

Construction Industry Council

Committee on Environment and Technology

Meeting No. 004/12 of the Committee on Environment and Technology for 2012 was held on 6 September 2012 (Thursday) at 2:30 pm at CIC Headquarters, 15/F, Allied Kajima Building, 138 Gloucester Road, Wan Chai, Hong Kong.

Present:	Wai-wai, YU	(WWY)	Chairman	
	Andrew CHAN	(AC)		
	Jan-ming KO	(JMK)		
	Christopher LEUNG	(CL)		
	Kevin POOLE	(KP)		
	Choi-kai AU	(CKA)	Director of Buildings	
	Clarence FUNG	(CYG)	Housing Department	
In Attendance:	Derrick PANG	(DP)	Chair of WG-IPM	
	James PONG	(JP)	Hong Kong Institute of Surveyors	
	Kenneth POON	(KP)	Hong Kong Institute of Surveyors	
	Sam-choi CHAN	(SCC)	Construction Site Workers General Union	
	Ping-wai CHOW	(PCH)	Hong Kong Construction Industry Employees General Union	
	Pun-hing HO	(PHH)	The Hong Kong Federation of Electrical and Mechanical Contractors	
	Jimmy CHAN	(JC)	Development Bureau	
	Dan FUNG	(DF)	Environmental Protection Department	
	Hon-kwok WONG	(HKW)	Architectural Services Department	
	WW WONG	(WWW)	Hong Kong Accreditation Service	
	Eric SZE	(ES)	Hong Kong Accreditation Service	
	Ivan WONG	(IW)	Senior Manager - Council Services 2	
	Ivan KO	(IK)	Manager - Council Services 2	
	Sharon YU	(SY)	Officer - Research	
	Apologies:	Wo-hei LAM	(WHL)	
		James KWAN	(YCK)	
Siu-hung CHAN		(SHC)		
Hau-wai CHEUNG		(HWC)		
Wai-wah HO		(WWH)	Chair of TF-RSS	
Thomas NG		(TN)	The University of Hong Kong	

Russell JONES	(RJ)	Hong Kong Construction Association
Ada FUNG	(AF)	for Permanent Secretary for Transport and Housing (Housing)

PROGRESS REPORT

At the commencement of the meeting, the Chairman welcomed new Members, Mr. James PONG and Mr. Kenneth POON, who joined the committee for the first time.

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4.1 Confirmation of the Progress Report of the Previous Meeting

Members took note of Paper CIC/ENT/R/003/12 and confirmed the progress report of the last meeting held on Thursday, 12 July 2012 at CIC Headquarters, 15/F, Allied Kajima Building, 138 Gloucester Road, Wan Chai, Hong Kong.

4.2 Matters Arising from the Previous Meeting

4.2.1 Research on Adhesion Technologies for External Wall Tiles

At the last Council Meeting, the Council approved:

- to publish the Study Report in full aiming to inform the industry about the progress of the study; and,
- not to publish the Reference Document in view of further study and substantiation required.

The Secretariat would arrange for the publication of the Study Report once the Chinese translation is done.

4.2.2 Schematic Design for Application of RFID, GPS and Sensor Technology in Monitoring the Movement of Construction Waste

The Secretariat is inviting Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM) to propose a nomination to assume the chair of this Task Force.

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4.3 **Presentation on Construction Product Certification by Hong Kong Accreditation Service**

Hong Kong Accreditation Service (HKAS) delivered a presentation on “Product Certification for Construction Materials – What Is It and How It Benefits Your Works?”

HKAS presented the following:

1. the common conformity assessment activities (including: testing, inspection and system certification) in assessment and accreditation market;
2. the benefit of product certification and the certification schemes;
3. current situation and examples of construction materials product certification in Hong Kong;
4. the role of HKAS is to provide accreditation services to testing laboratories, certification bodies and inspection bodies.

HKAS reiterated that the role of HKAS is to accredit testing laboratories, certification bodies and inspection bodies instead of certifying a standard, specification, and product certification scheme. Standard, specification, and product certification scheme are all prepared by and/ or agreed by the concerned industry, associations, and experts. Normally, these standards, specifications, and product certification schemes are prepared according to international standards together with supplementary requirements, for example: audit requirements/ production requirements/ management process.

HKAS highlighted that Hong Kong Housing Authority has required the suppliers of eight major materials, including fire-rated timber doors, panel wall partitions, cement products, tile adhesives, ceramic tiles, repair mortars, aluminum windows and 4-bar hinges assembly, to obtain certifications in stages, and they treated the product certification as providing extra quality assurance of the products. Some Members considered the certification would be more widely adopted if it could replace site tests. It was acknowledged that in United Kingdom, no site testing would be required for reinforcement bar products if they were under a product certification scheme.

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HKAS expressed that the major issues to wider adoption of product certification schemes were:

1. limited number of suppliers in certain product market and their willingness to adopt the certification schemes;
2. limited number of certification bodies which are competent enough for wide variety of products;
3. some products consist of diversified range of styles, for example, different sizes and styles of tiles.

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Chairman suggested further discussing the opportunity to leverage Product Certification Scheme in construction industry in next Com-ENT meeting.

[HKAS left after the presentation and Q&A session.]

4.4 Research on River Sand Substitutes for Concrete Production and Cement Sand Mortar Production (Phase One)

Members took note of Paper CIC/ENT/P/026/12.

HKU submitted Progress Report No. 3 which covered further interviews with stakeholders and field trials on the use of river sand, crushed rock fine and manufactured sand as fine aggregate in mortar for plastering.

