

# Green Building Challenge, 2000-2002

Green Building Challenge is a consortium of over twenty countries that is developing and testing a new method of assessing the environmental performance of buildings. The project will not have an immediate effect on the way that buildings are designed, but it appears certain to have a major long-term impact.

The project has consisted of two stages. An initial two-year process, including 14 countries, culminated in the GBC '98 conference, a major international event in Vancouver in October 1998. Work resulting from a second two-year round of development was displayed and reviewed at the international SB 2000 conference in Maastricht, the Netherlands, in October 2000.

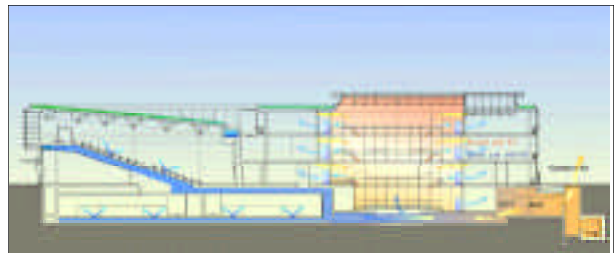
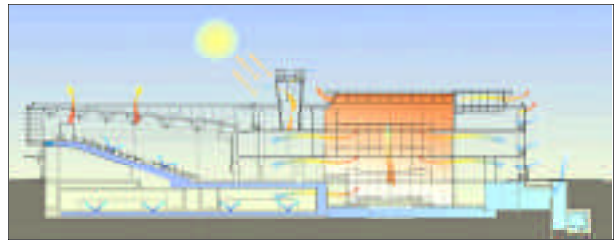
The assessment framework has been produced in the form of software (GBTool) that facilitates a full description of the building and its performance, and also allows users to carry out the assessments relative to regional benchmarks. Participating national teams test the assessment system on case study buildings in each country. At the GBC '98 conference, 34 projects were evaluated in depth, and a further 36 projects were assessed for the SB 2000 Conference.

Except for USA, Canada and Japan, the countries participating in the first round (1996 to 1998) were all European, including Austria, Denmark, Finland, France, Germany, Netherlands, Norway, Poland, Sweden, Switzerland, and the UK. All members of the first round also participated in the second round of work except for Denmark and Switzerland, whose teams experienced funding problems. However, several new national teams joined during 2000: Australia, Chile, Hong Kong, South Africa, Spain and Wales, bringing the total of participants in SB2000 to 18 national teams. In addition, several new teams have now decided to join



the third phase of the process; including Argentina, Brazil, Greece, Israel and Italy. Thus, 24 countries will show the results of their work at the next international conference in the series, SB '02 in Oslo, Norway.

GBC '98 is not the first performance assessment and rating system. The best-known existing system is undoubtedly the Building Research Establishment Environmental Assessment Method (BREEAM), developed by BRE and private-sector researchers in the U.K. This system provides performance labels suitable for marketing purposes, and has captured around 15% to 20% of the new office building market in the U.K. A spin-off system, BREEAM Canada, has been adapted to Canadian conditions, and a North American version is now being



developed. Meanwhile, the LEED system has been developed in U.S.A. and is now being implemented by the US Green Building Council, with strong support from U.S. government agencies and private-sector organizations. Several other systems (largely inspired by BREEAM) are in various stages of development in Scandinavia, Hong Kong and elsewhere. There are also more specialized systems of interest that are more closely tied to Life Cycle Assessment (LCA), including ECO QUANTUM (Netherlands), ECO-PRO (Germany), EQUER (France) and Athena (Canada).

Why is there so much interest in this area? The main reason appears to be that researchers and government agencies are viewing performance rating and labelling systems as one of the best methods of moving the performance benchmarks in the marketplace towards a higher level of performance. There is a growing realization that a major jump in performance levels, at least in market economies, will depend on changes in market demand, and that such change cannot occur until building investors and tenants have access to a relatively simple method that allows them to identify buildings that perform to a higher standard.

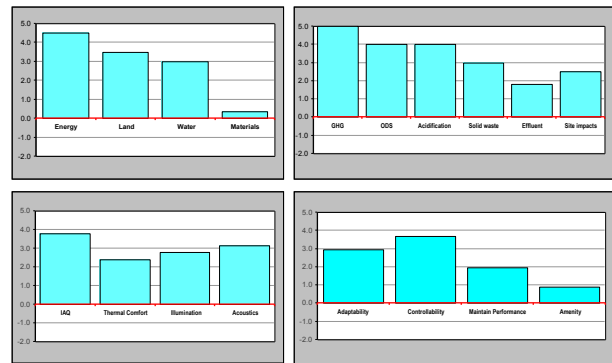
The GBC project is an attempt to develop a second-generation assessment system; one that is designed from the outset to reflect the very different priorities, technologies, building traditions and even cultural values that exist in various regions and countries. In order to use the system, national teams must first adjust the values and weightings embedded in the system, thereby assuring results that are relevant to local conditions.

