

RESEARCH ON INNOVATIVE METHODS FOR RETRO FITTING OF BUILDING

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Abstract- In India most of the buildings and small house are built without due consideration for earthquake Design. There is much difficulty in retrofitting existing building completed to construct a new building. With due consideration for earthquake resistance. The main aim of thesis to develop retrofit scheme for a real soft storey reinforced concrete building G+2 hostel building, multi-storeyed reinforced concrete building and to demonstrate through liner as well as nonlinear static analysis that addition of infill walls at the ground storey, jacketing of column, inclusion of shear wall is an effective retrofitting option.

Keywords: Addition of infill walls at the ground storey, jacketing of column, shear wall.

I.INTRODUCTION

Retrofitting is the addition of new technology or features to older systems. And other retrofits may be due to changing codes or requirements, such as seismic retrofit which are designed strengthening older buildings in order to make them earthquake resistant. Retrofitting is also an important part of climate change mitigation and climate change adaptation: because society invested in built infrastructure, housing and other systems before the magnitude of changes anticipated by climate change. The process of changing or repairing something after it has been manufactured is known as retrofitting. After a building's construction and occupation, retrofitting work entails modifying or repairing the structure system. As a result of this work, the structure's safety and durability have improved.

II.LITERATURE REVIEW

Retrofitting techniques for existing reinforced concrete building. In this study seismic evaluation carried out in two parte (1) preliminary evaluation i.e. configuration related checks and strength related checks (2) Detailed evaluation i.e. response spectrum analysis, pushover analysis, which are reliable methods to find out the deficiency of building. Retrofitting of existing reinforced concrete building has done using three different techniques i.e. inclusion of infilled walls at ground storey, shear walls and jacketing of column to the peripheral columns of soft story, which are convenient for execution and considering utility of soft story for parking purpose.

III.OBJECTIVES OF RETROFITTING

The objectives of retrofitting is,

1. Increasing the lateral strength and stiffness of the building.
2. Increasing the ductility and enhancing the energy dissipation capacity.
3. Giving unity to the structure.
4. Eliminating sources of weakness or those that produce concentration of stresses.
5. Enhancement of redundancy in the number of lateral load resisting elements.
6. The retrofit scheme should be cost effective.

IV.SIGNIFICANCE OF THE RESEARCH

Retrofitting create multiple benefits due to the economic, sustainability and cultural benefits of retrofit. It is considered that with an increased stability within the policies encouraging retrofit, there is the option to not only promote over time, an increased skill base, but also an increase in economic growth, unemployment decline, energy savings and also reduced impacts of fuel poverty.

V.ADVANTAGES OF RETROFITTING

1. Prevention of displacement.
2. Improved stability and safety.
3. Adaptability for existing and future activities.

4. Energy efficiency and emission reduction.
5. Earthquake resistance.
6. Increased load capacity.
7. Enhanced strength and stability.
8. Economical compared to reconstruction.

VI. CONCLUSIONS

- Seismic retrofitting is a suitable technology for protection of a variety of structures.
- It has matured in the recent years to a highly reliable technology.
- But, the expertise needed is not available in the basic level.
- The main challenge is to achieve a desired performance level at a minimum cost, which can be achieved through a detailed nonlinear analysis.
- Optimization techniques are needed to know the most efficient retrofit for a particular structure.
- Proper design codes are needed to be published as code of practice for professionals related to this field.

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