

# Maintenance Management at Sultan Abdul Samad Jamek Mosque, Kuala Lumpur: A Case Study

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## Abstract

Masjid Jamek Sultan Abdul Samad Kuala Lumpur (MJSASKL) is a historic landmark in Kuala Lumpur, established in 1909 and designated a National Heritage site by the National Heritage Department, Ministry of Unity, Culture, and Arts. As a center for worship, community activities, and tourism, maintaining its facilities' performance is crucial. Current maintenance practices primarily rely on corrective approaches, potentially hindering facility performance and leading to suboptimal management practices within the organization. This study aims to investigate the maintenance practices implemented by MJSASKL management. Using qualitative methods, structured interviews were conducted with key personnels from MJSASKL management and the Development Unit of JAWI. Findings reveal that while MJSASKL management has established a structured maintenance framework, challenges include limited maintenance personnel for assessing maintenance needs and adherence to maintenance budget guidelines set by the Department of Islamic Development Malaysia (JAKIM). The study contributes by providing insights that can support MJSASKL management and other stakeholders in effective facility maintenance management.

## 1. Introduction

Effective maintenance is essential for the proper functioning of any structure. It ensures that all facilities within the building are operational and convenient for users. To achieve excellent maintenance, it is crucial to have a management system that aligns closely with the users' needs and expectations [1]. In Malaysia, the iconic Masjid Sultan Abdul Samad Jamek Kuala Lumpur (MJSASKL), widely known as Masjid Jamek KL, holds the distinction of being the oldest mosque in the country, having been built in 1909. Additionally, Masjid Jamek was designated a National Heritage site by the National Heritage Department, Ministry of Unity, Culture, and Arts under the National Heritage Act 2005. Any building designated as a National Heritage site by Malaysia's National Heritage Department (JWN) requires official consent before any renovations or modifications can be undertaken.

Selecting the appropriate maintenance strategy is critical, as a successful approach requires a comprehensive understanding of maintenance management principles and practices, along with specific knowledge of facility performance [2]. This study aims to examine the maintenance management of the MJSASKL building and recommend best practices for future maintenance management of Masjid Jamek Sultan Abdul Samad Kuala Lumpur.

## 2. Literature Review

Maintenance involves procedures to oversee buildings after completion, ensuring they operate and function as expected [3]. According to BS 3811:1993, maintenance is defined as work on existing buildings to preserve, restore, or improve every part of a building, its services, and its surroundings to their original level, preventing deterioration below the minimum acceptable standard [4]. Each building requires a unique maintenance management approach tailored to its specific purpose and needs. A well-implemented maintenance management strategy not only ensures the building remains functional and safe but also minimizes the risk of major failures, thereby extending the building's lifespan and maintaining its value [5].

The primary objectives of maintenance are to ensure buildings are fit for use, to keep buildings and their associated services in a safe condition, and to perform the necessary work to maintain the building's quality. Maintenance is classified into two categories: planned and unplanned. Figure 1 illustrates the categories and networks of maintenance types

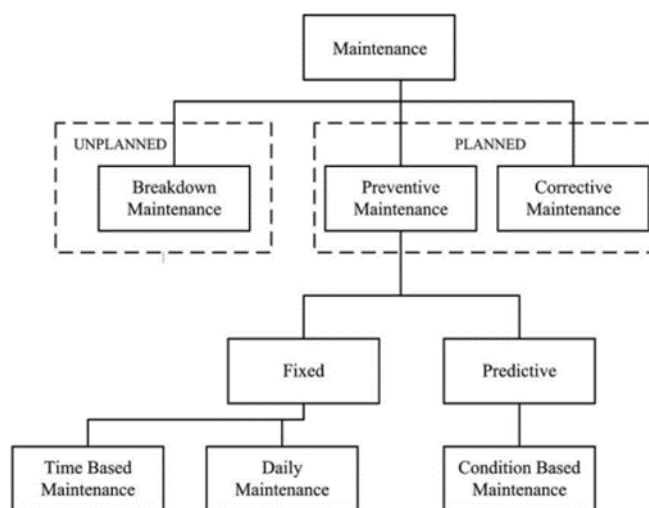


Fig. 1 Types of maintenance

Malaysia is known as an Islamic country where the majority of the population is Muslim. Islam is also the religion of the Federation, as stated in the Malaysian Constitution. Consequently, mosques have become one of the most important Islamic institutions in Malaysia. They serve multiple roles: as centers for knowledge and education, community hubs, administrative and governance centers, human development centers, Islamic legislative centers, and sources of state information.

