Advanced Building News

International Initiative for a Sustainable Built Environment

ABN 05, February 2005

China

Hunan University, China wins an Asia-Link project on Curriculum Development in Sustainable Built Environment

An Asia-Link project entitled A Multidisciplinary Approach to Curriculum Development in Sustainable Built Environment was recently approved by the European Commission. The proponent is the Institute of Intelligent Building and Built Environment, Hunan University and partners include Aalborg University in Denmark, Brunel University in Great Britain and Bharati Vidyapeeth's Deemed University in India. The project manager is Prof. George (Guoqiang) Zhang at Hunan University, our Chinese contributor and European coordinator is Prof. Per Heiselberg at Aalborg University. The contract was signed in December 2004 and research team started to work in January 2005.

The project aims to develop a new multidisciplinary master course in the field of sustainable built environment, through a multilateral network established between the four partner universities . The project is 36 months in duration and has a total budget of 460,000 EUR, of which 300,000 EUR is funded by the EC.

The course will make use of innovative educational tools and pedagogical methods and teaching modules will combine presence, distance and multimedia learning. The main activities consist of joint development and testing of course material (written, interactive) and their application for students of architectural, environmental, civil and mechanical engineering at the partner institutions. When complete, two intensive one-week workshops will be arranged for training of professors from universities in developing countries in Asia. The Asian partners will serve as a hub for distributing the course material to institutions of higher education and professional organizations in Asia.

USA

Notes from Portland

Late last year in Portland, Oregon, there was a unique opportunity to bring together two distinct but intimately connected worlds. The United States Green building Council's annual GreenBuild conference was held at the Portland convention center from November 8 to 12. Purely by coincidence, the Society of Environmental Toxicologists and Chemists (SETAC) held its 4th World Conference and 25th Annual Meeting in North America the following week in the same center.

If attendance and the quality of the educational program are any indication, GreenBuild was a huge success, with more than 7,000 attendees and a sold-out exhibition space. USGBC tried a new approach this year with only invited speakers instead of the usual 'abstracts' approach. The extent to which this new tack contributed to the quality may be debatable, but what is not debatable is the value of having fewer speakers in longer sessions with very tight rules about the focus of each session; an emphasis on issues at the expense of an overload of case studies and disguised sales pitches. The Master Speaker series that went on throughout the conference also contributed immensely to the overall program quality. For a more complete picture, visit the USGBC's web site at <http://www.usgbc.org/>.

The details of the SETAC conference may, at first blush, seem of only marginal relevance to those in the sustainable building community. However, these are the people who provide much of the critical science that serves and supports the green building movement. And SETAC is also the organization that was most instrumental in bringing life cycle assessment (LCA) methods from infancy to adolescence. Today LCA is increasingly of concern to the building sector as the only apparent route from prescriptive to true environmental performance requirements in assessment tools such as GBTool, BREEAM, LEED and Green Globes. Although smaller, this conference was also extremely well attended, drawing scientist, researchers, life cycle assessment practitioners and policy people from all over the world.

Fortunately, the unique opportunity to bring these two worlds together was not last. On the bridging

Saturday, November 13, a special workshop was convened around the topic of LCA in construction. The workshop was hosted by the UNEP/SETAC Life-Cycle Initiative, and sponsored by the Athena Sustainable Materials Institute, Carpet & Rug Institute, Five Winds International, Illuminating Engineers Society of North America, International Design Center for the Environment, and Sylvatica.

The sponsors were especially grateful to Bob Berkebile, who introduced the workshop with a penetrating assessment of the problems faced by any organization that has enjoyed rapid growth, but is then in danger of losing its focus and ability to maintain the vision that originally gave it momentum. Bob's fundamental point was that to maintain the growth, the vision must be renewed or revised as necessary, and the original vigour restored. Bob suggested that a greater reliance on life cycle assessment with a consequent emphasis on true environmental performance might provide that essential thrust.

Wayne Trusty
Athena Institute

iiSBE, CIB and UNEP issue RFP for SB2008 Conference

A Request for Proposals has been issued for the Sustainable Building conference for 2008. Bids will be accepted until June 1, and a decision on the winning bid will be announced at the SB05 conference in Tokyo in September of this year. The background for this event extends back to the first half of the last decade.

