Advanced Building News

International Initiative for a Sustainable Built Environment

ABN 07, August 2005

Global

The SB05 Conference is rapidly approaching, and many colleagues are busy completing work or trying to find the money for airfares. The event will take place in Tokyo from September 27-29 (see ad on back page), but there are many associated events. These include an iiSBE Annual general meeting on the 26th, to be held at the headquarters of the Architectural Institute of Japan (AIJ). On the same day, CIB will hold a Board meeting, and there are also several CIB working groups holding meetings before and after the conference.

As for the conference itself, our Japanese colleagues tell us that they have received almost 1500 registrations from approximately 80 regions or countries; about 50 exhhibit booths have been rented, and the six technical visits are sold out. The academic program will soon be finalized, and about 750 papers have been accepted, of which some 200+ will be orally presented.

There are also special sessions on Education (Dr. Ray Cole,Chair), Regional Issues (Kazuo Iwamura and Nils Larsson, co-chairs), and Case Stdy Assessment presentations (Tatsuo Oka and Nils Larsson, co-chairs). A special session of the IPCC will be held to discuss aspects of climate change.

For last-minute registration and updates, go to the site at <www.sb05.com>.

Bridge Tourism

We couldn't resist showing you this holiday photo of the magnificent bridge at Millau, which is attracting lots of tourists to the region. Sir Norman Foster was the designer,

Denmark

Danish Municipality shows the way for sustainable building in new settlement

In October 2004 ,Stenløse Municipality in Denmark started the sale of a new plot of land – Stenløse South – the first phase comprising 250 dwellings plus kindergarten and senior dwellings. The municipality has decided to require that all buildings are constructed to a standard with a net energy load for room heating 35% lower than required by the new energy requirements according to the Danish Building_Code to be put into force in 2006, and to recommend the construction of buildings with an energy consumption for room heating 70% lower. Besides the energy requirements the municipality also demands that rainwater is used for toilet flushing and washing, and that PVC and pressure-creosoted wood is not allowed in the constructions.

These demands will, based on experiences from the first phase, be maintained and possibly increased in the second phase of Stenløse South comprising 500 dwellings.

Stenløse Municipality cooperates with energy consultants from Cenergia Energy Consultants, The Danish National Building Research Institute, SBi and DONG in a project supported by the Energy Research Programme of the Danish Energy Agency to follow the developments in Stenlose

South closely. Recent investigations have documented that several low energy building projects did not result in the expected savings. Therefore, there is a need for success stories from "standard" case studies - buildings which are not special research and development buildings. The objectives of this project is to gather experiences from the first phase of the Stenløse South development and contribute to the project with quality assesment.

The gathered experiences is to comprise the following:

- The municipal decision process
- The technical solutions
- The resulting energy consumption
- The economy of the chosen solutions,

The experiences will be compared to experiences from Sweden and Germany and the results disseminated.

Ove Mørck, Cenergia Energy Consultants

News from CaGBC

For those not familiar with the Canadian scene, there is much going on, most of it related to the Canadian Green Building Council (CaGBC).

The CaGBC was launched as a non-profit in 2002 and has already enlisted 888 member firms, starting from its West Coast base, working its way eastward. Alex Zimmerman (formerly head of the GBC Canadian team) was loaned by the B.C. Buildings Corporation to become the first President. After an extremely exhausting schedule of work, he has just handed over the reins to Thomas Mueller, who has been active in CaGBC since its inception , and has degrees from the Ludwig-Maximillian University in Munich and Waterloo University in Canada.

One of the main reasons for the rapid growth and success of CaGBC is undoubtedly its license to use the U.S.-developed LEED rating system. In fact, Canada has developed a Canadian adpatation of LEED which has been approved by USGBC (U.S. Green Building Council), the owner of the original system. It is quite difficult to obtain approval for regional versions, and the reason for Canadian success (besides much hard work) is probably because of the great similarity in market conditions and design standards within North America.

So far, 156 buildings have been registered for assessments and 17 have been certified.

The CaGBC Fall and Winter Training schedule is an indication of the high level of activity. A brief description of each workshop/seminar follows:

LEED Canada-NC: Technical Review

This full-day workshop is a general overview of the LEED Canada-NC (New Construction) 1.0 Green Building Rating System and is an introduction to green-building design benefits and strategies and explains the prerequisites and credits that make up the basis of the LEED certification process. This course would be appropriate for anyone involved in the building design/construction field.

LEED for Contractors

This half-day seminar distills the LEED Canada-NC Technical Review down to those components that are the realm of the contractor. A LEED knowledgeable contractor can plan for and execute his responsibilities, reducing the risk of errors, deficiencies and project over-runs.

LEED for Commercial Interiors (LEED-CI)

This full-day workshop for building tenants and designers addresses performance areas in office, retail and institutional buildings including: selection of sustainable tenant space; efficiency of water usage; energy performance optimization (including lighting and lighting controls); resource utilization for interior building systems and furnishings and indoor environmental quality including comprehensive emissions criteria.

LEED for Existing Buildings (LEED-EB)

This full-day training session for building owners, facility managers and design teams will address strategies to advance existing buildings to a sustainable level of operation, upgrade and reduce building operating costs, solve building operation problems, improve indoor environment and support higher productivity of building occupants.

