
TO: Neil Connelly
General Manager, Community Services

DATE: August 31, 2004

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SUBJECT: GREEN BUILDINGS

PURPOSE

The purposes of this report are:

- to provide information about green buildings; and
- to obtain direction regarding a project to increase public and development industry awareness about green buildings and make green building practices easier to implement.

BACKGROUND

Information about green buildings and local government involvement in green building practices is provided in response to the July 13, 2004 Board resolution directing staff to prepare a report for the Board's consideration about green buildings. The Board passed this resolution as a part of its consideration of the Workshop Report for the April 3, 2004 Sustainability Workshop, and the Regional Growth Monitoring Advisory Committee's recommendation that the Board initiate a green building program as one means of taking immediate action to help accelerate progress towards regional sustainability. The Sustainability Workshop was conducted as a part of the Sustainability Project that the Regional District is currently undertaking.¹

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

¹ 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.

has been embraced nationally and internationally as ‘the green building design standard²’. 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 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.

Do Green Buildings Cost More Money?

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

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.

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>

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.

Additional information about these green buildings is available on the Canada Green Building Council web site at www.cagbc.ca.

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

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

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.

Green Building Role for the Regional District of Nanaimo

The Regional District of Nanaimo could play a leadership role in expanding market demand for green buildings and make green building practices easier to implement in the region by conducting a green building project. It is anticipated that a green building project could include the following elements:

- a Board member tour of nearby green buildings to gain a better understanding of the opportunities and challenges of building green;
- liaison with other local governments to gain a better understanding how green building practices can be advanced within the region;
- workshops with the local construction industry and residents to share information about green building practices;
- educational seminars about the Leadership in Energy and Environmental Design standard for green buildings;
- publication and dissemination of resource material for residents and the local construction industry that describes the benefits of green buildings and provides information regarding how to make buildings green,
- establishment of a directory of resources for green buildings to link providers of green building technology and services with those who may wish to build green;
- development of corporate policy regarding green buildings;
- examining barriers to green construction practices and to recommend methods of eliminating these barriers; and
- providing incentives and assistance to encourage the use of green building practices and technology.

It is anticipated that Regional Growth Management Services staff could initiate a green building project including some of the elements described above with an introductory allocation of approximately \$30,000. The Board would be able to determine in future years if it wishes to continue with such a project.

ALTERNATIVES

1. To receive the report, and request staff to develop terms of reference for a project to promote green building in the region.
2. To receive the report, and not pursue a project to promote green building in the region at this time.

FINANCIAL IMPLICATIONS

Resources for a green building project could be included in the Regional Growth Management Services work program and budget for 2005. Additionally, there are a wide variety of potential funding sources

for green building programs and initiatives that the Regional District could seek to supplement such a program, such as the Federation of Canadian Municipalities Green Municipal Funds Program and the Ministry of Community, Aboriginal and Women's Services Smart Development Partnerships Program.

GROWTH MANAGEMENT IMPLICATIONS

A green building program would help make the region more sustainable, the overall purpose of the Regional Growth Strategy. It would provide a direct contribution towards the achievement of the Regional Growth Strategy environmental protection goal, which is to protect the environment and minimize ecological damage related to growth and development.

ENVIRONMENTAL IMPLICATIONS

A green building program would help address environmental problems caused by poor building performance. It would result in the construction of buildings that are more environmentally compatible because they require less resources to construct, operate and maintain, and because they result in fewer harmful emissions to the environment. Since green buildings typically result in the use of fewer resources and the re-use of existing materials, a green building program would result in less solid waste disposal at the regional landfill and contribute towards the achievement of the Regional District's Solid Waste Management Plan objective of 'zero waste'.

PUBLIC CONSULTATION IMPLICATIONS

The Regional Growth Monitoring Advisory Committee recommended that the Regional District of Nanaimo implement a green building program as a result of the public feedback received at the Sustainability Workshop conducted by the Regional District in April of 2004.

SUMMARY

Information about green buildings is provided in response to the July 13, 2004 Board resolution directing staff to prepare a report for the Board's consideration about green buildings. 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. Local government, including the Regional District of Nanaimo, may be in a position to provide leadership in the area of green building technology, through promotional and educational efforts and other related initiatives. It also provides an opportunity for the Regional District to demonstrate its commitment to regional sustainability, as envisioned in the Regional Growth Strategy. The development of terms of reference for a green building project would provide more detailed information for the Board to consider in conjunction with the 2005 budget process.

RECOMMENDATIONS

1. That the August 31, 2004 report, "Green Buildings", be received.
2. That terms of reference for a project to promote green building in the region be developed for the Board's consideration.

Report Writer

General Manager Concurrence

CAO Concurrence