In 1994, the International Council for Research and Innovation in Building and Construction (CIB), held an international green building conference in London, UK. As a part of the international Green Building Challenge process, now operated by the International Initiative for a Sustainable Built Environment (iiSBE), an international conference on green building was held in Vancouver in 1998. Following these initial ground-breaking events, CIB and iiSBE joined forces to co-sponsor international conferences on sustainable building in Maastricht in 2000, in September 2002 in Oslo. The next conference in the series is to be held in Tokyo, in September 2005

In each of these conferences one or more local organizations have taken financial and organizational responsibility, while the GBC countries (now represented by iiSBE) and CIB have been co-sponsors. In this role, iiSBE and CIB have given organizational advice and have used their networks to ensure a large audience for the events. This role has been effective, as evidenced by an attendance of 600 in Vancouver, some 850 in Maastricht, and 1,100 in Oslo. SB05 organizers expect more than 1,500 delegates to attend that event.

In 2003 the Division of Technology, Industry and Economics (DTIE) of the United Nations Environment Programme (UNEP), became a third co-sponsor for the next round in this series of events.

In 2004, the three co-sponsors assisted in the organization of several regional sustainable building conferences, which are taking place in Brazil (July 2004), South Africa (September 2004), China (September 2004), Poland (October 2004), Egypt (December 2004), Malaysia (April 2005), and Greece (June 2005). All of these regional events have been designed to elucidate sustainable building issues in these regions, and to create a strong link with the global event in Tokyo in September 2005, chiefly through the tabling of regional SB strategy documents, including agendas for research and action programmes. The relevance for this proposal call is that we hope to sponsor a similar series of regional SB conferences in 2007, with links to the 2008 conference. The process for establishing the SB07 Regional events will be announced soon after Tokyo SB05.

IiSBE, CIB and UNEP have now invited Expressions of Interest for organizations to be named as hosts of the next conference in the series, to be held during the Fall of 2008. Expressions of Interest can be made until Wednesday, June 01, 2005.

A decision on the selected location will be made by a Committee consisting of representatives of the three co-sponsors, plus a representative of the previous conference host (SB05), The decision will be announced at SB05 in Tokyo during the period September 25-27, 2005. The Committee will issue a public rationale for its decision after the process is completed.

For further information, contact Nils Larsson at <larsson@iisbe.org>.

The RFP for SB08 can be downloaded from the iiSBE website at <www.iisbe.org>.

Life Cycle Assessment, Databases and Sustainable Building

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This is a shortened version of a paper delivered at the Latin-American Conference on Sustainable Building 2004, in São Paulo, Brazil, July, 2004. The complete paper is available on the SBIS database at www.sbis.info.

Introduction

We are experiencing a fundamental change that affects how products are developed and, more importantly, how they are perceived, especially by large volume purchasers such as governments and members of extended supply chains. The change affects market shares, and it most certainly affects building material choices and design decisions. I'm referring of course to the evolving environmental agenda that has, over the past several decades, come to encompass more and more of the issues and activities that had previously been approached in a more isolated fashion, such issues and activities as biodiversity, water use, transportation and fossil fuel depletion. The 1972 publication of the Club of Rome "Limits to Growth" report is a critical early milestone on a path toward increased environmental awareness and action. Other notable milestones along the way include the 1987 Bruntland Report, "Our Common Future", the Rio Accords of 1992, and the Kyoto Protocol of 1997.

At some point during the late 60's and early 70's, a lesser known activity was starting that today is in the forefront. Two researchers at the Midwest Research Institute, William Franklin and Robert Hunt, began working on a technique for quantifying energy and resource use as well as the environmental emissions from manufacturing and the use of products. Others in Europe were following parallel lines, and the result was what we now know as Life Cycle Assessment (LCA).

As environmental concerns have steadily moved from the periphery in the 1960s to center stage today, transportation, energy and water supply, and other resource issues are no longer focal points to which some environmental considerations are attached. Instead, all of these subjects and many more are routinely considered as topics on the environmental agenda. And that, of course, is a big part of what LCA is all about — casting the net wide to capture the full spectrum of environmental concerns.

Unfortunately, many in the manufacturing sector and in government question the value of doing LCA or, more importantly, of making data available regarding the environmental implications of products and processes. There may be good reasons for this reluctance, but the fact is that the triple bottom line is here to stay and the environment is a part of it. If data and information are not made available one way, they will be acquired in another. Environmental realities such as the following dictate a more open mind when it comes to information flows and the roles of both the public and private sectors.

