

# CHECK SHEET SURVEY FOR ESTIMATING CDW GENERATION AND CASH FLOW AT BUILDING DEMOLISHING SITES IN HANOI, VIETNAM

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## Abstract

A number of studies on reuse and recycling of construction demolition waste (CDW) for construction works as well as the properties of building materials using recycled aggregates have been carried out in many developed countries. However, in Vietnam, there are many difficulties to classify and recycle the CDW after demolition construction at site. Because the generation of CDW is increasing in Vietnam due to rapid urbanization and economic growth and CDW was dumped without any quality control of material at disposal site. It is highly demanded to promote the recycling of CDW in a sustainable manner.

In this study, in order to identify the CDW generation and cash flow at actual demolition sites in Vietnam. Firstly, we proposed a check sheet survey to discuss suitable CDW separation and treatment methods. The survey sheet enables to collect data on demolition period, number of labors and equipment, volume of CDW, number of trucks which brought the generated waste from the site, total floor areas, total cost for the demolition work, and so on. Then, using the survey sheet, actual survey works carried out at 3 different building demolishing sites in Hanoi. Finally, utilizing the collected data, we determined waste components and waste generation rates of typical materials such as concrete, brick, valuables (e.g., steel).

Results showed that most CDW generated from demolishing sites was sold to other contractors/buyers for the purpose of construction works (e.g., ground leveling). The generation rates of CDW including valuables varied widely from 0.29 to 1.22 tons/ (m<sup>2</sup> of total ground floor) depending on the building type and scale, and smaller building demolition gave a higher generation rate. As a result of cash flow, the estimated cost for selling valuables and CDW masonry to buyers became much higher than those for the contract cost of demolition work from land owner/client.

Keywords: Construction Demolition Waste (CDW)