



IAQ RADIO+

Show Number: 740 Blog

Anthony Cox
Building Science Manager/Lead Trainer

Community Housing Partners, Energy Solutions Division
Building Science, Weatherization, IAQ and Healthy Housing

Good day and welcome to IAQ Radio+ episode 740 blog. This week we welcomed Anthony Cox building science manager and lead trainer for Community Housing Partners, Energy Solutions Division to discuss: building science, weatherization, IAQ and healthy housing. Radio Joe met Anthony at the Building Science Summer Camp, approximately 10 years ago and has enjoyed and learned from their discussions over the years.

Anthony Cox is the Building Science Manager and Lead Trainer at Community Housing Partners, Energy Solutions Division, with over 30 years of experience in Weatherization. Since 1999, he has played a vital role in developing and delivering training programs internationally for the home performance industry

Anthony is the creator of widely recognized training tools like House of Pressure[®] and H.A.M. House[®], designed to illustrate building science principles effectively. Holding a business management degree and licenses in Master HVAC and Residential Building Analysis in Virginia, Anthony is also certified by the Building Performance Institute.

Anthony is actively involved in national committees, contributing to the development of industry standards.

Nuggets mined from today's episode:

Tell us about Community Housing Partners, it's a much bigger group than we realized. How did it get started and what is the focus?

"CHP was founded in 1975 by two concerned citizen activists—Rev. Woody Leach and Emily Stuart—who organized volunteer college students and faculty in Blacksburg, Virginia to perform minor home repairs for low-income families living in unsafe or unhealthy conditions. Known as Project Home Repair, we soon added weatherization services, which were delivered by a small team of professional staff."

<https://www.communityhousingpartners.org/about/history/>

When the program started it was a grassroots effort. As many of the homes were located in rural areas early volunteers dug outhouses. They also installed roll roofing, indoor plumbing and built bathrooms.

In 1976, responding to the energy crisis, and through a DOE program the group added weatherization. Early weatherization efforts involved closing large gaps, installing roll plastic film on windows and adding insulation.

With a total of 400 employees the group is now diversified and builds affordable housing, low rise multifamily housing and net zero duplexes. The organization also retrofits existing houses.

Anthony's Energy Solutions group has 125 employees and is focused on sustainability and energy efficiency. They are in the top 12% of like firms in the US performing 650 jobs annually and do over 40% of all such projects in the state of Virginia.

You are with the Energy Solutions Division, what is your focus?

Anthony works in the training department. The organization has 2 training centers (Virginia and Maryland). One of their funding sources (26 currently) was the American Recovery & Reinvestment Act. "A stimulus package enacted by the 111th U.S. Congress and signed by President Obama in response to the Great Recession. The act aimed to save and create jobs, provide relief programs, and invest in infrastructure, education, health, and renewable energy."

https://en.wikipedia.org/wiki/American_Recovery_and_Reinvestment_Act_of_2009

When money from government bills is available, people ride the funding waves and want to get involved both as service providers and recipients.

Weatherization is now almost 50 years old. “Each year, communities across the country mark October 30th as National Weatherization Day. Weatherization Day is an opportunity to highlight the impact of the Weatherization Assistance Program (WAP) which saves energy, improves the health and safety of homes, and supports jobs and small businesses. State and Local WAP agencies plan events and actions each year to showcase Weatherization Day such as community celebrations or WAP site visits with members of Congress. Many WAP programs are featured in the press and many governors officially issue a Weatherization Day Proclamation.”

<https://nascsp.org/wap/advocacy/weatherization-day/>

Filling the Gaps - History of Weatherization Program (Video)

<https://www.youtube.com/watch?v=aJcZTXwzqow>

How important are new windows when trying to save energy?

Many windows and doors installed for energy efficiency purposes look good and don't provide significant energy savings; *beautification not weatherization.*

Does weatherization impact IEQ? work together.

IAQ is impacted by weatherization because weatherization inevitably tightens houses. Weatherization treats houses as a system to recognize and address these issues.

Tell our audience about your work in South America.

Weatherization has expanded with “Weatherizers without Borders”

<https://www.weatherizers.org/about-wwb/>

Some takeaways from the Grandma's House video-

Weatherization has evolved by learning from mistakes: Air seal before you insulate. Moisture needs a pathway to leave the home. Single pane windows are prone to condensation. Think holistically, the home as a system. The big fan always wins and can cause back drafting. Air will enter or leave through the biggest, first available hole.

Grandma's House (Video)

<https://www.youtube.com/watch?v=jgnzdrC8AJ8&list=PLtlquUv1THEWOKIb80xStpZrzplvuGFLB&index=3>

What courses are taught at your training centers?

Courses taught include and are not limited to: Building Performance Institute Curriculum, Building Science, HVAC fundamentals, Heating System Fundamentals, Crewleaders, Energy Audits, etc.

What are the HAM House and Pressure House?

HAM House is a small model simulator used to explain and demonstrate some building science concepts (Heating, Air, Moisture). The Pressure House is a small model simulator used to demonstrate the building science concept of pressure.

Anthony's Additional Comments:

- Think of the house as a system.
- Think: Why am I doing the work? What will be benefits of the work I've done?
- Weatherization is Not just a hammer and a caulking gun.
- Weatherization, is learning how to better air seal and to treat the house as a system.
- Blower door, infrared camera, and smoke pencil are the most important tools in weatherization.
- Learn to concentrate your air sealing efforts on where outside air enters the home.
- Weatherization focus now has shifted away from walls to the top and bottom of the building; because that is where pressures are the highest. Seal underneath or in the attic.
- Safety First: Heating system safety, combustion safety & lead/asbestos safety.
- Safety first, then durable, then comfortable, then energy efficient. Do no harm.
- Make visual inspections of fossil fuel systems.
- Start with building science and think; Heat, Air, Moisture
- Energy Savings Modeling Software can pinpoint areas of greatest potential savings.
- Savings to Investment Ratio (SIR) of one or greater. The investment cost for an improvement must recoup its investment cost over the lifespan of the improvement,
- Use the terms "it appears" to describe images from infrared cameras.
- Makeup air needs to be provided for kitchen exhaust vent fans >400CFM

- A self-described gadget guy; Anthony has learned that some things were meant to buy and other things were meant to be used.

The not for profit he works for website is

<https://www.communityhousingpartners.org/>

Anthony's division is here <https://www.communityhousingpartners.org/energy-solutions/>

YouTube Video playlist from this show

https://youtube.com/playlist?list=PLtlquUv1THEWxYz_ZNIt4v1eIKLLF0f1v&si=3_J8wByAvuAYmq0

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Z-Man signing off

Trivia: Who founded the organization now known as Community Housing Partners?

Answer: Ren. Woody Leach and Emily Stuart

Answered by: John Lapotaire, Indoor Air Quality Solutions