



**Better
Buildings**[®]
U.S. DEPARTMENT OF ENERGY

Better Buildings Residential Network

Jonathan Cohen

September 15, 2016

Agenda

- Better Buildings Residential Network - Overview
- Health and Home Performance Initiative
- Multifamily Energy Efficiency Lessons Learned
- Better Buildings Residential Program Solution Center



Better Buildings Residential Network

Better Buildings Residential Network: Connects energy efficiency programs and partners to share best practices and learn from one another to increase the number of homes that are energy efficient.

Benefits:

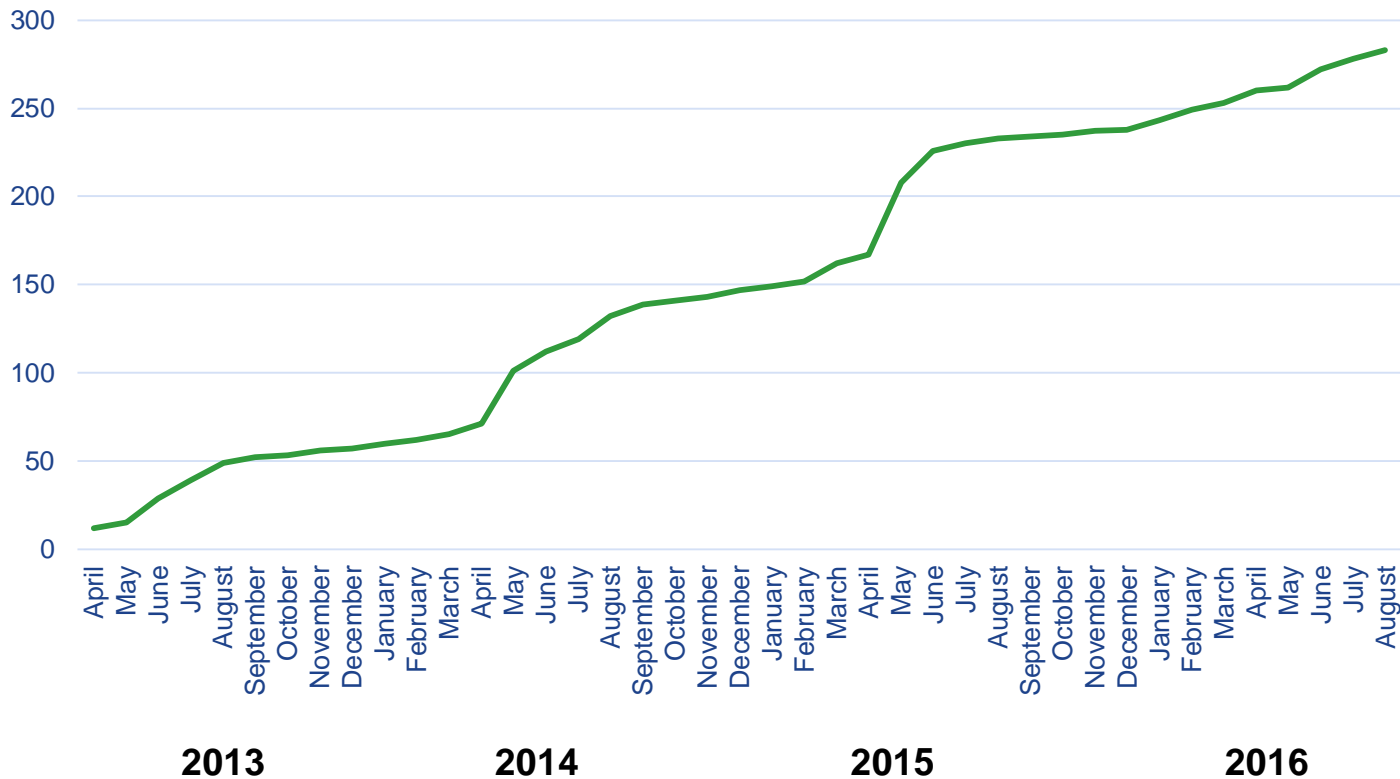
- Peer Exchange Calls, 4/mo
- Tools, templates, resources
- Recognition: media, materials
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- Residential Program Solution Center guided tours

Commitment: Provide DOE with annual # of upgrades, & benefits.