The direct output of this on-going process will be at the level of R & D; specifically, a thorough understanding of issues involved in designing such a system, as well as a continuing exchange of ideas on the subject by the best researchers in the field. However, public- and private-

sector organizations will also be encouraged to use the results to develop a new generation of commercial labelling systems. This aspect is expected to have positive practical results in the near term for industry applications in Korea, Hong Kong, Canada, Japan and several other countries.

The advantages of having a global standard for building performance assessment and labelling cannot be over-emphasized. If meaningful information about performance is to be exchanged between countries, then a uniform definition of performance parameters must be developed, even if the calculation tools providing data on, for example, energy consumption and emissions, vary between countries. Further, the rapid growth of global corporations, and their desire to work to a common standard, give this work a significant commercial importance in the medium term.

The Netherlands energy agency, Novem, undertook primary responsibility for organizing the Sustainable Buildings 2000 (SB 2000) conference, held in Maastricht, the Netherlands during October 22-25, 2000. The conference attracted 850 attendees and included an exhibit area with display pavilions from each country, organized by the GBC national teams. Each national pavilion included displays of buildings assessed during the GBC process, as well as displays of other green buildings of interest, summaries of ecological issues, policies and programs, and exhibits of green industry products. The SB '02 conference in Oslo will present another major opportunity for each country to display the state-of-the-art of its industry.



The GBC process was initiated and led by Natural Resources Canada during the 1996-2000 period. Although some direct financial support was provided by Canada to national teams during the first phase, Canadian contributions were limited to central coordination and system development during the second phase. Thus, each participating country is now expected to finance its own participation in meetings and for testing the system at home. Starting in January 2001, a new organization, the *International Initiative for a Sustainable Built Environment* (iiSBE), will take over international management and development of GBC. The organization will be assisted in its work, at least until 2002, by contributions from Natural Resources Canada, the U.S. DOE and Novem.

## List of National Teams and their Leaders

Argentina	Silvia de Schiller	schiller@fadu.uba.ar
Austria	Susanne Geissler	geissler@ecology.at
Australia	Rein Jaaniste	Rein.Jaaniste@dpws.nsw.gov.au
Brazil	Vanessa Gomes	vangomes@fec.unicamp.br
Canada	Alex Zimmerman	AZimmerman@bcbc.bc.ca
Chile	Norman Goijberg	goijberg@bellsouth.cl
Finland	Ilari Aho	ilari.aho@motiva.fi
France	Philippe Duchene-Marullaz	duchene@cstb.fr
France	Sylviane Nibel	nibel@cstb.fr
Germany	Guenter Loehnert	solidar@t-online.de (solidar)
Greece	Sotiris Milonas	milonas1@civil.auth.gr
Hong Kong	Steven Lau	ssylau@hkucc.hku.hk
Italy	Andrea Moro	andrea_moro@envipark.com
Japan	Tatsuo Oka	oka1@kt.rim.or.jp
Japan	Hisashi Hanzawa	hanzawa.hisashi@takenaka.co.jp
Netherlands	Ronald Rovers	R.Rovers@novem.nl
Norway	Sverre Fossdal	Sverre.Fossdal@byggforsk.no
Poland	Aleks Panek	apanek@saturn.iis.pw.edu.pl
South Africa	L.J. Grobler	mgilgj@puknet.puk.ac.za
Spain	Javier Serra	jserra@mfom.es
Sweden	Mauritz Glaumann	glaumann@bmg.kth.se
United Kingdom	Nigel Howard	howardn@bre.co.uk
U.S.A.	Gail Lindsey	GLindsey@ipass.net
U.S.A.	Dru Crawley	Drury.Crawley@ee.doe.gov
Wales	Phil Jones	JonesP@Cardiff.ac.uk
Secretariat	Nils Larsson	larsson@greenbuilding.ca
Secretariat	Raymond Cole	cole@architecture.ubc.ca

## For Further Info

<http://greenbuilding.ca>

or contact Nils Larsson at [larsson@greenbuilding.ca](mailto:larsson@greenbuilding.ca)

Sponsors of GBC include Natural Resources Canada, national research organizations in each country and much volunteer time.

Illustrations courtesy of Busby + Associates, Architects, Canada.

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