

TRANSLATING RESEARCH & INNOVATION

In the Built Environment for the Tropics

TRANSLATING RESEARCH & INNOVATION In the Built Environment for the Tropics



Building and Construction Authority



Building and Construction Authority

CHAPTER 8

Eco-Green Building



Use of Recycled Concrete Aggregate (RCA) for Structural Concrete



The project evaluates the use of Recycled Concrete Aggregate (RCA) in structural concrete for building construction. RCA is derived from the processing of Construction and Demolition (C&D) waste. There has been much scepticism on the use of RCA as most literatures reported that it has adverse effects on concrete properties. As such, its applications were limited to non-structural applications prior to this research project. Extensive laboratory testings were conducted to evaluate the engineering and durability properties of concrete containing RCA (RCA concrete). Using a three-pronged approach, with emphasis on processing of C&D waste, quality control of RCA and mix design method, RCA was effectively incorporated in concrete. RCA concrete was found to achieve comparable performance against conventional concrete mix containing natural aggregate.



Samwoh Eco-Building



Samwoh's Batching Plant

POTENTIAL APPLICATIONS

The three-storey Samwoh Eco-Green building, first in the region to be constructed using up to 100% RCA, has built confidence in the use of RCA concrete. This is a technology breakthrough in the construction industry and has demonstrated the feasibility of RCA concrete for structural applications. BCA has allowed the use of up to 20% RCA to replace coarse natural aggregate for the production of structural grade concrete and RCA concrete has also been accepted in the Green Mark Assessments for New Residential and Non-Residential Buildings.



Recycled Concrete Aggregate



For more information, please contact:

 Mr Lim Wee Fong

 weefong.lim@samwoh.com.sg

 Samwoh Corporation Pte Ltd

