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Study and Assessment for Damages and Maintenance Management of Residential and Industrial Building

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Abstract - Infrastructure Management is a major effort for employers and project managers in many countries with aging civic infrastructure. Due to the extensive shoot-ups and the disposal of such infrastructure and its associated costs it is virtually not easy to replace or cure all structures. There is a building to meet the user's time limit. The special purpose of maintenance is to exaggerate the bad life of the building through deterioration, decay and failure. Building maintenance management is the complex process of planning, directing, managing and managing resources for the livelihood of a building's functional operation. This research focuses on the most important form of management systems and reveals the state of the art. Seen through case studies, it is promising to make clear decisions due to structural strength monitoring in management systems, which are essential for profit owners struggling with limited resources. This paper focus on past research on repair maintenance managementBuildings are widely expanded in all over the world. So, its repair and maintenance is necessary for the safety, effective and economy of industrial building and as well as workers who are working in it. Maintenance involves operational and functional checks, servicing, repair and replacing of necessary devices, equipment, machinery, building infrastructure, and supporting utilities in industrial business, governmental and residential installation.

In Residential building many defects are occurred such as cracks, vegetation, structural cracks in wall, defective flooring, paint, cracks on internal road, improper drainage, gap in shed, improper cutting, cracks in foundation of machine etc. The early stage damage identification and its remedial action on it will be save the time and cost of user

Keywords - Repair, maintenance management, Building, defects

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INTRODUCTION

Repair is the process of restoration of broken damages, failed device, equipment, repairs. Some types of repair such as patching up of defects such as cracks and fall of plaster, repairing doors, windows, replacement of glass panes. Checking and repairing electric wire. Maintenance it is work undertakes to improve every facility in every part of residential building. It is the service and surroundings accepted standards and to sustain utility values of the facility.

Objective Of Maintenance

It is to preserve in good condition building and services, when deterioration occurs due to any reason it is inevitable to restore it to its original standards, to make improvement whenever required. A good maintenance team has to ensure safety, efficiency and reliability. Maintenance, Repairs and operations involves maintaining, repairing and replacing if industrial, business, government and residential installations. In maintenance there are types such as preventive maintenance, corrective maintenance, Predictive maintenance. Building in disrepair or unsanitary condition, unauthorized building works are potential hazards to the public. In any residential building many types of defects are occurred such as attack by pollutants, defects occurred in various forms and the different extends in all types of building , irrespective of age, use of unsuitable construction details, Natural deterioration defective concrete, or loose plaster in ceiling and etc.

Defects in residential building:

We find out all the above defects and their causes too. After findings the causes we will give preventive measures. Defects in building services installation such as water supply, electricity supply, fire

services, lift and escalator, air conditioning or heating.

Now-a-days residential building has many problems with repairs and maintenance. Many different techniques for investigation and repair for the various defects are available in the market. So, we will be providing technical system which is efficient as well as reducing the time for repair and maintenance. If any defect is suddenly occurred in the industry at that time requirement of labours is not fulfil within the sufficient time. So avoid this problems we have develop a new system or technology which is "Repair and Maintenance Application." Timely maintenance and proper repairing of any type of residential building keep them safe and provide them pleasant and comfortable environment for work. This application is easy to use for construction site engineers, or any other person for the working of repairing and maintenance.

Objectives of Paper: To study the past research work and analysis the methodology for next research work

LITERATURE REVIEW

The main aim is carrying out the literature review is to gather the information and be more understanding on the topic of this research. Relevant journals, paperwork, thesis, articles and book that related to the topic "Approach towards the repair and maintenance of industrial building" had been looking for and help in carrying out literature review.

Jorge M. Simoes, (2020) This literature review examined issues relevant to the different facets of maintenance activities, resources, measures, and measurement in manufacturing organizations. Based on the findings of the study, it is concluded that the area of maintenance performance and management is in need of more future systematic research efforts aimed at solidifying theoretical constructs and promoting the utilization of more practical applications

Jaladanki Sasidhar, (2017) 1) From the case studies and also from the surveys taken from the engineers and contractors it has been concluded that many of the engineers and contractors are not using any management systems for the management of materials, manpower, machinery and also it has been concluded that the percentage of delays due to lack of management systems varies according to the type of the project. So by using the management systems the delays in any project can be reduced in turn the cost gets reduced and also for the purpose the computer based management system has been designed and given to the engineers and contractors.

Iveta Pukite (2016) The present paper examines the connection between building and property management and building management system. The main aim of maintenance is to protect a building at its preliminary stage and to retain the value of investments in the property. During the management process, owners of building have to resolve several issues, such as how to organize building management effectively and in compliance with the existing regulations. The aim of paper is to conduct a literature review of different approaches to defining building management and building maintenance which are examined in various scientific publications.

Kajol Mevawala , (2016) The purpose of this paper is to justify the latest techniques, advanced materials and various requirements of repairing work to obstruct the deterioration which is necessary and economical than to reconstruct the building. After analysing the problem of building, we can apply the appropriate repair methods like Guniting, Routng and Epoxy Injection.

Darli Rodrigues (2016), The purpose of this paper is to present the Maintenance, repair and overhaul (MRO) and aeronautical industry literature review. As well as to provide insights related to MRO business models strategies. The analysis indicated there is a tendency of the market to build partnerships between stakeholders to expand market penetration. The concept "One stop shop" was identified, meaning that the customer is looking for only one place to overhaul the aircraft.

