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# Earthquake Resistant Analysis and Design of Multistoreyed Residential Building

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**Abstract**: *Shelter is a fundamental human necessity, and with increasing urbanization and seismic risks, the demand for safe and resilient structures has grown significantly. This project presents the structural analysis, design, and detailing of a multi-storeyed residential building located in the Nashik district, categorized under Seismic Zone III as per Indian standards. Emphasis is placed on earthquake-resistant design using relevant Indian Standard Codes including IS 875, IS 1893 (Part 1): 2016, IS 13920: 1993, and IS 456: 2000, along with design aids and explanatory handbooks such as SP 16, SP 22, SP 24, and SP 34. The structural system was modeled and analyzed using ETABS 2025 (v25), incorporating lateral and gravity loads to ensure stability and serviceability under seismic forces. The project also covers ductile detailing to enhance energy dissipation during seismic events, adhering to modern earthquake engineering principles. The outcome demonstrates a practical application of theoretical knowledge gained during undergraduate studies and highlights the importance of code-compliant design in earthquake-prone regions, contributing to safer infrastructure development..*

**Keywords**: Earthquake-resistant design, Structural analysis, ETABS, Seismic Zone III, Ductile detailing



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