The website is <www.cagbc.org>

SB08 Selection Committee Meets

The Committee, composed of representatives of CIB, iiSBE, Tokyo SB05 and DTIE / UNEP, met in Paris on August 10 to review six proposals and to select the best one. The winner is XXXXXX. Sorry for the mystery, but you will have to come to SB05 at Tokyo to find out during September 27-29.....

Will Manitoba Hydro have the Most EE Office in the World ?

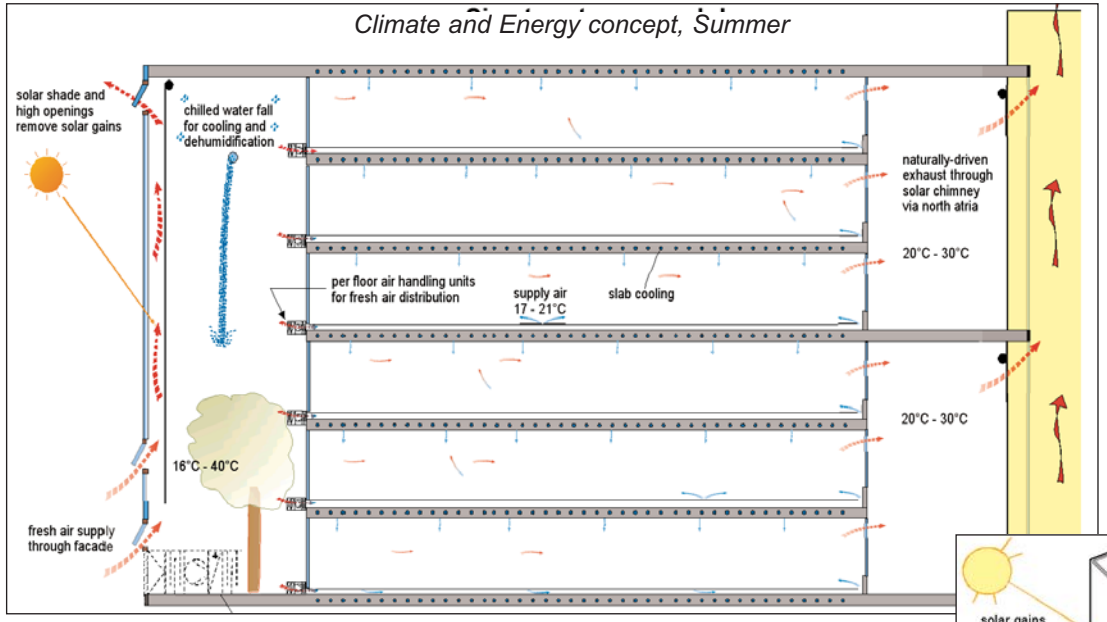
Ground has been broken for the new downtown Winnipeg office of Manitoba Hydro, the Provincial government owned electrical utility. On completion, the Manitoba Hydro Downtown Office Project (MH-DOP) will be, according to its designers and developers, the most energy efficient large office building in the world. Responding to obligations incurred with the purchase of Winnipeg Hydro, Manitoba Hydro has committed to setting a new standard of excellence for the facility. The project charter established goals in five areas: supportive workplaces, high performance design/energy efficiency, signature architecture, regenerative urban design, and cost effectiveness. Manitoba Hydro is using the facility as a vehicle for changes in corporate culture, including moving 2000 of its Winnipeg based staff to the downtown core.

The 22-storey building will encompass approximately 690,000 square feet, including public, retail, commercial and Manitoba Hydro office space. High performance in all of those areas will be required to achieve the building's energy reduction target of 60 per cent below the level set by the Model National Energy Code of Canada for Buildings (MNECCB). The design of the project is being undertaken in an integrated fashion pioneered in Canada by the Natural Resources Canada "C-2000 Program for Advanced Commercial Buildings".

The integrated design process (IDP) links all the elements of the design such that design economies are achieved through synergies created between the design disciplines. These synergies have also been observed between the elements of the project charter, where supportive workplaces and signature architecture support and are supported by energy efficiency achieved at a reasonable cost for world-class design. Energy simulation models have been used to assist the design process from the beginning, and the latest versions show the building to be on track to exceed the energy target.

In typical Canadian fashion, high performance is required to be achieved within a budget. The construction budget for the new building is $188 million CDN. The budget for the entire project totals $258 million, which includes such costs as modernizing Hydro's information technology and security systems, a bridge linkage to the elevated pedestrian system along Portage Avenue, insurance, design work and capital interest.

