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Green building often demands creativity in solving problems

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Construction companies are adapting and developing the expertise to support the demand for sustainable structures. While many of the basic principles of construction remain the same, the U.S. Green Building Council's Leadership in Energy and Environmental Design system and other types of sustainable construction require additional diligence and often call for creative problem solving to meet specifications.

Key elements of green construction include implementing and managing mechanical systems that support improved indoor air quality, locating suitable materials, applying finishes with nontoxic approaches, and recycling and disposing of materials in an ecofriendly way.

While LEED is synonymous with sustainability, it has numerous requirements related to occupant wellness. They include requirements related to indoor air quality, such as extensive ventilation and the use of high-efficiency particulate air filters. During construction, ventilation filters have to be changed regularly. And when construction is complete, requirements of LEED call for outside air to be pumped in for weeks prior to occupancy.

Materials have an obvious impact on a space. And, there are numerous options in ecofriendly finishes. Recycled materials used in carpet, environmentally friendly gypsum board versus sheetrock and products made from rapidly renewable resources, like bamboo, are popular choices. LEED design, however, also prefers materials to be within a 250-mile radius of a project to eliminate excessive shipping.

For companies looking to go sustainable without the designation, considering local resources for finishes is important. Limestone and a variety of other stones and mesquite wood are popular examples of materials that are plentiful in Central Texas. There are other choices, including laminate and linoleum, which are manufactured in the region.

General contractors are tasked with securing and ordering materials to complete the architectural vision. Finding enough of a specific material or finding a material that fulfills the vision of the design and meets sustainable objectives requires research and a solid understanding of what's available locally.

Sustainable construction often requires testing. Traditional means of adhering carpets, wood floors and architectural details are not always environmentally friendly. General contractors and their teams often need to evaluate leading-edge approaches to applying finishes to meet sustainable objectives.

Manufacturers are developing better green products that are nontoxic, but some do not have a known record. It's important for general contractors to understand how new products and adhesives are going to work on selected materials to ensure quality is not compromised.

Before and during construction, materials pile up. For decades, common practice has been to take unused or old materials to a landfill. Now, many companies are more interested than ever in ensuring that materials are recycled.

When LEED design was in its infancy, it was common for general contracting teams to sort materials for recycling. Materials slated for disposal were grouped in specific categories for recycling — a colossal job for large projects. And in LEED, the requirement for recycling is steep: 75 percent of demolished debris needs to be recycled.

As a result, dumpster companies are leveraging the increasing demand for recycling by offering all-in-one service. Debris is collected, carried offsite and sorted into appropriate components. While pricier than traditional disposal, it takes the hassle and mess away from the construction site.

Core to any LEED or sustainable project is a commitment to finding solutions that abide by high environmental standards. Companies of all types and sizes can build green with more options than ever. When selecting a general contractor, experience in sustainable construction is critical. New variables and a lack of time-tested solutions means that construction teams need to bring a high skill set to the site.

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