Building Maintenance Strategy And Faculty Management Frame Work For Amravati Region

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Abstract

Building maintenance plays a vital role in ensuring safety, durability, and functional efficiency of residential and commercial structures. This study investigates the maintenance management practices in selected buildings located in Amravati city, Maharashtra. A field survey and visual inspection were conducted on ten buildings situated in Tapovan, Kanta Nagar, and Rajkamal Chowk areas. The study identifies common structural defects such as cracks, water seepage, surface deterioration, and concrete spalling. Various maintenance strategies including routine maintenance, preventive maintenance, and condition-based maintenance were analyzed. Non-destructive testing techniques such as the Schmidt Rebound Hammer Test were also used to evaluate the condition of building components. The results highlight the importance of timely maintenance planning and effective management systems to enhance the lifespan of buildings and ensure occupant safety.

Keywords

Building Maintenance, Preventive Maintenance, Structural Defects, Visual Inspection, Amravati City

1. Introduction

Buildings are essential assets that provide shelter, comfort, and functionality for human activities. Over time, building structures deteriorate due to environmental exposure, poor workmanship, material degradation, and improper maintenance practices. Therefore, building maintenance management is necessary to ensure structural stability and prolong service life.

Maintenance activities involve inspection, repair, and replacement of building components to maintain the structure in a safe and usable condition. Early identification of defects such as cracks, leakage, and surface deterioration helps prevent severe structural damage and costly repairs.

This research focuses on evaluating maintenance management practices in selected buildings in Amravati city.

2. Literature Review

Various researchers have emphasized the significance of systematic maintenance planning for buildings. Maintenance is defined as the technical and administrative activities required to retain or restore a building to a condition where it can perform its intended function.

Studies indicate that neglecting maintenance leads to rapid deterioration of building components and increased repair costs. Preventive maintenance programs and regular inspection strategies have been widely recommended to ensure long-term sustainability of buildings.

3. Methodology

The study was conducted through field surveys and visual inspections of ten buildings located in different areas of Amravati city.

Study Areas:
• Tapovan
• Kanta Nagar
• Rajkamal Chowk

Inspection Method:
• Visual inspection of structural components
• Documentation of defects through photographs
• Collection of building records from municipal authorities
• Non-destructive testing methods

Non-Destructive Testing:
The Schmidt Rebound Hammer Test was conducted to evaluate the surface hardness and approximate compressive strength of concrete.

4. Results and Discussion

The inspection results revealed several common defects in the buildings such as cracks in walls and beams, spalling of concrete surfaces, water seepage from roofs and external walls, and corrosion of reinforcement.

Main Causes:
• Poor construction quality
• Lack of preventive maintenance
• Environmental exposure
• Aging of building materials

Maintenance Practices:
Routine maintenance, preventive maintenance, and corrective maintenance were identified as essential strategies to improve building performance and reduce repair costs.

5. Conclusion

Building maintenance management is essential for ensuring structural safety and durability. The investigation of selected buildings in Amravati city showed that many defects occur due to delayed maintenance and poor inspection practices.

Implementation of systematic maintenance programs, periodic inspections, and proper documentation of building conditions can significantly improve building performance and extend service life.

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