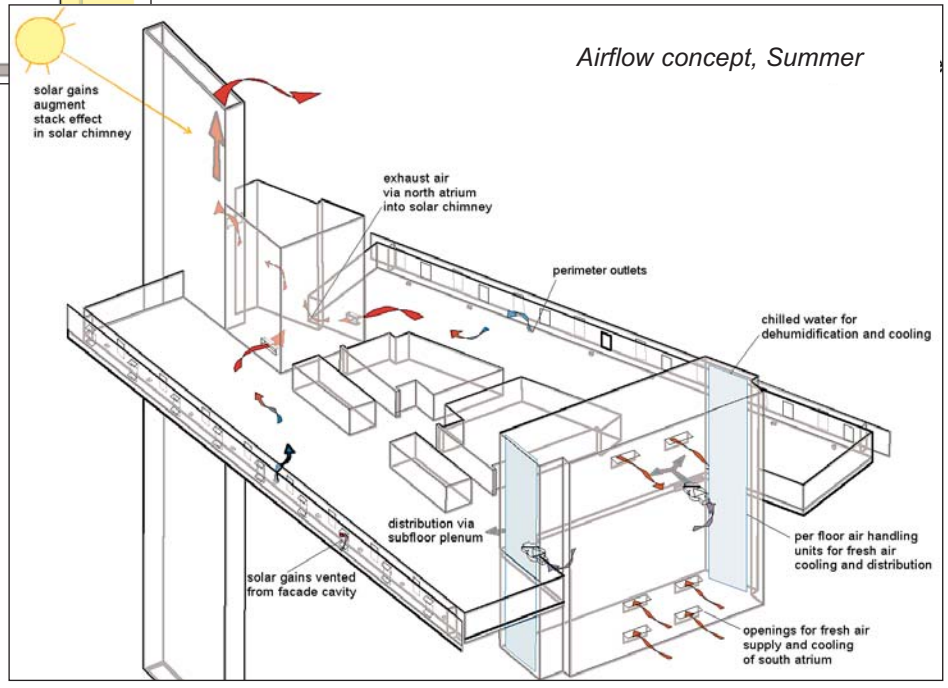
In real terms, the energy target sets a consumption level below 140 kWh/m2/yr. The MNECCB reference building for the project consumes 230 kWh/m2/yr. By comparison, the Conde Naste building at 4 Times Square in New York City (4TS), as modelled in conformance with ASHRAE Standard 90.1, consumes 221 kWh/m2/yr. The compared fig-



ures represent end-use energy on site. Due to the very low multipliers used for the Manitoba electrical grid arising from the vast supply of hydro electricity, the difference in primary energy consumption between MH-DOP and 4TS is even more dramatic.

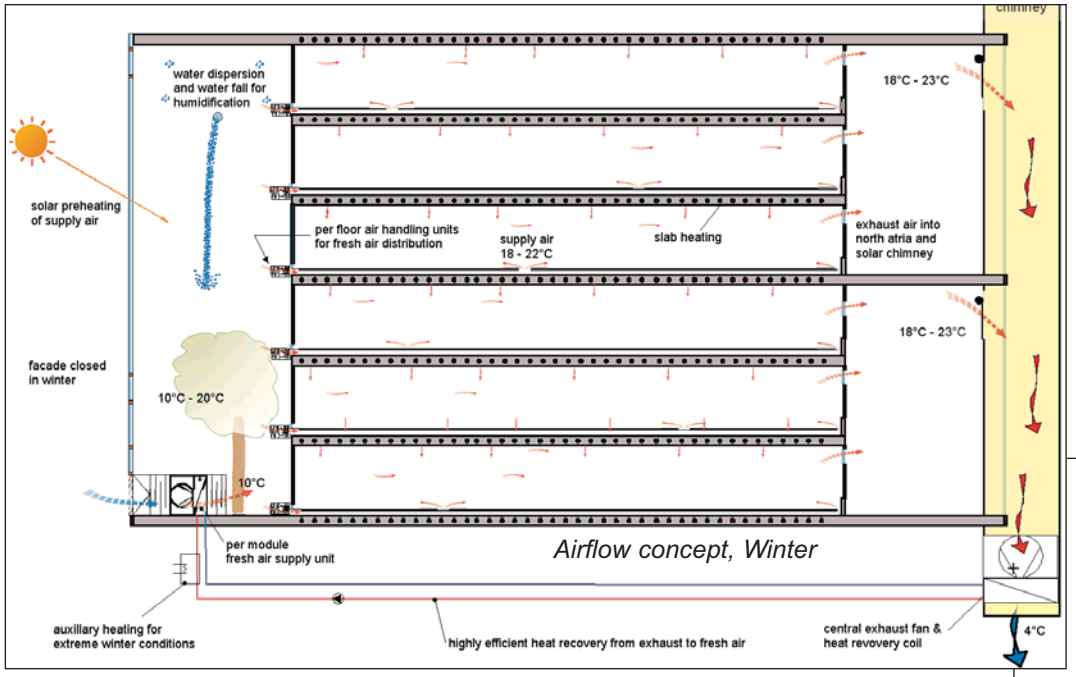
The design incorporates a splayed twin office tower resting on a podium that varies from two to three storeys, effectively marrying a large building mass with street level scale. The building's form and orientation optimizes passive systems for ventilation, heating and cooling, contributing to the building's world-class energy efficiency and a healthy, productive workplace. The building will be connected to the downtown elevated walkway system and provides street level retail activity, as well as offering a landscaped public courtyard on its southern exposure along Graham Avenue.

All diagrams on pages 4 to 6 are courtesy of Transsolar Klimaengineering



The supportive workplace goals assist the energy efficiency goals in a novel manner. One of the main social issues in tower design is providing identity for the various groups that work in the building. This is achieved through the use of atria on alternating floors that provide a focus for working "communities," and allow for vertical circulation over three to six floors that has a view to the outdoors and is not dependent on elevators.

