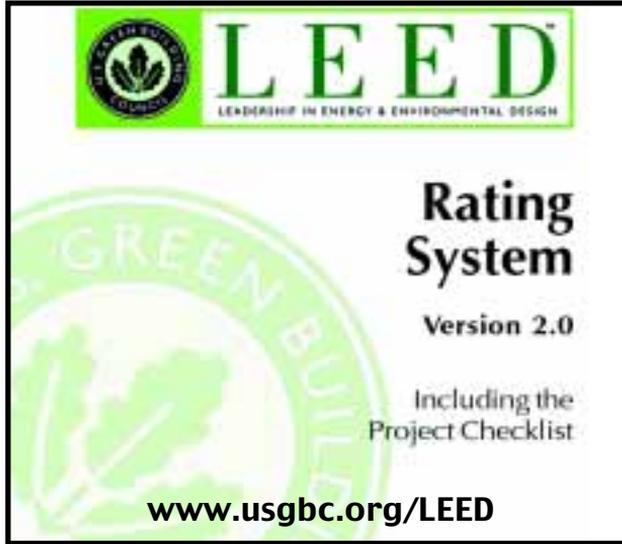


Making Radiant Green Fitting into the LEED program

by Lawrence Drake



According to Building Design & Construction magazine, “sustainable development is the most vibrant and powerful force to impact the building design and construction field in more than a decade.” This movement has been dubbed, “Green Building.” Although designing and constructing buildings with the environment in mind is not a new concept, it has taken on new wings with the establishment of the U.S. Green Building Council (USGBC) in 1993. Many other programs have contributed to the Green emphasis over the last ten years. For example the Energy Policy Act of 1992, EPA’s Energy Star labeling program, the DOE Order 430.2A in 2000, directing application of sustainable design to new DOE buildings, and the implementation of the LEED-EB pilot program launched in 2003 to qualify Green building. A number of

states have active programs that reward Green Building design, while others have sustainable design regulations. The list of cities with local regulations for Green Building is also growing.

The question still remains, what is a Green Building? It is defined by The Office of the Federal Environment Executive as, “the practice of 1) increasing the efficiency with which buildings and their sites use energy, water, and materials, and 2) reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal - the complete building life cycle.”

The USGBC’s LEED program is beginning to have an effect. The General Services Administration, the US Navy, Army, and Air Force are working LEED specifications into their construction projects. Major corporations such as Ford, Sprint, Steelcase, PNC Financial Services and Toyota have embraced LEED and sustainable design. Colleges and universities are making LEED their standard for new construction.

LEED stands for the Leadership in Energy and Environmental Design green building rating program. According to USGBC it is, “a national consensus-based, market-driven building rating system designed to accelerate the development and

(continued on page 7)

implementation of green building practices.” The program applies to building projects, not individual products or services. A building project is evaluated and given credit under five categories. Each category carries a possible number of points and, depending on the points earned, a building can be rated as “Certified”, “Silver”, “Gold” or “Platinum.” These ratings qualify a building project for federal, state and local incentives from cash to tax credits.

Even with all this in place, there is still a lack of consensus for a baseline for measuring the greenness of a product. Criteria vary widely among established standard and certification organizations. In particular, there is little that deals with the greenness of radiant heating. The radiant heating industry has the challenge of demonstrating to the building industry how it fits into the green building concept.

There are several areas where radiant technology can assist a designer in gaining LEED points. Under the heading of Energy & Atmosphere, Credit 1 calls for “Optimize Energy Performance.” The requirement is to “achieve increasing levels of energy performance above the prerequisite standard.” Points are awarded based on how much energy can be saved. Credit 2, Renewable Energy, includes the use of solar and geothermal, both of which can have improved performance when coupled to radiant heating.

Under the Indoor Environmental Quality heading, Credit 2 deals with Increase Ventilation Effectiveness. Radiant heat can help optimize air change effectiveness when designed in conjunction with the ventilation system. The intent of this credit is to provide for the effective delivery and mixing of fresh air to support the health, safety, and comfort of building occupants. Credit 3, Construction IAQ Management Plan, gives points for reducing the impact of construction on installer and occupant health and comfort. For example, the reduction or elimination of construction dust blowing through ductwork. Credit 6 deals with Controllability of Systems with the intent of providing, “a high level of individual occupant control of thermal, ventilation, and lighting systems.” The zoning capabilities of radiant make this a natural fit. Of course Credit 7, Thermal Comfort, is right down the radiant industry’s alley. Its’ intent is to, “Provide a thermally comfortable environment that supports the productive and

healthy performance of the building occupants.”

The projects that submit for the LEED program are not small and not residential. These are generally substantial projects due to the considerable amount of work and commitment it takes to wade through the requirements and the paperwork of the program. While most radiant professionals will not encounter a LEED project directly, everyone will feel its impact and the influence of the Green Building trend. It is a good time for the radiant industry to think “green” and actively seek ways to verify its claims. The building design and construction industry is being coaxed in the “green” direction by federal, state and local agencies as well as public and private organizations. Those that do their homework now will benefit in the future.
