

Background

The advancement of green building practices was identified at the Regional District of Nanaimo Saturday, April 3, 2004 Sustainability Workshop¹ as one of the possible ways of making the region a more sustainable place to live.

What is a Green Building?

Green buildings are buildings that require less energy to operate, contribute fewer emissions to the environment, conserve water, generate less solid waste, and provide more comfortable and productive environments for their inhabitants. The definition of what is a green building is somewhat subjective, but different rating systems have been developed and are becoming more common in their use to assess a building's greenness.

Leadership in Energy and Environmental Design (LEED) appears to be the most well-known and widely used system to rate the greenness of buildings. It is a voluntary, consensus based self-assessment tool that has been embraced nationally and internationally as 'the green building design standard'². LEED establishes a system in which a specified number of points are assigned according to the particular attributes of the building in five performance areas: the sustainability of the building site, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Depending upon the number of points accumulated, and hence the sustainability of the building, buildings are classified as LEED Certified, Silver, Gold or Platinum. The United States Green Building Council, a national non-profit entity, developed the LEED trademark, and continually updates the model to respond to new information and science. The Canada Green Building Council, a non-profit coalition of public and private building industry leaders, holds the LEED trademark for Canada and is responsible for recent adaptations of the system for Canada (i.e. LEEDTM Canada) and British Columbia (i.e. LEEDTM BC), as well as continual updates to these systems. LEED was created to define green buildings by providing a standard for measurement and to prevent exaggerated claims about the greenness of a building. It also provides a mechanism to recognize leaders, stimulate green competition, raise consumer awareness, transform the marketplace, and establish market value with a recognized 'brand'.

Why Build Green?

The green building movement was initiated in the early 1990s in response to the growing recognition of the environmental consequences of business-as-usual in the building industry, and as a response to the enormous demand from people in all sectors of the industry who wanted to do things better. Conventional building design

¹ The Sustainability Workshop was conducted as a part of the Sustainability Project that the Regional District is currently undertaking. The Sustainability Project is being conducted to assess the region's progress towards sustainability, to make residents aware of the region's progress towards sustainability and to provide more and better opportunities to involve residents of the region in that assessment. The seven key components of the Project are: [1] a public event to discuss what sustainability means in the context of the Nanaimo region; [2] review, refinement and confirmation of a set of indicators or measures of sustainability; [3] a report that documents the sustainability of the Nanaimo region, based on the chosen sustainability indicators; [4] a public event to discuss the results of that report; [5] a report that provides ideas about how the sustainability of the region can be accelerated [6] the development and implementation of a regional sustainability awards program and [7] citizen committee involvement in the first six deliverables.

² LEED specifications are intended to supplement, not replace, conventional building codes and bylaws. Conventional building codes and bylaws are intended to ensure the safety of buildings and structures whereas LEED standards promote green building practices.

and construction typically produces resource-intensive buildings. Building construction worldwide consumes approximately 3 billion tons of raw materials annually, depleting natural resources at an unsustainable rate. Buildings are responsible for annual consumption of 40% of the world's energy and materials. Green buildings contribute to sustainability because they require fewer resources to construct, less energy to operate, contribute fewer emissions to the environment, conserve water, and generate less solid waste than conventional buildings.

Cost has been cited as a reason for not building green. Recent research concludes that "integrating "sustainable" or "green" building practices into the construction of state buildings is a solid financial investment", that "a minimal upfront investment of about two percent of construction costs typically yields life cycle savings over ten times the initial investment", and that "the financial benefits of green buildings include lower energy, waste disposal and water costs, lower environmental and emissions costs, lower operations and maintenance costs, and savings from increased productivity and health"³.

Who is Building Green?

The green building movement has gained tremendous momentum during the last few years. The Netherlands has been a leader in the development and implementation of green building technology for many years. More than 40% of all new building projects in the United Kingdom enroll in its equivalent of the LEED system. During the last decade the movement has gained a foothold in North America. Pennsylvania, Massachusetts, Washington, Oregon, California and Texas appear to be the leaders in green building technology in the United States. Approximately 3% of all new construction in the United States is pursuing LEED certification. British Columbia appears to be leading the way in Canada. The 2010 Olympic bid for Vancouver includes a commitment to green buildings, and BC has more green buildings than any other province in Canada. A variety of public and private sector building projects, including one on Vancouver Island, illustrate the interest in and commitment to green building.