Contact us at bbresidentialnetwork@ee.doe.gov, or energy.gov/eere/bbrn

Membership

Network Members Joined Per Month

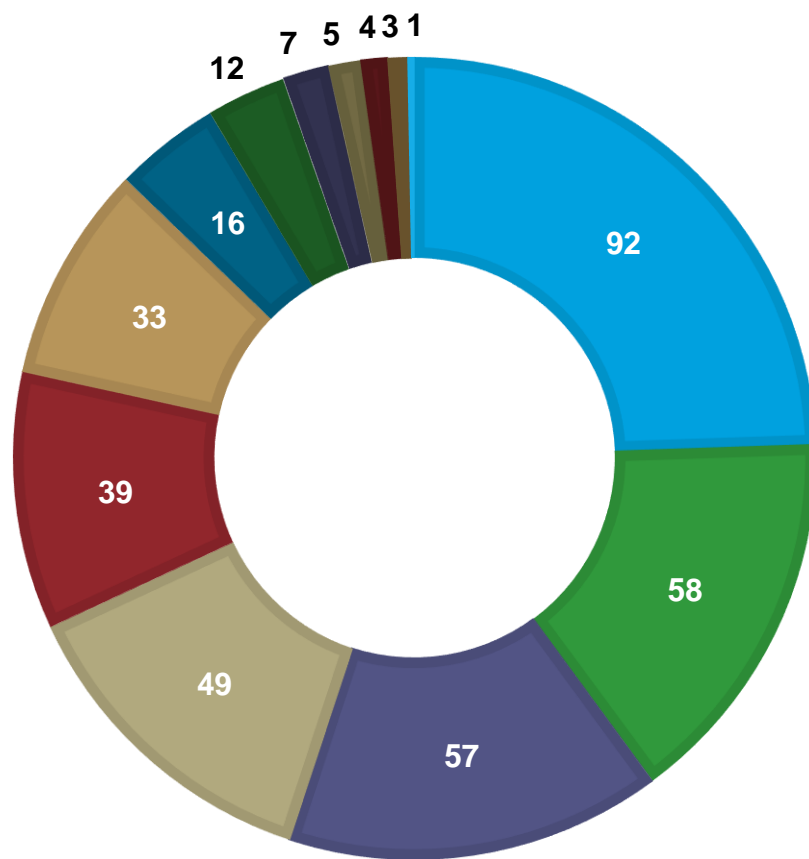


283

organizations

- In May 2015, the Residential Network welcomed all 49 Home Performance with ENERGY STAR Sponsors as members.
- In May 2014, the Residential Network recruited all 52 Georgetown University Energy Prize participating communities as members.

Membership Profile



TYPE OF ORGANIZATIONS:

- Non-Profits: 92
- Consultants/Advisors: 58
- Program Administrators/Implementers: 57
- Government - Local: 49
- Contractors/Trade Allies: 39
- Utilities: 33
- Other: 16
- Government - State: 12
- Manufacturers: 7
- Universities: 5
- Financial Institutions: 4
- Retailers: 3
- Foundations: 1

*Organizations may have identified as having more than one role, type, or DOE affiliation.

Selection of Recent Members

- California Housing Partnership Corporation
- Montgomery Cty Dep't of Environmental Protection
- CLEAResult
- Fujitsu General America, Inc.
- City of Fort Collins, CO
- Council of Multiple Listing Services (CMLS)
- Northeast Energy Efficiency Partnerships (NEEP)
- Energy Savvy

Programming - Peer Exchange Calls

>200 calls



>100 avg '16 attendees

Topics include:

- Health and Energy Efficiency
- The Energy-Water Nexus
- Making Homes Smarter
- Sequencing Upgrades Over Time
- The Changing Landscape of Residential Energy Efficiency

“Better Buildings Residential Network Peer Exchange Calls are invaluable to the industry. This kind of lesson-sharing is critical.”

-Don MacOdrom, Home Performance Guild of Oregon, Peer Exchange Call speaker

Peer Exchange Call Series

Calls 1st four Thursdays 1-2:30 pm on a range of topics:

- Financing & revenue
- Data & evaluation
- Business partners
- Multifamily housing
- Marketing & outreach

Upcoming calls:

- **Sept. 15: America's Got Multifamily Talent - TODAY**
- Sept. 22: Home Improvement Catalyst Quarterly Call
- Sept. 29: Highlights from ACEEE Summer Study Sessions
- Oct. 6: Secret Sauce: Recruiting and Retaining Qualified Contractors

