



Seattle's lighting professionals are certainly proud of their city's environmental track record, but some warn against green in the extreme

SHADES OF GREEN

BY PAUL TARRICONE

Before sustainability was the buzzword du jour—before global warming, carbon footprints and bike racks at the office—the Emerald City was a spiffy shade of green. Led by mayor Greg Nickels, Seattle was an early adopter of sustainability principles among U.S. cities. The framework for these activities is Seattle's "Environmental Action Agenda," which covers everything from climate control, to wetlands restoration and water quality, to green buildings. The effort dates back to 1998, and by 2008 the city had earned the number eight spot on Popular Science's list of America's 50 Greenest Cities.

The area's lighting professionals have had a front row seat for the greening of Seattle. "I moved to Seattle from Oakland, CA, in 2001 and have fallen in love with it," says Edward Bartholomew of Integrated Design Lab at the University of Washington. "The unique culture of this region has attracted a large number of architecture firms, some of the world's leading technology companies and some of the foremost organizations focusing on sustainability—all residing in an area surrounded by breathtaking natural beauty."

"At every conference that I attend, some city official will make the claim that they are the greenest city, and Seattle is no exception. . . although those of us who live here actually think it is true about Seattle," says Denise Fong of local design firm Candela Lighting Design and Consulting.

Seattle's focus is not just on the high-profile initiatives—like many cities, it requires that all city-funded buildings be LEED Silver—but on the small stuff, as well. "Not only do we recycle but we compost, too—in our offices," says Fong. "Take-out containers at virtually every restaurant are now compostable and they go into a special bin in the office along with all of our food scraps, pizza boxes and used paper towels, which soon become compost for our gardens. And at our zoo, the elephant dung, affectionately known as Zoo Doo, is something that people stand in line to get twice a year."

Working in Seattle often means designing for progressive architects and owners. "I am impressed with the sophistication of most of our clients," says James Sultan, vice president of Studio Lux. "They are very concerned with energy efficiency and ask excellent questions about the latest technologies."

Daniel Salinas of Nelson Electric adds that "you have to be willing to look outside the box when you work on a project. Most of the architectural firms I work with have set the standard to design to LEED Silver, whether the project is going forward in the LEED process or not. The Seattle Non-Residential Energy Code already more than exceeds the requirements of 90.1-2004 so this is not a dif-

ficult task if you are used to working on projects in the city. My design work begins with establishing energy goals for the project that are added to the boundaries of the design including available natural light, etc. If you begin design without first establishing the energy budget, you end up having to spend a lot of time battling redesign."

Even homeowners are savvy, says Sultan. "Our residential clients often direct us to design using fluorescent and LED solutions, and want us to design to the future, particularly with reference to new governmental lamp restrictions."

NOT ALL PEACHES AND GREEN

Just because things are green in Seattle doesn't mean they're always rosy. "There's a constant struggle between groups of people who agree that advancing environmental issues is a good idea. The disagreement comes from the 'when' and 'how' parts of the equation," says Candela's Mary Claire Frazier. She describes her work as the lighting representative on the state Energy Code Technical Advisory Group (TAG). "I'm usually fully in support of efforts to reduce energy use through new and proven technologies: daylight and occupancy controls; appropriate fixture, lamp and ballast selection; and limiting excessive exterior illumination are all valid ways to use technology to reduce energy use and disposal volume. The trick is to balance what is possible against what we would like to be possible."

A prime example is a proposed revision in the state energy code that would reduce energy use by 50 percent. "Wouldn't that be great? It sounds wonderful. What Washingtonian who loves to experience the great outdoors wouldn't agree with that?" asks Frazier. "But the TAG has been at war over the directive, and we lighting designers are in danger of losing our ability to provide clients with technically adept, visually pleasing, maintainable lighting designs."

Frazier recounts how there were a number of viable lighting proposals offered and passed on by the TAG with recommendations to incorporate into the code.



These included requiring automatic daylight controls in non-residential projects and requiring that half the luminaires in residential projects be high efficiency.

However, another proposal from a group of environmentalists with no training in lighting, called for drastically revising the Lighting Power Allowances downward. "It was based on using the input wattage of instant-start lamps and high-efficiency ballasts, applied to the 90.1 space models that use average illuminance calculations. The numbers were further manipulated in a rather arbitrary manner to change fixture types from those in the models."

This group was then able to hijack the voting process. "Through an impressive manipulation of procedure, certain zealots managed to outmaneuver the lighting experts and achieve a positive vote to recommend the reduced LPAs," says Frazier.