Public sector green buildings in BC that are commonly referenced include the following:

- Vancouver Island Technology Park in Victoria (LEED Gold);
- City of White Rock Operations Building (LEED Gold);
- Semiahmoo Library and RCMP District Office (LEED Silver);
- City of Vancouver Public Works Yard (LEED Gold);
- Telus William Farrell Building in Vancouver;
- Burnaby Mountain School;
- Nicola Valley Institute of Technology; and
- Liu Centre for the Study of Global Issues and C.K. Choi Building, both at the University of BC.

Private sector green buildings in BC that are commonly referenced include the following:

- The 58 residential unit Silva Building in North Vancouver (expected to achieve LEED Silver);
- The 6 residential unit Koo's Corner Building in Vancouver;
- Mountain Equipment Co-op Head Office;
- 1220 Homer Street architectural office;
- BC Gas Operations Centre;
- Association of Professional Engineers building in Burnaby;
- Keen Engineering office in North Vancouver; and
- 2211 West Fourth, a mixed commercial-residential project (building with Capers and Coast Mountain Sports) in Vancouver.

³ See the October 2003 report, "The Costs and Financial Benefits of Green Buildings" prepared for the Sustainable Buildings Task Force, a group of over 40 California state agencies. It can be viewed at <http://www.ciwm.ca.gov/greenbuilding/Design/CostIssues.htm>

In Canada there are 66 LEED registered projects (i.e. projects on their way to becoming LEED certified), 4 LEED certified projects, and 525 LEED accredited professionals. British Columbia accounts for 35 of the LEED registered projects, all 4 of the LEED certified projects, and 257 of the LEED certified professionals.

What is the Role of Local Government in Advancing Green Buildings?

Local governments are playing a key role in providing leadership for the advancement of green buildings through green building programs.

In the United States, some well known local government green building programs include the Santa Monica Green Building Program, the Seattle Sustainable Building Program, the City of Portland G Rated Building Program, and the City of Austin Green Building Program.

Closer to home, the Greater Vancouver Regional District has a comprehensive green building program called BUILDSMART⁴, the City of Vancouver supports green buildings through its organizational sustainability initiative and its adoption of LEED Gold as the standard for all new City buildings, the City of Richmond has adopted LEED Silver as the standard for all new City buildings, and the City of Victoria will be developing a green building program in 2005 and 2006 and has advanced the green building concept through the recent Dockside development (City owned industrial lands adjacent to the Gorge to be remediated and redeveloped as a mixed use residential/commercial area by the private sector in accordance with specified green principles).

The role of local government in advancing green buildings focuses on increasing public and construction industry awareness of green buildings and making green building practices easier to implement by:

- developing green building policy;
- educating/informing the public about green buildings and promoting their use;
- educating/informing the building/construction industry about green buildings, and promoting green building construction practices;
- providing technical tools and resources;
- offering incentives and assistance to encourage the use of green building practices and technology.

Purpose

The purpose of the Green Buildings Project is to promote green building practices in the Regional District of Nanaimo.

⁴ For more information about BUILDSMART see www.buildsmart.ca.

Objectives

Exploratory Phase

The objectives of the Green Building Project Exploratory Phase are:

- for the Regional District of Nanaimo to become informed about green building theory and practice;
- for the Regional District of Nanaimo to make a decision regarding the advancement of future phases of the green building project and a green building program.

Future Possible Phases

The objectives of future possible phases of the Green Building Project would be:

- for residents to become informed about the benefits of green building practices and ways to incorporate green building technology into existing and new buildings in the region;
- for the development and construction industry active in the region to become informed about green building theory and practice, the benefits of green building practices and ways to incorporate green building technology into existing and new buildings in the region;
- to increase support for green buildings among residents and the development and construction industry active in the region;
- to identify barriers to the implementation of green building practices in the region, and to identify ways of reducing or eliminating these barriers; and
- to develop and consider a policy regarding green buildings for the region.