- Environmental events and decisions are increasingly transnational.
- The environment is geopolitics, not just a subject for activists and scientists.
- There is clutter and confusion, with a proliferation of eco-methods, eco-labels, eco-orgs, and eco-events.
- Misinformation and speculation often push aside science.
- Wrong answers may carry as much weight with the uninformed as correct ones.

LCA practitioners, industry, and government have to work together to make available the best information possible; that means starting with high quality raw data cataloguing flows from and to nature — life cycle inventory (LCI) data. Too often the tendency is to focus on the development of attractive software without at least comparable time and effort being spent on the data side. But the quality of any life cycle assessment can never exceed the quality of the underlying LCI data on which all tools depend.

On the building side, every international agency or organization I know of is jockeying to secure its place in the sustainability movement. Indeed, one of the defining characteristics of the movement today is the extent to which environmental activist organizations are overshadowed by the more traditional and conservative organizations. The acronyms roll like credits at the end of an epic movie: OECD, UNEP, WBCSD, IEA, NATO, SETAC, CIB, RILEM, etc. And no standards organization worth its salt is without a technical committee or publications on sustainable building, life cycle assessment, or some other eco-method. The scene is so cluttered that we now need coordinating organizations like the International Initiative for a Sustainable Built Environment (iiSBE).

ISO, the *International Standards Organization*, is probably the most visible and certainly most quoted organization in this field. The ISO 14000 series of environmental management standards alone includes 14 separate publications ranging from auditing and product labeling to the 14040 sub-series on life cycle assessment. A number of other ISO activities and publications are closely related, such as those dealing with durability.

In the rest of this paper, I want to look more closely at the state of the art of LCA, at some specific data development activities, and at how LCA data serves the cause of sustainable building.

State of the Art in LCA

Dr. Greg Norris, a close associate of the Athena Institute, recently presented a paper on the future of LCA. [Norris, 2002] Dr. Norris is one of the world's leading authorities on LCA and is intimately involved in international LCA developments. With his permission, I have borrowed heavily from his paper in order to provide a thorough up-date on the state of the art.

Dr. Norris cites the following four main areas of activity that deserve highlighting:

1 a burgeoning of efforts at the national level to develop transparent and publicly available LCI databases;

2 the UNEP/SETAC Life Cycle Initiative;

3 greater academic capability and involvement; and

4 increasing momentum behind major applications and users of LCA.

Public Database Development

In a growing number of countries, there are national projects planned, underway, or already completed, whose purpose is to develop publicly available LCI data for common materials, energy carriers, energy use and electricity generation. Such projects exist in Japan, China, Chinese Taipei, Korea, India, Australia, Switzerland, Germany, Italy, Canada, and the USA. Each of these projects is described, with citations to documents and websites, in a paper presented by Dr. Norris in Tokyo in December 2001, which is available for download at www.sylvatica.com/unepsumm.htm.

This development is important for LCA for a number of reasons. First of all, without high quality, transparent LCI data there can be no high quality, transparent LCAs. A major driver of the cost of LCAs is data collection, and public databases addressing basic, commonly-occurring processes in life cycles therefore go a long way to reducing the cost of all LCAs. Their use also increases the consistency among LCAs and LCA-based comparisons. Their availability reduces the barrier to entry into LCA, broadening the base of academics and practitioners who have first-hand LCA experience and capability. As demonstrated by experience in Europe during the past two decades, the existence of publicly available data on core processes tends to increase the overall level of interest and activity in LCA, improving the market for consulting, tools, and specialized databases

The UNEP/SETAC Life Cycle Initiative

This global initiative seeks to promote advances in consistency, practicality, credibility and availability of LCA-related information and resources. The initiative has three programs based on preliminary definition studies that emphasized information gathering about LCA stakeholders' needs and concerns, and resulted in detailed work plans for the programs.

- The life cycle inventory program is undertaking activities to promote access to, consistency among, and availability of LCI data. This includes facilitating database development in countries and regions now lacking LCI data, and promoting greater consensus on methodological issues on which ISO may be silent or insufficiently prescriptive. The Athena Institute is serving as Secretariat to this program and Dr. Norris is the Project Manager.
- The life cycle impact assessment (LCIA) program is working toward consensus and scientific validation of recommended practice on LCIA methodology, including the development and dissemination of related models and data to support the recommended practice methods.
- The life cycle management program aims to characterize and disseminate information concerning the practical application of life cycle methods in industry, and the integration of LCA into management, accounting, and decision making systems. Rather than attempt to define "recommended practice"

in the LCM arena, this program will aim to communicate practices that are working and lessons learned in Life Cycle Management. Up-to-date information on the Life Cycle Initiative may be found at the UNEP website: www.uneptie.org/pc/sustain/lca/lca.htm.