The lighting community, though, quickly came together and submitted a minority report to the State Building Code Council, the group responsible for final decisions on code changes. "We used actual numbers from recent projects to develop an alternate LPA table based on achievable real-life goals with an average reduction of 10 percent for this two-year code cycle," says Frazier. "Many in this group certainly consider themselves environmentalists and supporters of energy-effective lighting design. They also have to face clients on a daily basis and explain how code restrictions affect their ability to achieve the client's goals. Painful as it is to find myself on the side resisting reduced energy use, I believe it is critical that we speak up against unreasonable initiatives that compromise the visual environment. If these reductions stand, many projects will be visually compromised, resulting in decreased support from the general public for energy-efficiency measures." The State Building Code Council has begun its review and should issue its final decision by December 1.

Salinas mentions another example of over-exuberant environmentalism: the rush to LEDs. "LED lighting is being pursued as the do-all, end-all of lighting's future,

and I am seriously concerned about that. I do not see this as a sustainable concept at this point and feel we are moving too fast into an area that only within the last two years has seen consensus standards for testing and lumen maintenance. Unfortunately, the last few years have seen a repeat of the early days of compact fluorescent."

The vocal supporters of LEDs tend to drown out those advocating a go-slow approach, says Salinas, especially regarding street lighting applications. "Seattle is currently running tests of LED street lighting in neighborhood areas and soliciting comments from the citizenry. The results are not necessarily in LEDs' favor when you read some of the comments, mostly having to do with glare and color. But the voices in favor of LED street lighting—using energy

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—Frazier

efficiency as their main sticking point—tend to be louder than those of the majority. Knowing how things run in this city, the lighting design community finds itself having to step into the discussion before decisions are made on bad data. This is not uncommon for any city, but Seattle always wants to be in the forefront of energy efficiency and that weighs heavily in decision making. With battles over energy reduction and now the strong call for reducing light pollution, the quality of the lighted environment is at risk here, and those involved in lighting find themselves



constantly involved in battling code and ordinance decisions that affect how they do their work.”

AN ENCORE?

What does Seattle, once at the vanguard of the urban green movement, do for a Second Act? And what will it mean for the city’s design community? “Seattle has positioned itself to be at the forefront of sustainable design, but there is still a lack of full understanding among clients when the term ‘sustainable design’ is used,” says Salinas. “Most people think it involves energy efficiency, or low VOC materials in the design, but that is only a small part of the process. More and more design firms are interested in the complete life cycle analysis of a project including cradle-to-cradle options, and some business owners are starting to ask for the designer’s understanding of TCO (total cost of ownership) for the system. This is progress toward fully understanding sustainable design.”

Fong believes there could be a more European flavor to Seattle in the future. “The city is starting to implement green initiatives that are more common in Europe than in the U.S. One example is making our streets more walkable. A downtown neighborhood is having some street work done that will widen the sidewalks making more room for pedestrians and less room for cars. This is a gutsy move in a society where the car is king. In Europe, cities like Copenhagen have found that reducing the ease of car traffic and increasing the ease of movement for bikes and pedestrians along with good mass transit systems actually improves people’s ability to move through the city and makes cities more livable and desirable.” Meanwhile, the first piece of a long-awaited light rail system opened in July, and the trolley system has also re-emerged in limited scope.

Bartholomew predicts Seattle will continue to lead the world in addressing climate change. “There is a consciousness up here that cherishes nature and doesn’t object to investing in long-term solutions that address these global challenges. I feel that this region will continue to be a test-bed for new sustainable designs.”

“Is Seattle perfect?” Fong asks rhetorically. “Not by a long shot.” But as Bartholomew notes, “Seattle is recognized worldwide for being a leader in sustainable design, and sometimes we live up to that.” ♣

SHOW-AND-

SITE TOURS

Tuesday, November 17, 9:00 a.m.-11:30 a.m.

Attendees may register for one of five concurrent tours; \$25 per tour

To register for the conference and site tours go to www.ies.org

Don’t leave Seattle without seeing Seattle. . .at least some of its most prominent lighting attractions. Attendees of the IES Annual Conference can choose one of five concurrent site tours of downtown Seattle buildings. The sites include two offices, two labs and a library. Here’s a preview.



Alley 24

Global architecture firm NBBJ designed this mixed-used building known as Alley 24 and now occupies three floors within it. The goal was to create office space that

would make work more visible and portable, while facilitating dialogue between disciplines and studios. Employee amenities include locker rooms and showers to encourage a healthy lifestyle, and bike storage for the popular commuting program.

