

Parking Takes the LEED in Sustainability

BY PETE GOLDIN

HE INTERNATIONAL parking industry is at a crossroads in terms of sustainability. Although parking facilities have not traditionally been considered eligible to earn LEED certification, that limitation may soon be overcome.

Leadership in Energy and Environmental Design (LEED) is an internationally-recognized green building certification system designed to verify that a structure is designed and built using green strategies such as energy savings, water efficiency and CO2 emissions reduction.

Although LEED was started in the U.S., established by the U.S. Green Building Council (USGBC), there are now several Green Building Councils around the world promoting LEED in countries including Australia, India, the UK and Japan.

"LEED is very popular in the construction industry," says Todd Lohman of Walker Parking. "It is the wave of the future. But no one has previously certified a standalone parking garage, so it has been a question whether it can be done."

LEED is intended to apply only to buildings that are occupied, either for residential

or commercial uses, which typically excludes parking structures. While car parks with retail or some other type of built-in occupied space have been able to attain LEED certification, standalone parking structures have not been considered eligible by the USGBC.

However, many of the green strategies outlined by LEED can be important design elements of parking facilities. This is supported by the fact that, while standalone parking structures are not eligible for LEED certification, parking facilities included as part of an occupied structure can help that building attain LEED certification by adding points for specific green features.

The Green Building Certification Institute's website says, "LEED is a voluntary certification program that can be applied to any building type and any building lifecycle phase."

This statement implies that standalone parking structures, which certainly can be buildings, could be eligible for LEED certification. Based on this possibility, Walker Consulting is designing a new standalone parking lot for Duke University in Durham, North Carolina, following LEED guidelines. This car park is expected to be the first standalone parking structure in the world to gain LEED certification.

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Prize winning Leed garage in Santa Monica used Leed construction processes and design that includes solar arrays on the roof.

Getting to the points

LEED awards points for performance in the following key areas, many of which apply to parking:

Sustainable Sites: Selecting a sustainable site can be a very important way car parks can gain credit for LEED. First, simply by choosing an environmentally appropriate location, and not building on previously undeveloped land, a car park can gain LEED points. For the Duke parking lot, Walker chose a site on top of an asphalt parking lot, gaining 6 LEED points.

This category also awards points for reducing heat island effect, and smart transportation choices – all of which can be easily included in parking design.

"Having a priority spot for hybrid vehicles would enable a parking structure to gain LEED points," notes Marie Coleman, Communications Associate, USGBC. "That is really catching on because it is a simple thing to do."

"A green roof on top of a parking deck or anything that would help mitigate the heat island effect are also features that parking lots can gain LEED points for," Coleman adds.

In this category, the Duke parking lot is also gaining points

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dards in Parking?

ed that the most common design philosophy used in most of the rest of the world was wrong, wrong, wrong and adopting anything but their preferred approach would lead to Armageddon. One thing that has surprised me about this debate is that, as far as I can see the designers of the box hardly ever talk to the designer of the thing that goes in it, the car. Car designs have changed dramatically over the last 20 years and will continue to change in the future and yet as far as I can tell there is no dialogue between the car park designers whose products have a 50 years lifespan and the motor industry. Is this important, just think of a car with gull wing doors?

The reality is, as we move into the 21st century, that more and more our cars are being designed in just a few places. Sure America still has bigger cars than Europe or Japan, but there's not much in the USA that is bigger than a Rolls Royce or a Maybach and although the fleet mix may be different the cars are the same. Perhaps the time is right for a summit meeting where the designers get together and agree a few basics like headroom, bay and aisle size and turning radius. The standards don't have to be mandatory, build bigger or smaller if you want but at least everyone would then know what the benchmark was. Is this desirable, I made my mind up when I visited a new car park with 2m wide bays between two walls.

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for providing reserved parking for low-emission vehicles and a green canopy to reduce heat island effect.

Water Efficiency: LEED encourages smarter use of water, inside and out. Walker was able to gain LEED points on the Duke project for using water efficient plumbing fixtures, and cisterns that save storm water for irrigation and minimize runoff.

Energy and Atmosphere: LEED allows points for a variety of energy-saving designs. Energy-efficiency – which included LED fixtures and daylight harvesting – was a major contributor to Walker's overall score for the Duke parking lot.

Materials and Resources: Buildings can gain LEED points during both construction and operation by reducing waste, recycling and using sustainable materials. For example, by recycling waste during construction of the Duke parking garage, Walker gained 2 LEED points.

Indoor Environmental Quality: This is the category that USGBC has traditionally used as a reason why a standalone parking facility cannot be LEED certified.

"Indoor environmental quality speaks to the indoor aspects of a building so I don't how a parking garage would be able to accrue points for that," says Coleman of USGBC.

"The biggest challenge we had on the project was not about accumulating enough points – it was the prerequisite in the LEED score sheet for indoor air quality," Lohman concurs. "A lot of people believe that you need a certain amount of occupied space to meet that prerequisite. On the Duke parking project, we were able to prove our building meets the indoor air quality requirements because it is a naturally-ventilated building. That was accepted by USGBC and we were able to get the points in that category, allowing the building to continue through the certification process."

Gaining an advantage

Aside from the question of whether LEED will accept parking, there is also a question of why parking lots need LEED. In

addition to the obvious benefit of sustainability for its own sake, LEED can offer significant advantages to parking lot owners.

"There is an economic benefit to LEED because you have to start looking holistically at a project from a sustainable standpoint and that can include lifecycle cost analysis," Lohman explains. "In our project we included LED lighting. While there was a little more upfront cost for the LED lights, there was significant lifecycle cost savings. So it is the right thing to do to be green but also there can be cost benefits to the owner by using sustainable design practices."

Lohman also explains that some sustainable design features also improve the user experience. For example, he says by including green vines in the canopy on the top tier of the parking structure, Walker was able to gain LEED points, but the canopy also offers patrons a better experience because it provides shade and is aesthetically appealing.

"There are a wide array of benefits from LEED," Coleman agrees. "If your building is consuming less energy, water and other resources, you're going to save on utilities, not just while your building is undergoing certification but throughout the lifecycle of the building."

"There have also been studies that have shown the LEED buildings have higher rental rates and higher occupancy rates," she continues. "In addition, it is good PR for the organization. Since LEED is a voluntary system, this lets people know that an organization is concerned about the environment."

"Green building is really catching on internationally," Coleman adds. "There is an opportunity for projects in every country to utilize LEED."

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