Increased Academic Capability and Involvement

The past five years have seen considerable growth of academic involvement in LCA. While Europe has enjoyed a significant level of academic expertise and involvement in the field since the 1970's, this has not been the case everywhere. In North America, for example, LCA has until recently been strictly the purview of consulting firms. Increasing academic involvement in the field should bring a number of benefits to LCA practice, including methodological advances and a steady growth in knowledgeable data users and trained practitioners.

Three peer-reviewed journals regularly publish a high level of LCA content, including methods advancement and discussion as well as results of case studies:

- *International Journal of LCA:* http://www.ecomed.de/journals/lca/welcome.htm
- *Journal of Industrial Ecology*: http://mitpress.mit.edu/journal-home.tcl?issn=10881980
- *Journal of Cleaner Production:* http://www.elsevier.nl/locate/jclepro

Major Applications and Users

There are a number of major application areas for LCA information, the growth of which will increase the demand for this information and will further increase the visibility of LCA. These areas include Environmental Product Declarations (EPDs) at the national and international level, Product Policy initiatives, especially in the European Union, and the development of decision support tools that use LCI data or draw upon LCA information.

EPDs, also known as ISO Type III Environmental Declarations, are intended to provide easily accessible, quality-assured and comparable information regarding the environmental performance of products and services. They are used in a growing number of countries, and the European Commission is considering the development of a Europe-wide Type III EPD framework.

Already, some countries require that an EPD accompany imported products, and I think we can expect to eventually see a more widespread adoption of that policy. As a result, countries that fail to develop national databases, and to thereby support the individual data development efforts of their export industries, may find themselves at a serious competitive disadvantage.

The ISO 14025 Technical Report provides guidance, principles and protocols on EPDs. Information about the rapidly evolving field of EPDs can also be found at the website of GEDNet, an international non-profit association of Type III EPD organizations and practitioners. The purpose of GEDNet is to encourage information exchange between parties developing or undertaking Type III EPD programs, and to discuss key issues in developing such programs. See: http://www.environdec.com/gednet/info.html.

On the policy front, the European Commission adopted a "Green Paper" on Integrated Product Policy (IPP) in February 2001, with the objective of launching a debate on the role of IPP and possible measures that could be taken on a European Union level. IPP is seen as a facilitative, rather than regulatory, policy approach that seeks to reduce the life cycle environmental impacts of products by focusing on three key decision points: environmental design of products; informed consumer choice; and the "polluter pays principal", or "getting the prices right." The first two elements, eco-design and informed consumer choice, clearly draw directly upon LCA. See: http://europa.eu.int/comm/environment/ipp.

Finally, the development of design or decision-support tools is a third major application area for LCA information. One important example area is the environmental design of buildings, discussed in more detail in Section 5. Another important application of LCA is in the field of solid waste management. In these and other fields, the challenge is to develop field-specific design tools that make LCA data readily usable by non-LCA specialists facing specific decision problems.

The US LCI Database Project

The US LCI Database Project is a public/private research partnership to develop and make available LCI data for commonly used products and processes. The underlying intents are to support

cost-effective LCA work by others; to facilitate the development of environmentally-oriented decision support systems and tools; to provide regional benchmark data for assessing company, plant or new technology data; and to provide a firm foundation for subsequent LCA tasks such as life cycle impact assessment.

The project was conceived as a three-phase effort: Phase I was an intensive initiation and planning phase; Phase II involves basic data collection, analysis and review; and the third phase will involve ongoing data dissemination, database expansion, and maintenance.

Phase I was undertaken by the Athena Institute in association with Franklin Associates Limited and Sylvatica, with funding through the National Renewable Energy Laboratory (NREL) from the US Department of Energy, the General Services Administration, and the US Naval Facilities Engineering Command. The Athena Institute and its associates are now in the second year of Phase II of the project, with funding provided by a combination of these agencies, the Environmental Protection Agency, and the U.S. Department of Agriculture through the Forest Service, as well as private sources such as the Vehicle Recycling Partnership and the American Plastics Council.