The Masjid Sultan Abdul Samad Jamek Kuala Lumpur (MJSASKL) is a heritage mosque building under the National Heritage Department (NHD). According to [6], heritage mosques, like other historic buildings, have made significant contributions to the country's history. Preserving heritage is crucial not only for the present but also for future generations. Heritage mosques are meticulously maintained to ensure that they continue to serve the community now and for generations to come.

Mosque management involves administration, building upkeep, and maintenance. According to [7], the mosque's management is overseen by two groups. The first group consists of government-appointed salaried officers who handle religious tasks: the Chief Cleric (Imam Besar), Cleric (Imam), Friday sermon reader (Khatib), Caller to Prayer (Bilal), and Mosque Keeper (Siak), collectively known as mosque officers. The second group comprises the mosque committees, who are volunteers responsible for managing public donations received by the mosque. The committee also acts as a representative for the Islamic Religious Department or other governmental organizations. Social and other activities are funded through these public donations, managed by the mosque committees.

Maintenance is one of the major responsibilities in mosque management. According to [8], every mosque management team must ensure that the mosque is in good condition and well-maintained. For instance, in Terengganu, the Enakmen Pentadbiran Hal Ehwal Agama Islam (Terengganu), Bhg VI Seksyen 83 2001, and in Perak, the Enakmen Pentadbiran Agama Islam (Perak) 2004, state that maintenance responsibilities are sometimes included in the job description of the Chief Imam. Effective mosque management not only ensures the mosque's physical upkeep but also upholds its role as a central institution for the Muslim community. Proper maintenance helps preserve the mosque's structural integrity, supports its various functions, and ensures it remains a safe and welcoming place for worship and community activities.

Mosques in Malaysia use diverse management and maintenance practices based on their location and congregation size. According to [6], 85% of heritage mosques are still in use, with the remainder under repair or abandoned. Many imams and committee members lack the technical knowledge needed for effective building maintenance, leading to performance issues [8, 9].

The main challenge is to ensure efficient management practices [10]. Proper maintenance requires adequate budgeting, but studies show mosques often face financial difficulties, frequently exceeding funds for utilities, repairs, and upgrades [8, 11]. For example, the MJSASKL mosque suffered severe flooding in 2020, damaging nearly half of the ground-level offices and some exterior areas. This necessitated an emergency maintenance program. However, budget constraints often result in inadequate repair techniques, especially for older components, where issues can recur even without further environmental disasters like flooding.

To attract more congregants, a mosque must avoid inadequate maintenance of both its operations and facilities. Implementing strategic management methods is essential to enhance effectiveness, control maintenance activities, improve quality, and ensure affordability. These strategies also help create optimal maintenance processes, contributing to a well-maintained and welcoming environment for worshippers.

### 3. Methodology

This study exclusively employed qualitative research methods, beginning with document reviews to gather relevant information about mosque maintenance management from various sources such as books, articles, and previous studies in journals and databases. The next step involved structured interviews with key personnel involved in maintenance management at MJSASKL and Jabatan Agama Islam Wilayah Persekutuan (JAWI). Respondents were selected using purposive sampling [12], where the researcher chooses participants based on specific characteristics or criteria. This approach ensures the focus is on individuals most likely to provide relevant and insightful information about the topic under study. The study involved interviews with five respondents: three officers from the Ummah Unit and Maintenance Unit of MJSASKL, and two respondents from the Development Unit of JAWI. The interview instrument included a set of questions focusing on the respondent's background, the maintenance organization's structure, the current maintenance approach, and suggestions for improving maintenance management. Each interview lasted between forty-five minutes to one hour per respondent. A thorough content analysis was conducted to interpret the data, and the findings were presented in both text and table formats. This comprehensive presentation provided a detailed and clear overview of the study's results, highlighting key insights and actionable recommendations for enhancing maintenance management practices.

