

other to make sure they have the most integrated design possible,” says Tubrett. “This ensures the most efficient and energy-wise practices are being integrated from the beginning. This also avoids confusion and expense from design changes later in the development process.”

Green awareness has resulted in environmentally savvy consumers who demand and expect greener

products and services; consumers however are not the only proponents of environmental building practices.

“Green intelligent building is more mainstream than it was five years ago,” says Tubrett. “Large architectural firms, building owners, government and consumers have helped push it along.”

Building integration article, continued on page 17

Smart standards for sustainable buildings

Several international standards published by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) support the integration of greener, smarter features in buildings.

The committee *Building Environment Design* (ISO/TC 205) has developed standards on building automation control systems and numerous others specific to environmental design. Among them, ISO 16813 aims to assess a proposed design with criteria ranging from indoor air quality, to thermal comfort, and also energy efficiency; and ISO 16818 specifies terms and definitions used in the design of energy-efficient buildings.

Another committee—*Doors and Windows* (ISO/TC 162)—is developing standards to maximize the energy conservation of doors and windows. The standard ISO 15392 offers general principles on sustainability in building construction. And another committee—*Thermal Performance and Energy Use in the Built Environment* (ISO/TC 163)—is responsible for developing standards on the thermal performance of not only the whole building, but also the materials, products, components, elements and systems within.

ISO/TC 205 is also developing a standard that will provide guidelines to assess the energy efficiency of new buildings, and another that will provide methodology to assess the overall energy performance and environmental impact of buildings.

The IEC’s Joint Technical Committee with ISO for information technology (ISO/IEC JTC 1) developed the ISO/IEC 14543 series of standards, which integrate information technology with a building’s electronic

system. With standards that cover management of an integrated system, wiring, frequency and control panels, these standards can help integrate the controls of a house’s lighting; security system; heating, ventilation, and air conditioning systems; water control; and energy management, as well as household appliances.

A number of other IEC standards are being used to help conserve energy in the built environment. The technical committee for *Solar Photovoltaic Energy Systems* (IEC/TC 82) has published several standards around the use of solar energy in creating heat and electricity in structures; the technical committee for *Power Systems Management and Associated Information Exchange* (IEC/TC 57) has developed a number of standards for energy management system applications (IEC 61970-parts 1 to 501).

While no single ISO or IEC standard sets out all required criteria for green intelligent buildings, ISO’s environmental management system series (ISO 14000) contains several standards that address the topic. For example, ISO 14001 provides requirements that an organization must adhere to in order to identify and control its environmental impact and improve its environmental performance.

Of course, there are numerous other technical committees in the process of developing new or related standards that can be used to increase the performance of buildings and lessen their impact on the planet. As technology advances and environmental concerns arise, members of ISO and IEC remain committed to finding standardization solutions that will improve environmental building performance. ■