The large atrium spaces provide an opportunity for the hybrid ventilation strategy. Temperature in the atria is allowed a wider variation than in the office areas, allowing the atria to be used as giant mixing boxes, tempering fresh outdoor air before it is delivered to the offices. The six storey south atria take



Airflow concept, Winter

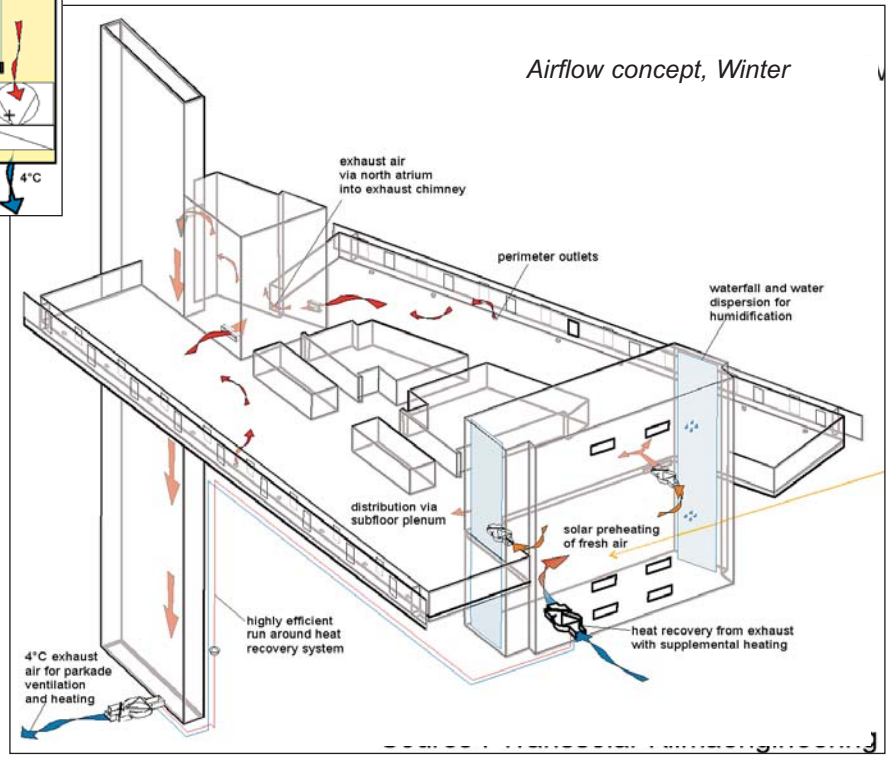
in fresh air and partially heat it with the solar gains in the space. The three storey north atria collect exhaust air and feed it to the “solar chimney,” a vertical shaft that in summer uses stack pressure to draw out exhaust air. In winter, when the stack effect is not so pronounced, the fan assisted solar chimney will reverse its direction and relief air will be used to heat the underground parking garage.

This hybrid ventilation strategy takes advantage of the low air volumes required by a dedicated outdoor air system. With ventilation separated from space conditioning, heating and cooling needs can be served with low temperature water in radiant slabs. The low temperature heat is provided by closed loop ground source heat pumps that take advantage of the constant temperature of the ground below the building. Heat is taken out of the ground in winter, and returned to the ground over the summer, as the heat pump takes up more of the cooling load.

The most visible innovation on the project will be the glazed double skin walls on the east and west facades. The double-skin wall is a uniquely Canadian proposal responding to expectations of construction cost and thermal performance in a more extreme climate than experienced in northern Europe.

To enhance access to natural light and reduce electricity use for lighting, the façade system will use a double-glazed, double low-e, gas filled exterior layer with an interior single glazed layer. Energy simulations demonstrate an optimum U-value for the outer layer of 1.35 W/m2*oC, but higher values are still workable.

The cavity between the glazing layers is compartmentalized on a floor-by-floor basis to avoid stack



Airflow concept, Winter

pressures, and improve ease of construction. The cavity will be heated to 5oC to prevent frosting or condensation on the outer glass, and to reduce the thermal load on the interior layer. Even with a design day temperature of –35oC, a heating density of less than 50 W/m2 is sufficient to maintain temperature. The heat will be supplied by a low temperature system of hydronic radiant tubes cast in the concrete floor slab. In all but the coldest days of winter, and hottest days of summer it is envisaged that the cavity will provide tempered ventilation air to the perimeter offices from operable windows. This ability to offer direct occupant control of space conditions is highly unusual in Canadian office buildings.

