

The Hippocratic Oath and the Design Team Catherine Bobenhausen



In healthcare facilities, there are no spectators, only participants who, while receiving treatment, perceive and respond to their surroundings. These facilities, once seen as safe havens, sheltering people and healing them, are increasingly under the microscope for practices that may cause harm. For example, ill-regarded chemicals, such as chlorinated plastics, phthalates, perfluorochemical stain repellants, flame retardants, heavy metals, antimicrobials, bisphenol A and nanomaterials have raised public health concerns like never before.

There is a drive to do better.

Design teams will do well to balance the precautionary approach of the Hippocratic Oath (“First, Do No Harm”) with the need for tried-and-true performance, workability and affordability in the building products they specify.

Close collaboration among industrial hygienists, clients and design teams results in careful prioritization and selection of finishes, furnishings and other materials with a positive impact on indoor air quality, as the market evolves.

However, it is still a “buyer-beware” world, where manufacturers control information, the supply chain can derail manufacturers’ quality standards, and the well-intentioned architect can fail to meet the mark.

In one example, an architect was evaluating several preferred countertops for specification on a healthcare project. One of the products had a GREENGUARD Certification for Children & Schools Gold rating, indicating that the product had been tested and found to meet specific indoor air emissions criteria. It therefore was selected. Only later did the architect realize that the certification only applied to the solid countertop, and not to the installation adhesive, caulk and sealant.

Toxicity concerns about building materials have given rise to useful evaluation tools such as Pharos (www.pharosproject.net), allowing architects and researchers to select lower-toxicity building products, interior finishes and furnishings. Pharos’ Building Product Library offers product data and a scoring system related to toxicity and health hazards. Each product is scored for VOCs, toxic content, manufacturing toxics and other factors such as renewable materials, renewable energy and reflectance.

Pharos categorizes the chemical content of each building product based on manufacturer disclosure and original research well beyond the detail of a standard material safety data sheet. The database enables architects, as non-scientists, to make wise choices regarding foreseeable chemical exposure of staff, patients and visitors in completed buildings, and to be considerate toward workers and the chemical hazards they may face in manufacturing and installing building products.

The online tool can be filtered to screen out chemicals such as semivolatile organic compounds including phthalate esters, which are used as plasticizers for softening and flexibility, and polybrominated diphenyl ethers, such as flame retardants in plastics, paints, furniture cushions and textiles.

A variety of rating systems and certification programs use the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1" (CDPH/EHLB Standard Method V1.1). This standard method establishes a protocol for testing and evaluating building products for vapor phase organic chemical emissions, such as those on California's lists of toxic substances: known or probable human carcinogens, reproductive/developmental toxins and systemic toxins with noncancer chronic effects. View the full document at <http://bit.ly/section01350>.

The standard method has been adapted by the LEED rating systems, GREENGUARD Certification for Children & Schools, Scientific Certification Systems Indoor Advantage Gold, the Business and Institutional Furniture Sustainability Standard (for the health-based criteria), the Carpet and Rug Institute Green Label Plus, and Resilient Floor Covering Institute FloorScore.

Manufacturers increasingly offer alternative, lower-emitting products. Their research and development chemists strive to address performance requirements (for durability, stain resistance, functionality, ease of care, colorfastness and more) with reformulated products that are less odorous and chemically more benign. It's not a simple balancing act, but it is about time.

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