Large floor plates and the exterior building skin maximize sunlight and views. Studios are located along the outer perimeter close to natural light and ventilation; every employee is within 45 ft of a window. To encourage connectivity between studios, they’re arranged horizontally around service/meeting area hubs. On the ground floor, a set of “giant steps,” made of locally manufactured Douglas fir, serves a dual role as a town hall-type forum and as the primary staircase connecting the ground and studio floors. Along the perimeter of the building, a three-story light wall, clad with translucent panels, houses a series of daily changing colors from LED fixtures. The light captures the mood of the day and shares it with passersby.



The Terry Thomas

The Terry Thomas is a highly sustainable, commercial building located in Seattle’s South Lake Union neighborhood. Wrapped in windows, the building is designed with

a modern aesthetic in combination with time-tested strategies from the pre-HVAC era. In fact, it’s Seattle’s first com-

TELL IN SEATTLE

mercial office structure in decades developed without central air conditioning.

Led by a team from Seattle architecture and design firm Weber Thompson, the tour will explain how the project reduces its carbon footprint; the workings of the passive cooling system; strategies employed to reduce water usage by 50 percent and energy usage by 30 percent; and how the building has met its original vision of thoughtful sustainable design and a workplace that contributes to the occupant's well-being, satisfaction and productivity. The Terry Thomas is LEED Gold-certified for Core and Shell. Weber Thompson's offices in the building are LEED Platinum-certified for Commercial Interiors.

(Editor's Note: Attendees registering for Alley 24/The Terry Thomas will visit both sites; two separate tours will be conducted in reverse order.)



Integrated Design Lab

The Integrated Design Lab is an extension of the University of Washington's College of Built

Environments, Department of Architecture. Its mission is to provide design teams in the Pacific Northwest access to the best knowledge available with project-by-project support on how to design, construct and operate the healthiest, most productive and most energy-efficient buildings in North America.

Visitors touring the lab will learn about current strategies emphasizing daylighting and electric lighting integration. Displays are located throughout the space describing the various integrated lighting strategies being implemented. Case studies and current research will also be presented.



Lighting Design Lab

There's nothing like seeing the real thing before you actually specify and install it. Lamps, luminaires, ballasts, louvers and controls are

all on display in the Lighting Design Lab's demonstration area. Here, lighting professionals can make side-by-side comparisons of features, effects, light quality, distribution and power usage. Visitors can view the effects of different lamp types on color using the lab's color boxes and try out the manual, programmable and motion sensor lighting controls that can save even more energy.

During the site tour, LDL staff plans to create side-by-side school classroom mock-ups (e.g., pendant direct/indirect lighting vs. an all direct lighted classroom) to allow conference attendees to compare footcandles, watts per sq ft and ceiling height, along with qualitative feelings about each space.



Seattle Public Library - Ballard Branch

Visitors to the Ballard Branch of the Seattle Public Library can feast on a veritable smorgasbord of sustainable

design. . .and it's not limited to lighting. Designed by Bohlin Cywinski Jackson, the building features more than 18,000 low water-use plants on its green roof; "notch and tab" tables and chairs (no screws or nails) cut from a single sheet of laminated wood to reduce waste; 17 solar panels on the roof and solar film in the windows of the adjacent Neighborhood Service Center; rooftop devices that measure wind speed and direction, sunlight and the sound of rain; abundant natural daylight, including seven skylights; occupancy sensors that control lights in offices and enclosed spaces; recycled carpet, glass, ceramic and ceiling tiles; environmentally friendly adhesives, sealants and paints; and light wells in the parking garage that provide pools of natural light to help with wayfinding and security.

CONFERENCE FAST FACTS

IES Annual Conference
Realizing the Future—Research to Application
November 15-17
Sheraton Seattle Hotel
Seattle, WA

Highlights

Sunday - November 15
Welcome Event and Keynote Address: Ken Alston, CEO, MBDC, "Cradle to Cradle Design as a Positive Environmental Agenda for Products" + Presentation of the 2009 IES Illumination Awards

Monday - November 16
Progress Report: New Products and Services in the Lighting Industry + Tabletop Exhibit and Reception

Tuesday - November 17
Lighting Tours of Downtown Seattle buildings
IES Gala Dinner; Guest Speaker: Dayna Baumeister, Biomimicry Guild, and presentation of the 2009 IES Awards and honors

For more information on the program or to register, go to www.ies.org