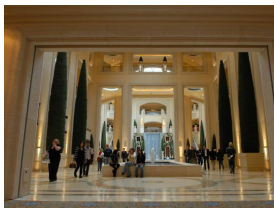


In U.S. building industry, is it too easy to be green?

Across the U.S., the Green Building Council has helped thousands of developers win tax breaks and more by giving them "green" certification under a system that often rewards minor, low-cost steps that have little or no proven environmental benefit.

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A USA TODAY examination shows that thousands of "green" builders win tax breaks, exceed local restrictions and get expedited permitting under a system that often rewards minor, low-cost steps.



(Photo: By Bob Riha Jr., USA TODAY)

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LAS VEGAS — The Palazzo Hotel and Casino boasts many features of Las Vegas excess — an indoor waterfall, a smoke-filled gaming area, seven decorative fountains, and guest suites with three TVs and power-controlled curtains.

Yet the 50-story complex achieved an unlikely and lucrative milestone after opening in 2008. A powerful private organization declared it an environmentally friendly "green" building, the world's largest at the time.

The designation won its owner, Las Vegas Sands Corp., a \$27 million tax break over 10 years because a Nevada law puts the private interest group — not the government — in charge of deciding which buildings are green enough for a taxpayer subsidy.

The U.S. Green Building Council, a building industry non-profit, credited the Palazzo for having bike racks in the garage; room cards telling guests when towels are replaced; landscaping that does not use grass, which local law prohibits anyway; and preferred parking for fuel-efficient cars — spots that on a recent week were occupied by Ford Expeditions, Chevy Tahoes, Range Rovers, Mercedes E320s, Chrysler 300s, Audi A6s, vans, sports cars and a Hummer.

The council even sidestepped its own policy and allowed smoking in the Palazzo casino, a 2.5-acre expanse between the hotel lobby and the hotel elevators.

Across the United States, the Green Building Council has helped thousands of developers win tax breaks and grants, charge higher rents, exceed local building restrictions and get expedited permitting by certifying them as "green" under a system that often rewards minor, low-cost steps that have little or no proven environmental benefit, a USA TODAY analysis has found.

The council has certified 13,500 commercial buildings in the U.S. as green and become one of the most influential forces in building design by helping persuade public officials and private builders to follow its rating system, known as LEED.

More than 200 states, cities and federal agencies now require LEED certification for new public buildings, even though they have done little independent and meaningful research into LEED's effectiveness. LEED can add millions to construction costs while promising to cut utility bills and other expenses.

Los Angeles, Miami, Boston, San Francisco, Baltimore, Washington and roughly 85 other cities go an extra step and require some private commercial buildings to follow LEED. And nearly 200 jurisdictions give LEED builders tax breaks and other incentives.

LEED, or Leadership in Energy and Environmental Design, awards buildings points for features that aim to minimize emissions, water use, waste and indoor pollutants. A new commercial building needs 40 out of a possible 100 points for certification.

A USA TODAY review of 7,100 LEED-certified commercial buildings shows that designers target the easiest and cheapest green points by trying to create pleasant and healthful office spaces; using common building materials; or taking steps with an unknown effect, such as providing preferred parking for fuel-efficient cars, bike racks and showers, and posting educational displays about the building.

Nearly every design team has won a point for including someone who has passed a LEED exam. Thousands more have won points for giving office workers their own light switches, views of the outdoors or temperature-control mechanisms, which can include operable windows or desk fans. More than 6,000 buildings got credit for using structural steel or concrete, common building materials that the council considers green because they are made from recycled material.

Points also have gone to universities that offer a course on green building, to employers that give workers a video-game room and fitness center and to builders for installing a modern fire-alarm system that "minimizes stresses on the firefighters," council records show.

"People have a tendency to buy points — they buy that bike rack even though there's no value in it," said Kansas City, Mo., architect Bob Berkebile, who helped create LEED in the 1990s and remains a strong proponent. "It's unfortunate. That's just where we are at this time."

TABLE: Top options for turning buildings 'green' (<http://www.usatoday.com/story/news/nation/2012/10/24/table-most-popular-options-going-green-leed/1652869/>)

TABLE: The least popular green building options (<http://www.usatoday.com/story/news/nation/2012/10/24/table-least-popular-green-building-options/1652891/>)

Yet environmentalists and experts widely praise LEED for sparking environmentalism in the building industry.

"LEED put this on the agenda single-handedly and rallied a mass of people interested in green buildings who didn't have a framework," said University of California engineer Arpad Horvath, whose 2006 study criticized LEED for not considering the lifetime effect of its various points.

