

# Simplified Finite Element Modelling of Multi-storey Buildings: The Use of Equivalent Cubes

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## ABSTRACT

*Finite element modelling is frequently used to overcome experimental limitations in predicting and analysing the performance of structures. However, constrained by software restrictions, 3-D analysis of high-rise buildings is still challenging and complex. This paper discusses how to substructure different parts of a multi-storey building with cubes having equivalent stiffness properties. As a result, the mesh density of the whole building is reduced significantly and the computational time and memory normally consumed by such complex structural dimensions and material properties will also be reduced. The simplified analysis results of a high-rise frame structure with a concrete core have been used to explore the reliability of this method.*

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