COST COMPARISON BETWEEN CONVENTIONAL AND FLAT SLAB STRUCTURES

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Degree of Master of Engineering in Structural Engineering Design

Department of Civil Engineering

University of Moratuwa

Sri Lanka

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Thesis / Dissertation submitted in partial fulfilment of the requirements for the Degree Master of Engineering in Structural Engineering Design

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DECLARATION

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Dr.K.Baskaran

ABSTRACT

In present era,conventional Reinforced Concrete(RC) frame buildings are commonly used for the construction. The use of flat slab building provides many advantages over conventional RC frame building in terms of architectural flexibility,use of space,easier form work and shorter construction time.

In the present work conventional and flat slab four story buildings are considered for cost comparison. In this research flat slab building andnormal symmetric RCframe buildings of different spans have been studied. The cost of construction for these buildings has also been compared. To find out the cost of reinforcement, formwork, concrete on structural elements slab,beam,columns are considered.For modeling and analysis of conventional and flat slabstructures,SAP 2000 software is used.The dead loads, live loads are considered as per British Standard.

The investigation shows that weight of flat slab structure is less compared to conventional slab structure. The cost of flat slab structure is less by around 12%-16% as compared to conventional slab. This study concludes that flat slab structures are the best suited for high rise buildings as compared to conventional slab structures,in terms of costof material.

Key words: Conventional slab, Flat slab,SAP2000,Cost Comparison

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