

Lighting Design

Lighting design at the Olympic Village had to balance a mandate for energy efficiency with the need to create inviting, enjoyable spaces. Efficiency measures included motion sensors that dim corridor lighting when no one is present, and multiple zone design, so that residents can choose to turn off light in areas they're not using.

But the company that handled lighting design for the majority of the Village's buildings opted against sustainability's poster child: the compact fluorescent lamp (CFL). "They're poor sources of light, in terms of quality," says Steve Nemetz, of Nemetz (S/A) and Associates, the company that handled electrical engineering in the Village. "It's flat light, with poor colour rendering, and some people react badly to it."

Instead, the company choose low-wattage MR16s, a halogen lamp. (In BC Housing properties, some CFLs were mandated.) "CFLs always require a ballast [a device that limits the amount of current the lamp draws]," says Nemetz. "A 13 watt CFL with a ballast uses about 15-16 watts of power, and

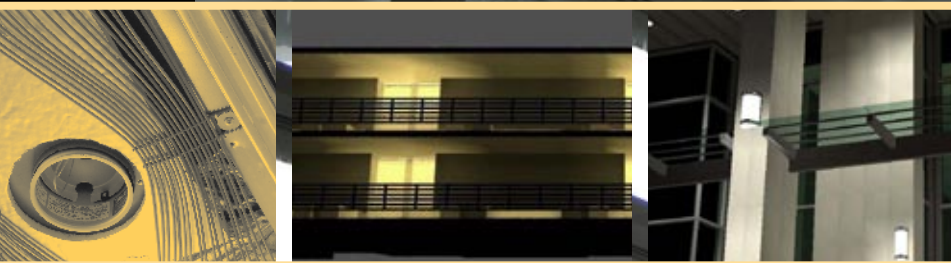
dimnable ballasts are expensive. Instead, you can use a long-life 20 watt MR16 and get the same amount of light, but with better colour rendering, much better atmosphere and similar longevity."

Another feature of sustainable lighting design (worth a LEED credit) is to minimize light trespass – the unwanted entry of exterior light from one home into the next. After that, it was time to set the mood.

"You'll see many architectural features that are highlighted," says Daisy Chan, lighting designer with Nemetz. "We've worked to ensure there's good feature lighting, in lobbies for example. Light can make or break a space. If it's lit improperly, you'll have a different impression."

"At the end of the day we're very happy with the lighting and the distribution," says Nemetz. "We'll be able to be proud of it. It's quite amazing."

We aimed for energy efficiency and colour temperature, not too bright or too dim. It's about quality of light, not quantity. Steve Nemetz



Background: Mood-enhancing pendant lighting in a building lobby, using compact fluorescent bulbs
 Inset left: Capillary mats and lighting fixtures must share ceiling space, requiring detailed shop drawings
 Inset centre: Rendering of Parcel 9 exterior corridor with LED lighting
 Inset right: Rendering of Parcel 6 building exterior

Power Smart New Construction Program

The Olympic Village is the largest project ever to participate in BC Hydro's Power Smart New Construction Program. The program funded an energy study to identify energy conservation measures and estimate potential savings. It found that the Village's conservation strategies – ranging from radiant heating to Energy Star-rated appliances – will save enough electricity to power 1,040 homes per year. Based on the energy saved, the program provided capital incentives to offset part of the upfront costs of the efficiency measures.

"At BC Hydro, our motto is to consider generations to come," says George Crowhurst, BC Hydro's key account manager for the Olympic Village. "This project will show our children what we did, that this was the innovative way to go at this time, and it gives a baseline for going further. Innovation for saving energy will only grow."

Educating the Market

One challenge faced by those involved in energy design was dealing with current perceptions about what the market demands in a new residential suite. While the superior performance of radiant heating sounds luxurious, for example, marketers say buyers demand floor-to-ceiling glazing (windows) to maximize views. You can't have both – windows lose too much heat.

"People may think they want huge windows, but not when they realize that there's a trade-off – these impact on comfort," says Vlad Mikler. "We tend to focus on what we marketed in the past. Now we have to educate buyers rather than just promoting what we've already done for 20 years. We can turn comfort and efficiency into a marketing advantage, but few [marketers] are doing it."

consider
generations
to come