Better Buildings Summit

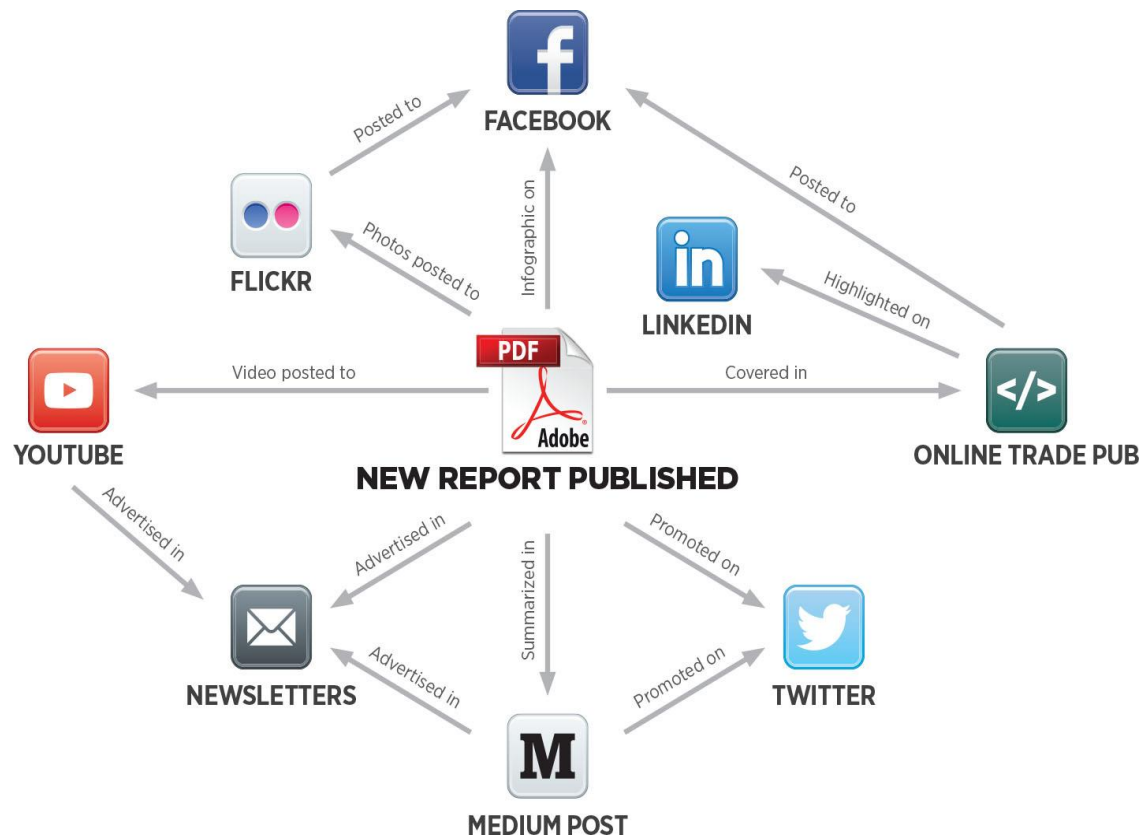
- ▶ National meeting where partners and stakeholders:
 - ▶ **Exchange** best practices
 - ▶ **Highlight** proven market solutions
 - ▶ **Cross-fertilize** with multiple sectors
- ▶ Residential Network members benefit by:
 - ▶ Speaking on sessions and share lessons learned
 - ▶ Getting recognized for accomplishments
 - ▶ Networking with other national leaders
- ▶ Better Buildings initiatives share cutting edge results



Toolkits – Voluntary Member Initiatives

Network members join together, identify, and address common challenges and market opportunities

- Training
- Social Media
- Incentives
- Partnerships



Communications

- New resources
- Toolkits
- Case studies, LL'd
- Peer Exchange Call schedule
- Peer Exchange Call summaries, PPTs
- Social Media
- Member map, list
- Newsletter archive
- DOE resource links

ENERGY.GOV
Office of Energy Efficiency & Renewable Energy

Search Energy.gov

SERVICES EFFICIENCY RENEWABLES TRANSPORTATION ABOUT US OFFICES >

Residential Buildings » Better Buildings Residential Network

BETTER BUILDINGS RESIDENTIAL NETWORK

Home
About the Better Buildings Residential Network
How to Join
Members
Member Benefits
Activities
Resources

NEW MATERIALS

April 2015

- Read the March issue of the *Better Buildings Network View*
- Download the Designing Incentives Toolkit
- Explore the latest Peer Exchange Call summaries
- See the partnerships case study

UPCOMING PEER EXCHANGE CALLS*

Community Organizing and Outreach
April 23, 2015
Developing State Energy Efficiency Alliances
April 23, 2015
Generating Demand for Multifamily Building Upgrades
May 14, 2015
Better Buildings Residential Network Orientation
May 14, 2015
Shark Tank: Residential Energy Efficiency Edition
June 11, 2015
Leveraging Seasonal Opportunities for Marketing Energy Efficiency
June 11, 2015

WHAT'S HAPPENING ON HOME ENERGY PROS?*

Learn About the New Residential Network Designing Incentives Toolkit
Join the conversation on Home Energy Pros, where Better Buildings Residential Network Group members are discussing the new Designing Incentives Toolkit to create incentives that motivate potential customers to act. [Learn more.](#)

RESIDENTIAL NETWORK MEMBERS

State/Province Containing Members

RESIDENTIAL RESOURCES

NEWEST MEMBERS

- Honeywell International, Inc.
- Energize New York
- Collaborative Project Consulting

DOE Health & Home Performance Initiative

Three Phases:

- 1) Literature Review
- 2) Stakeholder engagement
- 3) Develop roadmap, messaging