Components and Deliverables

Exploratory Phase

1. Identify Green Building Program Possibilities / Establish Green Building Program Foundation

Regional District of Nanaimo staff will obtain information about other local government green building programs for the purpose of helping the Regional District make a more informed decision about its possible future role related to green buildings.

Regional District of Nanaimo staff will establish contacts and consult with other local government staff with recognized green building programs to:

- gain an understanding of local government involvement in green building programs (existing programs, future plans),
- gain an understanding of the opportunities and challenges of local government green building programs;
- gain an understanding of local government's experience with green building programs;
- identify possible elements of a green building program for the RDN.

It is anticipated that staff from the Greater Vancouver Regional District, the City of Vancouver, the City of Richmond and the City of White Rock will be contacted. Where deemed appropriate, staff from the City of Seattle and City of Portland may also be contacted. Consulting resources may also be retained to provide advice regarding the most appropriate roles for local government in green building advancement.

As a part of this work Regional District of Nanaimo staff assigned to the project will complete basic training in green building theory and practice. This may include courses jointly offered by the Greater Vancouver Regional District and the Simon Fraser University City Program or offered by the Canada Green Building Council or other equivalents.

Regional District of Nanaimo staff will produce a report to document the information gained.

2. **Green Building Educational Tour**

Regional District of Nanaimo staff will organize and lead a two to three day tour of nearby green buildings for 4 to 8 representatives of the Board to gain a better understanding of the opportunities and challenges of building green.

It is anticipated that the tour will include visits to LEED certified buildings in Vancouver, White Rock, and Victoria, and other buildings in these municipalities that are widely recognized to be green.

It is anticipated that the tour will include meetings with key people involved in the design, construction and operation of the green buildings. Consulting resources may be retained to support staff in tour development and implementation.

3. **Terms of Reference for Future Phase of Green Building Project**

Regional District of Nanaimo staff will develop terms of reference for the Board's consideration regarding future phases of the Green Building Project.

Future Phases

Future phases of the Green Building Project could include, but not be limited to, the following:

1. Conducting a Board Seminar to provide information about green building theory and practice, to identify the opportunities and challenges presented by green buildings, to discuss how to advance green building practices in the region.
2. Organizing, facilitating and conducting an introductory seminar for local government staff in the Regional District of Nanaimo (i.e. building departments, liquid waste departments, water utility departments, solid waste departments, planning departments) about green buildings.
3. Organizing, facilitating and conducting an introductory seminar for the local construction industry to provide information about green buildings.
4. Organizing, facilitating and conducting an introductory seminar for residents to provide information about green buildings.
5. Researching, writing and publishing an introductory brochure for residents to provide information about green buildings.

6. Liaising with staff of local governments that have green building programs to ensure the Regional District benefits from the experience of other organizations.
7. Organizing and facilitating educational seminars about green buildings (possibly including the Leadership in Energy and Environmental Design standard for green buildings) for residents and the local construction industry.
8. Organizing and conducting a public workshop about green buildings to discuss the opportunities and challenges of advancing green buildings in the region.
9. Researching, writing and publishing more detailed resource material for residents and the local construction industry about green buildings (e.g. the benefits of green buildings, how to make buildings green).
10. Establishing a directory of resources for green buildings to link providers of green building technology and services with those who may wish to build green.
11. Providing assistance to a proponent of green building (i.e. LEED accredited) pilot project to help coordinate and expedite the approval process.
12. Identifying barriers to green construction practices and developing recommendations regarding methods of eliminating these barriers.
13. Developing corporate policy regarding green buildings for Board consideration.
14. Developing incentives to encourage the use of green building practices and technology.

Timeline

<i>Components and Deliverables</i>	<i>Project Date</i>
1. Identify Green Building Program Possibilities / Establish Green Building Program Foundation	March 2005 – June 2005
2. Green Building Educational Tour	June 2005
3. Terms of Reference Development For Future Phases of Green Building Work	July 2005 – Nov 2005

Budget

<i>Components and Deliverables</i>	<i>Estimated Cost (\$)</i>
1. Identify Green Building Program Possibilities / Establish Green Building Program Foundation	10,000
2. Green Building Educational Tour	5,000 – 10,000
3. Terms of Reference Development For Future Phases of Green Building Work	0 - 5000
Total	20,000