

Roundtable Talk

VIEWPOINTS ON IAQ FROM AN INDUSTRY CROSS SECTION

Moderated by Rachel R. Belew, public relations + communications manager, GREENGUARD Environmental Institute

How important is indoor air quality to environmental design and construction? We posed a series of questions to experts and influencers in the sustainable building and design industry. Here's what they had to say on the topic.

1. Is indoor air quality (IAQ) important to you and/or the industry in which you work? Why or why not?

Peter Syrett: IAQ is of the utmost importance to the design and construction industry. According to the U.S. Environmental Protection Agency (EPA), Americans spend more than 90 percent of their time indoors. Recent events such as the toxin-laced drywall from China empirically show us that there is a direct relationship between occupant health and the quality of the air within a building.

Mark Pollock: It is important to us in the design and construction field because it has an enormous impact on the health of both the workers during construction and the tenants after the building is occupied.

Kent W. Peterson: Indoor air quality is extremely important to the HVAC&R industry to provide acceptable indoor environments that minimize adverse health effects and improve productivity. Building occupants should expect healthy and comfortable indoor environments from the buildings they occupy.

Rachelle Schoessler Lynn: As a certified interior designer in Minnesota, I do believe that IAQ is important because interior designers are specifying materials, finishes, furniture, etc. that all emit toxins. We should take responsibility for making non-toxic specifications because of the impact the toxins have on human health.

2. What role does IAQ play in the construction, design and use of a successful building?

Mark Pollock: During the design phase, we take IAQ as a given when we are thinking about the final building, so we know what to look for and use only products that are proven to have minimal negative impact on IAQ for the end-users. We also monitor the construction phase and insert the required submittal of an IAQ plan into our specifications so that the general contractors draw up a plan for construction and post-construction. When it

comes to the use of the building, we cannot have workers/residents be impacted by an unfit environment due to poor indoor air quality. Therefore, it is important to us in the beginning to use only the best materials for the space to create a healthy work/living space.

Kent W. Peterson: Design impacts IAQ with the specification of materials, filtration, ventilation rates and thermal comfort. Construction practices impact IAQ with the use of filters, protection of building materials and air ducts from rain and moisture, protective measures to reduce the migration of construction-generated contaminants, and proper flush-out and IAQ testing prior to occupancy. Proper operations and maintenance of the ventilation systems is essential to maintaining adequate IAQ within buildings. This would include the testing and calibration of ventilation system controls.

Rachelle Schoessler Lynn: There must be coordination between the design decisions and the construction process. The designers and engineers design a space or building with good IAQ and rely on the contractor to maintain a clean jobsite during construction. We encourage the contractors to follow the SMACNA (Sheet Metal and Air Conditioning Contractors' National Association) standards to maintain good IAQ during construction and if possible we will recommend that the space either be flushed out or tested for IAQ prior to occupancy.

3. How does IAQ fit into the notion of sustainability?

Mark Pollock: For us, it plays a large part in having a healthy building and happy occupants. Of course, we want the occupants of our buildings to like the building in its usefulness and design, but if people are getting sick or cannot stand to work/live there, we have just created a bad environment for people. This starts a cycle of ripping out entire portions of buildings just to improve the IAQ. While it doesn't fit directly into what most people would consider "sustainable," it does have an impact of the life of a building.

Jeremy Benkin: For operators of existing buildings, the discussion of sustainability has recently become a hot topic, and it serves as a great means to expand our focus beyond just energy efficiency. Most buildings are now developing and implementing strategies

EXPERTS



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around waste handling, indoor air quality, and supply-chain activities to augment their existing energy practices. Good IAQ provides operators with the greatest opportunity to positively affect the entire building population.

Rachelle Schoessler Lynn: Buildings are built for people, and we have learned that buildings can make people sick. We should strive to design buildings that will make people healthier. The economics of sustainability include productivity measurements. Productivity is increased when people are healthy.

4. With regard to indoor air quality and health, do you feel that a product's chemical emissions are more important, equally important, or less important than its chemical content? Why?

Peter Syrett: When considering a product, the

foremost factor in the selection and specification of a product should be its overall environmental profile. This profile has many facets of which chemical content and emissions are two significant components but not the only two components to consider. That being said, the respective importance of a product's emissions profile versus its chemical content should be considered based upon which poses the greatest overall health impact; whichever one is greater should govern.

Kent W. Peterson: With regard to indoor air quality, the product's chemical emissions are more important than its chemical content since the emissions impact the air quality in the building. With regard to health, I am not a health expert, but a product's chemical content can have an impact on human health if people are in contact with the products.

Rachelle Schoessler Lynn: I believe that chemical content and the emissions are equally important. They are both potentially detrimental to the Earth and to people. Toxic chemicals should be banned.

5. In what ways do you verify a product manufacturer's claims of sustainability, environmental friendliness or healthfulness?