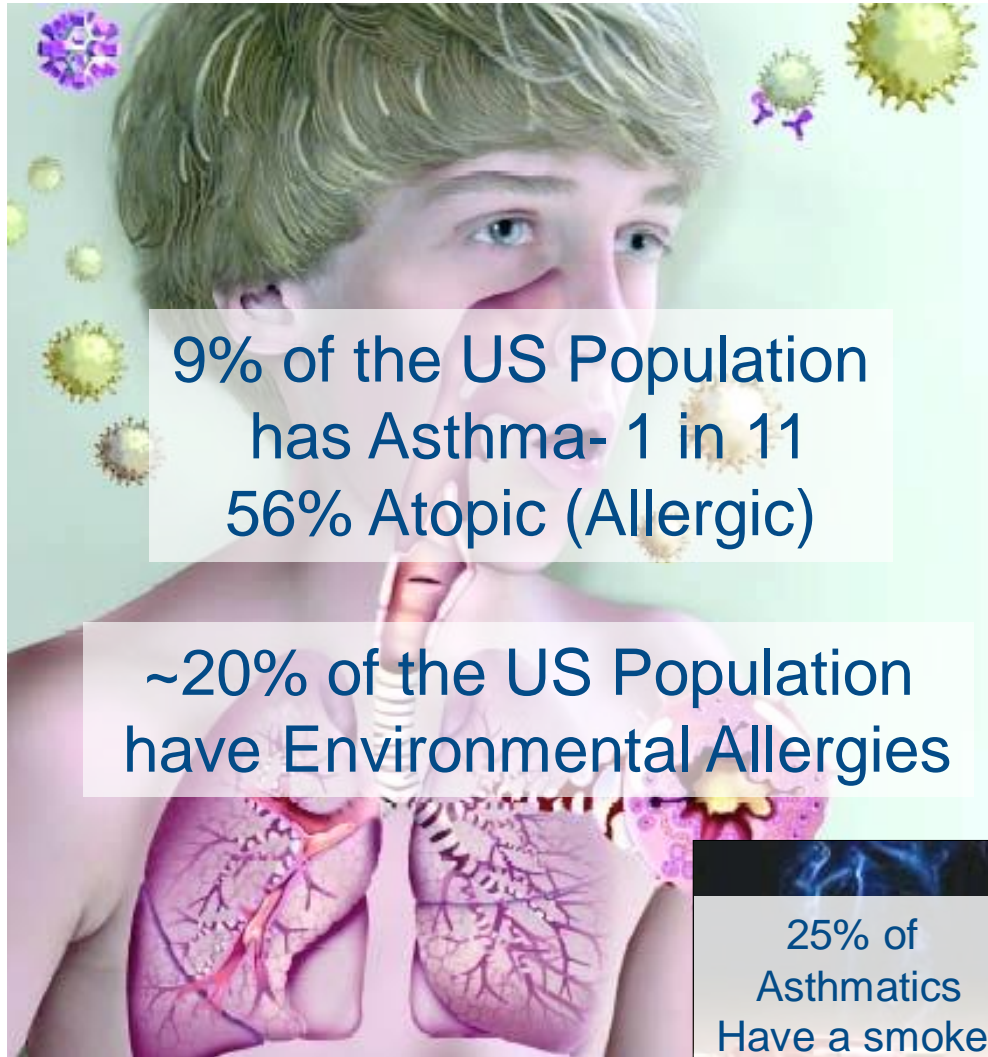


Better Buildings Residential Network Peer Exchange Call

Roadmap for Integrating Health and Home
Performance (201)

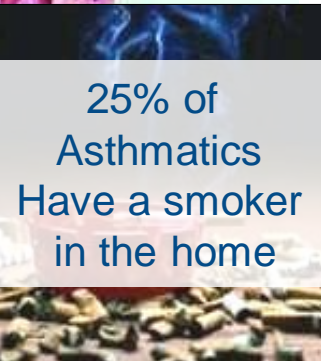
September 8, 2016

Asthma and Allergies in US



9% of the US Population has Asthma- 1 in 11
56% Atopic (Allergic)

~20% of the US Population have Environmental Allergies



25% of Asthmatics Have a smoker in the home



25% Allergic to Dust Mites



25% Allergic To Mold



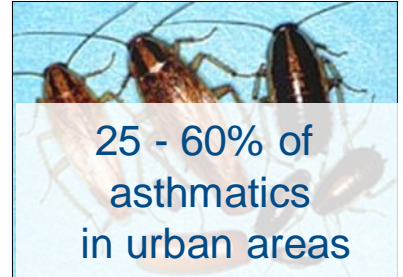
75% of Urban homes Have mouse Allergen in the dust



