

energy code corner.

by Michael Lane LC

The United States Department of Energy's Energy Policy Act of 1992 instituted a plan to make energy codes more uniform nationwide by requiring states to certify their energy codes are at least as strict as ASHRAE 90.1. So some states use ASHRAE 90.1, their own unique codes, or the International Energy Conservation Code.

Most of the commercial energy codes are based on ASHRAE 90.1, which will publish a 2004 revised Standard later this year. Energy standards and codes are in a constant state of revision, and our region adopts, enforces, evaluates and changes energy codes regularly. Oregon adopted a new code last year, and Idaho adopted a commercial energy code for the first time. Montana still uses the 1989 version of ASHRAE. Washington and Seattle are ending their current evaluation cycles. California's Title 24 is due for revision in 2005.

Michael Lane, LDL's senior lighting specialist, has been on the ASHRAE 90.1 lighting subcommittee for several years. He also is a part of a joint ASHRAE/DOE/AIA group developing a design guide for highly efficient building designs.

The following table shows that even with the effort by DOE to standardize, there is still significant variation between states.

• Comparisons of current codes for an open office space—sample lighting power budgets

	W/ft ²
ASHRAE 2004	1.0
Seattle NREC	1.0
Washington NREC	1.2
Oregon NREC	1.0
Idaho IECC	1.0
Montana ASHRAE(89)	1.7
California Title 24	1.2

ecode resources

ASHRAE 90.1

www.ashrae.org

Seattle Energy Code

www.seattle.gov/dpd/energy/nonres/CHAP11.htm

Washington State Energy Code

www.sbcccwa.gov/docs/O1Anrg.pdf

Oregon Energy Code

www.energy.state.or.us/code/cdnonres.htm

Idaho Energy Code

www2.state.id.us/dbs/energy/energy_code.html

Montana Energy Code

www.discoveringmontana.com/dli/bsd/bc

International Code Council

(includes International Energy Code)
www.iccsafe.org/

reinventing lighting design.

by Diana Grant

I suggest a new holistic integrated approach to lighting design. This approach would broaden the lighting designer job definition to plan and design with light coming from all sources, including natural light and light reflected off interior surfaces. Competencies in analysis of natural light entering the building, electric lighting design, knowledge of color theory and surface reflectivity of materials would be necessary. The proficient lighting designer would also be current on the latest research on the aging eye, light and health. Then, we may be able to design the total visual environment as if people mattered.

Currently, the daylighting consultant often doesn't deal specifically with the electric lighting and the lighting designer only specifies electric lighting fixtures and controls. The interior designer looks at surfaces,

but may not be aware of the result of interaction with surface reflectances and multiple light sources. All these consultants are involved in the building design at different phases of the process. In the fifteen years I have worked at the Lab, I have seen maybe one lighting designer accompany the architect to model natural light entering the building.

As a result, we see highly polished marble floors valued and budgeted in brand new public buildings, next to large windows which turn the floor into a giant light reflector, bouncing light into our eyes and creating highly specular patches of glare. Research on the aging eye documents that falls and injuries can be traced to the fact that the elderly can't see where to put their feet. This is a problem at curbs, on stairs and highly polished floors. Who can predict the people im-

pact of the interactions of the total visual environment?

Someone needs to be in charge of analyzing the interaction of surfaces and lighting from multiple sources, to control and combine them into a cohesive whole, making the building a pleasure to be in. I think this is the job of the Lighting Designer, if they can broaden their knowledge to include designing with light from all sources whether it is the sun, electricity or light bounced off surfaces. Perhaps, if the lighting designer expanded their professional purview they would be brought into the design process earlier, and stay involved through installation and commissioning of the visual systems.