Cheong Peng Au (2016) This paper reviews the implementation of preventive maintenance strategy, routine maintenance in specific. The research examines the maintenance issues in construction industry, specifically in residential building. The study will focus on two aspects, which are routine maintenance of essential facilities and services and value-added facilities and services.

S. Raja Subramaniam (2016), This paper provides a comprehensive study of repair and rehabilitation of heritage buildings. Repairs and Rehabilitation is defined as the process of achieving the original state of structure when it undergoes any sort of defects or deterioration or destruction. This paper delivers its usefulness to those who as an objective of doing Repair and Rehabilitation in a Heritage Building.

Zul-Atfi Ismai (2016), There is a total of eight case studies have been used to analyse the key problems, approach to address problems, ICT implementation, use of emerging technologies and maintenance management system at IBS building. The suggestion for good practices was through the implementation of ICT to reduce the repetition of defect on the design specification used and construction practiced for the building structure and facility. to improve the complete information in the defect knowledge transfer, the new system would be developed provided with the building attributes, for instance, the design operating procedure in detail. Regarding the above findings, this research will concentrate on the development of a new system to integrate the knowledge transfer approach to improve the defect diagnosis and decision making process at IBS building.

Vemund Årskog (2016),In the present paper, the framework and methodology for quantifying the environmental burden of various repair materials and systems for maintenance of concrete structures are briefly outlined. The objective of the present paper is to focus on the framework and methodology for quantifying the ecological effects and impacts from various methods and systems for repairs and maintenance of concrete structures. a methodological framework for life-cycle assessments (has been established through a number of international standards and guidelines. ecological point of view, it appears to be a very good strategy to carry out preventive maintenance of a concrete structure before a stage is reached where patch repairs may be necessary

Robert Hemmerdinger (2016), By instituting a formal "smart service plan" that takes a predictive maintenance approach, using either internal resources or a third-party provider, building owners/operators can substantially improve equipment performance, reduce energy costs, and operate a greener facility. Savings can be increased further by using analytics to leverage the data that is generated from building management systems. First they need to take stock of their facility's technical infrastructure. Understanding the capabilities of their facility and any internal maintenance resources is a critical first step.

Bupe. G. Mwanza, (2015) The focus of this paper was to develop an effective TPM model to improve the maintenance system at a chemical manufacturing company in Zambia. The researches set objectives to assess the current maintenance system, to determine the overall equipment effectiveness and to identify key performance indicators and success factors of TPM. The result of this research is the maintenance department.

M.A. Othuman Mydin (2015), The construction industry is characterized as a project-based industry that delivers one of a kind products and services". Majority of current building maintenance strategies are restrained with budget and they are either planned or unplanned maintenance. The decision of building maintenance is the logic and rigid process to determine which building maintenance approach is the most appropriate and cost lowest. the principal concept of building maintenance decision is to combine maintenance strategies rationally and optimally according to condition of each item in a building. . To determine health, safety and environmentally significant items, it is necessary to detect out how these items would influence the health, safety and environment as they fails.

Paper 13 Carol K.H.Hon, (2015), Aim of this paper is to identify the three factors management commitment to occupational health and safety (OHS) and employee involvement, application of safety rules and work practices, responsibility for health and safety.

Ayman Alshehri (2015), The purpose of this paper is to find out the common problems facing the operation and maintenance public industry. The scope of the research is focused on building maintenance department.

Oseghale (2014) The study was focused on appraising the state and maintenance of industrial facilities, maintenance strategies adopted, and the impact of the strategies on the performance of the facilities. The most widely maintenance strategy used by maintenance department of building manufacturing and plastic industries in Lagos state was reactive maintenance. Further research work can be carried out on facilities maintenance management practice of industrial plant and machinery. This was not considered as part of the research work due to engineering professionalism involved. The research procedure and methods employed in this research cut across the study population and data requirement, sample frame, sampling techniques, sample size, choice of data collection instruments, questionnaire design and techniques of data analysis and presentation.

Noorliza Karia (2014), It provides a better understanding on what component of maintenance management that may have impact on performance. In service organization, buildings and physical facilities are vital assets; and they are the most expensive and important input for transforming the process of operations into output. Therefore the needs for effective maintenance are necessary to sustain building value rather than rebuild a new one or reconstruct existing ones and further help organizations to obtain business profit and competitive advantage. In order to generate high impact on performance, maintenance management should be positively planned, strategically organized, and innovatively implemented. This study aimed to investigate current maintenance management practices and its issues in service organizations. This study combined a literature review and a case study to answer its research objective

SUMMARY

The maintenance works is becoming necessary to ensure the serviceability and safety of the constructed facilities. The first step for improvement and development of maintenance is identifying and evaluating the current practice. Therefore, the purpose of this research is to find out the common problems facing the operation and maintenance public industry. In order to explore the current status of the building maintenance in Pune, Repair and Rehabilitation is an Art of Civil Engineering work which enables to extend the service life of a structure. Repair and Rehabilitation is defined as the process of achieving the original state of structure when it undergoes any sort of defects or

deterioration or destruction. Restoration of structure is an ultimate aim of Repair and Rehabilitation where it plays a major role by maximizing the functional utility of the structur

CONCLUSION

Building networks are complex in nature due to their diverse, interconnected components and systems. Therefore, fundamental changes to the condition assessment must take place in most areas. Demonstration of a traditional approach to situation assessment high level content and reliance on adequate resources (time, money and manpower). Therefore, this research has introduced a framework with the help of the latest software that makes the situation assessment process more structured, less time consuming, less subjective and less costly.

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