The objective of Phase I was to develop a research protocol and establish research parameters including products, processes, data categories and data quality. In LCA parlance, Phase I was the goal and scope definition step. An advisory group was formed with 45 representatives of manufacturing, data user, government and non-government interests, as well as LCA experts. A workshop was held to discuss issues and develop a Phase I work plan. The workshop participants agreed that the goal of the project was not to carry out full product LCIs, but rather to make the creation of such LCIs easier while reducing the level of data inconsistency and incompatibility that currently plagues the LCA field in general.

It was also generally agreed that the data would be developed and made available as a set of modules that quantify the environmental burdens of common unit processes encountered during product manufacture, use, and disposal. The intent was to make it possible for relatively knowledgeable users to readily access, combine and augment the modules to develop more complex LCIs or full LCAs.

Since we do not know in advance precisely how or why individual database modules will be used, we had to develop the research protocol on the assumption that potential uses of the data would dictate the most stringent requirements in terms of data categories, transparency, review and other factors that are normally determined by the starting goal and scope statement of a study. In general, that meant assuming the data will be used in full LCAs for the purpose of making public comparative assertions.

It was decided that individual data modules should be developed in Phase II for the following:

- common energy combustion and pre-combustion processes, including transportation and electricity generation;
- basic cradle-to-gate manufacturing processes for a wide range of commonly used materials and intermediate products;
- transformations (stamping, molding, etc.) and finishing operations (painting, welding, etc.); and
- end-of-life processes such as composting, baling, incineration, etc.

The project is focusing on data modules that can be combined and used in more complete LCAs. For example, data modules for electricity generation cover the mix of energy forms used, efficiency factors, line losses and generating plant effects in defined grids, with the pre-combustion effects associated with the energy forms provided in separate modules. Similarly, the LCI for a specific product need only specify the amount of transportation required by mode. Common modules then provide the basic transportation energy use factors and direct combustion emissions, with other modules providing the pre-combustion effects, as in the electricity generation case. Still other modules will provide data on generic production effects for a range of commonly used input materials and processes. For example, there will be modules dealing with basic steel and aluminum production, lumber and board products, a range of petrochemical feedstocks, and so on, all reflecting average or typical production practices.

The use of common data modules allows those doing LCAs of specific products to focus on the elements that are unique to the specific plant or process. Figure 1, below, illustrates the situation for two flooring manufacturers who would add their own in-plant and use-phase data to the common elements like transportation or basic petrochemical production. The result is a much fairer comparison at greatly reduced costs for each manufacturer.

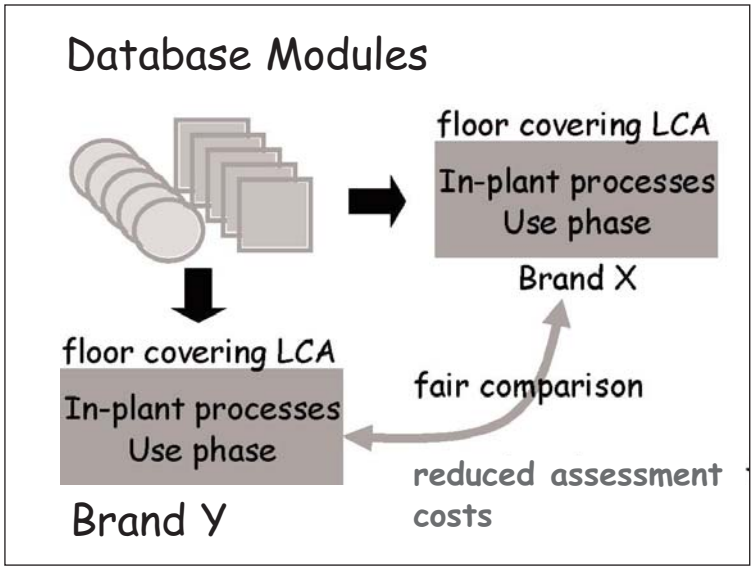

Figure 1: Illustration of the use of LCI data modules for supplier-specific LCAs

The costs will be especially affected by the fact that suppliers will no longer have to trace all of the important process inputs back through the entire supply chain.

During Phase I, NREL committed to serve as the data repository and access agency, and to take responsibility for long term database maintenance, updating, and expansion. NREL also established a project web site <http://www.nrel.gov/lci/> to ensure transparency from the outset and encourage participation from any interested parties. All key working documents, the research protocol and the final Phase I report have been posted to that site, which also has provision for receiving comments on specific documents or the process in general.

