

Thesis title:

Utilization of Construction and Demolition Waste (CDW) for Roller Compacted Concrete Pavement (RCCP) applications

Abstract:

There is a huge demand for construction aggregates nationally and globally for the construction industry, meanwhile the society expects the construction industry to adopt sustainable construction material and innovative practices to minimize environmental pollution associated with industrial tasks. Use of recycled concrete aggregates (RCA) as a substitute for virgin aggregates can be a promising solution for construction industry since already industry is facing a scarcity of natural resources.

Roller Compacted Concrete (RCC) name originate from the construction practice of RCC, where it is compacted to its final form by using heavy vibratory rollers. Conventional concrete mixes are wet and workable at the instance of placing, however RCC is a dry mix of concrete which is zero in slump and contains same ingredients as conventional concrete. Well graded aggregates, water and cementitious materials are used as the main ingredients of RCC. However, RCA can be used for RCCP as a substitute for coarse aggregates and the mix design of RCC needs to be optimized accordingly. Such mix design optimizations are expected to be developed from this research.