25% Allergic To Pollen



25% Allergic To Pets

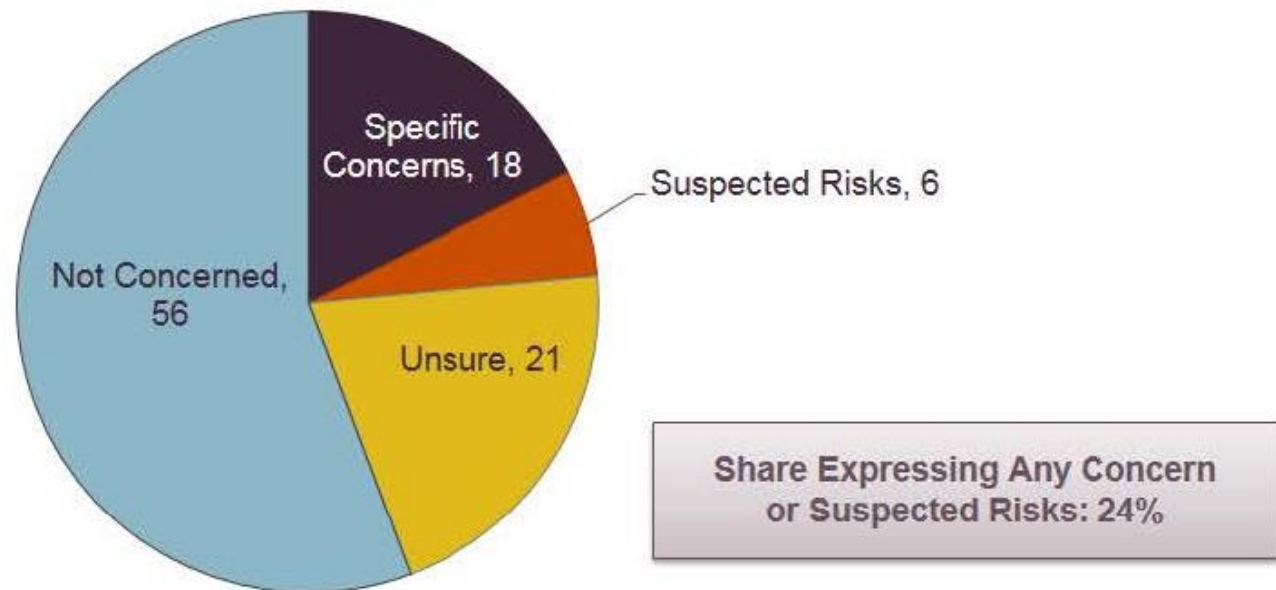


25 - 60% of asthmatics in urban areas allergic to roaches

From: www.aafa.org

24% of Surveyed Households have Specific Concerns about Home Risks

Share of Owner Households Expressing 'Healthy Home' Concerns (Percent)

