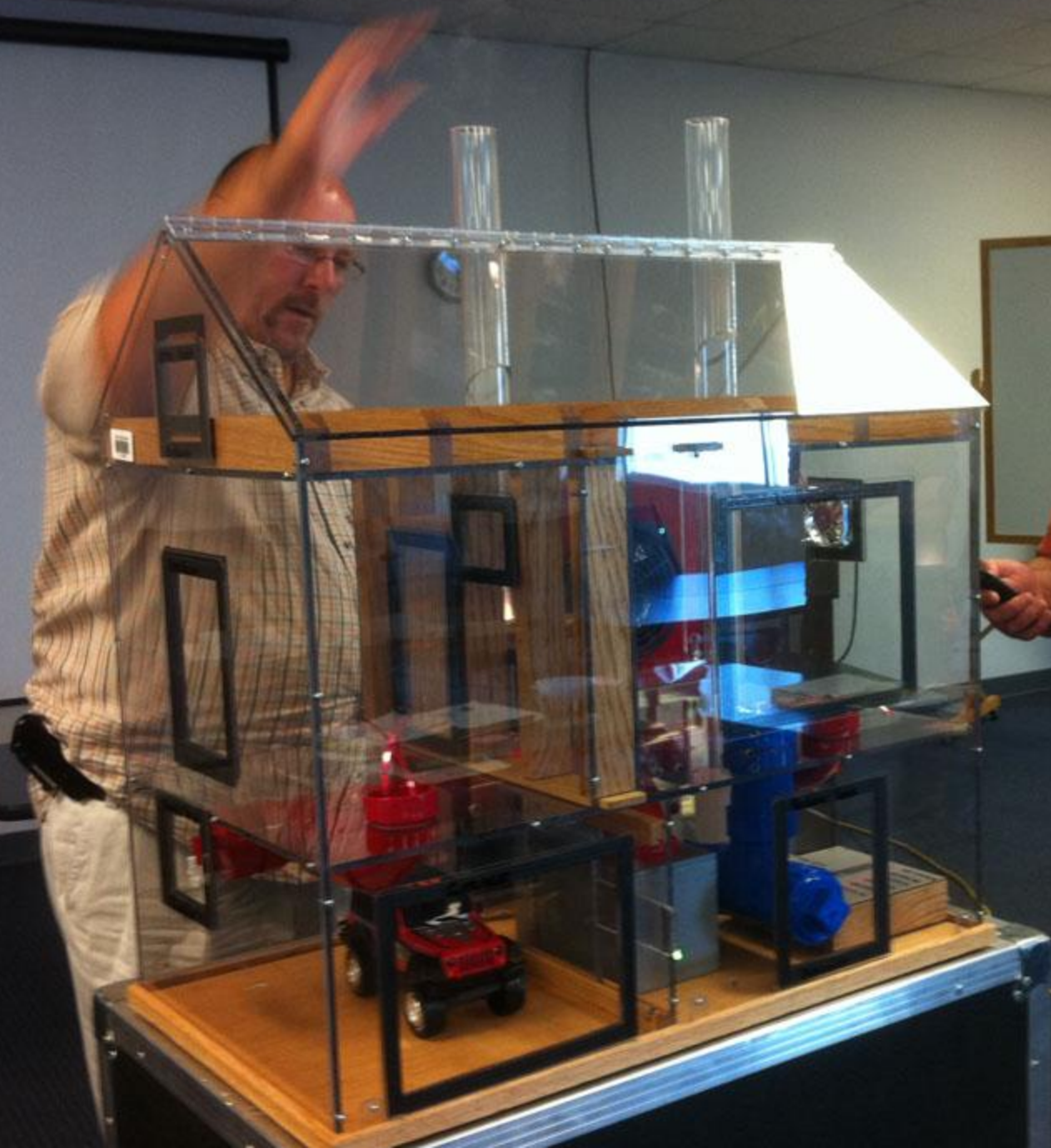


NWACC and Pulaski Tech Training Centers





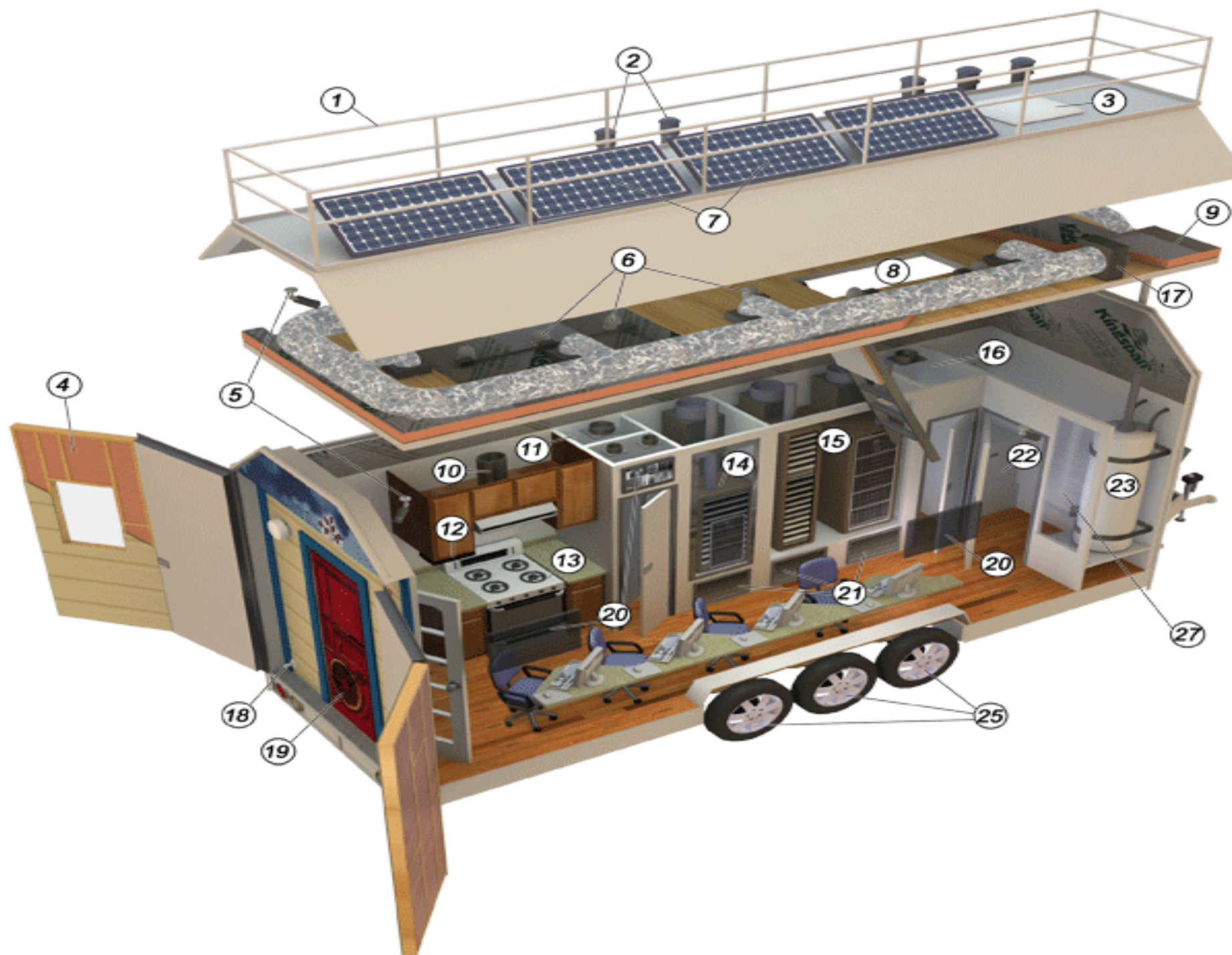












Mobile Training Lab





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Could be the Perfect Storm



Thank you.

