



MSWA'S HOUSING SOCIETIES REVIEW



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WHY STRUCTURAL AUDIT IS IMPORTANT?



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During our services for past 31 years, we have served as Project Management Consultant for repairing and rehabilitation of almost 450 buildings and structural audit of more than 2000 buildings.

We found that, the prominent reason for deterioration of a building is due to ageing, seepage & corrosion due to atmospheric action, substandard quality of construction, inadequate methodology, ill-maintenance, undue alterations such as shifting of kitchen, toilet etc., addition of load within the flat without consulting structural engineer.

Another common practice is getting building repaired by inexperienced contractors & use of inferior quality material. Also the attitude of majority of the members in the cooperative society / owner of building not to undertake timely action and approach of postponing the same is a great concern.

A structural audit is government mandated. As per society modern bye law no.77 & section 353-B of MMC Act, 1888, all Co-operative Housing Societies, industrial & commercial premises are required to undergo 'Structural Audit' of the building as follows:

- For building aging between 15 to 30 years once in 5 years.
- For building aging above 30 years once in 3 years.

Structural audits are performed by licensed consultants who have the required expertise in structural repair.

The structural audit consist of first visually inspecting of defects, deformation, material deterioration in structure in form of cracks, spalls, leakage, seepage, deflection etc. Further tapping with ebonite hammer & noting the tapping sound helps in identifying dense or hollowness in structural members.

It is supplemented by Non-destructive testing (NDT) to evaluate strength & durability of structural elements. As per the MMC Act, following test are obligatory to perform on structure:

- I. Rebound Hammer Test: To measure surface hardness of concrete.
- II. Ultrasonic Pulse Velocity Test: To assess homogeneity of concrete & determination of cracks and discontinuities.
- III. Core Sampling and Testing: To determine compressive strength of concrete.
- IV. Carbonation Test: To ascertain depth of carbonation in concrete.
- V. Chemical analysis: To assess PH, total water/acid soluble chloride contents etc.
- VI. Cover Meter survey: To measure cover of reinforcement, diameter of reinforcement and spacing of reinforcement.
- VII. Half Cell potential test: To assess probability of corrosion in the embedded steel.

Corrective repairs/ remedial measures recommended by Structural engineer/PMC should be carried out by the owner/occupier of the building within a period as suggested by Structural engineer in this report.

Further, tendering process is performed & selection of contracting agency is done in consultation with PMC.

If MCGM serves notice under section 353-B to any building/ structure for structural audit then owner / occupier of building should appoint Licensed Structural Engineer/PMC immediately and submit the audit report to concerned authority within 30 days from the date of notice issued. If the Structural Engineer/PMC recommends any corrective repairs then such repairs shall be carried out by owner / occupier and submit stability

certificate from concerned structural engineer/ PMC within 6 months from the submission of Structural Audit Report to MCGM. Failing to comply, the owner / occupier of building shall be punished as per provision in Section 471 of MMC Act, 1888.

The effective implementation of timely inspection & necessary repair enhances the life span of structure, prevents deterioration of building leading to sustain ability. **A structural audit is a highly recommended preventive measure to avoid any undue loss of human life & property.**

**We NEOTECH CONSULTANTS are in Building Repair, Redevelopment and Self-Redevelopment field for more than 30 years.
For any query or guidance please contact us on: 99303 61574 / 99304 40047.**