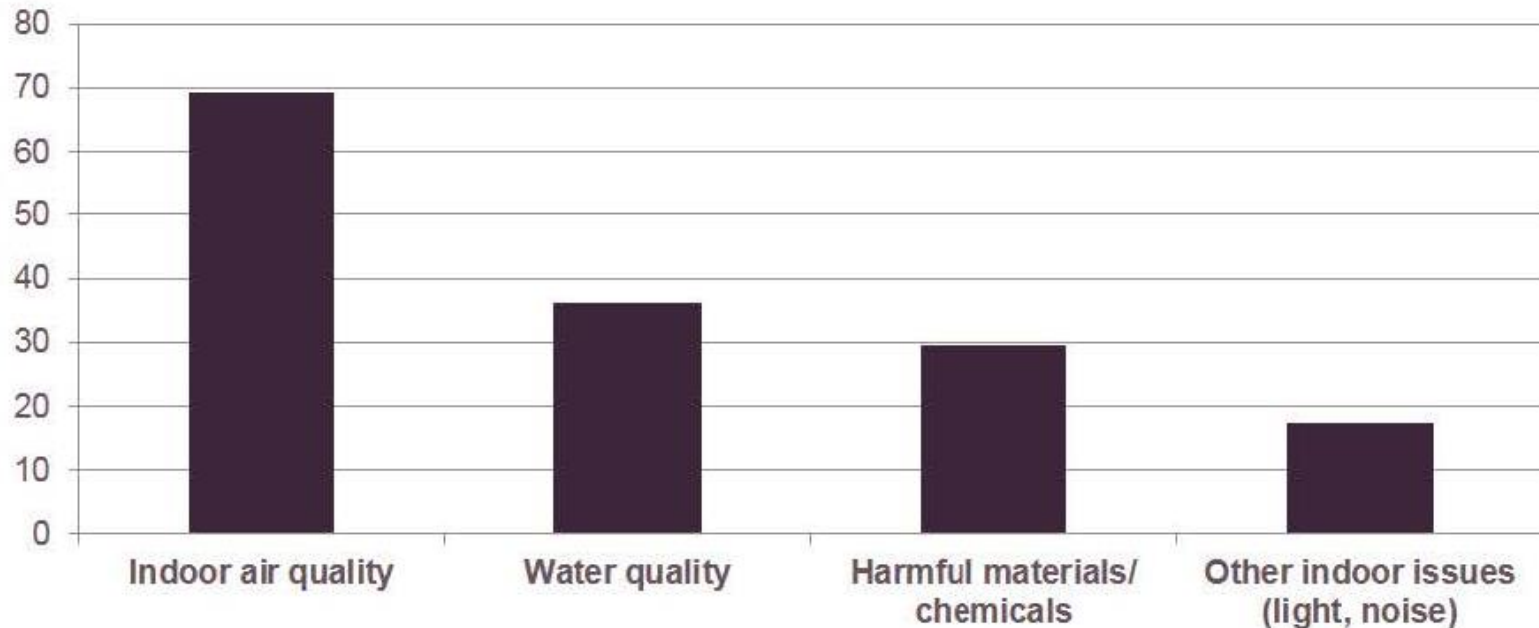


**“Challenges and Opportunities in Creating Healthy Homes:
Helping Consumers Make Informed Decisions”**

http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/healthy_homes_wolfson_la_jeunesse.pdf

Homeowner Interest in Healthy Housing

Share of Homeowners Concerned about 'Healthy Housing' who Cited the Following Specific Issue(s) (Percent)



**“Challenges and Opportunities in Creating Healthy Homes:
Helping Consumers Make Informed Decisions”**

http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/healthy_homes_wolfson_la_jeunesse.pdf

Healthy Home Evaluator- New Micro- credential



Building Performance Institute, Inc.
BPI Certifications

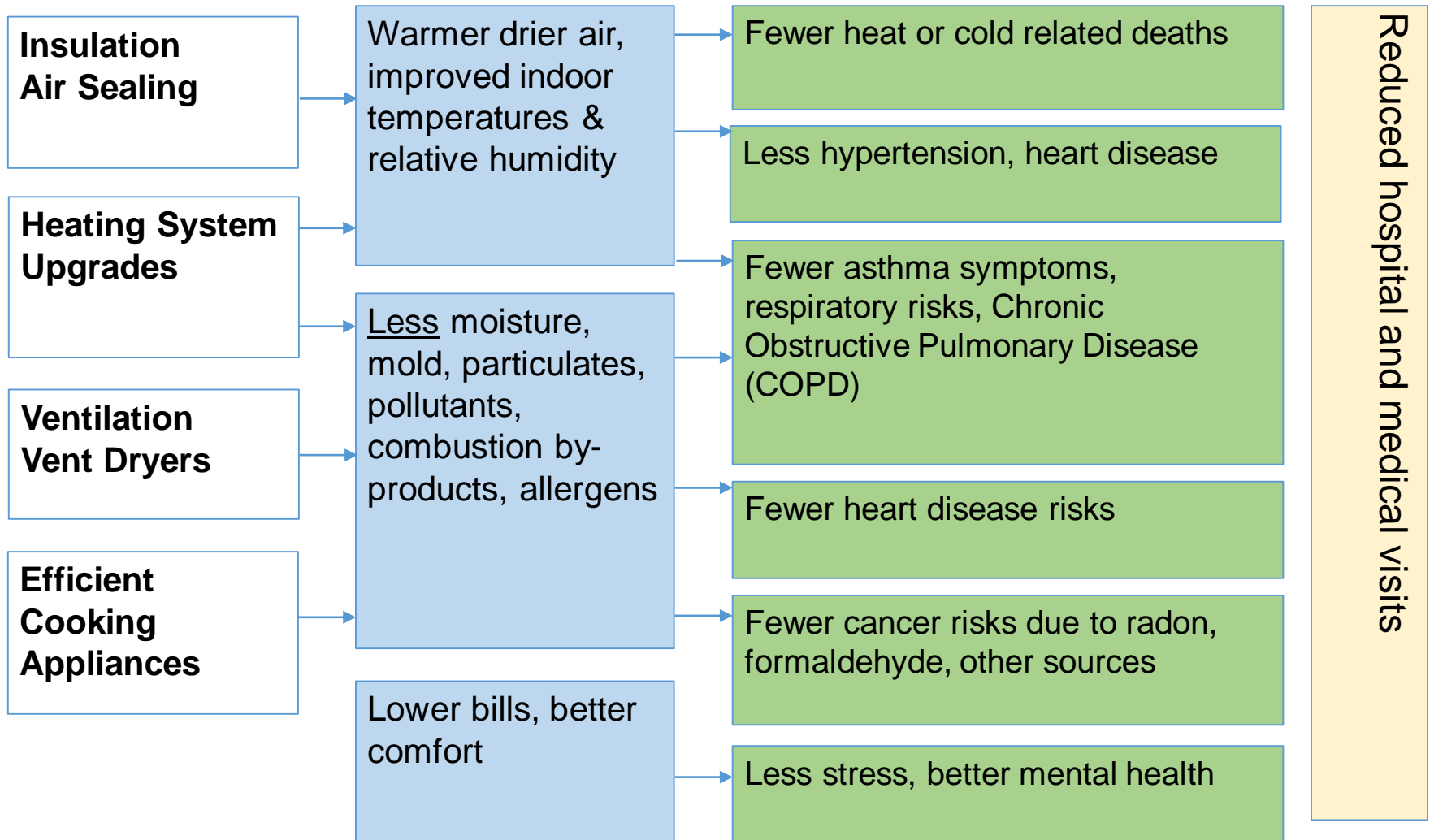
Healthy Home Evaluator (HHE)
Credential - Pilot
Certification Scheme Handbook



