

GBC 2002 Call for Entries

GREEN BUILDING CHALLENGE 2002 CALL FOR ENTRIES - QUICK SUMMARY -

If you are an owner or designer of a green building, this is your opportunity to participate in the Third International Green Building Challenge to be held in Oslo, Norway in October 2002.

Building Categories

- Schools
- Offices
- Multi-family residential
- Other

Eligibility

- Projects submitted for consideration must be built, under construction, or at 100% completion of working drawings by mid-January of 2002.
- Private or public buildings are eligible, as are renovations if the retrofit affects all major building systems and responds to the judging criteria.
- Only projects that have major sustainability improvement objectives as part of their design process will be considered.
- Eligible projects must have completed energy simulations using either EE4 or other approved DOE2-based simulation programs.

Judging Criteria

- Sustainability as a major objective of the project
- Availability of data and co-operation of owner
- Evidence of use of integrated design process or design facilitator
- Repeatability of project, including economic viability
- Representation of climatic and regional variation across Canada
- Architectural quality

Benefits

- Projects selected will be published in Canadian Architect 2002 Edition
- Winners will be involved in the preparation and assessment of their project, and can participate in the Canadian Team display at GBC 2002 to present to the international community
- Projects will be presented on the GBC Canada website

Performance Assessment

Project teams are expected to enter data from their projects into the GBC 2002 Design Performance Assessment Tool, a copy of which will be provided to the Project Teams. The tool is still being finalized, but will be similar to GBTool (as found at iiSBE / GBC2000 site at www.iiSBE.org).

Notification of Selected Projects

Selection takes place in December 2001, with assessments following in the winter and spring. Successful entrants will be notified by e-mail.

Entry Fee

\$75.00 per entry (includes GST). Make cheques payable to GBC 2002.

Deadlines

Send all entries to arrive by 2:00 p.m., Friday, November 30, 2001. Entries received after the deadline will not be considered.

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Canadian GBC 2002 Team c/o Athena Institute
P.O. Box 189
112 Brock St. E.
Merrickville, Ontario, Canada K0G 1N0

GREEN BUILDING CHALLENGE 2002 CALL FOR ENTRIES - DETAILS -

We bring to your attention an opportunity to become involved in the Third International Green Building Challenge (GBC 2002)!

The focus of the call for entries is to solicit potential projects for submission to GBC 2002 and to be presented at the Sustainable Building 2002 conference. The conference is a joint meeting of the International Council for Building Research Studies and Documentation Task Group on Environmental Assessment of Buildings (CIB W-100) and GBC 2002. Sustainable Building 2002 is being convened in Oslo, Norway in October 2002.

Sustainable Building 2002 is the third international conference utilizing the Green Building Challenge process. It follows the successful GBC 98, held in October 1998 in Vancouver and GBC 2000, held in Maastricht, The Netherlands in October of 2000.

Lessons from Canadian Experience at Maastricht, Sustainable Buildings 2000

The second conference featured over 60 buildings from 19 countries, and was attended by over 850 international delegates for three days of sold out meetings, presentations and discussion papers.

Three projects were assessed by the Canadian Team and were featured at the Sustainable Buildings 2000 conference in Maastricht. One entry was for a new computer science educational facility on the York University campus in Toronto. Another was for a total retrofit and re-deployment of an existing office building for Telus Corporation in downtown Vancouver. The third involved a brownfield re-development of the former CPR Angus Shops (Angus Technopole) in Montreal.

Lessons on Process:

Common to all three projects seems to be advances in the design and construction process. All three projects featured close collaboration between the design team and client in examining, re-examining or interpreting client program needs and expectations with respect to sustainability or environmental objectives. In all cases, this resulted in a clearer definition of design goals. Specifically, for York University, the process targeted an ambitious energy reduction goal, used passive rather than active load control strategies, and reduced mechanical equipment sizes. For Telus, the renovation involved maximum re-use of the building and materials in the building, an ambitious energy reduction target, natural ventilation of the double skin, attention paid to retaining maximum daylight and maximum space flexibility. For Angus Technopole, it was de-construction and maximum re-use of building and materials, energy reduction principles and flexibility for future changes in use.

In all cases the clear benefit is that the client becomes an ardent champion of the approach throughout the project.

Common Green Features:

There were some common solutions or variations of them in all three of the projects. Common strategies included: efficient envelopes, control of shape and external shading for energy reduction, maximised use of daylighting, natural ventilation air paths (openings, operable windows), flexible spaces to accommodate changing future use and technologies, exposing the structure to act as a thermal flywheel, and the use of low VOC materials. Aggressive lighting

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designs with low lighting power densities that results in reduced air conditioning loads, active controls to reduce electrical light levels when natural light is sufficient were also common to varying degrees. Mechanically, the designs incorporated in heat reclaim, outdoor air control, natural ventilation, free cooling and sophisticated active mechanical control strategies.

Highlights of features unique to each project:

- York University: Sod roof (evaporative cooling in summer, added insulation in winter), stacks and relief hoods for air paths, broadened thermal comfort range, free cooling, passive heat reclaim from the displacement ventilation in theatres and passive preconditioning of supply air from underground tunnel, scavenger heat exchanger on condensate lines. Capital costs were reduced through high temperature differential on hot water and chilled water to reduce piping and pump sizes.
- Telus: Double skin outer envelope with combination of passive and active controls (including PV-powered fans) to moderate effect on inner wall and occupied space, underfloor ventilation, interior light shelves to bounce daylight further into the interior, waste heat reclaimed from an adjacent existing refrigeration plant and electrical/mechanical rooms.
- Angus Technopole: Brownfield re-development, majority of existing historic structure retained for adaptive re-use. Materials re-used in novel ways, industrial infrastructure (cranes, gantries) and building structure retained and exposed for structural function, heritage value and thermal mass effect, rainwater retention for landscaping.

