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# Interiors

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It's no secret that designing and constructing high-performing, energy-efficient, sustainable buildings and interior spaces is more important today than ever before. Green buildings lead to reduced environmental impact; healthy returns on investment for architects, designers, builders, owners, and product manufacturers; as well as substantial cost savings for end-users.

But in our haste to protect the planet, conserve natural resources, and promote clean outdoor air, one critical piece of the green building puzzle—and, arguably, the most important—is often overlooked: indoor air quality.

"The greatest irony of sustainable design and construction is that, often, the built environments we're creating don't sustain human health," says Henning Bloech, executive director of the GREENGUARD Environmental Institute (GEI). "While sustaining Earth's natural resources is critical, we can't lose sight of the underlying goal: keeping people healthy."

#### WHAT IS INDOOR AIR QUALITY?

Indoor air quality (IAQ) refers to the quality of air inside built environments as it relates to human health: The better the IAQ, the healthier the air that people breathe. Unfortunately, statistics consistently show that indoor air is two to five times more polluted than the air outside. Even worse, the air in newly constructed and/or renovated interior spaces can be up to 1,000 times more polluted than outdoor air. Why? Because many of the synthetic products and materials we use to design and build these spaces emit a cocktail of volatile organic compounds (VOCs) and other pollutants into the air—things like potential carcinogens, reproductive toxins, odorants, and other irritants, notes Bloech.

Not surprisingly, research has linked poor IAQ to a number of health risks, including asthma and other respiratory ailments; headaches; eyes, nose, and throat irritation; and even cancer. This, in turn, leads to decreased productivity, lower academic performance, and increased absenteeism.

#### WHY YOU SHOULD CARE

As architects and designers, you help shape and lead the green building and design industry. The built

# THE Missing Piece

Designs that sustain the Earth's natural resources are no doubt significant, but there is one critical factor tied to green design that the A&D community simply can't lose sight of: human health.

environments you help create and furnish today—whether they're homes, schools, hospitals, community centers, or retail spaces—will have enormous health impacts on the people who occupy them tomorrow.

Paradoxically, some of the world's "greenest" buildings—those that meet strict environmental criteria for energy efficiency, site selection, water conservation, and material selection—fail to account for the quality of indoor air.

"Sure, it's a great thing when we create interior environments made from renewable resources," says Bloech. "But, if the adhesives used to hold those renewable resources in place release toxic chemicals into the air, then the building we once thought was sustainable is actually doing more harm to its occupants than good—and that goes against everything green building and design stands for."

To complicate matters, at the core of green building and design is energy efficiency: saving energy equals saving money equals saving the planet. Yet, the more airtight our built environments are, the more polluted the air inside them becomes (the chemicals that emit from indoor sources get trapped inside). "We may be harming our health without even realizing it," adds Bloech.

#### WHAT WE DON'T KNOW MAY HURT US

Four decades ago, you—the world's leading architects, designers, builders, and manufacturers—helped make it possible to reduce human exposure to lead and asbestos in our built environments ... even though these building materials were as commonplace (and as accepted) as hardwood flooring or carpeting. You acknowledged the harmful effects that these materials have on human health, and you acted. As a result, today, the levels of lead in children's blood across every population are markedly lower.

More recently, you also helped cut back on industry use of formaldehyde, a chemical that emits from common building materials (like engineered


wood products or insulation) and is known to cause cancer. Thanks to your actions, today, fewer people are exposed to this hazardous chemical.

But science has shown that more than 12,000 other chemicals emit from the products we use or encounter every day. Many of them are known carcinogens, irritants, or developmental and reproductive toxins. Others we know very little or nothing about. Experts warn that exposing ourselves to these unknown chemicals is like gambling with our health.

"Until we learn more about these compounds and their potential impact on human health, it would be prudent to limit our exposure to them as much as possible," says Marilyn Black, founder of the GEI. "New chemicals are introduced into our environment every day. Do we really want to let ourselves and our children become research guinea pigs?"

#### HOW YOU CAN HELP TODAY

By doing your part to raise awareness about poor IAQ and its health impacts, you can help gain the political, economic, and social momentum needed to make doing your jobs easier and more cost-effective. You can help ensure strong returns on investment, healthy profits, and increased consumer demand. And you can help transform neighborhoods, communities, cities, nations, and human lives.

"Economic growth, political viability, and social progress all share a common thread: human health," adds Black. "Once we recognize that human health is the cornerstone of green building and design, we can affect real, positive change on the world." 

*The GREENGUARD Environmental Institute (GEI) is an industry-independent, not-for-profit organization that oversees the GREENGUARD Certification programs. As an ANSI-Accredited Standards Developer, GEI establishes acceptable product standards for building materials, interior furnishings, cleaners, electronics, and children's products. Learn more at [www.greenguard.org](http://www.greenguard.org).*