LEED also has expanded the use of green practices such as energy modeling of buildings and of green products such as low-flush toilets, low-emitting paints and materials made from wood that is sustainably harvested.

"LEED has been one of the most significant drivers of forest conservation in history," said Corey Brinkema, president of the Forest Stewardship Council U.S., which promotes sustainable forestry.

Berkebile calls LEED "the most transformative force in the design and construction industry in my lifetime by a factor of four. For the first time, (designers) are starting to consider how a building affects the life and well-being of the occupants and the vitality of the system in which it operates."

There are now LEED-certified breweries, stadiums, dormitories, bus depots, parking garages, shopping malls, libraries, fire stations, warehouses, boathouses, locker rooms and prison buildings.

LEED's growth has been driven partly by the building council itself, a 13,000-member non-profit chiefly run by architects, builders and building suppliers. Many specialize in — and profit from — the type of design the council certifies and promotes. The council collects up to \$35,000 in fees for each LEED certification.

Building council members have boosted their own LEED-related businesses by helping persuade officials to require or reward LEED certification. LEED also helps developers market buildings to tenants and investors and collect higher rents and sales prices, University of California economist Nils Kok said.

"A lot of the fuel for LEED, to be honest, is marketing advantage," said Bill Walsh, executive director of the Healthy Building Network, which promotes non-toxic building materials. "People are interested in how they get the (LEED) credits, not in thinking deeply about it."

Stacking up easy points

Some LEED-certified buildings include advanced or costly technology such as solar panels, on-site water treatment and highly efficient heating and cooling systems. The Palazzo's seven swimming pools are solar-heated; sensors reduce air conditioning when hotel suites are empty, for example.

But LEED does not require designers to take specific steps beyond meeting minimum standards in water and energy conservation, recycling and indoor air quality. Designers chart their own course to certification, choosing from roughly 50 options that range from minimizing light pollution and storm water runoff to maximizing interior daylight and ventilation. More options bring higher certification levels — from Silver to Gold to Platinum — and sometimes bigger tax benefits.

USA TODAY conducted the first public analysis of the 7,100 LEED certification records posted on the council website and found that designers emphasize LEED points that can be won through simple purchasing decisions and shun labor-intensive options and cutting-edge technology.

The most popular LEED option — earned in 99.7% of the buildings — has no direct environmental benefit but generates millions of dollars for the building council by giving one point if a design team has a LEED expert. People become experts by passing a LEED course and paying \$550 to \$800 to a non-profit that the building council created in 2007.

The building council gets 5% of those fees — \$3.3 million from 2008 through 2010, council tax records show. The council rewards the inclusion of LEED experts to encourage building designers to learn about LEED.

More than 90% of the buildings got points for using indoor paints, adhesives and flooring that aim to protect occupants' health by emitting fewer contaminants. Widely used, the materials add little cost or effort and have no impact outside the building.

A point for low-emitting adhesives "shouldn't cost you anything," says a LEED user's guide written by BuildingGreen, a consulting and publishing firm run by former council board member Alex Wilson. Low-emitting sealants are "an easy, no-cost credit," and low-emitting flooring is "a pretty easy credit, with minimal additional cost."

Another "easy to achieve" point, earned by 91% of the buildings, is for using building materials with recycled content. That includes steel and concrete, standard building materials that usually yield a point for being made within 500 miles of a building site.

In total, a downtown office building can earn 32 of 40 points needed for LEED certification through measures that the user's guide calls easy or inexpensive.

"We put in some very easy points," said Rob Watson, a former Natural Resources Defense Council scientist who led the writing of LEED in the 1990s. "We wanted people who were six or seven points away (from certification) to see that if they could get three or four easy points, then LEED was accessible. We wanted LEED to be accessible both economically and technically."

At the other extreme, only 14% of buildings generate renewable energy, and 12% include major water-reduction steps such as using waterless urinals or treating sewage on site.

"People figure out the path of least resistance to get to the end goal, and it doesn't matter if it's LEED certification or 50% energy savings," said Paul Torcellini, a building researcher at the Energy Department's National Renewable Energy Laboratory.

Cheap points can add valuable tax breaks. In Las Vegas, the Palazzo scored just two points above the minimum needed for its \$27 million tax break.



