EFFECT OF MASS IRREGULARITY IN A RC FRAMED BUILDING

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(STRUCTURAL ENGINNEERING)

By
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UNDER THE GUIDANCE OF

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CERTIFICATE

This is to certify that the thesis work entitled "**EFFECT OF MASS IRREGULARITY IN A RC FRAMED BUILDINGS**" being submitted by me, is a bonafide record of my own work carried by me under the guidance and supervision of Mr. Alok Verma, Associate Professor in partial fulfilment of requirements for the award of the Degree of Master of Technology (Structural Engineering) in Civil Engineering.

The matter embodied in this project has not been submitted for the award of any other degree.

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e. Whenever I have used materials (data, theoretical analysis, figures, and text) from other sources, I have given due credit to them by citing them in the text of the thesis and giving their details in the references.

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ABSTRACT

Major portion of urban building is irregular. Sometime the building is designed irregular and many time it become irregular due to different circumstances like change of use of building or reconstruction. In the present study, an effort is made to understand the behaviour of a building which becomes vertical irregular by non uniform distribution of mass along height.

A four storey building is modelled in STADD PRO V8i for studying the effect of mass irregularity on the behaviour of building structure. Seismic load is applied on the building model as per IS 1893 (PART 1): 2002. In each storey, seven case of different loading condition is formulated by changing the ratio of mass of that storey to that of adjacent storey to 1, 1.5, 2.0, 2.5, 3.0, 3.5 and 4.0.This process is repeated for each floor. A total of 28 cases is analysed and change in various output parameter like roof drift, storey drift, base shear, frequency etc is studied.

Based on the present study, it can be concluded that whenever mass is increased on lower and/or top storey, large variation is observed in studied output parameter than those occur when mass is changed in middle floor. Most critical location is top storey as drift is increased by 70% than that of original building when maximum loading is applied on top storey.

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