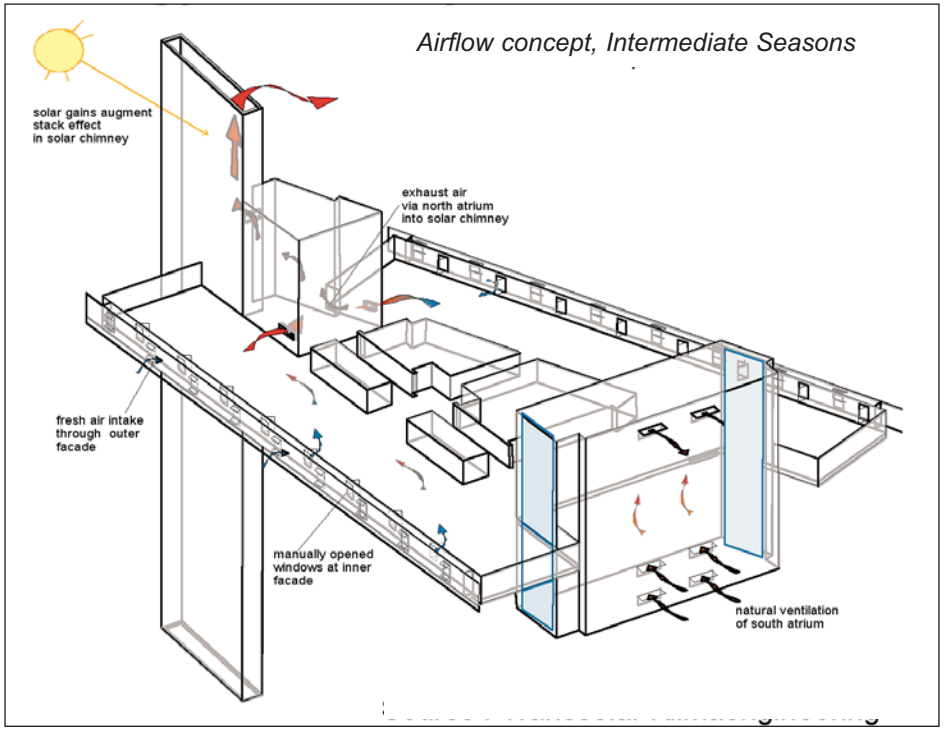
Daylight transmission is aided by specifying low-iron glass for both the inner and outer façade layers. Glare will be controlled using mechanized blinds inside the cavity.

The cavity is not mechanically cooled, as the intent is to keep it warm in the winter during the occupied periods with solar gain, and cooled by ventilation in the summer. Summer cooling is a larger energy issue in this application than winter heating. Motorized operable window units in the outer glazing layer will be placed along the length of the façade allow unwanted heat to be drawn out of the cavity by the prevailing wind. Climate analysis has shown that very few of the hot days are without strong winds.

Analysis of the performance of the double skin is still ongoing. In direct comparison to the MNECCB reference building wall having a 40% fenestration to wall ratio, the system is not as energy efficient. Tests were made on a typical floor starting from basic background conditions, not counting design elements such as ground source heat pumps, heat recovery on exhaust air, variable speed fan drives and other energy efficiency measures proposed for the project. A reduced lighting level was applied due to the impact that lighting has on heat contribution to a space. In various scenarios, the energy penalty in direct comparison ranged between 2.8% and 8%.

However, building performance is a complex linkage of systems, and the heat flow between building zones and the double skin cavity is heavily interdependent under both heating and cooling conditions. The significantly improved access to daylight and attendant reduction in lighting loads, the speed of installation, the availability of operable windows and the attendant occupant benefits, all mitigate the apparent energy penalty. Furthermore, as the totality of building systems become represented in the energy model, the behaviour of the whole system starts to show improvements beyond the performance level of the reference building. As detailed design of the façade system commences a considerable interest in its performance remains, but supported by greater confidence that the building in its totality will perform as designed.

The new headquarters will also save the corporation $15 million in annual operating costs. Included in this total is approximately $7 million in annual lease costs the corporation will save by amalgamating 12 leased Hydro offices into one location. The remainder of the savings will be realized through enhanced energy efficiencies, productivity improvements, co-location of employees and other design features.



Deconstruction of on-site structures is nearing completion, with reusable material from buildings on the site salvaged for recycling to minimize materials going to landfill for disposal. Construction is underway, beginning with foundation excavation. Completion is scheduled for 2007.

Stephen Pope, C-2000

Integrated Design Team

- Design Architect
  Kuwabara Payne McKenna Blumberg (KPMB) Architects, Toronto
- Architect of Record
  Smith Carter Architects & Engineers Inc. Winnipeg
- Advocate Architect
  Prairie Architects Inc., Winnipeg
- Construction Manager
  PCL Constructors Canada Inc., Winnipeg
- Energy Engineering
  Transsolar Energietecknik GMBH Stuttgart, Germany
- Electrical & Mechanical Engineering
  EarthTech (Canada) Inc., Winnipeg
- Structural Engineering
  Crosier Kilgour & Partners Ltd., Winnipeg
  Yolles Partnership Inc., Toronto
- Quantity Surveyor
  Hanscomb Limited, Winnipeg
- Power Smart Advisor
  Manitoba Hydro
- C-2000 Advisor
  Natural Resources Canada

Feasibility Study for Air Ventilation Assessment

We have recently been made aware of a study just completed in Hong Kong, carried out as a result of the recnt SARS epidemic there.

The consultancy study titled *Feasibility Study of Air Ventilation Assessment System in Hong Kong* was launched by the Planning Department HKSAR in late 2003, and the Department of Architecture, the Chinese University of Hong Kong, was commissioned as the lead consultant. The feasibility stage has just been completed., and the reports can be seen at:

<www.info.gov.hk/planning/p_study/prog_s/air_vent/avas_eng.html>

The study was triggered by the epidemic SARS. After SARS, the HK community "discovered" that the city should be better planned and designed with respect to its urban environmental quality / liveability, particularly its wind environment / air ventilation. If the city were not to be well ventilated, individual building design would not be effective, especially true in the case of high-density cities like HK. Hence, the notion of AVA was conceived with a view to developing an assessment system on urban air ventilation performance appropriate for compact urban form and tropical climate.