Currently the web site contains about 50 data modules covering the following products and processes:

- primary fuel production;
- primary fuel combustion;
- electricity generation;
- transportation;
- transformation processes (e.g., aluminum casting);
- wood products; and
- agricultural products.

Additional modules currently under study or planned for the near future include more wood products, steel, aluminum, plastic polymers and various mining or quarrying activities (e.g., limestone, salt, aggregates).

The Athena Environmental Impact Estimator

From the Athena Institute's perspective, this kind of national database is essential if we are to continue to expand the geographic and material scope of our own software tool, the Environmental Impact Estimator.

We developed the Estimator to make it possible for architects, engineers and researchers to assess the environmental implications of building designs and material choices at an early stage in the project delivery process. A sizeable portion of the initial environmental footprint of a building is locked in at the very early conceptual stage of design, when basic structural decisions are often made — decisions that may never be revisited. Indeed, key decisions of this type may even be made in the design competition or during that first lunch when the architect and developer talk concept and make preliminary 'back-of-the-napkin' sketches. We believe it essential that objective, quantified information — LCA information — be brought to bear on decisions as early as possible, and that means providing reliable tools that allow a design team to focus on the design issues without having to find and interpret basic environmental data.

The Impact Estimator was therefore conceived as an LCA-based decision support tool focused at the level of whole buildings, or complete building assemblies (walls, floors and roofs, for example). It applies to industrial, institutional, office, and residential buildings and captures the systems implications of product selections related to a building's structure and envelope, taking into account the environmental effects of the following:

- material manufacturing, including resource extraction and recycled content;
- related transportation; on-site construction;
- regional variation in energy use, transportation and other factors;
- building type and assumed lifespan, which can be varied to allow users to assess relative durability effects;
- maintenance, repair and replacement

effects, distinguishing between owner-occupied and rental facilities where relevant; and

- ❑ demolition and disposal.

More detail is available in the full paper, and a demonstration version can be downloaded from the Institute's web site, www.athenaSMI.ca.

Conclusions

The central theme in all of this is information: the development of the best possible data and its dissemination to those who make or influence decisions about design, purchasing or environmental policies. Good data also allows industry to exercise a greater degree of control, or at least to argue a case to best effect, and it allows governments to assess and understand environmental issues and to then develop appropriate policy responses. In the future, data in the form of environmental declarations or labels may be an essential part of an export package, and those who fail to lay the groundwork early will be at a serious competitive disadvantage.

Putting good data to use requires reliable tools. The Athena Institute is not alone as a developer of LCA-based decision support tools aimed at the building design community; there are comparable tools in use or under development in the Netherlands, the United Kingdom and Australia. These whole-building oriented tools are complementary to product-oriented tools such as BEES, developed by the U.S. National Institute of Standards and Technology. A tool such as the Athena Environmental Impact Estimator is used in the early stages of design, while BEES is more relevant in the specification and procurement stages. These tools, in turn, are or should be used to support whole building assessment systems such as BREEAM, LEED, Green Globes and, of course, the Green Building Challenge Tool.

Overarching all of this is the fact that the concept of sustainability — however you chose to define that word — is becoming embedded as a fundamental way of thinking and perceiving our world and actions. Nowhere is that more true than in the case of the built environment. Political shifts may alter the priorities, and may even temporarily suppress the sustainability movement in some countries. Humankind, however, is not going to back away from a fundamental concern for the environment, or fail to do whatever is necessary to solve, or at least redress, critical environmental problems like climate change. Our future, and the future of our children, must rest on a firm and stable tripod of economic, social and environmental consciousness.

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A Close Call in Hong Kong

The schoolgirls in the photo were protesting the prospect of the imminent demolition of the new but unoccupied assisted housing buildings in the background. The plan was to develop new luxury housing on the site.

The proposal was abandoned after several vigorous protests by environmental groups and, perhaps more importantly, staff and students of an adjacent school that was faced with the prospect of suffering the side effects of the demolition of some brand new 2470 apartments, totalling about 200,000 tonnes of waste. The close call underlines the reason why Hong Kong is known as the mecca of free-market advocates, and offers hope that some of the worst excesses may be over.

Information and photo from K.S. Wong, Hong Kong

The Europe-Asia Sustainable Building and Construction Project

Earlier in this issue (pg. 2) we have outlined the background of a series of regional conferences on sustainable building that will culminate later this year in the global SB05 event in Tokyo.

