A Comparative Study on RCC Structure with and without Shear Wall

Abstract

Now a day tall buildings are provided with shear walls to improve the lateral load resistance. Shear walls are a type of structural system that provides lateral resistance to the building or structure. Shear walls are vertical elements of the structure, the horizontal force resisting system. Shear walls are constructed to counteract and minimize the effect of lateral loads acting on the structure. The properties of these seismic shear walls dominate the response of the buildings, and therefore, it is important to evaluate the seismic response of the walls appropriately. In this present study, main focus is to determine the solution for shear wall location in multi-storey building. The effectiveness of RCC shear wall building is studied with help of four different models. The first Model is bare frame system and the other remaining three types are frames having different locations of shear wall. An earthquake load is applied to G+10 storey building located in different zones. The performance of building is evaluated in terms of lateral displacements of each storey. The analysis is done by structural finite element analysis method using SAP2000 software. Keywords: frames, finite element analysis, lateral displacements, SAP2000, seismic forces, shear wall.

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