## 4. Results and Discussion

### 4.1 Organizational Structure

The MJSASKL organization consists of 28 employees responsible for both mosque management and operations, as illustrated in Figure 2. The head of the Maintenance Unit oversees all maintenance work across the entire MJSASKL building and grounds, including civil, mechanical, and electrical tasks. This role requires ensuring that all maintenance activities meet technical requirements and established standards. Since MJSASKL is designated as a National Heritage site under the National Heritage Act 2005, also recognized by UNESCO, certain works must adhere to specific standards. For instance, approval from the National Heritage Department is required for any development or repair work related to walls, floors, ceilings, and other relevant areas. Additionally, external maintenance responsibilities fall under the jurisdiction of other authorities, such as Dewan Bandaraya Kuala Lumpur (DBKL) and Alam Flora Sdn Bhd, who handle upkeep outside the mosque's building. By adhering to these rigorous standards and collaborating with various authorities, the MJSASKL organization ensures the preservation and optimal performance of this historic site.

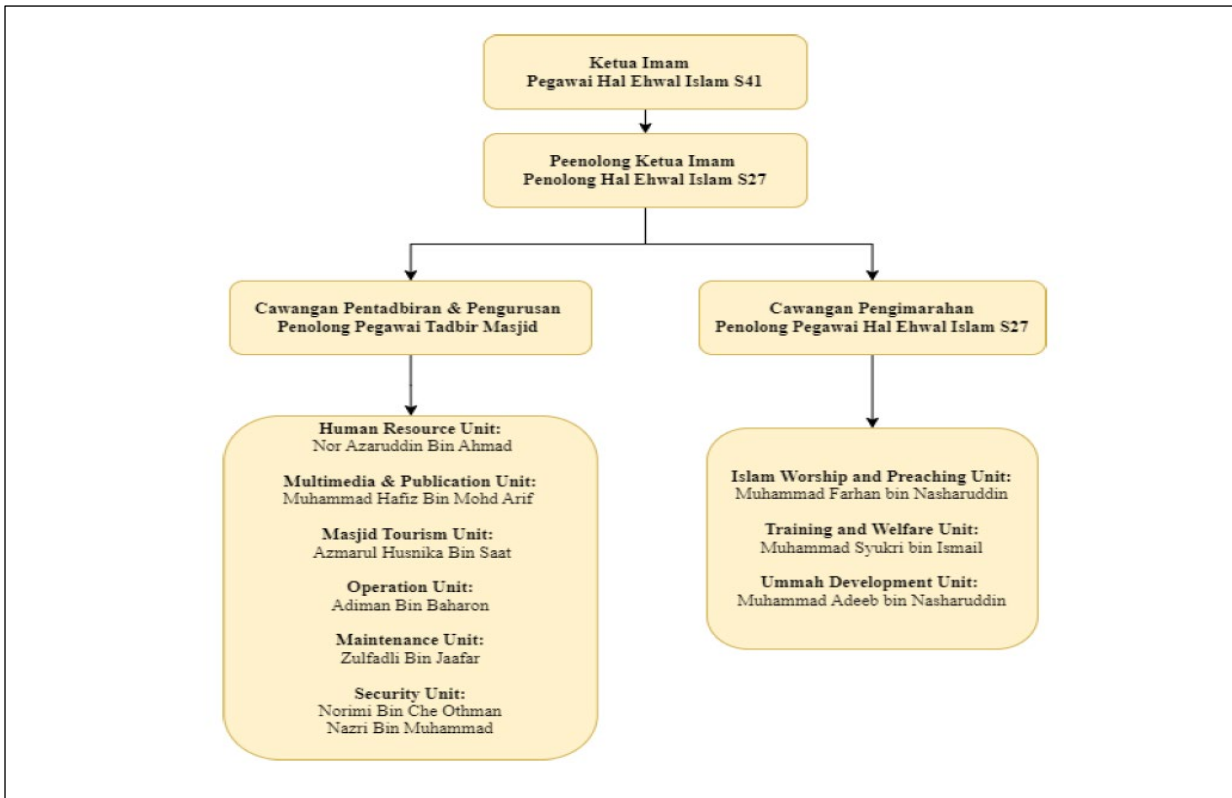


Fig. 2 Organization chart committee of MJSASKL

The Development Unit at JAWI, as depicted in Fig. 3, includes 10 members: one Head Engineer, three Civil Engineers, one Electrical Engineer, two Assistant Engineers from Majlis Agama Islam Wilayah Persekutuan (MAIWP), and three MYSTEP trainees. Together, they ensure systematic and effective maintenance across all JAWI-administered premises, including MJSASKL. JAWI intervenes in MJSASKL's maintenance for significant defects requiring a substantial repair budget. Monthly maintenance reports from MJSASKL to JAWI ensure transparency and accountability. This structure and reporting system maintains high standards of upkeep across all properties managed by JAWI.

