

# A Review paper on Analysis and construction management of Maintenance and Repair works in Residential Building

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**ABSTRACT:** Poor and improper building maintenance will cause more damages and costly repair works if ignored. Aging, obsolescence and general deterioration of buildings and their systems and components can adversely affect the ability of building to sustain and operate properly. Priorities should be set for various aspects of maintenance works. This paper explores the different causes of need for maintenance and repair work and strategies of maintenance management in residential building.

**Keywords** – *Building maintenance, Priorities, Maintenance and repair work*

## I. INTRODUCTION

Building maintenance is work undertaken to keep, restore or improve every part of building, its services to a currently acceptable standard and to sustain utility and value of the facility. Poor and improper building maintenance will certainly cause additional damages and expensive repair works if left unattended.

Without maintenance performance will not meet the demand and eventually will drop below the limit of acceptance of residence. Preventive maintenance and corrective maintenance are the two main types of maintenance.

Repair is the process of restoration of broken or damaged part or property to an acceptable operating condition. Day to day repair, annual repair, special repairs are the types of repair service. The quality of housing is warranted by execution the correct maintenance activities at the correct

## II. RESEARCH BACKGROUND

1) Nor'Aini Yusofa<sup>1</sup>, Shardy Abdullah<sup>2</sup>, Sarah Zubedyc<sup>3</sup>, Nurul 'Ulyani Mohd Najibd<sup>4</sup> (2012) suggests that, "work necessary to maintain the safety and health of residents", "work necessary to keep property habitable" and "work necessary to keep buildings operable" as the most important reasons for maintenance. It additionally shows that Electrical faults, sanitary appliance failure and pipe linkage are residents top three maintenance priority preferences.

2) Vivian W. Y Tam (2016) the aim of this study is to study common building defects by carrying out questionnaire survey from building owners as well as professional and building management industry. The results show that lack of building maintenance knowledge is the fundamental problem encounter by building owners. Lack of awareness, lack of volunteer initiatives of owners and unwillingness of owners to bear the maintenance cost are the three most common reasons for building deterioration.

3) Ahmad Suffian (2013) studied some common maintenance problems and building defects such as waterproofing issues, cracks, soil settlements, wall finishing problem and remedies to overcome them. He also stated that civil engineers & their inputs are not less important compare to mechanical and electrical. Also immediate repair is really important in preventing propagation of defects.

4) Michael N. Grussing (2014) states, aging, obsolescence, and general deterioration of buildings and their systems and components can adversely affect the ability to accomplish a mission or generate expected revenue. Without proper investment, buildings will degrade more quickly thus resulting in adverse effects on performance. Building components generally deteriorate over time, causing adverse effects on system function. This leads to fitness loss over time thanks to age, use, damage, etc.

5) Ajetomobi Oludare Olayinka and Olanrewaju Sharafadeen Babatunde Owolabi (2015) studied and found out the common solution to the housing maintenance is the monitoring and documentation of corrective actions. Followed by provision of accurate data for maintenance and construction programmer decision making, systematically identify maintenance needs, deficiencies, capital improvement needs at housing estates, preparation of service maintenance and construction budget requests using systematic and standardized procedures.

6) Muhammad Jamaluddin Thaheem<sup>1</sup> and Alberto De Marco<sup>2</sup> (2014) indicates, Repair & maintenance

(R&M) activities of buildings and structures are inescapable: aging, constant use (causing wear and tear), likely defects of style and construction, and the consequences of environmental agents and vulnerabilities cause the deterioration of building components over a period of time. Repair and maintenance decisions are partly dictated by policies and regulations in the developed world, however the situation differentiates in developing countries where large number of externalities dictates these decisions: lack of budget, enforcing regulation and building standards to name a few.

7) Susan J. Smith, Marja Elsinga, Lorna Fox O'Mahony, Ong Scow Eng, Susan Wachter, Heather Lovell, (2012) states maintenance is required to maintain a building's initial performance capacity. Without maintenance, performance will not meet the demand and eventually will drop below the limit of acceptance of residents. Maintenance could be a combination of all technical and associated body actions throughout the service life to retain a building or its components during a state during which it will perform its required functions. All building parts have throughout their service lives to agitate degradation and performance loss through ageing, use, and external causes.

8) Sunday Julius Odediran, Oladele Ayinde Opatunji & Frank O. Eghenure studied and analyzed that in the study area users carried out maintenance activities at one time or the other including daily sweeping or mopping of the floor, drainage clean up and weekly shut down of floor and windows. He recommends that individual should embrace maintenance as a practice for sustainability.

### III. SCOPE OF PROJECT

- To collect and find out the factors affecting or contributing to building defects and failure
- This research focuses on maintenance strategies of residential building to avoid future defects
- To identify the critical maintenance work of the components to restore the buildings to its original standards.
- Minimize the repair cost of building By implementing proper maintenance strategies
- To understand the timely maintenance and repair work of building to extend the life of building.

### IV. OBJECTIVES OF PROJECT

1) To analyze different causes of failure and defects in building and remedies to overcome them.

2) To preserve building and services in good operating condition and restore them back to their original standards.

3) To repair building components which get deteriorated due to various natural or manmade reasons.

4) To maximize the aesthetic and economic values of building as well as increase the health and safety of occupants and to extend the useful life of building.

### V. METHODOLOGY

The methods used for the collection of data by the various researchers were questionnaire survey and interview with various fields' experts. The questionnaire was prepared based on the objectives of the research. The questionnaire prepared by Nor'Aini Yusofa, based on the factors like work necessary to maintain the safety and health of residents, work necessary to keep property habitable and work necessary to keep buildings operable. (1) The questionnaire developed by Vivian W. Y Tam is to examine the attitude towards maintenance priority among building owners and building professionals. (2) The questionnaire developed by Ajetomobi Oludare Olayinka to sample professional opinions on probable causes of identified defects and to offer remedies to same. (5) The aim of questionnaire prepared by Sunday Julius Odediran is to identify nature and types of maintenance works often carried out by the users of residential buildings. (8)

### VI. CONCLUSION

From the above study it can be concluded that poor maintenance results into building defects such as waterproofing issues, cracks, soil settlements and wall finishing problem. Lack of awareness and lack of budget are most common reasons for building deterioration along with age and use of building. In order to overcome all of defects and maintenance management issues, proper and timely maintenance of building should be carried out.

### VII. REFERENCES

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