The European Commission has now provided funding for a project initiated by CIB and UNEP and local partners, to provide extra depth and value to the two Asian conferences in the SB04 series - the Shanghai SB04 conference, which took place in September 2004, and the SB04 East Asia conference, to be held in Kuala Lumpur in April of this year.

The project aims basically to develop Asian-led and Asian-owned action agendas for implementation of SBC practices, methods, policies and market mechanisms in the building and construction sector.

SBC work to date has focused mainly on architects/engineers. The project organizers hope to bring in the industries (cement, construction, real estate developers), local authorities, multilateral donors and the financial sector (especially property managers and insurers). For this purpose, targeted EU-SE Asia and EU-China cross-learning seminars are scheduled in Kuala Lumpur and Shanghai respectively.

There are several specific tasks included in the overall project.

1. SBC studies illustrating the state-of-the-art in SBC, elaborating on elements such as needs, barriers and actions to mainstream SBC both in Asia and Europe.
2. Cross-learning seminars (workshops) in Shanghai and Kuala Lumpur (KL) to exchange information between EU and Asia, and build networks for post-conference partnerships. Participation will be sought from SBC professionals, local authorities, industries, and financial institutions in EU/China and EU/SE Asia. the KL workshop is planned on 8-10 April 2005 before the main SB04 SE Asia conference. China workshop to be organized on 23-25 May 2005 (SB04 China conference already took place in Sept 2004)
3. Two SBC conferences (in China and Malaysia)- a multi-stakeholder event aiming at developing an action plan for the implementation of SBC practices in Asia. Conference studies and outcomes from cross-learning seminars will be used as bases for dialogue (Note: Shanghai Conference has already taken place in Sept 2004, therefore in the case of China, only post-conference seminar will be carried out).
4. Conference studies and outcomes from cross-learning seminars will be used as bases for dialogue (Note: Shanghai Conference has already taken place in Sept 2004, therefore in the case of China, only post-conference seminar will be carried out).
5. Participation in Tokyo SB05 and dissemination of SB04 Asia results
6. Publication of outputs, project wrap up, and preparation for follow-up demonstration/pilot projects in China and/or SE Asia

The main outputs of the project will include the following:

- ❑ State-of-the-art SBC study for Europe, China and SE Asia
- ❑ EU-Asia cross-learning seminar (training workshop) materials and trained experts in Asia
- ❑ Post-conference publications for China and SE Asia. These will include action agendas guiding international and national investment in SBC research, development and practice
- ❑ Follow-up demonstration project(s) in China and/or SE Asia

Local sponsors are of course essential for the success of any major event. The Shanghai Research Institute for Building Science (SRIBS) put together a very good event in September, with more than 250 people from the region attending.

In Kuala Lumpur, the *Construction Technology and Management Center* (CTMC) is the main sponsor, and this organization has very good connections with professional, academic and government sectors in Malaysia. the added input of the EC project will add to the value of the event.

Staff: based on information provided by CIB and UNEP.

New GBTool available for downloading

The 2005 version of the GBTool software for assessment of sustainable performance is available for downloading at **<www.iisbe.org>**. This system is now being used by countries participating in the 2005 Green Building Challeng process, to be presented at Tokyo SB05.

Kuala Lumpur and Athens SB04 events coming up soon

If you live or work in the Southeast Asian region, you should consider attending the KL Sustainable Building conference during April 11-13. This promises to be a very significant event, and the added value of the EC project (see previous page) will make it of exceptional interest.

You may not have heard before about the SB04 Mediterranean conference, which will unfold in Athens during the June 9-11 period. This conference was proposed late last year as an added event in the SB04 series of events. This now looks like a major conference, with active support by the French HQE organization, as well as iiSBE, CIB and UNEP. Many countries around the Mediterranean basin are expected to send delegates, and the outcomes should fill the last gap in the global picture being presented at the Regional session at SB05 in Tokyo.

You can see more details at <www.sb04.org> on both of these events, as well as other SB04 conferences.

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Action for Sustainability
The 2005 World Sustainable Building Conference in Tokyo
SB05Tokyo

27-29 September, 2005

The 2005 World Sustainable Building Conference in Tokyo

iiSBE and CIB are pleased to announce the SB'05 conference, to be held in Tokyo.

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

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