

# LEED CI - A CASE STUDY

Vancouver Port Authority *Jim Taggart*

While no projects have yet been certified under the Canadian version of LEED CI, which was just launched in September 2006, the experience of those involved in piloting the US edition gives insight into the opportunities and limitations of the new standard.



VIEW ALONG MAIN CONCOURSE OPENING TO THE CENTRAL GATHERING AREA [1].

At much the same time as the USGBC was looking for pilot projects for its LEED CI initiative, Bunting Coady Architects had been retained by the Vancouver Port Authority to design and fit out 55,000sf of office and visitor centre space in the landmark Canada Place building. The space, originally intended for conferences and exhibitions was a double-height volume, with ceiling heights of 40ft. in places, and spectacular harbour views. With

its high public profile, interesting space and program, and a committed client, the project was an ideal fit.

LEED CI has an abbreviated version of the checklist used for new buildings, with the site design section reduced to a measurement of site density - rewarding urban projects over those that are decentralized and more dependent on road transportation. There are also a few new credits that

increase the emphasis on environmentally responsible materials, indoor air quality and acoustic performance.

As they worked through the design, Bunting Coady identified several aspects of the project for which credits could potentially be awarded but which were beyond the control of the tenant such as the efficiency of the building's environmental systems and its overall approach to water management.

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**ARCHITECT**

*Bunting Coady Architects,  
Vancouver*

**INTERIOR DESIGNER**

*Group 5 Design Associates Ltd.,  
Vancouver*

**STRUCTURAL ENGINEER**

*Read Jones Christoffersen, Ltd.,  
Vancouver*

**MECHANICAL ENGINEER**

*Stantec Consulting, Ltd.,  
Vancouver*

**ELECTRICAL ENGINEER**

*Schenke Bawol Engineering,  
Ltd., Vancouver*

**CONTRACTOR**

*Dominion Fairmile  
Construction, Vancouver*

**ENERGY**

*Energys Analytics Inc.,  
Vancouver*

**ACOUSTICAL**

*Brown Srachan Associates,  
Vancouver*

**ENVELOPE**

*RDH Engineering Ltd.,  
Vancouver*

**PHOTOS**

*Howard Waisman, Vancouver*



**Plan**

As Teresa Coady puts it, "From the tenant's perspective, the efficiency of the building's environmental systems is a matter of luck. With the Vancouver Port Authority we scored lots of points for energy efficiency because the building has an efficient sea water cooling plant. Others might not be so fortunate."

Building configuration also predetermines the amount of daylight that can be harvested, and space planning can only go so far in ensuring that the most critical occupied areas receive natural light. While the sea water cooling system helped achieve energy savings of 36% over Model National Energy Code for Buildings [MNECB] standards, energy savings for lighting were a more modest 20%. One would expect these figures to be higher in a new building project over which the designer would have a greater degree of control.

Coady also takes issue with the fact that a credit is available for the reuse of existing furniture in a tenanted suite, while the same is not true for furniture moved from another part of the building.

Similarly, to acknowledge an organization's commitment to environmentally responsible design, LEED CI offers a credit to tenants who sign a long term lease, yet doesn't offer the same reward to owner occupiers like the Vancouver Port Authority. Bunting Coady offered to submit a copy of the Port Authority's mortgage to demonstrate its commitment, but this offer was declined and the project missed out on that credit.

Coady also feels that there should be a greater emphasis on durability and life cycle analysis and a more flexible system for defining what constitutes a 'local' material. In fair-

ness the Canadian version of LEED for new buildings does include a credit for durability, and a more generous 'local materials' envelope for cities like Vancouver that are located on the ocean.

Ian Theaker, LEED Program manager for CaGBC admits that there are imperfections in LEED CI, and it was imported without modifications to the prerequisites to meet the market demand in Canada. Fine tuning will take place over time in response to user and market input.

