

REGIONAL DISTRICT OF NANAIMO

POLICY

SUBJECT: <i>Green Building Policy for RDN Facilities</i>	POLICY NO: B1.16 CROSS REF.:
EFFECTIVE DATE: May 27, 2008	APPROVED BY: BOARD
REVISION DATE:	PAGE: 1 of 4

PURPOSE

To establish a Green Building Policy for all Regional District of Nanaimo (RDN) facilities. The key feature of the policy is to establish an Integrated Design Process (IDP) for all new construction and renovation projects undertaken by the RDN. The IDP involves establishing a vision, goals and objectives for a building and its performance and relies on a collaborative design team consisting of a range of consultants engaged at the outset of the project.

POLICY

1. An Integrated Design Process (IDP) will be the foundation for all new construction and renovations undertaken by the RDN.

a. The IDP consists of seven phases, each with a particular process and outputs, as identified below. While all projects will be unique, this summary provides a useful guide in establishing the expectations for what an Integrated Design Process undertaken by the RDN should entail:

i. Phase 1 - Pre-Design

Process:

- Establish a diverse team, include a facilitator;
- Establish a foundation for the team, including fee schedules that provide incentives for consultants to incorporate high-performance, green building systems; and
- Host key meetings including project preparation, visioning workshop, programming meeting, facilities management, etc.

Outputs of Pre-Design:

- Vision statement, goals, objectives and targets;
- Pre-Design Report, including synopsis of visioning workshop;
- Preliminary budget that includes cost of IDP activities; and
- Communications protocol.

ii. Phase 2 - Schematic Design

Process:

- Ensure an understanding of site challenges and opportunities;
- Clarify functional program and program implications across disciplines; and
- Host ongoing meeting as necessary to brainstorm, develop concepts, evaluate and refine ideas, and for team cohesiveness;

Outputs of Schematic Design:

- Goals and targets matrix;
- Preliminary energy analysis;
- Preliminary financial estimate;
- Schematic design report; and
- Roles and responsibilities matrix.

iii. Phase 3 – Design Development

Process:

- Introduce new/additional specialists to the team, as necessary,
- Assess feasibility of green building strategies and technologies; and
- Simulate building performance, as required.

Outputs of Design Development:

- Design development report including energy simulation results;
- Detailed financial report using life-cycle costing; and
- Updated goals, roles and responsibilities.

iv. Phase 4 - Construction Documentation

Process:

- Coordinate Construction Documents between all disciplines;
- Include green building aspects in Construction Documents; and
- Ensure that the impacts of all changes are evaluated.

Outputs of Construction Documentation:

- Project specifications with embedded performance criteria;
- Material substitution policy;
- Tender documents with clear explanation of innovative aspects, contractor responsibilities for green building documentation, and training and supervision of trades/sub-contractors;
- Develop commissioning plan; and
- Updated goals, roles and responsibilities.

v. Phase 5 – Bidding, Construction and Commissioning

Process:

- Transition from the design team to the construction team;
- Train maintenance and operations staff and occupants;
- Include performance criteria in contract documents;
- Host pre-tender award meeting to discuss green design intent;
- Host an information session for contractor and trades; and
- Host regular site meetings.

Outputs of Bidding Construction and Commissioning:

- Record drawings of the build project;
- Commissioning reports; and
- Operations and maintenance manuals as necessary.

vi. Phase 6 - Building Operation (Start-up)

Process:

- Transfer of knowledge between design team, commissioning agent, building operator and occupants;
- Transfer of all building documentation to owner;
- Establish tools and/or process for ongoing monitoring;
- Share lessons learned; and
- Educate staff and occupants about green building features.

Outputs of Building Operations (Start-up):

- Training, education and outreach materials;
- Measurement and monitoring data; and
- Completed commissioning documentation

vii. Phase 7 – Post-Occupancy

Process:

- Establish a building performance evaluation team with a budget and meeting schedule, as necessary; and
- Put monitoring equipment and/or methods in place.

Outputs of Post-Occupancy:

- Continuous monitoring and evaluation of building performance.

b. In order to follow an Integrated Design Process, a diverse and knowledgeable team is required. This will vary, potentially significantly, from project to project. The following list indicates the range of team members that the RDN may need to draw from at the outset of an Integrated Design Process:

Core Team	Additional Team Members (as necessary)
RDN Representative / Project Manager	Ecologist
Facilitator	Occupant representative
Architect	Programming specialist
Landscape Architect	Interior designer/ materials specialist
Structural Engineer	Planner/ Building Department representative to highlight code or other regulatory issues
Mechanical Engineer (with experience in energy modeling and analysis)	Lighting and day-lighting specialist
Electrical Engineer	Soils or geotechnical expert
Green Design Specialist	Commissioning Agent
Civil Engineer	Others as required
Facilities Manager	
Cost Consultant with experience in Life-Cycle Costing	
General Contractor	

2. Within the context of an IDP, the RDN will set the goal that all new construction and major renovations will maximize building performance, optimize energy efficiency and minimize greenhouse gas (GHG) emissions as measured in annual tonnes of carbon dioxide equivalent (CO₂e). Based on the urgent need to achieve significant reductions in GHG emissions in the immediate term, use the concept of 'carbon neutral' buildings to guide discussion at the outset of the IDP for capital projects, and achieve the following:
 - a. 50% reduction in tonnes of CO₂e for all new construction and major renovations starting in 2010, relative to the Model National Energy Code, and as measured by an energy modeling specialist;
 - b. 60% reduction in tonnes of CO₂e for all new construction and major renovation between 2012 and 2014 relative to the Model National Energy Code, and as measured by an energy modeling specialist;
 - c. 70% reduction in tonnes of CO₂e for all new construction and major renovation between 2015 and 2019 relative to the Model National Energy Code, and as measured by an energy modeling specialist;
 - d. 80% reduction in tonnes of CO₂e for all new construction and major renovation between 2020 and 2024 relative to the Model National Energy Code, and as measured by an energy modeling specialist;
 - e. 90% reduction in tonnes of CO₂e for all new construction and major renovation between 2024 and 2029 relative to the Model National Energy Code, and as measured by an energy modeling specialist; and
 - f. All new construction and major renovations are carbon neutral by 2030.
3. At the outset of the IDP for capital projects, consider the goal of achieving third-party verified, green building certification for all new construction and major renovations. Target LEED Gold (or equivalent), and achieve a minimum of LEED Silver (or equivalent), including registration and certification for new construction and renovations over 500m² with the majority of floor space devoted to tenant use and occupation.
4. Require that a green building specialist (e.g. LEED Accredited Professional) is involved in all capital construction projects.
5. Use the life-cycle costing approach in budgetary planning for major capital projects.
6. Use the IDP to generate educational materials to encourage learning and awareness of green building practices for staff within the RDN and for people in the wider community.
7. Review and adapt the IDP as the foundation for the Green Building Policy for RDN buildings after five years, or upon recommendation from staff and/ or the RDN Board of Directors.