

# STRUCTURAL PLANNING OF THE EAST JAKARTA RSPON SERVICE BUILDING WITH THE ADDITION OF SHEARWALLS

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## **ABSTRACT**

*Indonesia is a country prone to earthquakes, which certainly affects the construction of multi-story structures. This study compares buildings that use shear walls and those that do not. Shear walls, commonly referred to as shear walls, are useful for withstanding lateral loads, such as wind, earthquakes, and others. One of the structural elements that plays an important role in increasing the stiffness and lateral stability of a building is the shear wall element. This study aims to analyze the addition of shear walls to the behavior of reinforced concrete structures, including deflection response, internal forces, and overall building performance. The theoretical study covers the concepts of reinforced concrete structures, frame structures, wall systems, dual systems, loading, and planning provisions based on applicable Indonesian national standards. The research method used is a numerical analysis method with the help of software through modeling of buildings with and without shearwalls in East Jakarta. The data used consists of primary data in the form of building plan drawings and secondary data in the form of material parameters, loads, and design regulations. The analysis was carried out on main parameters such as structural period, base shear force, inter-story drift, structural stiffness, and internal forces in structural elements. The results of the study show that the addition of shear wall elements has a significant effect on structural performance, where certain configurations can produce smaller deflections with a decrease of  $x = 42.30\%$  and  $y = 32.07\%$  compared to buildings without shear walls, as well as better internal force distribution. The addition of shearwalls tends to result in stiffer and more optimal structural behavior. Thus, the addition of shearwalls affects the safety and efficiency of reinforced concrete building structure planning.*

**Keywords:** *Structural Analysis, Shearwall, Deflection, Shearwall Comparison.*