

Readings in Contemporary Construction Technology and Management

Muhammad Abu Eusuf



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Muhammad Abu Eusuf

Building Technology and Engineering Kulliyyah of Architecture
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INFLUENTIAL FACTORS AND STRUCTURAL RELIABILITY

Muhammad Abu Eusuf, Ph. D

Department of Building Technology and Engineering, Kullyyah of Architecture and Environmental Design, International Islamic University Malaysia, PO Box 10, 50728, Kuala Lumpur, Malaysia

ABSTRACT

This study focused on the influential factors that enhance the reliability and versatility of structure throughout life span. The factors considered on the basis of need assessment of state of-art- structural analysis and design. Through investigation researcher found that there are two most influential factors are repeatedly influenced to the life of structure. The two factors are as structural elements and loading pattern. Structural elements identified on the basis of structure height, span, bays, percentage of shear wall, ratio of structural and non- structural panels to total number of panels and type of frame. The loading pattern investigated on the serviceability limit of structural components.

Keywords: Influential factors, structural components, loading pattern, stability analysis, structural design and structural reliability

INTRODUCTION

In structural analysis and design, there are some essential parameters influences the structural stability and serviceability. Structures are commonly constructed with full care widely found in urban and rural areas, but previously full attention given only in urban areas and Government public structure. However, on the process of rapid urbanization and easy availability of necessary raw materials, these structures are also constructed in sub-urb and large rural communities. The quality of analysis, design and construction process impact to the life of structure remains variable and uncertain in all locations (Eusuf et. al. 2010).

Currently, most efficient type of structural construction is being built, which is called Condominium. Huge high rise condominiums are constructed in various federal territories of Malaysia and other important cities such as Ipoh, George Town, Shah Alam, etc. In most situations, multi-story apartment blocks are constructed wherein each apartment is sold to individual owners. Such buildings are usually occupied by the upper-middle and middle class people in the cities. In major metropolitan areas, such apartments are also owned by high-