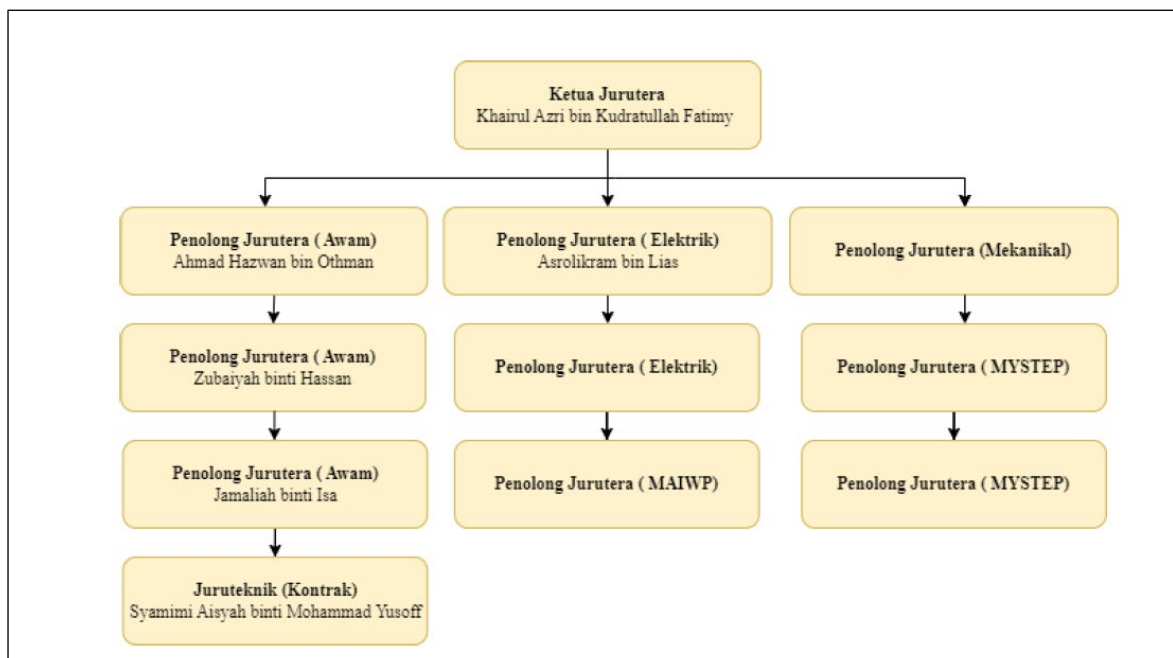


Fig. 3 Organization chart committee of Development Unit (JAWI)

## 4.2 Maintenance Approach

The findings summarized in Table 1 reveal that MJSASKL practices both planned and unplanned maintenance. Planned maintenance, which includes scheduled tasks, is primarily performed for routine activities such as cleaning. However, the majority of maintenance activities are unplanned, falling under corrective maintenance. Corrective maintenance typically occurs when equipment becomes faulty, ceases to function, or poses a danger due to its inability to operate properly [13]. These situations require immediate attention to restore functionality and ensure safety. In addition, corrective maintenance tasks that necessitate substantial budgets are escalated to upper management for budget allocation. These tasks are categorized as indent work or work under quotation, ensuring that appropriate financial resources are allocated for effective resolution.

