

Study on Behaviour of Outrigger System on High Rise Structure by Varying Outrigger Depth in Seismic Zones of India by Using Staad Pro

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Abstract: Tall building development is rapidly growing almost everywhere in the world acquainting new difficulties that need to be met with, through engineering evaluation. In tall buildings, lateral loads generated by earthquake or wind load are frequently resisted by providing coupled shear walls. But as the height increases, the building becomes taller and the efficiency of the tall building greatly depends on lateral stiffness and resistance capacity. So, a system called outrigger is introduced which improves overturning stiffness and strength by connecting shear wall core to outer columns. When the Structure is subjected to Lateral forces, the Outrigger and the columns resist the rotation of the core and thus significantly reduce the lateral deflection and base moment, which would have arisen in a free core. During the last three decades, numerous studies have been carried out on the analysis and behaviour of outrigger structures. But this question is remained that how many outriggers system is needed in tall buildings. (Using Staad-Pro)

Keywords: Couple Shear Wall Core, Outrigger Depth, Rotation, Stiffness, Seismic Load, Dead Load Live Load, Load Combination

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