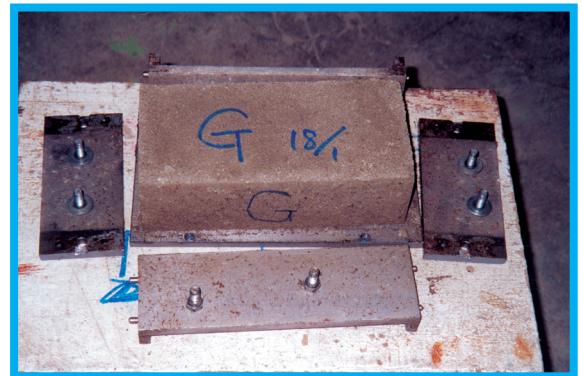


NEW BLOCKS from RECYCLED AGGREGATES

In Hong Kong we produce large volumes of construction and demolition waste. Much of the inert material in the waste stream, such as old concrete may need to be placed in landfills as its supply may outstrip the public filling (reclamation) capacity in the near future.

One of the directions of the advance in building technology, therefore, lies in the important direction of waste minimization. Construction and demolition wastes obtained at the Tseung Kwan O public filling area and the old Kai Tak Airport have been crushed into a fine material, and various mixes made by adding small quantities of cement, pfa and other additives. The recycled aggregates constituted about 80% of all the materials required for making the blocks. Block strengths of between 10 and 40 MPa, after 6 hours of curing are being attained in the laboratory, blocks suitable for partition of walls at one end of the spectrum to paving blocks at the other. All blocks comply with the relevant Hong Kong specifications. The crushed construction and demolition waste raw material is continuously graded from a maximum size of 10mm with about 60% passing the 5mm sieve. Cement quantities needed vary from 5% by weight for 10MPa blocks to 14% for the 40 MPa blocks. The performance of the blocks is comparable to those prepared with virgin aggregates. Pigmentation has not been experimented with but there is no reason to suppose a range of colours could not be produced.



40MPa block made with recycled aggregate

Topic Investigator **Professor C.S. Poon**

Telephone : 2766 6024

Fax : 2334 6389

E-mail : cecspon@polyu.edu.hk

The Advanced Building Technology (ABT) programme is being funded and promoted as an Area of Strategic Development within the Polytechnic University. The programme currently covers the following research topics within the three fields of Structural Engineering, Building Environmental Performance Engineering and Fire Safety Engineering:

Vibration Control and Measurement; Damage Detection; Earthquake Risk Analysis; Advanced Design Modelling; FRP Retrofitting Sustainability Performance, Internal Environment, HVAC Modelling, Energy Saving; Intelligent Building Controls; Waste Management, Fire and Smoke Spread modelling, Sprinkler Performance.

Industrial partners are very much welcomed to help extend work in any of the above areas and / or to discuss joint work on additional topics. The University and Industry can jointly apply to the Government's Industrial Technology Fund where this is necessary.

To follow up please **contact** either
PROFESSOR J.M. KO, Faculty Dean
Telephone : 2766 5037
E-mail : cejmko@polyu.edu.hk
Or
PROFESSOR M. ANSON, ABT Leader
Telephone : 2766 6070
E-mail : clanson@polyu.edu.hk