



Blueprint for “green” buildings

by Vicky J. Sharpe

Focusing on eco-efficiency

WHEN CANADIANS THINK about energy consumption and greenhouse gas emissions (GHGs), many of us link these issues to large emitters in the industry and resource sector. But there are many, less obvious sources of GHGs that have a definite impact on our environment – and as you read this article, chances are you’re sitting in one right now.

The commercial building sector – including all of Canada’s offices, educational and health care facilities, and retail and hospitality outlets – accounts for about 14 percent of secondary energy use in Canada, and has seen energy-related GHG emissions increase 42 percent between 1990 and 2004. For this sector to move in a more eco-efficient direction, we need a whole new approach to both the way we design, build and use commercial buildings as well as the regulations and policies that guide these activities.

Right now, too many of the key players in the development and operation of the typical commercial building work in isolation, focusing only on their niche areas of expertise – be it design, engineering, construction, or operations. This isolated thinking needs to change. A spotlight should be cast on real-world demonstrations that break these silos in the design process, so that the liability and lifetime economic viability of these buildings, and their alignment with comfort and usability, becomes the new norm.

A report recently released by Sustainable Development Technology Canada serves as a blueprint for greener commercial build-

ings in Canada. The report draws attention to a number of technical and non-technical changes in the design, construction and maintenance of Canada’s commercial buildings that need to be made to reduce their energy utilization, water consumption and waste production.

By examining market characteristics such as building size, construction and type, and based on a set of industry-driven vision statements for the sector, the report identifies the technologies that can help create more sustainable buildings – the ones we use now and the ones that will be built in the future.

The report focuses much of its analysis on building operations, and with good reason. Although embodied energy, material selection, construction, and demolition are important in a life cycle approach to buildings, the largest environmental impacts are a result of the operation of buildings. Operations account for approximately 85 percent of the lifetime energy in commercial buildings, but are simultaneously affected by the one-time capital choices made during design and construction. SDTC understands the critical importance of a full lifecycle approach, and incorporates the entire building lifecycle considerations into individual project investment assessments on a case-by-case basis.

Among the non-technical changes recommended, the report stresses the importance of accurate data, improved eco-labeling and life-cycle-based performance standards that will enable certification of buildings on a life-cycle rather than on an as-built basis.

Switching to a life-cycle approach is crucial if we are to truly achieve on-going sustainability in our commercial buildings. Progress has been made over the last few years with the rise of LEED designation and other tools, but more work needs to be done to establish at-a-glance, meaningful measurements that give owners and tenants sustainability indicators to help guide their decision-making. *www*

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