Raising the Bar in Building Performance Contracting

March 17, 2016

How Energy Efficiency Can Reduce Health Risks



Home Asthma Triggers



Energy Efficiency Can Improve Health

Author and Date of Publication	Health-Related Outcomes						
	Healthcare Utilization	General Health/Wellness	Lower Respiratory Health/Asthma	Upper Respiratory and Other Health	Comfort (Temperature/Relative Humidity)	Indoor Air Pollutants	Other
Osman (2010)	~	~	+		~		
Barton (2007) Richardson (2006)	~	~	+		+	~ (PM)	
Howden-Chapman (2007)	+	+	+	+(cold/flu)	+		+(mold)
Walker (2009)	~	+	~	+(heart disease/hypertension)	+		
Pigg (2014a) Tonn (2014)	~	+	~	+	-	-(formaldehyde, radon)	
Wilson (2014)		+	+/-	+(sinus infection, hypertension)	+	~	

Take Home Message

- Multiple studies find that residents feel better, have fewer respiratory symptoms, and experience fewer headaches after energy efficiency measures.
- No one should use this research to guarantee health effects for any particular client, but the evidence is clear that population health benefits are real.
- Consumers should be educated that properly conducted energy efficiency will improve the indoor environment and will likely improve occupant health.

Health Partners Are Engaging with Energy Efficiency Programs

- VERMONT: Neighborworks of Western VT supported by the Rutland Medical Center to provide energy and home rehab in homes of asthmatics and COPD patients.
 - COPD is Chronic Obstructive Pulmonary Disease
 - Cigarette smoking leading cause of COPD
 - Long-term exposure to other lung irritants—like air pollution, chemical fumes, or dust—also may contribute to COPD
- WASHINGTON STATE: Funds Weatherization Plus Health; Tracks Medicaid savings. Targets high risk asthmatics, community health center referrals.

Better Buildings Residential Network Peer Exchange Call

**Addressing Barriers to Upgrade Projects
at Affordable Multifamily Properties (201)**

March 10, 2016

Multifamily EE Upgrade Lessons Learned

DC Example - DHW Boiler Replacement Issues:

- 230 - unit building in Washington, DC
- Breakdown between design & construction phases
- Boilers installed without an outdoor temperature sensor
- Sensor later installed but not connected
- Boilers could not operate using proposed (more efficient) control strategy

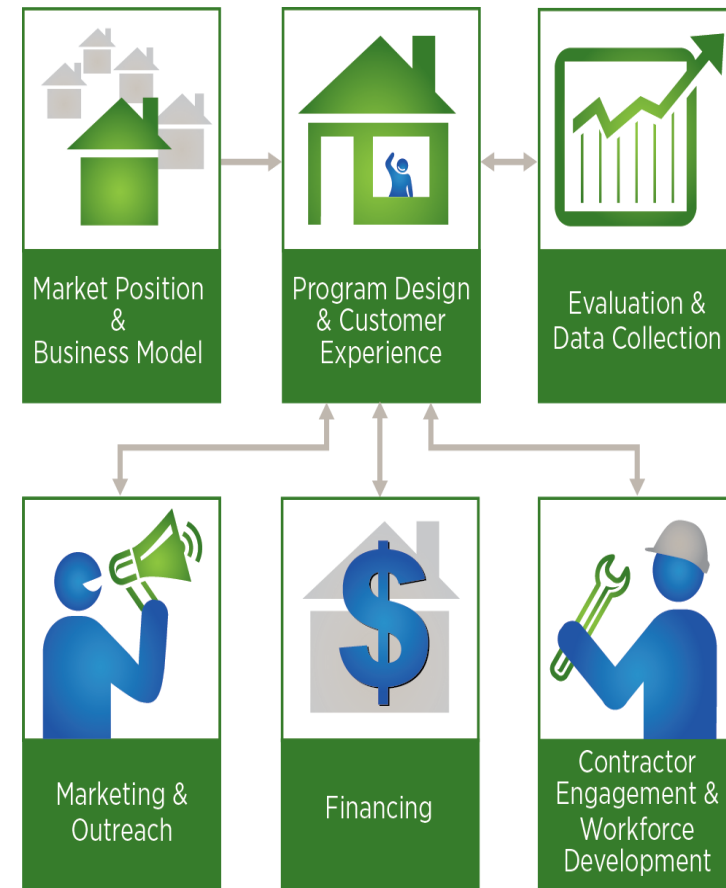
Multifamily EE Upgrade Lessons Learned

DC Example - DHW Boiler Replacement Solutions:

