

The Inherent Value of LEED

A Matter of Choice

By Dan Overbey, LEED AP

Everything we create is a product of choice - are you aware that simple decision making may improve the health of a project's occupants?

According to the American Lung Association, Americans spend as much as 90% of their time indoors. Therefore, the quality of the indoor environment is very important for occupant health, productivity and quality of life. In recent years, studies have linked improved indoor environmental quality with a multitude of dividends, including: reduced absenteeism and turnover, improved worker productivity, reduced liabilities due to inadequate ventilation and improved student performance.

Moreover, healthier indoor environments don't necessarily correlate with elaborate building features or higher initial costs. Whether you are a project owner, designer, or builder, you have the power to help create a safer, healthier indoor environment. Many achievable improvements in indoor environments are a simple matter of choice. Presented below are three areas in which one's choices can have a very powerful impact on indoor environmental quality.

SPECIFYING HEALTHIER MATERIALS

Research over the past decade has vastly improved our understanding of the indoor environment and the causes for poor indoor environmental quality. Among other issues, a large number of building products and furnishings consist of substances that have been proven to or suspected of having a negative impact on human health.

To combat such detriments, green buildings typically implement building materials and furnishings that avoid volatile organic compounds (VOCs) and other substances which are known or suspected carcinogens, mutagens, teratogens, or endocrine disruptors.

Owners, designers and builders have the power to investigate materials and specify products which are free of lead, chlorine, cadmium, and other poisonous elements. Consider polyvinyl chloride (PVC),



The Las Vegas Springs Preserve was designed to maximize indoor environmental quality. Features include: carbon dioxide monitoring, various healthy building materials, and a high level of thermal comfort.
Photo Courtesy of Tate Snyder Kimsey

which is commonly used as vinyl siding, window profiles, pipelines, and other conduit fixtures. Building products containing PVC are likely to contain phthalates-which have been known to cause liver cancer in animals and suspected of causing endocrine disruption-as well as toxic dyes and ultraviolet stabilizers. PVC products are also over 40% chlorine by weight and contain hazardous hydrocarbons.

Rather than specifying vinyl siding for instance, one may consider solid wood, strand board, wood-resin composites, stucco, or fiber cement. Instead of PVC window and door frames one may consider Forest Stewardship Council (FSC) certified wood frames. There is also an extensive collection of alternative interior flooring products that do not contain PVC.

Specifying alternatives to PVC is just the beginning. For many building products, there are health benefits to reap simply by specifying one brand over another. One needs only to research and specify products based on durability, performance, and environmental characteristics. If information provided in a product's Material Safety Data Sheets (MSDS) does not suffice, it may be necessary to request emissions test data from product manufacturers. Then, compare this data with that of alternative products. It is important to realize that any person can make a difference by virtue of their own awareness. >>



IMPROVING THE PERFORMANCE OF VENTILATION SYSTEMS

Weather in the Las Vegas Valley can be uncomfortable for much of the year. Therefore, citizens must rely on mechanical ventilation systems to achieve thermal comfort inside our buildings. Another key to improving indoor air quality is to ensure that our mechanical ventilation systems perform adequately.

In order to accomplish this, a building's ventilation system should meet the minimum requirements outlined by the voluntary consensus standard ASHRAE 62-1999, Ventilation for Acceptable Indoor

Air Quality, and approved Addenda using the Ventilation Rate Procedure. Fortunately, ASHRAE Standard 62-1999 has become customary ventilation design practice and may not require additional design effort or cost. Responsible parties simply need to see it through to realization.

Additionally, project teams should evaluate the building site prior to acquisition to avoid choosing one with potential threats to indoor air quality. Fresh air intakes should be positioned away from any such threats. In addition, during construction and building fit-out, building materials should be protected from moisture.

THE BENEFITS OF DAYLIGHTING

Championing daylighting strategies is perhaps one of the most advantageous choices one can make in terms of human health as well as economic vitality. Architects, lighting designers and other professionals in the building industry have long maintained the position that adequate daylighting strategies yield economic benefits to employers in terms of increased worker productivity and alleviated energy expenditures with regard to artificial lighting and cooling loads. According to information published in Public Technology Incorporated's reputable Sustainable Building Technical Manual, a well-designed day lit building can often reduce lighting energy use by 50% to 80%. However, many owners and building professionals are unaware of the growing body of knowledge revealing the various health benefits offered by daylighting strategies, including beneficial effects on the human immune system.

Moreover, daylighting has been shown to foster improved mental health and performance. Numerous studies indicate a direct correlation between properly-designed daylighting strategies and improved student performance and increased worker productivity.

Considering the fact that virtually every building has windows, it simply becomes a matter of choice. With appropriate orientation and shading, these openings to the outdoor environment can create excellent, day lit interior environments that will provide benefits for the life of the building. <<

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