10. ***Share and demonstrate sustainability***. If we are to improve the environment for all, the knowledge of how to do so cannot be proprietary information. Share the knowledge gained with your colleagues and competitors as well as your clients.

11. ***Long-term value***. In all ways, think of the design in terms of creating an environment of long-term value.

Rating Systems

Over the last several decades, a number of different rating systems have been developed to evaluate the environmental performance of many things, including building materials. Several systems have been developed that specifically rate the overall environmental performance of buildings. The most widely known and complete systems include the BREEM system, developed in Great Britain in the 1980s and the BEPAC system, created in Canada in the early 1990s. Both of these systems attempt to model every material, system, and operational decision that goes into a building to arrive at a total impact of the building on the health of the earth. Both are computer models of great thoroughness and complexity. In the mid-1990s, both were considered by the new U.S. Green Building Council (USGBC) for a building rating system for the United States. However, the complexity of both systems limits their widespread use. The council decided to create a new building rating system intended specifically to be used as a design tool. That system, the LEED Green Building Rating System (see Table 16-1), under development for five years, was officially released in the spring of 2000.

LEED GREEN BUILDING RATING SYSTEM

The USGBC was formed in 1993. It is a consortium of building owners; material suppliers, contractors; architects, engineers; governmental agencies; and others involved in the design, construction, ownership, and operations of buildings. It is a mainstream organization dedicated to significantly improving the environmental performance of the built environment. The council is a consensus-driven organization.

The LEED Green Building Rating System was initially developed for commercial buildings. Other sections are now under development, including

TABLE 16-1

LEED Green Building Rating System, Developed by the U.S. Green Building Council

SUSTAINABLE SITES

Prereq 1 Erosion & Sedimentation Control
Credit 1 Site Selection
Credit 2 Urban
Credit 3 Brownfield Redevelopment
Credit 4 Alternative Transportation
Credit 5 Reduced Site Disturbance
Credit 6 Stormwater Management
Credit 7 Landscape & Exterior Design to Reduce Heat Islands
Credit 8 Light Pollution Reduction

SAFEGUARDING WATER

Credit 1 Water Efficient Landscaping
Credit 2 Innovative Wastewater Technologies
Credit 3 Water Use Reduction

ENERGY AND ATMOSPHERE PROTECTION

Prereq 1 Fundamental Building Systems Commissioning
Prereq 2 Minimum Energy Performance
Prereq 3 CFC Reduction in HVAC&R Equipment
Credit 1 Optimize Energy Performance
Credit 2 Renewable Energy
Credit 3 Best Practice Commissioning
Credit 4 Ozone Depletion
Credit 5 Measurement and Verification
Credit 6 Green Power

CONSERVING MATERIALS AND RESOURCES

Prereq 1 Storage & Collection of Recyclables
Credit 1 Building Reuse
Credit 2 Construction Waste Management
Credit 3 Resource Reuse
Credit 4 Recycled Content
Credit 5 Local/Regional Materials
Credit 6 Rapidly Renewable Materials
Credit 7 Certified Wood

ENHANCING INDOOR ENVIRONMENTAL QUALITY

Prereq 1 Minimum Indoor Air Quality (IAQ) Performance
Prereq 2 Environmental Tobacco Smoke (ETS) Control
Credit 1 Carbon Dioxide (CO_2) Monitoring
Credit 2 Increase Ventilation Effectiveness
Credit 3 Construction IAQ Management Plan
Credit 4 Low-Emitting Materials
Credit 5 Indoor Chemical & Pollutant Source Control
Credit 6 Controllability of Systems
Credit 7 Thermal Comfort
Credit 8 Daylight & Views