The main concern of the river sand substitute was its adoption in mortar and the initial view was the use of manufactured sand with compositions to be defined in the next phase study.

Manufactured Sand

Through field trials and desktop study, manufactured sand (that is, processed crushed rock fine) was technically regarded as a potential alternative to river sand. It is most probably suitable for the production of high-performance concrete, such as high-strength concrete and high-flowability concrete.

Manufactured sand also appeared to be suitable for use in mortar for plastering works.

The concrete producers in Hong Kong have already adapted to the

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use of crushed rock fine as river sand substitute in the production of concrete. The use of crushed rock fine in concrete production has been very common in Government projects.

Waste Glass

From economic perspective, it was not cost-effective or practical to use crushed waste glass as substitute because of relatively high waste glass collection cost and transportation cost. Besides, the risk of having alkali-silica reaction might affect the durability of the concrete, and the high brittleness of glass might make the concrete unsuitable for structural applications. Further study would be necessary before waste glass could be considered as substitute of river sand.

Furnace Bottom Ash

Possibility of using furnace bottom ash as a substitute for river sand in construction could be ruled out in view of the actual supply condition. Currently, the furnace bottom ash was almost used up as one of the raw materials for cement production.

Recycled Aggregate

Recycled aggregate was not considered as a good substitute in structural concrete because of lacking in strength.

HKU opined that preparing a set of specifications for manufactured sand would be a time consuming task which could take two to three years with reference to the preparation of CS3. It was suggested that CIC could consider issuing a reference document after the Phase 2 study of the research for use by local manufacturers as a reference such as optimum fine content, particle size distribution, and roundness of sand particle for the production of manufactured sand, and the standard mixture or specification to follow. After the recommended reference document had been widely adopted in different aspects of the construction industry, the reference document could be converted into a construction standard or specification for manufactured sand.

Members advised that:

1. This project is very important and has great impact to the construction industry. CIC should speed up the study/ research

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- and scale up this project with respect to (a) standard mixture/specification; (b) manufacturing process of the substitutes; (c) put forward pilot scheme;
2. CIC may consider to apply for other technology support fund to support the further studies;
 3. The cost for the use of crushed waste glass is mainly attributable to transportation of waste glass and cleansing of waste glass, opportunity should be sought to reduce these cost such that the use of crushed waste glass should not be ruled out;
 4. The construction industry may seek for the change of construction method aiming to reduce the use of plastering and hence reducing the use of river sand.

4.5 Strengths of the Hong Kong Construction Industry

Members took note of Papers CIC/ENT/P/027/12.

Committees of the CIC had previously deliberated on the strengths and weaknesses of the Hong Kong construction industry and their inputs were listed in this paper.

Strategic Planning Steering Committee recommended the committees to provide further inputs with specific examples through experience sharing to better illustrate the strengths.

After much deliberation, in order to facilitate fruitful output, Chairman suggested coming up the result through a separate small discussion group together with other practitioners/experts who are familiar with construction industry in Mainland China.

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4.6 Tentative Work Plan of Year 2013

Members took note of Paper CIC/ENT/P/028/12.

The Secretariat briefed the Members on the tentative Work Plan of Year 2013.

Members expressed the following views:

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1. a specific target of the adoption of BIM in Hong Kong should be recommended by the Working Group on Roadmap for BIM Implementation so as to come up a more realistic task plan;
2. task of the determination of the way forward and further development of the Carbon Labelling Scheme was suggested although it was understood that the implementation and operation of the Scheme would be carried out by the CIC;
3. the study on “wider use of machinery with complementary to new construction process aiming to lesser rely on frontline workforce” was suggested to include in Wider Use of Prefabrication and Modularisation Construction Phase 2;
4. three upcoming tasks: use of RFID, adoption of BIM and wider use of prefabrication are mutually complement to each other in the full life cycle of a project and a structure; by which help to promote productivity, work efficiency, and information exchange cross disciplines in construction industry;
5. leverage Product Certification Scheme in construction industry but subject to the discussion in next Com-ENT meeting.

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4.7 Tentative Meeting Schedule for Year 2013

Members took note of Paper CIC/ENT/P/029/12.

4 numbers of Committee meetings for year 2013 were scheduled for 17 Jan (Thur), 10 Apr (Wed), 3 July (Wed) and 2 Oct (Wed).

Members were requested to pencil in the meeting dates. Secretariat will send out meeting notice 2 weeks prior to each meeting.

4.8 Any Other Business

- a. CIC Conference 2012 – the conference will be held on 28 September 2012 (Fri) at Kowloon Shangri-la Hotel. This year’s topic is “Manpower Sustainability of Construction Industry cum Zero Carbon Building Development in Hong Kong”.
- b. A self-explanatory letter from Pneumoconiosis Compensation Fund Board regarding the invitation for submission of research

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proposal was tabled. The research fund is setup to support projects that relate to the prevention, diagnosis, assessment of disability and treatment of Pneumoconiosis and/ or Mesothelioma in Hong Kong. The upcoming application period is from 1 September to 15 October 2012.

- c. A self-explanatory letter from The Lift and Escalator Contractors Association regarding the recent Launch of the LECA Charity Fund and the fund application procedures was tabled. The purpose of the fund is to provide immediate financial assistance to the victims or their family members who suffered from accidents in lift or escalator works.

4.9 Tentative Date of Next Meeting for 2012

22 November 2012 at 2:30 pm at Zero Carbon Building, Hong Kong **All to note**

There being no further business, the meeting was adjourned at 4:30 pm.