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How Green is Your Office?

LEED architects are changing New Jersey's corporate sector – one workplace at a time.

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It's formally known as Leadership in Energy and Environmental Design, but the U.S. Green Building Council's (USGBC) landmark certification program is more commonly known by its acronym, LEED. And it's changing the face of the American workplace.

The future office workplace is going to be more open, with greater personal control over everything from lighting to HVAC, and it will occupy a smaller footprint. That's the consensus of LEED-certified architects and designers, who also say that the changing, more youthful workforce will have a lot to do with how everything plays out. And LEED (or "green" or "sustainability" in the broader sense) raises a new set of legal and financial issues.

"The green revolution was like water building up against a dam, and within the last 24 months everything came rushing out," says Matthew Jarmel, a principal of Jarmel Kizel Architects in Livingston. "Now everybody wants to do it."

And whether or not everyone actually tries to get their building certified, more designers and builders are at least following LEED guidelines. "It's going to become part of every project, whether or not you register and follow exact USGBC rules," says Jennifer Hirsch, a LEED-certified designer for TSC Design in New York. "We've already seen the change from past decades."

But there are some stumbling blocks as the office of the future takes shape. One of them is the relative newness of the movement. "Everybody feels

compelled to do something without really understanding what they're doing," Jarmel says. "As a result, there are a lot of poor decisions being made relating to cost efficiency. It's not so much costly from a construction standpoint as [it is about] the administrative cost of doing LEED certification. The architect, engineers, and builders have a lot of reporting work to do, and that can literally double the soft costs of a project."

There is also more than USGBC's LEED program at work here. "There are different rating systems in every country," Hirsch notes. "Every one is a little different; in the future we hope the process can be streamlined across the world."

Thanks to the current state of the economy, the LEED/green movement is a bit in the doldrums, at least for the short term. "We're seeing clients who want to be green-sensitive, but with the economics of it they're taking a more cautious look," says Jack Miller, vice president of marketing and business development for JRS Architect in Princeton. "We'll probably see a bit of a lag from the momentum we've had."

More companies are, for those reasons, making an end-run of sorts by following LEED guidelines but not actually going through the certification process. "They may be looking at certain fabrics, paint, and carpet for interior fit-outs, but they're looking at it a bit more economically," Miller says. "Unless an organization is actually positioning itself as being on the cutting edge of LEED and green and see it as a

"People are more proactive now than in the past. [They] want to be in touch."

marketing ploy, they're using sustainable materials but not going for LEED certification."



USGBC Logo.

That observation may be borne out by some interesting numbers, says Jarmel. "We did some research and found that 40 buildings in New Jersey have LEED certification, but half of those are PNC Bank branches," he explains. "So there are only about 20 buildings in New Jersey that have achieved certification. A lot of people have followed the guidelines but have not filed for certification."

So how is LEED shaping the office environment? For Deborah Walsh, a principal of the Aztec Corp. in Iselin, it comes down to quality of life. "People are spending more time at the office and having a pleasant and healthy environment is important," she explains. "People are looking to have more control over this environment."

"We're working on a project right now where we're testing a new technology integrating energy-efficient products into the workspace," Hirsch says. "If your employee isn't there, it will be smart enough to know and can shut off the power in that area. It can be programmed through a computer or you can have a universal remote and change the settings to personalize it to each worker's needs. At the end of the day what will really sell it is whether or not it can save the company money over the long term."

Beyond that, workers want more natural light and views, and are increasingly getting both. "Tenants want to see more of the outdoors and we're incorporating more glass," Walsh says. "We're seeing management give up some of their window offices, moving to inside spaces to allow more light to penetrate to the interior of the space."

Artificial lighting use in general is down, resulting in energy savings. "We don't use as many watts now, and people are okay with that," Walsh says. "They're working more on computers, so they're not doing a lot of heads-down work. It's mostly on the screen and we have task lights at the desk for any close-up work."

Fluorescent lighting is increasingly important. "It has been a mainstay of commercial office lighting for years and has gotten more sophisticated in the way it can be controlled and delivered," says Peter Jensen, design director for G3 Architects in New York. "LED fixtures are storming the marketplace, and we expect a mini-revolution in the way spaces are lit in terms of an overall lower level of ambient lighting and greater task-intensive lighting."

