

# Audit Course Of Existing Building

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**Abstract-** *The internal audit function has never been more important than it is today. The dynamics of the Engineering and Construction (E&C) and real estate industry are quickly changing. Given recent economic events, several high profile incidents of fraud and pressures from regulators, investors and lenders, the industry is increasing its focus on operational infrastructure. Ineffective processes, poor controls and a lack of governance are no longer acceptable. Boards, audit committees, analysts, regulators and executive management are demanding greater accountability, transparency and management of enterprise risk. Industry leaders are increasing their focus on practices that allow them to more readily access data — but more importantly, ensure that the data is accurate and timely. Also, an investor's confidence in the manager's ability to demonstrate its competence in these areas is increasingly becoming a basis for deploying capital. To decrease the cases of frauds and pressure from the investor, and lenders, and increase the accountability of the enterprises audit is necessary.*

## I. INTRODUCTION

In India, from 1980 onwards the infrastructure industry witnessed stepping up of public investment and growth in infrastructure industry which results in construction of new multistorey concrete apartments which are now in the age of thirty plus years. There are many buildings during this period and earlier have reduced strength in due course of time because of structural deficiency, material deterioration, unexpected over loadings or physical damage. If, further use of such deteriorated structure is continued it may endanger the lives of occupants and surrounding habitation. Structural Audit is an overall health and performance check-up of a building like a doctor examines a patient. It ensures that the building and its premises are safe and have no risk. It analyses and suggests appropriate repairs and retrofitting measures required for the buildings to perform better in its service life. Structural Audit is an important tool for knowing the real status of the old buildings. The Audit should highlight & investigate all the risk areas, critical areas and whether the bldg. needs immediate attention. It also covers the structural analysis of the existing frame and pinpoints the weak structural areas for static, wind & earthquake loads. The need of structural audit is for maintenance and repairs of existing structures whose life has exceeded the age of 30 years to avoid any mishaps and save valuable human life. There is demand of

appropriate actions and measures for all such building structures to improve its performance and restore the desired functions of structures which may leads to increase its functional life. The periodical structural auditing and diagnosis for health of existing buildings is thus utmost important for finding the present serviceability and structural viability of structures.

## II. METHODOLOGY

1. Study of plan, if not available the plan should be prepared.
2. Visual inspection

The various points should be checked on inspection

- Any settlement in the foundation.
- Detect dampness in wall.
- Visual cracks in columns, beams, slab and walls.
- Any sign of material deterioration.
- The various addition and alteration made.
- Status of balconies – sagging, deflection, crack.
- Electrical wiring from main connection to all rooms. Any explosion in the meter room.
- Leakages from terrace and toilet block.

### 1. Ultrasonic Pulse Velocity Test:-

In UPV test the quality of concrete is assessed based on the pulse generated by the electro- acoustical transducers which are placed on the concrete surface. The pulse encounters multiple reflections at the boundaries of the various material phases and reaches the receiving transducer. The underlying principle of assessing the quality of concrete is that comparatively higher velocities are obtained when the quality of concrete in terms of density, homogeneity and uniformity is good. In case of poorer quality lower velocities are obtained.

- 1) The members to be tested are identified and the dimensions are measured for member size and path length.
- 2) Grid points are marked at 300 x 300mm sizes as per the provisions of IS: 13311 (Part – 1) 1992.
- 3) The junctions of the grids are cleared of all surface undulations or deformations by using carborundum stone, grinder or any other suitable methods.

- 4) Suitable acoustic couplants like petroleum jelly, grease, liquid soap or kaolin glycerol paste shall be applied at each of the junctions before initiating testing.
- 5) The probes are connected to the display unit via cables of suitable lengths and calibrated onsite using the calibration rod supplied along with the device.
- 6) Once calibration is done the probes are faced on either side of the marked locations; ensuring that the probes are geometrically opposite to each other.
- 7) The readings are taken and noted into the field data sheet.

### REFERENCE

- [1] I. A.B. Mahadik and M. H. Jaiswal concluded that to create awareness amongst the civil engineers, residents and owners of building towards the health examination of existing concrete buildings called as Structural Audit which help to implement maintenance and repair work timely which leads to prolonged life of the building and safety. The need of structural audit is for maintenance and repairs of existing structures whose life has exceeded the age of 30 years to avoid any mishap.
- [2] B.H Chafekar, O.S Kadam K.B Kale, S.R Mohite, P.A Shinde, V.P Koyle studied that before going in detail about the structural audit is necessary to know about the structure. A structure is a system of inter connected elements to carry loads safely to underground earth. The health examination of concrete building called as structural audit. The author shows different methods in paper: E.g. Visual inspection, non-destructive test.
- [3] M.M.Sonawane, D.H.Markad, V.G.Maindad, M.B.Patil, K.D.Manwar, P.D.Mote. Concluded that appropriate actions should then be implemented to improve the performance of structures and restore the desired function of structures. Thus, it is almost important to perform structural audit of existing buildings and to implement maintenance/ repair work timely which will lead to prolonged life of the building and safety of the occupant.