**Table 1** Maintenance Approach at MJSASKL

Respondent (s)	Responses
B	<ul style="list-style-type: none"> <li>Planned maintenance at MJSASKL, also referred to as scheduled maintenance, involves routine cleaning of the mosque's interior, exterior, and water closet. This regular upkeep ensures a clean and well-maintained environment for all users.</li> <li>Unplanned maintenance at MJSASKL often involves corrective maintenance. For instance, a flood that occurred between mid-2020 and early 2022 significantly impacted the mosque's office management, leading to deterioration of the floor, walls, and electrical system in the internal area. This incident was reported to JAWI, requiring extensive corrective maintenance and a substantial budget allocation to address the damages.</li> <li>Any repair or maintenance work will not involve altering the structure or changing the original materials of the mosque building, as these materials are protected under UNESCO guideline</li> </ul>
D	<ul style="list-style-type: none"> <li>The suitable approach to maintenance will only be carried out if JAWI gets a complaint from MJSASKL management.</li> </ul>

## 4.3 Maintenance Personnel

At MJSASKL, maintenance tasks are carried out by varying numbers of workers, each following distinct procedures as illustrated in Table 2. The findings reveal that maintenance operations typically involve a team of 2 to 5 contractors for tasks such as cleaning, while internal repairs like fixing leaking ceilings and addressing lighting issues are managed by teams of four workers. Minor repairs are overseen directly by MJSASKL management and are typically completed within a week. In the case of major repairs reported to JAWI, a structured process for selecting contractors and allocating budgets is implemented, ensuring oversight by JAWI officers to maintain effective maintenance practices.

**Table 2** Maintenance personnel at MJSASKL

Respondent (s)	Responses
B	<ul style="list-style-type: none"> <li>Most of the maintenance work is carried out by a variety of workers. Contractor work typically requires only 2 to 5 people to complete the task, especially for cleaning services. Internal building repairs, such as fixing leaking ceilings and lighting, typically involve only four workers.</li> <li>Minor repairs are completed in less than a week, while major repairs require notification to JAWI or DBKL to appoint a contractor</li> </ul>
D	<ul style="list-style-type: none"> <li>MJSASKL management handles all minor repair work. However, if complaints are received by JAWI and major work is required, a procedure exists for selecting a contractor based on cost and budget allocation. The work will then be overseen by JAWI officers (Assistant Engineers)</li> </ul>

### 4.4 Maintenance Budget

According to the Department of Islamic Development Malaysia (JAKIM) guidelines, financial resources for maintenance should correspond to the building's condition. Generally, MJSASKL secures funding from three main sources: state and government allocations, internal management funds, and public contributions, with the majority sourced internally. Effective maintenance budget management is crucial for the preservation and functionality of mosques [8]. Respondents indicated that repairs costing below RM20,000.00 are managed as indent work, while those exceeding RM20,000.00 require quotation-based procedures. Table 3 provides a summary of respondent feedback regarding maintenance budget inquiries.

**Table 3** Maintenance Budget

Respondent	Responses
B	<ul style="list-style-type: none"> <li>The administration department handles financial approval for minor works. MJSASKL's contractor wages and budget are managed by its own committee and management by default.</li> <li>For major maintenance projects, the Head of the Maintenance Unit submits a report to upper management to allocate a budget</li> </ul>
D	<ul style="list-style-type: none"> <li>Upon receiving a complaint from MJSASKL management, JAWI officers inspect the site, providing reports, quotations, specifications, cost estimates, and repair timeline.</li> </ul>

### 4.5 Systematic Maintenance Management Practice

All respondents have provided valuable insights and reliable information regarding current maintenance management practices. Responses from the maintenance approach question indicate varied opinions among respondents regarding the optimal maintenance practices for MJSASKL. According to Jabatan Agama Islam Wilayah Persekutuan (JAWI), their oversight of maintenance management spans multiple buildings and premises, making their recommendations highly relevant for maintaining current practices. Table 4 summarizes respondent feedback on systematic maintenance practices

**Table 4** Systematic maintenance management practice

Respondent	Responses
A and B	<ul style="list-style-type: none"> <li>Appoint an experienced maintenance representative to oversee mosque building maintenance (<b>Maintenance Personnel</b>).</li> <li>Scheduled maintenance includes regular upkeep of water closets and building cleaning in response to complaints (<b>Scheduled Maintenance</b>).</li> <li>Implement preventive maintenance every 6 months to address civil, mechanical, and electrical aspects of internal buildings (<b>Preventive Maintenance</b>).</li> <li>Responsible authorities should develop an annual budget plan focusing on enhancing mosque maintenance. This should include costs for training maintenance staff and related courses to improve efficiency in mosque maintenance management (<b>Financial allocation</b>)</li> </ul>

