

MATERIAL WASTAGE ON CONSTRUCTION SITES IN THE GAZA STRIP

*Adnan Enshassi¹, Said El-Moghany¹, Peter E. Mayer²
and Josef Zimmermann²*

¹Department of Civil Engineering, IUG, Palestine

²Lehrstuhl fuer Bauprozessmanagement und Immobilienentwicklung, TUM,
Germany

Abstract

The Construction sector is one of the main contributors to the Palestinian economy and it is vital for necessary infrastructure development. The sector contributes up to 16 per cent of the GDP, employs approximately 22 per cent of the workforce and absorb up to 34 per cent of international donor programs. Waste has been considered to be a major problem in the Palestinian construction industry, and very little research has been conducted in this area in Palestine. The objective of this paper is to identify and rank the causes of material wastage in construction sites in the Gaza Strip. The research approach adopted in this study was questionnaire survey. Eighty valid questionnaires have been studied and analyzed. The results indicated that the main causes of material wastage are: poor performance leading to rework due to poor concrete placement, using longer steel bars than required, using low quality timbers, re-plastering, mixing aggregate quantities greater than required, manufacturing defects, using paints that do not comply with specification, and excessive thickness of asphalt mixture. Owners, designers, and consultants are advised to play more active role in reducing material wastage on construction projects by approving waste management plan matching the nature of projects. Project managers should use proper planning, good coordination and effective communication in order to minimize material waste. It is crucial to conduct regular training programs for all employees who work in construction projects, and educate them to understand the concept of waste.

Keywords: material waste, rework, performance, construction.

Introduction

Construction waste defined as “the by-products generated and removed from construction, renovation and demolition workplaces or sites of building and civil engineering structures”. In environmental terms the later definition provides the better description as it identifies clearly materials that must be either recycled or re-used or disposed of (McDonald and Smithers, 1998). Specifically, construction waste refers to solid waste containing no liquids and hazardous substances, largely inert waste, resulting