

## Commercial Interiors: New Opportunities for Sustainable Design

By *Helen J. Kessler, AIA*

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Until late last year the U.S. Green Building Council's Leadership in Energy and Environmental Design Green Building Rating System (LEED), did not easily apply to commercial interiors. With the advent of LEED for Commercial Interiors (LEED-CI), a green building rating system specifically designed for commercial interiors, that has now changed. LEED-CI is part of a family of LEED rating systems that also includes LEED-NC for new construction, LEED-EB for existing buildings and LEED-CS for core and shell developments, such as speculative office buildings. LEED-CS is still only available as a pilot while the other three systems have been officially rolled out. LEED-CI and LEED-CS were designed to work together, although any commercial interior may be designed and built to achieve a LEED-CI rating.

LEED-CI addresses the specific needs of tenant build-outs in office, retail and institutional buildings. It emphasizes taking an integrated approach to sustainable design in a similar fashion to the older and more commonplace LEED-NC. A greater emphasis is put on materials and resource efficiency as well as indoor environmental quality. Less emphasis is put on the credits that are hard for the commercial tenant to do anything about: site and water efficiency opportunities. LEED-CI projects can achieve four levels of certification: Certified (21-26 points), Silver (27-31 points), Gold (32-41 points) and Platinum (42-57 points).

Setting LEED-CI goals at the beginning of the project is critical to success. In that respect, a LEED-CI project is no different from any other sustainable design project. Taking an

integrated approach to design will allow a project to obtain the higher levels of certification, potentially at minimal cost.

There are many good reasons for a commercial interior tenant to consider sustainable design. In addition to doing well for society, the tenant is likely to reduce long-term operating costs and improve the indoor environment for its employees. Improving employee comfort may have the biggest benefits for an employer, as a tiny increase in productivity can significantly benefit the tenant's bottom line.

It is possible to achieve LEED-CI certification in any existing building. That said, if the building has already been certified as a LEED (NC, EB or CS) building, if it's located in an existing urban area, if lighting and plug loads are separately metered (as in most Chicago buildings) — all positive attributes for sustainable development — the project will achieve more LEED points.

As with any LEED project, there are certain prerequisites: commissioning (verifying that the HVAC and lighting systems are designed and constructed according to the owner's project requirements), achieving a minimum energy performance based on ASHRAE 90.1-2004, eliminating the use of CFC refrigerants, providing for the storage and collection of recyclables, maintaining minimum indoor-air quality, and eliminating smoking.

What are the challenges of LEED-CI? The program requires that the space meet the energy efficiency requirements of ASHRAE 90.1-2004, which is a more stringent energy code than ASHRAE 90.1-1999 and Chicago's Energy Conservation Code, especially with respect to lighting power density (lighting watts/square foot). That said, one can get up to five points for various lighting efficiency measures, including

reducing lighting power density below the standard, providing daylight dimming near windows and providing individual lighting controls for most of the occupants. Another energy efficiency credit relates to using Energy Star-rated appliances, such as computers, printers, copy machines and refrigerators.

An interior architect's greatest impact will be on the choice of materials used. Materials made from recycled content, such as drywall, acoustic ceiling tiles, carpet tile and furniture all contribute to reducing the use of virgin materials and developing a more sustainable project. Recycled content materials may include post-consumer and post-industrial feedstock. Post-consumer recycled content includes materials such as milk and pop bottles or old newspaper that has been used by consumers prior to being reused as another product. Products that contain waste from industrial processes are considered to have post-industrial recycled content. Post-industrial does not include industrial scrap or trimmings that are normally fed back into the same manufacturing process.

Materials that emit low or no volatile organic compounds (VOCs), such as carefully chosen paints and carpet systems, contribute to indoor environmental quality. Unlike LEED-NC, furniture systems play a significant role in LEED-CI, and the design team can obtain credit for specifying furniture systems that are Greenguard-certified. Greenguard-certified furniture has low VOC emissions.

There are a number of LEED-CI examples in Chicago. Furniture maker Haworth's Merchandise Mart showroom, designed by Perkins + Will, is slated to receive LEED Gold certification. Exelon is building out a new 220,000-square-foot



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**Furniture maker Haworth's Merchandise Mart showroom is slated to receive LEED Gold certification.**

corporate headquarters in the Chicago Loop, which is being designed by Epstein-ISI to obtain at least a LEED Silver certification. As the sustainable design/LEED consultant on the latter project, I can attest to Exelon's commitment to taking every cost-effective measure available to meet its environmental goals. One of the significant measures will be to reuse furniture which provides two compelling benefits: 1) reducing the amount of abandoned furniture which could potentially be sent to a landfill, and 2) reducing the amount of new furniture purchased, a significant source of savings. Tenant energy use is expected to be at least 25 percent below ASHRAE 90.1-2004, and at least 90 percent of the employees are expected to have views to the outside.

LEED-CI requires careful coordination between interior architects, mechanical engineers and lighting designers. It also requires the unwavering commitment of the tenant. With an integrated approach and sensible choices, operating and first costs may be reduced, and employees will have a more comfortable environment. Most important of all, considering LEED early in the design process and using a sustainable design charrette can help ensure success. ■

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