The findings underscore that key components such as appointing experienced maintenance personnel, adhering to scheduled and preventive maintenance routines, and developing an annual budget plan are crucial for maintaining the operational efficiency, structural integrity, and cleanliness standards of MJSASKL. These practices not only ensure prompt upkeep and prevention of structural issues but also promote sustainability and effectiveness in mosque maintenance management, ultimately fostering a conducive environment for worship and community activities

### 5. Conclusion

This study has thoroughly analyzed maintenance management practices at MJSASKL, focusing on the administration of maintenance tasks and proposing essential components for effective management. It serves as a valuable reference for both MJSASKL and JAWI management, offering insights to optimize facility management.

By implementing these findings, both organizations can ensure the quality and safety of their buildings, supporting worship activities and benefiting the community

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## Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of the paper.

## References

- [1] Pintelon, L., Du Preez, N., & Van Puyvelde, F. (1999). Information technology: opportunities for maintenance management. *Journal of Quality in Maintenance Engineering*, 5(1), 9–24. <https://doi.org/https://doi.org/10.1108/13552519910257032>
- [2] Guy Deighton, M. (2016). Maintenance Management. In *Facility Integrity Management Effective Principles and Practices for the Oil, Gas and Petrochemical Industries* (pp. 87–139). Gulf Professional Publishing. <https://doi.org/https://doi.org/10.1016/C2014-0-00795-2>
- [3] Abdul Lateef, O. A., Khamidi, M. F., & Idrus, A. (2010). Appraisal of the building maintenance practices Malaysian universities. *Building Appraisal*, 6, 3/4, 261-275. <http://www.palgrave-journals.com/jba/journal/v6/n3/pdf/jba20113a.pdf>
- [4] BSI (1993). "BS 3811-Glossary of Maintenance Management Terms in Terotechnology." British Standards Institute, London.
- [5] Rani, N. A. A., Baharum, M. R., Akbar, A. R. N., & Nawawi, A. H. (2015). Perception of Maintenance Management Strategy on Healthcare Facilities. *Procedia - Social and Behavioral Sciences*, 170, 272-281.
- [6] Johar, S., Ahmad, A. G., Che-Ani, A. I., Tawil, N. M. and Usman, I. M. S. (2011). Analysis of Field Study on Building Defects in Old Mosque Building in Malaysia. *Journal Design Built*, 44-62
- [7] Razak, A.A., Hussin, M.Y.M., Muhammad, F., & Mahjom, N.(2014), Economic Significance of Mosque Institution in Perak State, Malaysia, *Kyoto Bulletin of Islamic Area Studies*, 7, 98–110.
- [8] Hamdan, W.S.Z.W., Hashim, M.H.M., Radzwan, N.A.M., Hassin, M.A., & Ismail, R.A. (2023). The Importance Maintenance Budgeting For The Mosques Management In Malaysia: A Systematic Literature Review. *Journal of Tourism Hospitality and Environment Management*, 8(34), 78-92
- [9] Mazlan, E.M., Che-Ani, A.I., & Sarman, A.M. (2018). Management of Building Mosque in Malaysia. *World Journal of Engineering Research & Technology*, 4(3), 48-56.
- [10] Adil, M. A. M., Mohd-Sanusi, Z., Jaafar, N. A., Khalid, M. M., & Aziz, A. A. (2013). Financial management practices of mosques in Malaysia. *Global Journal Al-Thaqafah*, 3(1), 23–29. <https://doi.org/10.7187/GJAT302013.03.01>
- [11] Islamiyah, N. (2019). The Financial Management Practices of Mosque: Study Case in Malaysia. *Jurnal Akuntansi dan Kewangan Indonesia*, 16(1), 108-121
- [12] Patton, M. Q. (2002). *Qualitative research and evaluation methods*(3rd ed.). Thousand Oaks, CA: Sage.
- [13] Luiz. (2018). *What Is Corrective Maintenance? | Definition and Examples*. Upkeep. <https://www.upkeep.com/learning/correctivemaintenance>