The study turned out to be a fascinating research process, involving both local and overseas researchers, academics and architects / planners / engineers, etc. Key overseas advisors include:

- Prof Shuzo Murakami, Keio University, Japan
- Prof Lutz Katzschner, Kassel University, -
- Prof Mat Santamouris, University of Athens, Greece
- Prof Baruch Givoni, UCLA USA
- Dr Wong Nyuk Hien, NUS Singapore
- Edward Ng is project manager, contact at <edwardng@cuhk.edu.hk>

Despite the AVA system is in need of further research and development with respect to an urban climatic map for whole Hong Kong, benchmarking survey for the particular context of HK, etc., it has already caused some notable impact to the HK society, especially against the background of surging summer heat in HK and elsewhere in the world. Recently, among others, a new residential development proposal (highrise - each tower about 50 storeys and with ten towers aligned like a continuous wall manner -- forming a significant wind screen blocking sea breeze to the older urban fabric inland) has been strongly objected by the district community from the viewpoint of local air ventilation. In parallel, a general criticism to the recent state of urban developments in Kowloon Peninsula is that more highrise, wall-like buildings, are springing up along the waterfront of the metropolitan area (for best sea view, hence best sale price), thereby resulting in a new "walled city" effect for the urban area -- hampering its inland areas from sea breeze .

The Government intends to apply the AVA method in the current urban planning for redeveloping the old Kai Tak site into "a new city within our city" -- which will be the "last" large central location in the metropolitan area of HK subject to development in the near future.

K.S. Wong, Hong Kong

Project background

EPLabel is a two year project involving nineteen countries, ten with full Partners, supported by the EC's Intelligent Energy for Europe (EIE) SAVE programme. It addresses the EU Energy Performance of Buildings Directive (EPBD) Article 7.3: the requirement for 'Public Buildings' over 1,000 m_ to display an Energy Certificate prominently – see www.eplabel.org for further details. The project aims to support each Partner's Member State in planning for and implementing Operational Ratings under the EPBD. The project is led by the UK Partner and part funded in the UK by ODPM and Constructing Excellence.

The project's main technical objective is to develop a methodology for energy benchmarking and certification of the diverse range of buildings in the following six sectors:

- Public administration offices,
- Higher education (Universities, Colleges),
- Schools,
- Sports facilities,
- Hospitals and other health facilities,
- Hotels and restaurants (to take account of residential and catering facilities in the public sector).

In 2002-04, EPLabel's predecessor Europrosper (see www.europrosper.org) reviewed the potential for Operational Ratings, developed a prototype procedure for offices, and contributed to draft CEN standards. EPLabel intends to demonstrate a clear, robust and pragmatic procedure which can be used by Member States which plan to use Operational Ratings - offering sufficient flexibility to accommodate national diversity whilst seeking the harmonisation the EC desires.

Energy certification based on Operational Ratings

The procedure for building energy certification based on an Operational Rating can be seen as having five key steps:

1. Collect quality data and calculate the building's Energy Performance Indicator (EPI - defined by CEN as the weighted sum of actual annual energy consumption divided by the building's floor area.)
2. Identify appropriate benchmarks with which the EPI can be compared.
3. Grade the energy efficiency of the building by comparing the EPI with the benchmarks.
4. Identify cost-effective energy saving measures.
5. Collate all the relevant information onto an energy certificate, possibly of several pages with the first page on display to the public.

Summary of work programme

Following a review of existing approaches in the six target sectors, we plan to identify the common ground and to produce a pragmatic scheme which can help to support benchmarking and certification of operational energy in each country. The proposed strategy, summarised in Appendix A, offers an easy entry level for cases where few if any benchmarks are currently in use, plus more detailed methods of assessment where current knowledge is more advanced, including customised benchmarks based on schedules of accommodation and usage. The project's main deliverables will be:

- Software which demonstrates the five-step procedure.
- A website where independent or accredited experts or self-assessors will be able to determine benchmarks for total measured energy consumption for any building within the targeted six sectors (see Appendix B), with integral quality assurance procedures.
- Full documentation and an on-line training package for energy certifiers.

EPLabel benchmarking strategy and alignment with implementations of the EPBD

The Directive comes into force on 4 January 2006, but countries are allowed up to three years to phase it in. In many countries, the Operational Rating approach may start by requiring eligible buildings to provide a summary of their energy use, weight the different fuels used (e.g. by primary energy or by kg CO2), report energy performance per m_ of floor area (probably of Gross Internal Area, though there are other choices), and compare it with simple benchmarks (where these are available).

Following a review for the UK's Sustainability Forum , the UK team plans to apply benchmarks for Operational Ratings at three levels of sophistication, as illustrated in Figures 1 to 3

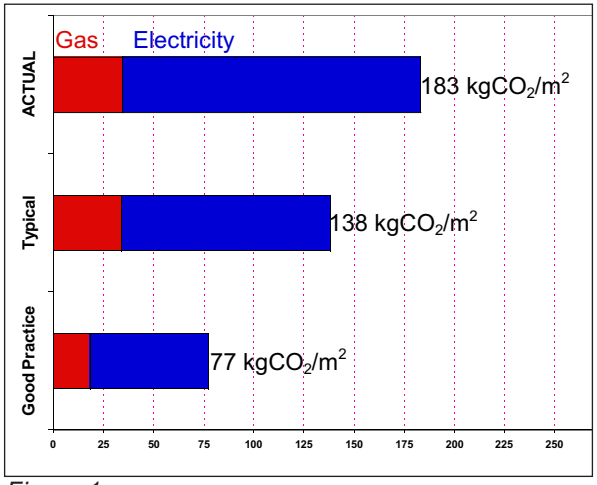


Figure 1:
Level 1: simple, usually derived from stock statistics for the type of building concerned.