Walsh says the office building of the future will also have better HVAC system controls. "We're putting in more zones and more thermostats so people can control their area," she says. "It's also easier to control large open office areas."

Buildings in the future will also be outfitted with things like daylight controls that dim lights close to windows on sunny days, occupancy sensors that turn the lights off a certain amount of time after a space is vacated, and rated glass windows for reflectance, Walsh says.

Buildings in general will be more sustainable in terms of energy usage. While he sees solar energy as "not worth the bang for the buck" right now, Jarmel does see a future for that resource. "It works better for single-story buildings now, but the technology is getting better and as it develops we will be able to generate more power with a smaller footprint" for multi-story buildings.

Jarmel also sees wind power on the table, and hydro-generation. The building of the future will also recycle gray water for non-potable uses, including flushing and irrigation, have green roofs, and have greater care for building orientation to take advantage of solar and wind.

“LEED is a good way to attract tenants, by the way,” he says. “It’s a good way of showing them how to reduce energy costs and what their real estate will actually cost.” Jarmel also predicts that buildings will become more stand-alone in terms of their energy requirements. “Campuses and office parks in the past or present might share central plants, but I think we’ll see less of that in the future.”

The office of the future is likely to have a smaller footprint, and yet a more collaborative one. “You can achieve your goals of a smaller footprint by making your programs more efficient so you’re not wasting space and not disturbing the site as much,” says Chris Rudman, a project architect and LEED AP for JRS Architect. “That saves the company on leasing costs because they have less square footage.”

Noting that one of his firm’s clients is, these days, more apt to give employees a laptop and a remote station, “the overall footprint of their office is shrinking,” he says. “Everyone is just working from home, coming into the office once a week or so.”

Walsh notes, “We’re also seeing a lot more collaborative areas. The younger generation is more involved with multi-tasking, and we’re providing more flex spaces and areas not just designated for one person.”

“We’re still seeing what first emerged in the dot-com world,” notes Jensen of G3. “Workplaces need to have more than just a desk, a place to make a copy, and a place to get a cup of coffee. It might also need places for interaction. While that’s not necessarily related to LEED, it ties into a workplace lifestyle that is not a separate entity to who you are as a person, but is integrated into that lifestyle.”

The second “E” in LEED stands for “environmental,” and that’s what designing the workplace of the future boils down to, says Emily Hammer, a principal of SSP Architects in Somerville. “Sustainability gives you the greatest opportunity to influence the physical experience of the person in a work environment.”

Indeed, various studies have shown that comfortable levels of temperature and lighting, particularly natural daylighting, play out in enhanced productivity, according to Hammer.

“There are measurements that can be applied as far as productivity. It’s been said that if you increase productivity in an individual by one percent in their workday, that adds up to about five minutes a day,” she says. “When multiplied by the total workforce, that’s a lot of time. Studies also show that in retail environments, sales go up, and in hospital environments, discharges happen more quickly.”

Ken Mihalik, a project manager for RSC Architects in Cliffside Park, concurs on the admittance of more daylight, “whether it be by more open office environments to allow light coming from the perimeter windows to reach into the office spaces, or the use of daylighting mechanisms such as light shelves, devices put on the windows to reflect light further into the building. We’re also putting in daylighting sensors, so the brighter it is outside and the more daylight coming in, the dimmer the light fixtures.”

Other items likely to become “fixtures” in the workplace of the future include light tubes. “They can be used on buildings where you don’t have a lot of floors,” Mihalik says. “In a building where you have one or two stories, you can install light shafts, which go right up through the roof. They’re highly reflective shafts that bring in natural light, almost like miniature skylights, but they’re high intensity.”

And in general, Hammer has seen what she terms, “a 180-degree change in client attitude toward sustainability in just the past few years.” She agrees with others that a lot of people are going with LEED

guidelines but not pursuing certification, “because of the cost associated with registration and certifying a building. But for some, if sustainability is strong enough to their institutional mission, it’s a no-brainer to go ahead and get that emblematic proof.”



