Towards Sustainable Building and Infrastructure in Indonesia

British Council Researcher Links Workshop, Bandung, 24 – 27 March 2014

A Summary of Outcome

As an emerging economy, Indonesia is planning for a significant infrastructure investment to increase the quality of life and to enhance the competitiveness of the nation. The current planning, design and construction practices often do not consider sustainability criteria fully due to the inability of the industry players to overcome the constraints presented by the accumulation of many years of past activities and issues associated with developing countries (e.g. low productivity, ineffective planning processes), this represents a significant challenge for the country now and in the foreseeable future. This workshop was intended to establish a sustained network for ongoing collaborations between Indonesia and UK researchers in the vital future areas of sustainable building and infrastructure. The main objectives are to (i) explore areas of mutual interest and benefits for further development, (ii) facilitate knowledge transfer and learning across national borders, (iii) train, inspire and mentor a young generation of researchers, and (iv) develop action plans and a roadmap that sets out and integrates the future collaborative research activities between the two countries. Following this four-day workshop in ITB, the participants have successfully developed six projects, which are in line and support the future development in Indonesia:

The development of tropical built environment performance indices – 'TROBEP' *(Hardi, Ahilan, Gleeson, Hamzah, Hatmoko, Manewa, Ruikar, Suraji, Tambunan, Zakharova)*

Aim: to assess and develop suitable tropical built environment performance indices for Indonesia, and used to improve local government's performance evaluation in the delivery of sustainable built environment implemented by the Ministry of Public Work.

Bamboo composite as a multi-functional material for low-cost, sustainable and resilient housing *(Suryanto, Bennett, Chmutina, Surjamanto, Widyowijatnoko)*

Aim: to develop a bamboo composite for building components that are lightweight, durable, fire resistant and thermally efficient.

Monitoring infrastructure *(Laori, Goodier, Ophiyandri)*

Aim: to develop methodologies for infrastructure monitoring and employ them to evaluate existing infrastructure in Indonesia.

Adopting bottom-up approach in developing technical and social guidelines for disaster relief shelter *(Brunner, Rostiyanti, Soetanto, Wedawatta)*

Aim: to gather data and evidence on much needed supplies related to personal hygiene and sanitation facilities and disaster management during a natural disaster event, with particular emphasis on urban flooding, evacuation and relief shelter.

Quantifying the emissions from construction activities *(Hajji, Huang, Larasati)*

Aim: to develop a methodology with stakeholder tools for quantifying the emissions of common construction activities in Indonesia, and to benchmark the emission results with internationally recognised datasets.

Low-cost energy efficient housing in Indonesia *(Zeeshan, Ahmed, Jaya, Larasati, Murti, Park, Setiawan, Soetanto)*

Aim: to explore relationships between various enabling methods (e.g. modern methods of construction), techniques (e.g. offsite precast, carbon footprint reduction, optimisation of indoor air-quality), innovative financial models for realisation of low-cost energy efficient houses, and methodological, social and cultural aspects specific to Indonesia.

Following the workshop, the **UK-Indonesia Researcher Network (UKIREN)** was established to sustain long-term collaborative activities and capitalise future opportunities arising from growing infrastructure investment and international collaboration.

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