The overall lessons were that it is possible to achieve a significant reduction in energy consumption and realize major sustainability goals with little or no increase in capital costs. In some cases, construction time is even reduced. Additionally, the designs showed that reduction are possible on municipal infrastructures and operating costs while increasing client involvement and satisfaction.

Green Building Challenge 2002 Details

GBC 2002 will again showcase worldwide innovation in Green Building Design. GBC 2002 already has 24 countries committed and organization is well under way, being coordinated by an international committee. The Canadian Team is comprised of a group of professionals who are volunteering their time. The Team is operating under the direction of the non-profit Athena Institute and is being sponsored again by Natural Resources Canada, Public Works and Government Services Canada and other Canadian agencies including the Sustainable Buildings Canada Committee. The Canadian entry is being organized by the Team, who have the task of selecting Canadian submissions and preparing them for the conference in Oslo. *This call for entries is the first stage of that process.* Subsequent stages will include an in-depth technical performance evaluation of up to four selected Canadian entries. The assessment of that performance will be against a uniform "measuring stick," called GBTool, being prepared by the International Committee. On that basis the submissions will be demonstrated at the October 2002 conference.

GBC 2002 is not a competition. It is an international cooperative process to develop new performance assessment tools and highlight innovative environmental building technologies. The challenge will do much to raise the consciousness of Green Building Design in the mind of the building industries, governments, architects, engineers and contractors in all of the participating countries. It will also serve as a catalyst for the raising of awareness in green building issues and stimulating demand for green building design and construction.

Calls for entries will be sent to all professional architectural and engineering organizations in Canada and to all levels of government, universities and the Royal Architecture Institute of Canada.

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GBC 2002 has the participation of the *Canadian Architect*; it is strongly felt that design excellence is also a component of creating innovative, practical and desirable green buildings. Marco Polo, the editor of the *Canadian Architect* will participate in the selection of the final entries for GBC 2002. *Canadian Architect* will also publish the Canadian Entries in October of 2002.

Eligibility

Projects submitted for consideration must be built, under construction, or at 100% completion of working drawings by mid-January of 2002. Private or public buildings are eligible, as are renovations if the retrofit affects all major building systems and responds to the judging criteria. Only projects that have major sustainability improvement objectives as part of their design process will be considered. Eligible projects must have completed energy simulations using either EE4 or other acceptable DOE2-based simulation programs. High architectural quality will also be a criteria.

Judging Criteria

Submissions will be assessed based on:

- Sustainability as a major objective of the project
- Availability of data and co-operation of owner
- Evidence of use of integrated design process or design facilitator
- Repeatability of project, including economic viability
- Representation of climatic and regional variation across Canada
- Architectural quality

Performance Assessment

Project teams are expected to enter data from their projects into the GBC 2002 Design Performance Assessment Tool, a copy of which will be provided to the Project Teams. The tool is still being finalized, but the buildings will be assessed under seven principal criteria:

1. Resource Consumption

- Life-Cycle net primary energy use
- Use of land and change in quality of land
- Net consumption of potable water
- Re-use of existing structure or on-site materials
- Amount and quality of off-site materials used

2. Loadings

- Emission of green house gases from building production and operations
- Emission of ozone-depleting substances
- Emission leading to acidification from building operations
- Emissions leading to photo-oxidants from building operations
- Emissions with eutrophication potential from building operations
- Solid wastes
- Liquid effluents
- Hazardous wastes
- Electro-magnetic pollution
- Impacts on site and adjacent properties

3. Indoor Environmental Quality

- Air quality and ventilation
- Thermal comfort
- Daylighting, illumination
- Noise and acoustics

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4. Quality of Service

- Flexibility and adaptability
- Controllability of systems
- Maintenance of performance
- Privacy and access to sunlight and views
- Quality of amenities and site development

5. Economics

- Economic performance

6. Pre-Operations Management

- Construction process planning
- Performance tuning
- Building operations planning
- Transportation management planning

7. Commuting Transport

- Emission of greenhouse gases
- Emission of gases leading to acidification
- Emissions leading to formation of photo-oxidants

Each of these criteria relate to environmental sustainability issues.

Categories

- Schools
- Multi-family residential
- Office
- Other

Submission Requirements

1. Submission form. The attached submission form should be completed and securely fixed as the first page in a three ring binder.
2. A project binder should be submitted that must include:
 - 1 First page – the entry form.
 - 2 Second page – a single page describing the project.
 - 3 Subsequent Pages – a summary of the sustainability objectives for the project and how they were incorporated into the design process, such as a description of the stages, use of a facilitator or other formal process. Also, provide a brief summary of how the project has responded to each of the seven assessment criteria listed above.
3. Each entry must be securely fastened in a binder. Two copies of this entry form must be in a plain sealed envelope inside the front of the binder.
4. Drawings: site plan, floor plans, sections, elevations, context plan.
5. Illustrations: photographs of the completed project or models or renderings if the project has not yet been constructed.

Entry Fee

\$75.00 per entry (includes GST). Make cheques payable to GBC 2002.

Sustainable Building 2002, OSLO

The winners will be involved in the preparation and assessment of their project at detailed level using the GBC 2002 Design Performance Assessment tool which is presently being finalized.

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Notification of Selected Projects

Selection takes place in December 2001 and assessments in the winter and spring. Successful entrants will be notified by e-mail.

Publication

Selected Projects will be published in Canadian Architect 2002 Edition.

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