

Analysis of High-Rise Building G+20 Under Different Shear Wall Openings and Different Seismic Zone Using Etabs

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Abstract: *High-rise buildings are increasingly built for aesthetic purposes and due to land scarcity. Lateral force impacts, such as seismic loads as well as wind, are significant; thus, shear walls are used generally to help contain and lessen damage. Shear walls also have openings to allow for the ventilation and passage of air, in addition to doors and windows. As per the architectural design, openings can vary in size and placement. However, many buildings do not take the structural impacts into account for openings. This study focuses on the G+20 buildings and conducted its analysis using the response spectrum method in ETABS 2021. This model involved five different configurations where the percentage of openings was altered. These configurations were 0 openings (regular model), 25% openings, 50% openings, and 75% openings. the model was tested across different seismic zones: II, III, and IV. The structures were analysed based on story drift, maximum displacement, and story shear, which are all results used in the structural design of a building. The results are then compared to one another.*

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