Masonic Temple Exterior.

Marlyn B. Zucosky, director of interiors for **Clarke Caton Hintz** in Trenton, similarly sees clients toeing the LEED mark without necessarily applying for certification for their buildings. “In general, my clients are interested in understanding LEED and how it can apply to their environment,” she says. “It’s not that difficult to find sustainable products—I think the manufacturers are ahead of design professionals in a lot of ways.”

Other clients, Zucosky continues, differentiate themselves by being “aware of the marketability of sustainability, of adding value to their buildings.” At the same time, however, the role of the design professionals is changing to the extent that, she says, “we’re assisting clients in identifying and getting funding.” But in the end, she agrees that while USGBC set the standard, saying, “in the future, sustainability will be more code-driven.”

Interestingly, **Clarke Caton Hintz** is currently creating its own sustainable workplace of the future, building out 14,000 square feet on the third floor of the historic Trenton Masonic Temple, where it will relocate its offices come October. The firm is shooting for at least LEED Silver and possibly gold,

says Jessica Johnston, a LEED-accredited architect for the firm.

“It’s two-story-high space with mezzanines,” Johnston says. “The mechanical systems, plumbing, and fixtures are LEED-rated. The equipment is custom-designed, and we are working closely with Trane to design a system that will both meet LEED standards and be applicable to the space. It’s one of a kind—you won’t see it anywhere else.”

Similarly, most of firm’s furniture will be new and GreenGuard-certified. “We also scored a lot of points because we found a lot of materials within a 500-mile radius,” Zucosky adds. The radius clause is part of LEED guidelines related to fuel consumption for shipping.

But whether certification is part of the plan or a firm simply follows LEED guidelines without going the formal route, legal issues are bound to arise. For example, a variety of incentives may be on the table for owners constructing LEED-certified buildings.



Clarke Caton Hintz proposed interior for the Masonic Temple.

“Design professionals should be aware of them and the question becomes, ‘what happens if these incentives are not achieved?’” asks Richard W. Gaeckle, an associate and a LEED AP attorney with the Hoagland Longo law firm in Wall. “Green buildings require that you have design pros, owners, and contractors all on the same page. The problem is, the architect can’t be expected to achieve every

single credit in the LEED guidelines, some of which are outside the scope of the work an architect would traditionally perform.”

It comes down to delineating the obligations of all the parties, Gaeckle says. There may as well be additional concerns relating to professional liability insurance, guarantees and warranties, the role of the commissioning authority involved with a specific project, and just normal construction disputes. “At the end of the day, it comes down to who is responsible for what,” he says. “In a perfect world, a construction project is completed in a timely manner, within budget, and with all expectations met. But we don’t live in a perfect world.”

Concerning related issues, JRS Architect’s Miller points to the taxes, particularly “additional changes in the tax laws from the standpoint of depreciating operating income from a capital operating side, which will further help people to invest more in green.” And Aztec’s Walsh points to the benefits of the New Jersey Smart Start program, which offers rebates for tenants to encourage them to minimize energy usage.

In the end, design professionals generally agree that whatever the stumbling blocks, LEED, green, and sustainability are here to stay. “People are more proactive now than in the past,” Walsh says. “People want to be in touch, they want to be moving forward and seen as progressive. They’re very attuned to the idea.”

So attuned, in fact, that in the future, Jarmel predicts, “buildings themselves will become more efficient in the way they create and use power and use natural resources...and it’s going to happen very rapidly.”

As always, there are pragmatic considerations. “From a human resources standpoint, I’m always intrigued with the efficiency and productivity studies from a green environment,” says Miller. “That’s the other area I look at with green—how it’s going to physically impact how we work and operate.

Designing for the next decade is going to be continued imagination of space and materials.”

In any case, “just given the zeitgeist and the fact that it’s pretty much universally accepted that the environmentally responsible model is something that is useful,” says Jensen, the office complex of the future looks, simply put, “very green—LEED, being one way to measure that responsibility, is going to have a strong influence on the office of the future.”