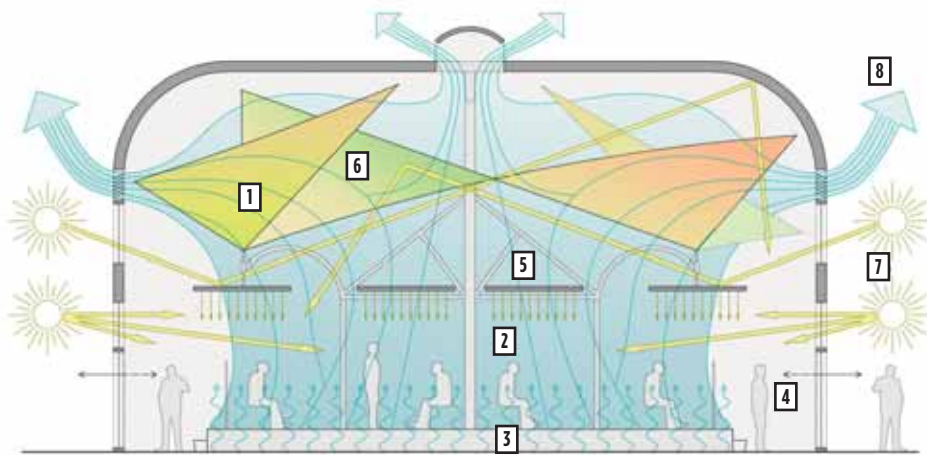
For all her criticism, Coady is a fan of LEED. Her firm has completed more than 1 million sf of LEED Gold space in a variety of building types. She views LEED primarily as an education and incentive program, and feels that its value in the Vancouver Port Authority was threefold:

First, it educated the contractor in the kind of site practices necessary to maintain a clean site and deliver a healthy building. Procedures such as cleaning and sealing ducts, plenums and wall cavities have a huge impact on the quality of the indoor environment.

Secondly, the project invigorated the local market for certified wood products. With fewer points available, and an increased emphasis on materials, it was necessary to find ways of turning locally available certified material into finished products. The volume of work provided an incentive for several local manufacturers to go through the certification process.

Third, it raised the level of awareness of the client - already noted for its sound environmental operating practices, but less familiar with the design of sustainable buildings. The





- 1 Fabric sail - reflects sunlight, reduces ceiling height and baffles office noise
- 2 Artificial light - provides task lighting in offices
- 3 Raised access floor - allows for ventilation and elevated privacy
- 4 Perimeter circulation - partly screened for both view and privacy
- 5 Possible mezzanine beyond
- 6 Daylight penetrates to center, reflecting off of sails
- 7 Sunlight / daylight
- 8 Ventilation

### Section: Lighting and ventilation patterns

completion of the project has helped the Vancouver Port Authority to make the list of Canada's top 100 preferred employers.

Coady always advises her clients to go LEED for its public relations advantages, and is quick to dispel their misconceptions about the cost of green design. While there are additional fees for energy modelling and the services of a commissioning agent, these are generally insignificant in the context of the overall project cost.

Green design emphasizes the importance of strategic decisions such as building orientation, configuration etc., and it is here that great savings in construction costs may be made. While there are fewer opportunities for this kind of saving on an interiors project, the Vancouver Port Authority consultant team used their knowledge of the global construction market to advise their client to pre-purchase all the steel for the job one year ahead of time. Escalating world prices turned this into a \$1 million saving by the time the project was complete. The downside of this decision, however, was the resulting low recycled content [8%] achieved on the project - a calculation based on the value, rather than on the volume of recycled materials.

With 32 out of a possible 57 points, the VPA offices achieved a LEED CI Gold rating.

"We've always achieved a gold rating," says Coady, "For us that's the base line. You can achieve gold with a developer mentality; it can be good business all the way through. Platinum means you've made a contribution."

However, in Coady's view all gold ratings don't carry the same weight. "When we look at global sustainability, water efficiency and

energy are the big issues, yet total project size and total energy benefit are not considered. Surely a project of 1 million square feet that gets gold is worth more than a similar quality of project that is just a few thousand square feet," she says.

"Being of medium scale, it wasn't that hard to get a gold rating for the Port Authority. It was an educational process for the small team of consultants and contractors involved. Looking back we didn't really do anything remarkable. But our experience has shown that achieving LEED gold on big

projects, requiring a much larger building team, is much more difficult."

While acknowledging this argument, Theaker reaffirms that LEED is designed to reward achievement rather than effort, and that in some areas this may result in the perception of unfairness to which Coady refers. Whatever conclusion one draws, applications for LEED CI are growing and its benefits, even at this early stage, far outweigh its limitations. ◀

JIM TAGGART, MRAIC, IS EDITOR OF SABMAG.

ARCHITECTURAL "FOLDED PLATE" STAIR UP TO THE EXECUTIVE MEZZANINE LEVEL [2]. DAY LIT WAITING AREA FEATURING VIEWS TO CRUISE SHIPS [3].

