

**Construction Industry Council**  
**6<sup>th</sup> Progress Report of Committee on Environment and Technology**

**Purpose**

This paper outlines the main points discussed at the 6<sup>th</sup> meeting of the Committee on Environment and Technology held on 10 March 2008. The record of attendance is at Annex A.

**Issues Discussed**

2. Members discussed the following items –
- carbon assessment and reduction for the built environment;
  - environmentally friendly designs and green measures implemented in public rental housing estates;
  - establishment of independent entity for promotion of green buildings; and
  - work plan.

**Progress on Matters Arising from the 5<sup>th</sup> Meeting on 6 December 2007**

3. Members noted the following –

Paragraph 15(a)

Co-ordination of construction research and development (R&D) would be further discussed in latter parts of the meeting;

Paragraph 15(b)

DEVB would be invited to brief Members on the initial findings of the study on sustainable construction for public works projects in due course;

Paragraph 15(c)

HD's initiatives on enhancing the sustainability of public housing development would be discussed in latter parts of the meeting; and

Paragraph 15(d)

The assessment carbon footprint would be discussed in latter parts of the meeting.

**Carbon Assessment and Reduction for the Built Environment**

4. Dr Raymond Yau of Ove Arup and Partners (OAP) briefed Members on the recent developments in carbon assessment and reduction. From a worldwide perspective, the largest volume and growth in carbon emission came from the energy supply sector. However, there was significant potential for reduction in residential and commercial buildings.

5. The UK Green Building Council identified five categories of low and zero carbon (LZC) buildings –

- (a) Type 1 – buildings completely self sustaining with all energy demand being met by onsite renewable generation;
- (b) Type 2 – buildings with production of onsite renewable energy offsetting the power consumed from the local power grid over annual basis;
- (c) Type 3 – buildings connected to locally available LZC power supply;
- (d) Type 4 – buildings connected to distant or international LZC power supply; and
- (e) Type 5 – buildings with emission offset by purchased carbon credit.

6. The assessment of carbon footprint for buildings involved identifying the emission producing activities including direct emissions such as combustion in boilers and furnaces and combustion by vehicle fleet owned by users of buildings; indirect emissions generated by consumed utilities such as electricity and gas; and other indirect emission such as commuting of employees.

7. Carbon emission could be reduced through reducing energy load and adoption of energy efficient systems. For instance, in China, typical existing commercial buildings in Shanghai consumed about 200 to

300 kWh/m<sup>2</sup>/year. OAP reckoned that in some of their projects in Shanghai this could be reduced to 160 kWh/ m<sup>2</sup>/year by designing to the Chinese National Code GB50189 which became a mandatory standard in 2005. Indeed, the consumption could be further reduced to 140 kWh/m<sup>2</sup>/year by designing to the ASHRAE<sup>1</sup> Standard 90.1 published in 2004.

8. Dr Yau also made a brief introduction to ecological footprint assessment used in district planning to measure the demand on the biosphere in terms of the areas of biologically productive land and sea required to provide the resources for human consumption and for absorbing waste generated by human activities. In 2003, the ecological footprint for the whole world was 14.1 billion global hectares or 2.2 global hectares per person. The total supply of productive areas was only 11.2 billion global hectares or 1.8 global hectares per person.

9. Members agreed that assessment of carbon footprint was an important topic and should be further discussed to ascertain the role that CIC should play in promoting greater awareness and wider application by the construction industry.

### **Environmentally Friendly Designs and Green Measures Implemented in Public Rental Housing Estates**

10. HD briefed Members on the environmentally friendly designs and green measures implemented in public renting housing estates delivered under the comprehensive strategy on sustainable development adopted by HA in 2004 to progressively achieve sustainable development balancing social, economic and environmental needs. The measures implemented included micro-climate studies applied to all new public housing developments since 2004 applying computational fluid dynamics simulations, wind tunnel tests and daylight simulation to optimize natural lighting and ventilation; air ventilation assessment introduced in 2006 to identify potential areas for improving air flows; and environmentally responsive façade incorporating new designs with extended overhang, reduced window glazing area and use of tinted glass to save energy.

11. The first batch of estates adopting the green measures had been completed. HD was conducting a review on their effectiveness by collecting feedback of residents through opinion surveys. The possibility of developing CIC guidelines on specific measures to promote their adoption by the industry could be considered upon the completion of the exercise.

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<sup>1</sup> American Society of Heating, Refrigerating, and Air-Conditioning Engineers

## **Establishment of an Independent Entity for Promotion of Green Buildings**

12. Members recalled that, having considered the proposal to establish an independent entity for the promotion of green buildings at its 6<sup>th</sup> meeting held on 15 November 2007, CIC asked the Committee to seek the view of the HK-BEAM Society on the idea. In pursuance of this instruction, the Chairman and Members of the Committee convened an informal meeting with the representatives of the HK-BEAM Society, Business Environment Council (BEC) and the Professional Green Building Council (PGBC) (to be referred to collectively as the Key Stakeholders) on 12 December 2007. They expressed support in principle for the independent entity and agreed to consolidate their positions on the way forward which was discussed at a subsequent informal meeting held on 25 January 2008.

13. At the meeting, the key stakeholders highlighted the importance of securing international recognition for the independent entity through seeking membership of the World Green Building Council (WGBC). They advocated an open management structure consisting of ordinary membership open to all interested individuals, founding membership which would include CIC and the Key Stakeholders as well as a board of directors consisting of directors nominated by the founding members in equal numbers and other directors elected by ordinary members.

