

Overview

Healthy employees are more productive. A workplace built, furnished and operated to minimize exposure to substances harmful to human health means fewer sick days and less staff turnover, which can cost thousands of dollars.

Cost, performance and aesthetics are common criteria for selecting interior building materials and furnishings. Their affect on the health of occupants and the natural environment is often overlooked. As awareness grows, manufacturers are bringing to market products which have a lesser or reduced effect on human health and the environment when compared to competing products that serve the same purpose. These environmentally-preferable products typically add little or no cost to a project, yet pay dividends in increased employee health, productivity and retention.

Benefits

- Increases productivity
- Less staff turnover
- Fewer sick days
- Reduces stress

Quick Fact

Escalating numbers of workers are suffering from symptoms associated with sick building syndrome, estimated at 16 million people — 23% of office workers.



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Strategies

Specify healthy building materials and avoid those that pose indoor air quality problems which can lead to asthma, headaches, loss of concentration and long-term illnesses.

Materials to avoid are those that harm the natural environment in their manufacture or disposal or that emit harmful gases during installation or use.

Volatile organic compounds (VOCs) volatilize to air as materials dry or cure. Some VOCs can cause cancer, lead to long term damage to the liver, kidney and nervous system and increase chemical sensitivities. VOCs are used in adhesives, finishes, paints, flooring, wall covering, ceiling tiles, furniture, composite wood products and insulation.

Persistent bioaccumulative toxins (PBTs) do not break down readily from natural processes (persistent) and accumulate in fatty tissues in increasing concentrations as they move up the food chain (bioaccumulative). The most prominent PBTs are lead, mercury, cadmium, dioxins, furans (arising from manufacture of polyvinyl chloride, or PVC), polychlorinated biphenyls (PCBs), perfluorocarbons (used to make fabrics stain resistant and frictionless), and brominated compounds (used in flame retardants). Persistent bioaccumulative toxins are generally highly toxic in small quantities.

Healthy building materials are those interior building and design materials that do not contain certain toxic chemicals, reduce or eliminate emissions, and are handled in a manner that avoids generating mold. A substantial and diverse selection of healthy building materials are readily available at no or low cost premium. By including healthy materials in criteria used in selecting furnishings, fixtures and finishes employers can avoid unnecessarily compromising employee health, comfort and productivity.

Carpets The Carpet & Rug Institute (www.carpet-rug.org) certifies certain carpets and their adhesives as Green Label Plus which complies with California's stringent Volatile Organic Compound (VOC) requirements (CA 01350).

Floors Scientific Certification Systems (www.scs-certified.com) certifies resilient flooring that meets the CA 01350 VOC requirements.

Wall Coverings and Panels The Collaborative for High Performing Schools (www.chps.net) maintains a list of products—including wall panels—that meet CA 01350.

Sealants and Adhesives Green Seal (www.greenseal.org), Ecologo (www.ecologo.org) and EPA (www.epa.gov/epp) offer lists of certified sealants and adhesives low in VOCs.

Paints and Coatings GreenSeal maintains a listing of paints and coatings that meet their VOC standards, do not contain toxins and meet certain performance requirements.

Furniture GreenGuard (www.greenguard.org) certifies low VOC-emitting furniture.



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Quick Fact

80-90% of the average American's life-time is spent indoors. The concentration of pollutants inside a building may be two to five times higher than outdoors.

LEED®-CI v2.0: Commercial Interiors

These indoor air quality credits were included to protect occupant health, comfort and safety. Because indoor air quality is not federally regulated and people spend most of their time indoors, optimizing indoor air quality is a priority in green building. By implementing various healthy building material strategies, your project may be eligible for the following:

Indoor Environmental Quality

EQCredits 4.1–4.5: Low-Emitting Materials

EQ Credit 5: Indoor Chemical & Pollutant Source Control

Checklist

Create a checklist of materials to avoid to begin your implementation strategy.

A great place to start is: www.healthybuilding.net/target_materials.html

- No polyvinyl chloride. Check the Healthy Building Network's PVC Alternatives Database for a list of PVC free alternatives for a wide range of building materials: www.healthybuilding.net/pvc/alternatives.html.
- Low or no VOC (volatile organic compounds). Check for materials that are CA 01350 compliant and have no added formaldehyde.
- No phthalates or heavy metals (lead, mercury, cadmium, organotins)
- No halogenated or brominated flame retardants
- No perfluorocarbons, including PFOA, Teflon and other treatments

Control sources of indoor air contamination, an important element in providing good overall Indoor Environmental Quality (IEQ).

- Test the site for sources of contamination: radon, hazardous waste, fumes from nearby industrial or agricultural uses.
- Locate air intakes away from sources of motor vehicle exhaust fumes or designated smoking areas.
- Consider the location of building air intakes so they are not accessible by people other than authorized staff to minimize security risks.
- Consider recessed grates, walk-off mats and other techniques to reduce the amount of dirt entering the building.
- Specify materials and furnishings that are low emitters of indoor air contaminants such as volatile organic compounds.
- Allow adequate time for installed materials and furnishings to "outgas" before a new workplace is occupied. Assist the process by running the HVAC system continuously at the highest possible outdoor air supply setting after materials and furnishings have been installed to adequately "flush out" the facility. (The exact timing may vary for different materials.)
- Consider "modular zoning" for air distribution in order to avoid cross contamination.
- Install proper barriers between occupied and construction zones in renovation projects in order to protect worker health.

Resources

www.healthybuilding.net Search for PVC-free product alternatives for a wide range of building materials.

www.buildinggreen.com Contains multiple articles and product specifications for healthy alternatives.

www.epa.gov/opptintr/epp Click on "Finding and Evaluating Green Products and Services."

www.oikos.com Click on "Products" to search by product type or name.