Your Next Big Business?

Larry Zarker explains how home health issues could figure in your future / by Bruce Snider

Humans have been building houses for millennia, but it's only been in the past half century or so that we've begun to grasp how they actually function. The mysteries of heat transfer, moisture retention, and air flow—long more a matter of folklore and conjecture than of hard science—are finally yielding to empirical research. But cracking the building performance code is one thing; getting that knowledge out into the field is another, and that's where Larry Zarker comes in.

As CEO of the Building Performance Institute (BPI) since 2006, Zarker has helped expand the organization's roster of certified building science professionals from 1,000 to more than 25,000.

A veteran of over 30 years in the field, 20 of those with the National Association of Home Builders Research Center, Zarker says it will take all that expertise and more to make the nation's building stock efficient, healthy, and comfortable for the multitude of retirement-age baby boomers intent on staying put in their existing homes. Here's what Zarker has to say about the situation, as told to Bruce D. Snider:

illustration: Patrick Welsh

Snider: *Most people associate building performance with energy efficiency and comfort. Where does health come in?*

Zarker: Most of the country's government and utility incentive programs for energy efficiency are focused on high utility bills—that is, on improving energy efficiency. What we're learning from contractors, though, is that consumers are more interested in the non-energy benefits. They're worried about drafts and rooms that they can't bring up to temperature, or asthma, sinusitis, and dust allergies. Health and comfort issues are actually more important to people than the utility bill. Lowering the utility bill can be a benefit of doing upgrade work—and it typically is—but it's not the primary goal.

S: *What kinds of problems are you seeing out there in existing homes?*

Z: About a third of owner-occupied homes are at least 45 years old and another third are at least 25 years old, so two thirds or more of our homes predate modern energy codes. And with old houses, you end up with a lot of issues: energy efficiency, comfort, and indoor air quality. When I give presentations to builders and remodelers, I show slides of a basement that's typical of what we see during building inspections. One photo shows fiberglass band-joist insulation that is black with mold and other material being carried in through air leaks from an adjacent crawl space. And because the air-handling equipment is five feet away, it effectively distributes the mold throughout the house. It's sending up into the house everything that came in from that damp crawl space; that's the air the occupants are breathing. That's just one scenario, but we see similar things all the time.

S: *What are the health effects of poor indoor air quality?*

Z: The Mayo clinic says that more than 93% of people with chronic sinusitis test positive for a mold allergy. They use the term "allergy," but I think what they're really saying is that problems in the home are causing or aggravating this health condition. I've had sinusitis myself, so I've thought a lot about how moisture gets into the home, how it can create mold, and the fact that it affects some people more dramatically than others.

Another significant problem is dust mites, which live in mat-

tresses and scavenge for dead skin. When a mattress is infested, there are as many as a million of them in there, and they can cause asthma to develop, especially in children. One in four homes has at least one mattress that's infested with dust mites.

S: *Did we create these problems by tightening up our houses?*

Z: When I give presentations to builders, I often ask how many people in the room think you can get a house too tight, such that it's going to cause problems with indoor air quality.

Usually, three-fourths of them raise their hands. And I say, well, we just looked at a house where all this stuff is coming in from crawl spaces, from a place you know you can't trust, and we're breathing it because it's being distributed through the house. BPI's GoldStar program trains contractors to approach the whole house as a system, including ensuring that the mechanical ventilation system is drawing fresh air from a place you can trust.

S: *Is the health care establishment waking up to this situation?*

Z: That's starting to happen. In Baltimore, the Green & Healthy Homes Initiative conducted a study in which it retrofitted 100 homes for indoor air quality, and it found that emergency room visits fell by 67%. Aetna estimated the cost of an average emergency room at $600 (it now may be up to $800) and a hospital stay at $8,800. That starts to get into impressive numbers, because asthma does tend to lead to hospital stays.

And because the Affordable Care Act penalizes hospitals financially for repeat admissions, we see hospitals like Children's Mercy Hospital in Kansas City, Mo., going out and looking at homes. They're saying, "Let's fix the home so that you don't have to come back. Let's fix these conditions so you go to school and Mom gets to go to work."

And we're not only talking about children. In New Zealand, a $347 million government-funded study retrofitted 188,500 homes. They went in primarily aiming to save energy, but they found significant health improvements. Admissions to hospitals for respiratory conditions dropped by 43%, days off of school by 23%, days off of work by 39%. Over 90% of the benefits they found were health-related.

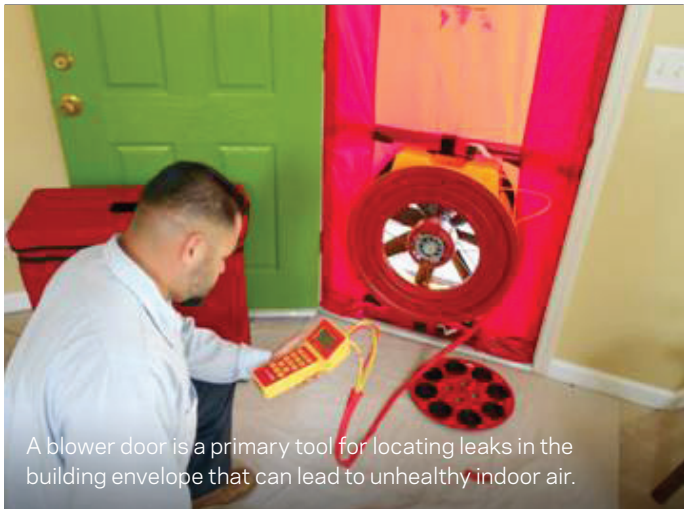
S: *How is BPI responding to the increasing demand for healthy homes?*

Z: We've traditionally been the group that's done building science, so we understand how to assess the home from the physics side, but until now we haven't addressed the environmental health side. So what we're doing is working with the Green & Healthy Homes Initiative, Children's Mercy Hospital, and other groups to marry the two and add those skills to our certification for Building Analyst. There are people who understand the healthy homes side of it and there are people who understand the building science side of it, and we're trying to bring those two together.

S: *Until then, what's your advice to remodelers serving baby boomer clients?*

Z: The home energy audit is the prescription, whether you hire a certified BPI Building Analyst to do it or you acquire the BPI training to do it yourself. When you locate and eliminate air leaks, insulate properly, fix the comfort systems for heating and cooling, and make sure you have proper ventilation, you dramatically reduce the conditions that lead to mold, dust, and pests in the house. The problems are all interrelated.

I worked for many years with Bill Asdal, a remodeler out of New Jersey. He later became a BPI-certified Building Analyst, and in describing his training he said, "I went through a 30-day gray haze and came out the other side with a new business model, because now I can look my customer in the eye and say, 'Here's what's going on in your home, and here's how we're going to fix it.'"



A blower door is a primary tool for locating leaks in the building envelope that can lead to unhealthy indoor air.

Photo: ABC Cooling & Heating

Sealing air leaks and providing controlled ventilation can improve both indoor air and energy efficiency.

Photo: Dr. Energy Saver

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