Architect Bob Berkebile helped create the LEED rating system in the 1990s and remains a strong supporter. (Photo: Dan Videtich, BNIM Architects)

The Tower Companies, a Maryland developer, got a \$1 million windfall by adding last-minute features to an office tower near Washington, D.C. Aiming for Gold certification when construction began in 2007, company officials realized when the building was nearly finished that they were close to reaching Platinum. They added preferred parking spots for hybrid cars and a system that channels cooling-system water to outdoors landscaping — and turned a \$530,000 property-tax break for Gold into \$1.6 million for Platinum.

The extra money was not the goal, said David Borchardt, Tower's chief sustainability officer. But the extra incentive for Platinum certification "more than made up for the cost" of the two extra features, he added.

The uncertainty of LEED

In 2009, responding to criticism, the building council revised LEED to put more emphasis on energy conservation.

But the revision increased the uncertainty about LEED and highlights a central problem: LEED certification is awarded before occupancy. Points for minimizing energy and water use are based on projections, not on actual energy and water use.

"That's like the ranking of football teams before the season starts," said Oberlin College energy expert John Scofield, who testified before Congress in May.

Designers can earn up to 19 points for projecting lower-than-average energy use. The projections come from computer models that analyze hundreds of features such as insulation and sun exposure. Such models are good at comparing designs to show which would use less energy. But they are bad at quantifying actual energy use, which depends largely on how a building is used and maintained.

"Buildings have a poor track record for performing as predicted during design," the council itself reported in 2007. "Most buildings do not perform as well as design metrics indicate."

The Environmental Protection Agency says "it is a common misconception that new buildings, even so-called 'green' buildings are energy-efficient." The EPA's voluntary EnergyStar program certifies only buildings that prove energy efficiency over a year of occupancy, and rates buildings every year.

A little-noticed study of Navy buildings in January showed that four of 11 LEED-certified buildings used more energy than a non-LEED counterpart. Of the seven others, four were better than their counterparts by 9%, a level of improvement that is insufficient to earn any LEED points.

"Energy savings are not closely related to the number of points received," concluded the study by University of Wisconsin researchers.

LEED tries to address the problem by offering one point for buildings that measure actual energy use. Only 23% of the LEED-certified buildings have taken that option, USA TODAY found.

Building council Senior Vice President Scot Horst has long pushed to require LEED-certified buildings to report their energy use, but faces resistance. "A lot of people don't want to disclose that information — they feel like somehow their energy data is like dirty laundry and shows they haven't connected their ability to use energy wisely," he said.

A new version of LEED, likely to become mandatory in mid-2015, will require building operators to write a plan for running a building efficiently and to tell the council a building's energy and water use for five years. In recent years, the council has started to review energy and water use for LEED buildings that volunteer the information and tells owners how they are doing compared to projections.

The new version would require low-emitting paints and other items to pass lab tests, and LEED-friendly building materials to demonstrate a wide range of environmental benefits.

Horst said that even with some uncertainty, LEED vastly improves design and "creates buildings that have the ability to do what they might not do otherwise."

Some officials shun LEED or require builders only to follow its guidelines without getting certification. Kentucky law urges school districts to get new buildings certified by LEED or by the EPA. The overwhelming number opt for the EPA because it's free and requires energy efficiency.

"We've designed educational buildings that could easily be LEED-certified, but a lot of school districts have chosen not to because of the cost of certification itself and the lengthy documentation process," said Martha Tarrant, a Lexington, Ky., architect specializing in school construction. "Districts don't see the value of LEED as worth that cost."

Government-fueled green

Governors, mayors, state legislators and federal administrators have been forceful LEED advocates who helped it flourish nationwide. About 26% of LEED-certified buildings are government-owned.

But officials have embraced LEED and similar standards "often without fully understanding their benefits, trade-offs and costs," says a 2009 study by the National Institute of Building Sciences, a research group that interviewed building officials, regulators and advocates.

The federal General Services Administration (GSA), which owns and leases space in 9,600 buildings, gave crucial support in 2003 when it began requiring LEED certification for its new and substantially renovated buildings. Every federal department now follows green building practices along with 35 states. Roughly 170 cities give LEED builders tax breaks, grants, expedited permitting or waivers allowing them to construct larger buildings than local law allows. Roughly 2,000 developments, buildings and homes have received \$500 million in tax breaks nationwide, USA TODAY found.

Public LEED buildings typically cost taxpayers extra. In Ohio, LEED certification for new state-funded schools has added \$131 million in construction costs since 2007. "Soft costs," such as fees to the building council and to LEED consultants, add about \$150,000 to the price of a new federal building, the GSA estimates.

