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REVIEW PAPER ON STUDY BEHAVIOUR OF RCC BUILDING WITH AND WITHOUT BRACING BY USING STAD Pro.V8i

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ABSTRACT: *In tall RC [reinforced concrete] building bracing system is provide for stiffness, strength and energy dissipation to resist the lateral load. The study about the different bracing system (diagonal type, V type, inverted and X type) and arrangement of bracing system. To build the seismically safe structure with adequate lateral resistance .Bracing system is installed between column member to resist the lateral load. Bracing system is easy to installed. Economical and occupies less space. The structure is analyzed for seismic zone IV with different types of bracing system and compared with the bare frame with the using of STADD Pro v8i software. The load condition is applied as per IS 1893-2002. Bracing system improve the displacement capacity of the structure.*

Key words – *Base shear, RCC bracing, Seismic behavior, Seismic analysis, Storey displacements.*

INTRODUCTION

Seismic analysis is calculating the response of structure to the earth quake. Nowadays high rise building are constructed for the purpose of stiffness and lateral load resistance .Larger seismic waves strike the earth surface caused shaking the earth surface in all possible direction .In recent year growth of the cities have been on rise and any RC building depend on many factors like strength of material, used soil and amount of mass .Bracing are the most prominent method used by structural engineers .Increase the lateral load resistance by bracing .There are many braced system in RC structure like V,K and X. But concentric bracing mostly used by structural engineer. All the structure posing adequate strength. The frame structure transfer the gravity load and lateral load to the foundation .Colum and beam distribute the gravity load in to the structure but there are not significant for stability of structure. They provide the different bracing system to transfer the seismic wave in to the structure .With the different method we analyses the structure. Rcc bracing most used in RC structure. Rcc bracing transfer the load to the frame.

CONCLUSION

After the analysis of the structure with different types of structural systems, it has been concluded that the maximum reduction in the Axial force and Bending moment occurs after the application of cross bracing and v bracing system. Bracing system reduces bending moments in the columns. The lateral load is transferred to the foundation through axial action. The performance of cross bracing system and inverted bracing system is better than the other specified bracing systems. Steel bracings can be used to retrofit the existing structure. Total weight of the existing structure will not change significantly after the application of the bracings.

OBJECTIVE

- To carry a relevant literature review by going through journal papers conference proceedings, text/reference books, Standard handbooks, BIS publications etc
- To identify the suitable bracing system for resisting the lateral loads efficiently.
- Establishing a comparison between the two types of structure and analyzing the result and establishing a needful similarity with effectiveness in tabular form.
- To compare the Staad- pro. results for the following parameters-

1. Base shear
2. Storey shear
3. Storey drift
4. Deflection
5. Member forces

Literature Review

Mishra, et al 2014 Presented the behavior of reinforced building with different bracing .In this study reinforced concrete frame considering with different bracing . Bracing resist the lateral load and wind load. Bracing system increase strength of building and Increase its resistance to seismic forces. Analyses reinforced concrete building with the using of STAAD PRO software. Different type of bracing system have been used. Analyze the bare frame to increase the lateral

displacement and member force in the building. Bracing system effectively provide the stiffness to the structure. In this paper they compared of all the different bracing (x v inverted) with bare frame analysis to evaluate the seismic resistivity of the building .It concluded that bracing system effectively reduced the seismic forces. Mohammed et al 2013 In this paper analyses the behavior of RCC multistory structure with different type bracing system .The main focus of this paper is to find out seismic responses of the braced structure and bare frame structure. Analyses the G+8 floor building with bracing and without bracing. They compared the result of bending moment, shear force ,story drift and axial force with all types of structural system. It concluded that displacement of the reinforced concrete building reduce after the using of bracing system in RCC building. Cross bracing decrease the maximum lateral displacement of structure. RCC building with bracing system decrease the shear force and bending moment in columns. They found that Structure with bracing system transfer the lateral load through the axial action. They concluded that Steel bracing mostly used by the structure engineers.

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