

Standing Committee on Concrete Technology
Annual Concrete Seminar 2011
(23 March 2011)

Recent Advances in Concrete Materials and Testing

Opening Address

Honourable guests, distinguished speakers, fellow engineers, ladies and gentlemen, on behalf of the Standing Committee on Concrete Technology (SCCT), I welcome you all to the Annual Concrete Seminar 2011.

In the last few years, the demand for concrete has surged as we press ahead with a number of projects, including the Ten Major Infrastructure Projects highlighted by the Chief Executive in 2007. It is estimated that in the last 12 months, HK has produced 6-7Mm³ of reinforced concrete, using 11Mt of aggregates and sand, 3Mt of cement and 1Mt of steel reinforcement. The estimated expenditure on concrete accounts for more than \$11B, which is a significant proportion of our total construction expenditure. This gives you a sense of the importance of the concrete and related industries, the value of spending our effort to improve concrete technology and practice, and why the Government has a Standing Committee on Concrete Technology.

For those participants who may not be familiar with the Standing Committee, I would like to take a few minutes to give you a brief introduction of its history and functions. The Committee was formed in 1982. Its principal function is to act as the central body for handling inter-departmental liaison amongst government departments on matters related to concrete technology. In more specific terms, all matters related to standards, specifications and practice notes for concrete construction, testing and maintenance, performance of concrete and its constituent materials, research and development and training fall within the ambit of the Committee.

Over the years, the Committee has been reviewing the adequacy of the concrete-related standards, specifications and practice notes used in Hong Kong. Our recent work includes updating of CS1, on testing concrete, and CS2, on carbon steel bars. CS3, on aggregates, is currently under preparation.

Advancement in test methods and their introduction in routine engineering practice are crucial in concrete mix design, and in the quality control of concrete production, supply and construction workmanship on site. In this regard, new tests have been added in the recently published CS1:2010. These include the slump flow test, rapid chloride penetration test, and tests for determining alkali silica reaction potential, amongst others.

The changes introduced in the updating of CS1 will be presented in a lecture this morning.

On concrete materials, there is continuous improvement, which is translated into cost-effectiveness and environmental friendliness of concrete production. An example is the replacement of Portland cement with Ground Granulated Blastfurnace Slag (or GGBS), which has many technical benefits and can lead to reduction in carbon emission. Other than its use in the Tsing Ma Bridge and Stonecutters Bridge Projects, GGBS concrete has recently been used in precast facades in a Housing Department project. With the completion of a study by the Public Works Central Laboratory (PWCL) on the durability and strength development of GGBS concrete, the General Specifications are now being updated to promulgate the general use of GGBS concrete in our projects. The results of the PWCL study and the experience of successful application of GGBS concrete will also be shared in another lecture today.

Other than the Standing Committee on Concrete Technology, many other people including members of the industry, the universities, research institutes and professional bodies have also contributed towards the advancement of concrete materials and testing. In today's seminar, we will have the opportunity to hear about some of the latest research findings, knowledge management tools, and developments in our local practice on concrete technology.

Finally, ladies and gentlemen, I wish to end with a positive note. As you must have noticed, Government's capital works expenditure has been increasing in the last few years. In the next few years, the expenditure on Government's capital works projects will remain high. Also, it is expected that the private and housing development sectors will be very active. Many cubic metres of concrete will need to be produced to support implementation of the projects ahead. There is going to be great opportunities. At the same time, there are significant challenges in meeting the demand for personnel with good knowledge in the field of concrete technology. I hope all of you will enjoy today's seminar, make use of it as a platform for acquiring knowledge, and be able to apply the knowledge gained in your work to contribute to the further development of HK.

Thank you.

Ir Dr P L R Pang
Chairman, SCCT