Governments seeking to justify LEED often rely on reports funded by the council or written by council leaders asserting long-term cost savings.

A widely cited 2004 report for the GSA said that the costs of getting a building LEED-certified can be "surprisingly limited." The report was written by Steven Winter Associates of Connecticut. Firm principal Steven Winter was chairman of the building council from 1999 through 2002 and was on its board through 2004. Winter did not work on the report, said Andy Hathaway, the firm's head of sustainability consulting.

Another oft-cited report, which says LEED buildings use less energy than typical buildings, was funded by the council and written in 2008 by Mark Frankel when he was a board member of the council's Pacific Northwest chapter. The report, the largest to date, studied 121 LEED commercial buildings and said they used on average 24% less energy than conventional office buildings.

The report also found that roughly a third of the buildings used more energy than conventional counterparts. For an individual building, LEED is "a poor predictor of project-specific performance," the report said.

Researchers questioned the findings because they encompassed only buildings that volunteered to reveal energy use. Scofield, the Oberlin professor, said the report overestimated energy savings, which were nil by one calculation he made. The Canadian government's National Research Council said the findings were encouraging because they showed overall energy savings but "should be considered as preliminary."

The GSA released its largest report on its green buildings in August 2011, which studied only 16 of the agency's roughly 40 buildings that were LEED-certified by the end of 2009. Seven LEED buildings were "not cooperative" in disclosing energy use, the report said. The report found 13 of the 16 LEED buildings used less energy than typical office buildings but acknowledged studying only "a small number of buildings."

The council has advocated for more research. Its strategic plan says the "lack of data on green building performance makes it difficult to address perceptions that green building is not cost-effective."

One researcher says the council tried to suppress a critical 2002 report by the federal National Institute of Standards and Technology (NIST) that said some LEED points were too easily earned and that others had only marginal long-term benefit.

"USGBC wanted NIST to take it off line, not to publish it," recalled study author Greg Keolian, who is co-director of the University of Michigan's Center for Sustainable Systems. "They didn't like the findings. They were concerned we were criticizing LEED." NIST published the report.

Christine Ervin, the council CEO from 1999 to 2004, said recently that she doubts the council tried to suppress the report and more likely wanted to make sure that NIST provided context about LEED.

What happened in Las Vegas ...

The biggest winner of LEED incentives has been the Las Vegas gaming industry, and its biggest helper was the Green Building Council, which agreed to allow smoking in casinos.

Smoking arose as an issue in 2006 when the Nevada State Office of Energy was deciding how to implement a law that created the nation's biggest tax breaks for LEED buildings. LEED requires certified buildings either to be non-smoking or to restrict smoking to contained rooms. Casino resorts wanted the LEED tax breaks and smoking in their gaming areas.

Tom Hicks, then a building council vice president, told the state in a crucial September 2006 letter that the council would award LEED certification to every part of a casino complex except the casino, which the council would ignore. Hicks cited the "extraordinary health risks associated with exposure to tobacco smoke." He also said there is "unprecedented opportunity for market transformation" in Las Vegas. Hicks, now deputy assistant secretary for energy at the Navy, declined comment on the issue.

Building council Vice President Brendan Owens said recently that the council let the Palazzo developers declare the hotel tower and the casino separate buildings because each has its own ventilation system — a distinction the council no longer allows for attached buildings. "I wouldn't go so far as to say they were exploiting loopholes," Owens said, "but they were exploring the boundaries of the way the rating system should be applied."

The council's accommodation let the Palazzo cut \$2.7 million a year from its property tax bill over 10 years and also to avoid sales taxes on some building materials. The Palazzo is one of seven LEED projects — five of them casino resorts — that have saved \$138 million in sales taxes between 2005 and 2010.

Palazzo officials declined to be interviewed and cited a company report saying the green features reduce energy and water use.

The author of the tax-break law, former state legislator Chris Giunchigliani, said the incentives were a viable alternative to mandatory new-building standards. Writing the law with a neighbor, Lance Kirk, who led the building council's Nevada chapter, Giunchigliani said she hoped that LEED buildings would be "a marketing piece" to tell visitors "we have more than gambling — we have a sustainable environment."

But the Palazzo's certification shows the need to improve LEED to require more than common practices such as hotel-room cards about towel replacement, said Giunchigliani, now a county commissioner in Las Vegas. "That's good, but that's the industry standard," she said. "I don't think LEED should be giving credit for the industry standard."

Contributing: Christopher Schnaars, Hannah Morgan

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