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Structural Audit of RCC Building

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Abstract: *Civil engineering forms the backbone of all structures that provide comfort to human life. Buildings have a finite lifespan during which they need to be maintained to remain in good serviceable condition. However, over time, all structures experience wear and tear, resulting in cracks, rusting of steel, and other signs of aging. To ensure the safety of the building and its occupants, it is essential to conduct regular structural audits using non-destructive testing (NDT) methods and adhering to Indian Standard (IS) codal provisions. Negligence during supervision, the use of substandard materials, and environmental factors can shorten a building's useful life. Therefore, a structural audit should be conducted every five years to preserve and renovate the existing structure, thereby increasing its safe life. This is a cost- effective way to extend the lifespan of a building instead of constructing new ones. NDT testsprovide information on the structure's current strength and other factors, such as rusting of steel, which is the most common reason for structural damage. Regular maintenance, including addressing wetness, leakages, and other environmental factors, is necessary to enhance the building's serviceability. Failure to maintain structures older than 30 years can endanger the lives of occupants and surrounding structures. Thus, structural auditing is essential to determine the current strength and serviceability of existing structures and carried out in accordance withestablished norms and standards.*

Keywords: Structural auditing, SHM, NDT tests, HRI, Rebound Hammer test.

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