- Coordinate with Housing Authorities, Building Permit offices to build the pipeline
- Provide incentives that work within green certifications
- Reach beyond direct install measures
- Engage owners at critical junctures, such as during the capital planning processes, renovations, and acquisitions to incorporate energy efficiency into the planning process
- Provide specific and tailored attention to engage residents in energy efficiency

Multifamily Energy Efficiency Resources

- MD Dep't of Housing & Community Dev. M/F Energy Audit Guide
- Case study on Efficiency Maine's seven unit apartment upgrade
- Marketing & Outreach – Make Design Decisions handbook discusses how to articulate your value proposition for customers
- New Case Study: New York City Energy Efficiency Corporation (NYCEEC) - 5,415 units in 63 M/F upgrades covering 4.1 M sq ft



Residential Program Solution Center

Web portal of residential EE upgrade program resources and lessons learned to plan better, avoid reinventing wheel.

- Network members, Home Performance with ENERGY STAR Sponsors, BB Neighborhood Program+
- Provides:
 - Step-by-step guidance
 - Tips for success
 - Examples
 - Tools and templates
 - Topical resources
 - Updates re new content



Six Components of a Program













Option to Work through Program Phases



Handbook Index – 50+ Handbooks

- Explore by program component or program design phase
- Consistent structure

		Program Components					
							
		Market Position & Business Model	Program Design & Customer Experience	Evaluation & Data Collection	Marketing & Outreach	Financing	Contractor Engagement & Workforce Development
		Overview	Overview	Overview	Overview	Overview	Overview
Program Design Phases	 Strategy Development	<ol style="list-style-type: none"> Assess the Market Set Goals & Objectives Identify Partners Make Design Decisions 	<ol style="list-style-type: none"> Assess the Market Set Goals & Objectives Identify Partners Make Design Decisions 		<ol style="list-style-type: none"> Assess the Market Set Goals & Objectives Identify Partners Make Design Decisions 	<ol style="list-style-type: none"> Assess the Market Set Goals & Objectives Identify Partners Make Design Decisions 	<ol style="list-style-type: none"> Assess the Market Set Goals & Objectives Identify Partners Make Design Decisions
	 Planning	<ol style="list-style-type: none"> Develop Implementation Plans Develop Evaluation Plans 	<ol style="list-style-type: none"> Develop Implementation Plans Develop Evaluation Plans 	<ol style="list-style-type: none"> Develop Evaluation Plans 	<ol style="list-style-type: none"> Develop Implementation Plans Develop Evaluation Plans 	<ol style="list-style-type: none"> Develop Implementation Plans Develop Evaluation Plans 	<ol style="list-style-type: none"> Develop Implementation Plans Develop Evaluation Plans
	 Implementation	<ol style="list-style-type: none"> Develop Resources 	<ol style="list-style-type: none"> Develop Resources Deliver Program 	<ol style="list-style-type: none"> Develop Resources Conduct Evaluation 	<ol style="list-style-type: none"> Develop Resources Deliver Program 	<ol style="list-style-type: none"> Develop Resources Deliver Program 	<ol style="list-style-type: none"> Develop Resources Deliver Program
	 Evaluation	<ol style="list-style-type: none"> Assess & Improve Processes Communicate Impacts 	<ol style="list-style-type: none"> Assess & Improve Processes Communicate Impacts 	<ol style="list-style-type: none"> Communicate Impacts 	<ol style="list-style-type: none"> Assess & Improve Processes Communicate Impacts 	<ol style="list-style-type: none"> Assess & Improve Processes Communicate Impacts 	<ol style="list-style-type: none"> Assess & Improve Processes Communicate Impacts

Access the Solution Center: energy.gov/rpsc

The image shows a screenshot of the Better Buildings Residential Program Solution Center website. The page title is "Better Buildings Residential Program Solution Center". Below the title, there is a navigation menu with options like "About", "Handbook Index", "Energy Data Facts", "Glossary", "Browse By:", "Program Components", "Program Design Phases", and "Contact Types". The main content area features a "Process Flow" diagram with four stages: Strategy Development, Planning, Implementation, and Evaluation. Each stage is represented by an icon and a text box. The "Strategy Development" icon shows a target with arrows. The "Planning" icon shows a person carrying a large roll of paper. The "Implementation" icon shows a checklist with green checkmarks. The "Evaluation" icon shows a magnifying glass over a house. Below the process flow, there are sections for "Access Program Component Handbooks" and "Explore Program Design Phase Resources". The "Access Program Component Handbooks" section includes icons for "Market Position & Business Model", "Program Design & Customer Experience", and "Evaluation & Data Collection". The "Explore Program Design Phase Resources" section includes icons for "Marketing & Outreach", "Financing", and "Contractor Engagement & Workforce Development". The "ACKNOWLEDGEMENTS" section lists the U.S. Department of Energy and other partners who conducted an expert review of the Solution Center handbooks.

Strategy Development

Planning

Implementation

Evaluation

Better Buildings
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Thank You

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www.energy.gov/eere/bbrn