Peter Syrett: The utter lack of transparency about the chemical composition of building products makes it an extremely difficult task to verify claims about "sustainability," "environmental friendliness" or "healthfulness" of any product. Unfortunately, intense research is the best way to glean an understanding of a product's chemical composition. The research process ideally starts with an open and honest dialog with the manufacturer about their product's environmental health profile. If that doesn't reveal enough information, then one must look for testing or other data that has been gathered on a product — ideally from a third party. Environmental Building News and the Healthy Building Network's Pharos Project are good places to look for more detailed data on products.

Kent W. Peterson: We verify a product's claim of sustainability by evaluating third-party certification with industry-accepted standard testing procedures. We consider all other claims to only be marketing claims.

Jeremy Benkin: For most purchasers, it is not practical to test the claims of manufacturers prior to utilizing a product. We must be able to rely upon the representations made by the manufacturer. By introducing third-party verification to the product and application, we gain greater confidence that the outcomes we desire are achieved.

Rachelle Schoessler Lynn: Studio 2030 uses an Environmental Impact Questionnaire that is issued to all manufacturers in our product library. The questionnaire asks questions about the entire manufacturing process from extraction

of raw materials to factory IAQ to energy usage, transportation, installation and end of life. We also look at the third-party certifications, such as GREENGUARD, that the product has achieved.

6. What is your opinion of third-party certification versus first-party or second-party certification?

Peter Syrett: A third-party certification is superior to other certifications because it assures impartial results.

Mark Pollock: Getting a third-party certification would be the best in all cases, but we have found that it is not always available for all of the products that we specify in our projects. For the most part, if a product doesn't meet some kind of industry or association standard (second-party) then we will head in another direction unless there is no other choice.

Kent W. Peterson: Third-party certification is not only preferred but specified by our engineering firm to verify proper certification and testing.

Jeremy Benkin: First- and second-party certification programs lack the essential element of independence. As a purchaser, without the separation of interests, there is little integrity in the claims.

7. How important is the rigor of a certification program? Why?

Peter Syrett: Rigor is very important because good data "in" equals good, clear and meaningful information "out." In my opinion, this is the whole point of a certification program.

Mark Pollock: As designers and contractors, we trust the certification program when we see that it comes from an industry leader such as ANSI, ASTM or GREENGUARD because we can trust that the product will meet the agencies' strict standards. Certain testing bodies have built up such a great reputation within the design and construction industry that we just see the label and the certification paperwork and know it works.

Kent W. Peterson: The certification program must follow industry-based standards for testing of products to ensure different manufacturers' products are tested to the same requirements.

Jeremy Benkin: Obviously, there are plenty of programs out there today that allow manufacturers to submit their data and get a stamp of approval. They add to the confusion in the marketplace and inhibit progress. Everyone wants to do the right thing, but without rigorous certification programs, the ability of individual purchasers to drive change can be trapped in the old way of doing things.

8. What are the top three attributes you look for when evaluating a certification program?

Peter Syrett: I look for impartial and scientifically based programs that are transparent about their funding and data sources.

Mark Pollock: Rigor, transparency and reliability.

Kent W. Peterson: Industry-standard testing, third-party testing and certification, and when the product was tested.

Jeremy Benkin: Independence, transparency and rigor are the three indicators of a strong certification program. Any missing element from a certification program compromises the effectiveness of the program and its usefulness to purchasers.

9. Why should or shouldn't professionals in the sustainable building and design industry care about IAQ?

Peter Syrett: If you care about people, then you should care about what impacts human health.

Mark Pollock: It should be a big concern to designers and contractors since it can have such an immediate effect on the occupants and the installers. While other more-apparent or obvious sustainable/green elements are great, they don't have a direct impact on the end-user.

Kent W. Peterson: Professionals in the sustainable building and design industry should care about IAQ because we cannot establish sustainable buildings without good indoor environments. Sustainable buildings require a balance of resource efficiency and good indoor environments for the occupants in the building.

Jeremy Benkin: From a building operation standpoint, IAQ is one of the primary drivers of occupant comfort and satisfaction. It also represents a very real area of risk for the building owner. IAQ is an area that, historically, many building operators have only dealt with after they have a problem. In more recent years, building managers have taken a much more proactive role around IAQ management. The certification process around cleaning programs created by the GREENGUARD Environmental Institute is a key component to addressing IAQ in a proactive manner.

Rachelle Schoessler Lynn: We should care because we have contributed to the decline in the environment. Design and construction uses 40 percent of the raw materials available, and we contribute 30 percent of the waste in a landfill, and the buildings that we design consume 72 percent of the electricity in the U.S. Designers have the opportunity to reduce our ecological footprint in a profound way. We can create environments that improve human health and we can choose to support manufacturers that promote social equity and that strive to lower their own impact on the environment. [ec+g](#)