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## Association update: LEEDv3 and the engineer

by David Toshio Williams, American Council of Engineering Companies of Minnesota, Guest Commentary



David Toshio  
Williams

### Updated system affects all engineers

By now, many of you have heard the term Leadership in Energy and Environmental Design (LEED) and know that, if you are planning a building project, someone will bring the idea of considering it for LEED certification. As with all things in this rapidly evolving world, LEED has changed again into LEEDv3, also known as LEED 2009.

If you are a building owner, LEED can help you achieve a higher level of performance. The USGBC system provides all stakeholders a common language for green, or sustainable, building design. It enables you to establish and communicate goals and track them over the course of the project. The ultimate goal is to create a high-performance building: using less energy and water, managing storm water, material resources, and waste, and improving indoor environmental quality.

Engineers are key to reaching LEED certification. They fill the role of managing expectations, implementing strategies and providing outcome documentation for the majority of credits. Many businesses that have obtained certification have seen increases in employee satisfaction, retention, recruiting, health and productivity.

The updated LEED rating system affects all aspects of engineering. Civil engineers must focus on minimizing site disturbance and designing storm-water management systems that control both the quantity and quality of the storm-water runoff from the site. Integration with landscape architecture and the building location can help a project gain credits in the areas of site development and heat island minimization.

The more stringent lighting control and lighting power limitations in LEEDv3 mean that the electrical engineer can not just use an office standard design for even basic compliance with the rating system. Those projects with higher aspirations in the areas of energy performance will require dialog about lighting goals and energy tradeoffs between the owner, architect, interior designer, electrical engineer, and perhaps potential lighting equipment suppliers. Proper implementation of the measurement and verification credits also calls for more than standard practice.

Mechanical engineers have the largest involvement in LEED certification, with many calculations and substantial engineering required in the areas of energy, air quality, air movement, and energy measurement. Some projects will include acoustical engineers to create a design guideline and the supporting calculations to achieve the low sound targets required in school projects.



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The special needs of LEED project documentation and certification require the skills of applying the building sciences to the unique conditions of a specific project, a skill set that successful professional engineers have developed. The ability to adapt to changing standards, codes, and building construction and delivery practices are also found in design firms that have embraced high performance building projects.

In the end, as technical requirements of LEEDv3 and subsequent versions are implemented, building owners and architects will rely even more on engineers to design and operate their building systems. As Minnesota's voice for the engineering community, the American Council of

Engineering Companies of Minnesota (ACEC/MN) is available to provide guidance and explanation along the way. ACEC/MN encourages engineering excellence and furthering the advancement of the engineering profession.

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