The first two charts show a building's actual carbon dioxide emissions in comparison with Typical and Good Practice benchmarks. With the level 2 approach, the emissions from a special energy use (not included in the benchmark reference) are identified by measurement and deducted from the total emissions before making the benchmark comparison.

The chart in Figure 3 includes benchmarks built up from each of the energy end uses occurring in the different activity areas in the building concerned,

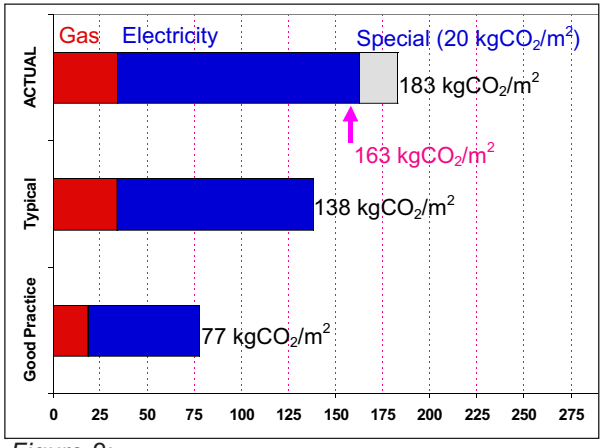


Figure 2:

Level 2: corrected, taking account of special energy uses not included in the Level 1 benchmarks.

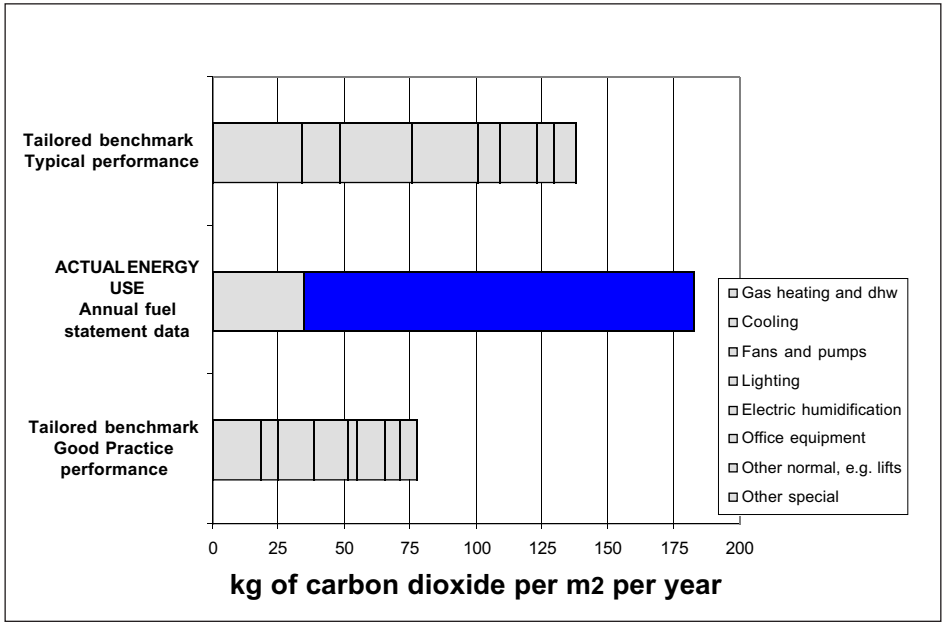
calculated separately assuming Typical and Good Practice energy efficiency for the fabric, plant, management and controls involved.

EPLabel's focus is on developing the Level 3 benchmarking approach, which will allow more meaningful and fairer assessments of the energy use and CO2 emissions of a building than is possible by comparing them with bulk energy statistics. The procedure will also need to be as compatible as practicable with the Level 1 and 2 assessments that may well be employed in initial statutory implementations of Article 7.3. In due course, it might become verified and accredited as an alternative to the Level 2 correction.

Industry Advisory Groups (IAGs) will help to ensure that the procedures make sense to each sector. Representatives will include major building owners, occupiers and managers as well as sectoral organisations. Advisory Group members will be asked to

Figure 3:

Level 3: customised, taking more detailed account of the building's schedule of accommodation, activities and use.



review key strategic documents and attend two meetings: the first to discuss EPLabel's review of the sector and ideas for the approach to benchmarking; and the second to comment on a working draft of the proposed benchmarking system.

EPLabel software

Software will be produced in three development versions (see Figure 4), linked to the energy certification 5-step process previously defined. The preliminary version (V1.1) is an Excel file which demonstrates Step 1, namely getting the facts straight about the building: the sector and sub-type it fits within, its floor area (or other measure of extent) and the annual consumption of all energy supplies. The software allows each energy source to be summed by different weighting factors, using local, national or European values, according to choice and creates an energy and carbon dioxide emissions summary. The Energy Performance Indicator (EPI) is presented both on the basis of the delivery of fuels to the building's site, thereby taking fully into account the benefit of any on-site CHP and renewables (OSC&Rs) and on the basis of the intrinsic energy efficiency of the building (ie after excluding the benefit of OSC&Rs) in order to reveal the scope for energy saving measures.