14. While the Key Stakeholders appeared to accept that the CIC would contribute the bulk of the expenses for forming and operating the independent entity, they proposed to establish other sources of income in particular sponsorship by commercial organizations. The Key Stakeholders felt strongly that the independent entity should have its own secretariat and office premises. The Key Stakeholders appeared to be receptive to the notion that, given the importance of the financial backing from CIC, CIC should be allowed to exercise some special control on functioning of the independent entity through arrangements such as approving the annual programme of activities and budget.

15. Members noted that future discussions with the key stakeholders would hinge on identifying a suitable management structure for the independent entity and considered the following options –

- (a) appointment option – CIC would appoint all the directors (possibly based on nominations made by various sectors);
- (b) parity option – the independent entity would adopt the management structure suggested by the Key Stakeholders.

CIC would not have any special power in controlling the operation of the independent entity. In line with this scope of control, CIC and the Key Stakeholders would contribute equally to the establishment and operating cost of the independent entity. However, CIC would not undertake to finance any deficits;

- (c) intermediate option – this was the same as the parity option except that CIC would undertake to finance any deficits incurred by the independent entity. In line with this greater financial commitment, CIC would be given special powers in controlling the operation of the independent entity.

16. Members appreciated that the appointment option would not be considered by the Key Stakeholders. As such, the other two options would be proposed in future discussions with the Key Stakeholders.

[Post meeting note – A CIC delegation consisting of the Chairman of the Committee two other CIC Members and two co-opted members had an informal meeting with the representatives of the Key Stakeholders on 13 March 2008 in which the management structure for the independent entity and other issues were discussed. The representatives agreed to seek the view of their respective associations on the way forward.]

### **Work Plan**

17. Members considered the work plan for the Committee and directed that, in relation to construction research and development (R&D), about three to four months should be allowed for industry stakeholders to put forward proposals for research projects to be funded by CIC. The Secretariat would prepare a circular letter inviting submissions accordingly.

18. The Secretariat was asked to revise the work plan in accordance with the discussions at the meeting for submission to the CIC meeting scheduled for 2 May 2008.

[Post meeting note – The revised work plan is at Annex B.]

### **Further Actions**

19. The following further action was agreed –

- (a) the Secretariat would arrange for further discussion of assessment of carbon footprint;

- (b) the Chairman and interested members of the Committee would further discuss the formation of an independent entity for promotion of green buildings with the Key Stakeholders; and
- (c) the Secretariat would prepare a letter inviting industry stakeholders to submit proposals for research projects to be funded by CIC.

**CIC Secretariat**  
**March 2008**

**Committee on Environment and Technology**

**6<sup>th</sup> Meeting held at 2:30 pm on 10 March 2008  
in Room 150, East Wing, Central Government Office**

**Record of Attendance**

**Present**

Mr Conrad Wong	Chairman
Mr Peter Lee	
Dr Andrew Chan	
Mr CHEUNG Tat-tong	
Prof KO Jan-ming	
Mr K K Choy	Buildings Department
Mr NG Shiu-ming	Association of Plastering Sub-contractors
Mr Russell Jones	
Mr Y C Chan	)
Dr Alex Li	)
Mr P H Ho	Hong Kong Federation of Electrical and Mechanical Contractors
Mr PANG Long	Hong Kong Construction Site Workers General Union
Mr Anthony Fok	Environmental Protection Department
Mr Ken Cheung	Housing Department

**Absent with Apologies**

Mr LAM Wo-hei

**In Attendance**

**For Agenda Item No. 2**

Dr Raymond Yau	Ove Arup & Partners Hong Kong Limited
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## **Construction Industry Council Secretariat**

Mr K H Tao

Chief Assistant Secretary for Development  
(Works) 1

Mr Solomon Wong

Assistant Secretary for Development (Works)  
Public Works Systems Administration 1



**Work Plan****(I) Construction Standards**

<b>Milestone</b>	<b>Task</b>	<b>Deliverable</b>
May - Nov 2008	Overall review of the construction standards used in Hong Kong and identification problems and issues associated with existing standards	Problems and issues with existing standards
	Formulate way forward for solving the problems and issues and identification of CIC's role in the process	Improvement measures and role of CIC
Dec 2008	Endorsement of recommendations of Task Forces on Construction Standards by Committee	
Early 2009	Approval of recommendations of Task Forces by CIC	

**(II) Construction R&D**

<b>Milestone</b>	<b>Task</b>	<b>Deliverable</b>
May - Jul 2008	Invitation to industry stakeholders and other CIC Committees to propose R&D topics	Proposals for research topics
	Taking stock of R&D projects being undertaken by academic institutions and research establishments	List of current R&D projects
Aug 2008	Formulation of R&D programme for CIC for the remainder of 2008 and 2009	R&D programme
	Approval of R&D programme by CIC	

### **(III) Promotion of Green Buildings**

<b>Milestone</b>	<b>Task</b>	<b>Deliverable</b>
May 2008	Further discussion with Key Stakeholders on the way forward for forming an independent entity for promotion of green buildings	
Jun 2008	Consideration of outcome of discussion by Committee and formulation of action plan on way forward	Action plan

### **(IV) Advising DEVB on sustainable construction**

<b>Milestone</b>	<b>Task</b>	<b>Deliverable</b>
Late 2008	Consideration of the findings of DEVB's study on sustainable construction and formulation of advice on the way forward	Advice on way forward