The next version of the software (V1.2) will illustrate the Level 1 benchmarking system, comparing the EPI with notional level 1 benchmarks graphically. If possible, it will also calculate the CEN 'C' factor which relates the EPI to the building stock mean and to a nominal 2006 Building Regulation level. V1.2 will also illustrate Level 2 corrections - explicit allowances for 'special' activities or energy uses not included within the Level 1 benchmarks (e.g. a swimming pool in a school, a data processing centre in an office, or a building with a lot of external lighting). V1.2 could well resemble procedures which may be adopted by several countries for their initial implementation of Article 7.3. Once it has been reviewed by Partners, it will be downloadable under a free licence from the EPLabel web site, hopefully well in advance of the implementation deadline. The intention will be to demonstrate the potential for a relatively simple initial Operational Rating procedure that does not require significant expertise.

V2 of the software, again in Excel, will demonstrate all five steps of the certification process and will also be downloadable under a free licence from the EPLabel web site. It will:

- Illustrate how fully customised benchmarks can be created for a building.
- Calculate the important A to G grade in addition to the 'C' factor.
- Incorporate a standard list of measures for each building type, presented in a tick-box format to allow applicability to be indicated and notes to be added.
- Generate a notional Energy Certificate, probably of three pages, the first for display, a second with more detailed data and a third with the list of applicable measures.

Early in 2006, we are planning to create a web-based version of V2, covering the first three steps of the energy certification process. This will be V3 of the software, a free-to-use web site offering a country-specific benchmark generation and grading service, with key parts available in eight languages.

	Energy certification **five step** process (see section 2 on page 1)					Purpose	Target date for release of development version to Partners
	1	2	3	4	5		
Software version	Measure the EPI	Identify Benchmark	Determine Grade	Identify measures	Produce certificate		
V1.1	Emissions summary	-	-	-	-	Taster of EPLabel approach	May '05
V1.2	Emissions summary	Levels 1 to 2	CEN 'C' factor	-	-	Support early national implementations of EPBD Article 7.3	Jul '05
V2	Emissions summary	Levels 1 to 3	CEN 'C' factor + A to G Grade	Standard list of measures (checklist)	3 page certificate	Demonstration of customised benchmarking method	Oct '05
V3	Emissions summary	Levels 1 to 3	CEN 'C' factor + A to G Grade	-	-	Free to use web site generating building benchmarks and grade	Spring '06

Figure 4: Proposed development schedule

The project Co-ordinator is Energy for Sustainable Development Ltd who are supported by sub-contractors Target Energy Services, William Bordass Associates and the Association for the Conservation of Energy.

2005 Subtropical Green Building International Conference

Date: 20-23 November , 2005

Venue: GIS Convention Center/NTU, Taipei

Website: http://2005sgbic.cabc.org.tw

Directed by Architecture & Building Research Institute, Ministry of Interior, Taiwan

Hosted by
Chinese Architecture & Building Center
National Cheng-Kung University
Taiwan Green Building Council

The sustainable development on earth has been the major concerned issue for years. Through the international conferences, such as SB2002, SB2004 and SB05, which were held by UNEP, iiSBE, WGBC, CIB and other international organizations, we can see the integration among knowledge and achievement related to sustainability as well as its development and accumulation. These international organizations and symposiums have grown to be the platform for exchanging knowledge and experiences worldwide.

In Taiwan, we will organize an international green building conference focused on various issues of the subtropical zone after the 2005 World Sustainable Building Conference in Tokyo in September 2005.

To promote the development of green building policies in Taiwan to the global community, and carry out the mission of global cooperation, the 2005 Subtropical Green Building International Conference in Taiwan will meet the schedule of SB05 and the series of SB International Conferences consecutively with invitations to the keynote speakers, country representatives, especially from the developing countries.

The major programs of the Symposium include academic program, and technical visit to several green buildings in Taiwan. This action plan will showcase the fruitfulness of green building policies from the government sector, and the developments from the private sector. Being a member of the global partnership, the local, subjective, and unique of Taiwan experience can provide other countries in the subtropical zone an environmental education base. This international green building symposium focuses on the issues of the "Subtropical zones", which is called "2005 Subtropical Green Building International Conference".

Website: http://2005sgbic.cabc.org.tw

Rethinking Sustainable Construction 2006: Next Generation Green Buildings

Sarasota, Florida, USA — 19-22 September 2006

Call For Papers

Rethinking Sustainable Construction 2006 (RSC06) is an international conference being organized to develop a vision for future green buildings and it will be held in Sarasota, Florida, USA in September 2006. Although this is a Call for Papers, a wide variety of delivery methods is envisioned for RSC06, from research papers by academics, to building models by design professionals, policy papers by public sector representatives, Power Point presentations from industry, and other effective means of communicating ideas. The organizers anticipate that this flexibility will encourage a dynamic interchange among the participants and help add sorely needed direction and energy to the international sustainable construction and green building movement. Please be sure to note your desired means of presentation in your abstract. :

Website: http://www.treeo.ufl.edu/rsc06

Special Reminder: The deadline for submission of abstracts is 15 November 2005. We encourage early submissions so you don't miss an opportunity to share your views and innovations.

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27-29 September, 2005

The 2005 World Sustainable Building Conference in Tokyo

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The conference is being organized by public and private-sector organizations in Japan, with the support of iiSBE and CIB.

For details, see:

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