

MAINTENANCE PRIORITIZATION FOR *SURAU*
IN PRECINCT 11 PUTRAJAYA

BY

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the degree of Master of Science in Building Services
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ABSTRACT

Maintenance service of a *surau* is usually done on an ad-hoc basis, as and when it is required. Typically, the maintenance of *surau* is not on the priority list as the fund is limited, and the *surau* administrator typically focuses on prospering *surau* with religious activities such as *ta'lim* and other community activities. This focus leads to overlooking the maintenance aspects for the essential facilities services, for example, the cleanliness of the toilet hence becoming a deterring factor for the residents to perform their daily prayer at that particular *surau*. *Surau* in Putrajaya can be categorized into two (2) types: Government Quarters *surau*, funded by Government's Operating Expenditure (OE) that either has its maintenance contract or has a fixed allocation budget for maintenance. Another one is the Residential/Community *surau* which has a self-raised fund. This study shall concentrate on the Residential/Community *surau* type and prioritize the maintenance services to optimize the operating cost due to the financial constraint for the benefit of the administrators and the community and public user as a whole. Relative Importance Index (RII) and Analytic Hierarchy Process (AHP) methods are used to get a more accurate priority list, thus giving the best solution in planned maintenance programs from the “value for money” perspective. It can be concluded that there are five (5) planned maintenance scope that should be prioritized over the others that are; electrical system, PA system, air conditioning, cold water supply system, and housekeeping & cleaning services to ensure that the *surau* safety and functionality is available at all times without sudden disruption.

Keywords: maintenance, *surau*, prioritization, strategy, RII, AHP.

خلاصة البحث

عادة ما تتم خدمة صيانة المصلى على أساس مخصص، عندما يكون ذلك مطلوباً. عادةً، لا تكون صيانة المصلى في قائمة الأولويات لأن الميزانية محدودة، ويركز مدير المصلى عادةً على ازدهار سوراو بالأنشطة الدينية مثل التعليم وأنشطة المجتمع الأخرى. يؤدي هذا التركيز إلى التغاضي عن جوانب الصيانة لخدمات المرافق الأساسية، على سبيل المثال، نظافة المراض وبالتالي تصبح عاملاً رادعاً للسكان لأداء صلاتهم اليومية في هذا المصلى بالذات يمكن تصنيف المصلى في بوتراجايا إلى نوعين (2): المصلى في الأحياء الحكومية، بتمويل من نفقات التشغيل الحكومية (OE) التي لديها عقد صيانة أو لديها ميزانية مخصصة ثابتة للصيانة. وواحد آخر هو سكني/ المصلى المجتمعي الذي لديه ميزانية تم جمعها ذاتياً. ترغب هذه الدراسة في التركيز على نوع المصلى السكني/المجتمعي وإعطاء الأولوية لخدمات الصيانة لتحسين تكلفة التشغيل بسبب القيود المالية لصالح المسؤولين والمجتمع والمستخدم العام ككل. يتم استخدام أساليب مؤشر الأهمية النسبية (RII) وعملية التسلسل الهرمي التحليلي (AHP) للحصول على قائمة أولويات أكثر دقة، وبالتالي تقديم أفضل حل في برامج الصيانة المخطط لها من منظور "القيمة مقابل المال". يمكن أن نستنتج أن هناك خمسة (5) نطاقات صيانة مخططة يجب أن يكون لها الأولوية على الآخرين؛ النظام الكهربائي، ونظام PA، وتكييف الهواء، ونظام إمداد الماء البارد، وخدمات التدبير المنزلي والتنظيف لضمان توفر سلامة ووظائف سوراو في جميع الأوقات دون انقطاع مفاجئ.

الكلمات المفتاحية: الصيانة، المصلى، تحديد الأولويات، الإستراتيجية، RII ، AHP.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Science in Building Services Engineering.

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DECLARATION

I hereby declare that this dissertation is the result of my own investigation, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Mohd Fadhlin bin Arshad

A handwritten signature in black ink, consisting of a stylized 'M' followed by a horizontal line and a vertical stroke.

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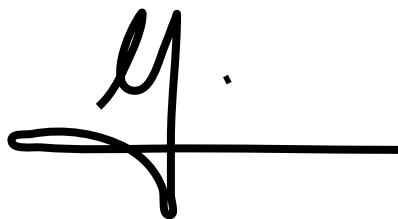
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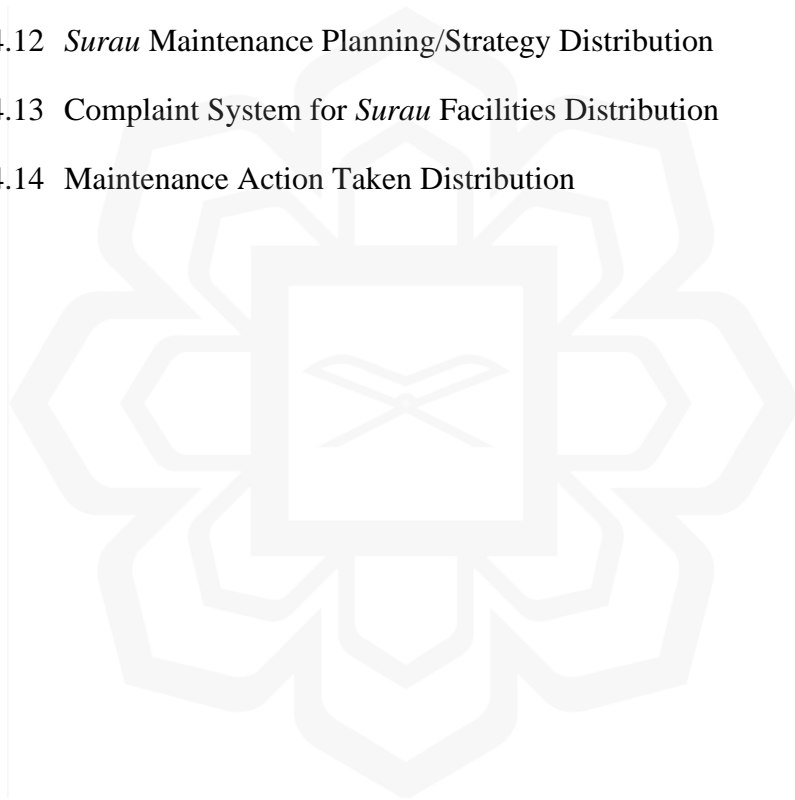
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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

Only in the Nusantara region, this smaller version of the *masjid* (mosque) is called *surau*. According to Kern (1956), *surau* is basically a small *masjid*, only not adapted for Friday prayer. It is called *pasuroan* or *suro* that means place of worship in Sumatran Batak's language. In the other parts of the world, such as India and Pakistan, this smaller *masjid* is still called a *masjid*, where a *masjid* with Friday prayer is called *masjid jami'*.

Mufti Wilayah Persekutuan defines a *masjid* as a place built to perform prayers inside it with the intention of getting Allah's blessings. It is allocated as a place where congregational five daily prayers are performed and specific prayers such as 'Eid prayers, *istisqa'*, and many more. Distinguished by the fact where *Jumaat* prayers are performed, *masjid al-Jami'* is included as a *masjid* as well. While *musalla* literally means a place to perform prayers and *du'a*.

According to *Garis Panduan Perancangan Masjid & Surau GP008-A* (JPBD, 2011), *surau/musalla* is a building for the Muslim to perform their *ibadat* and related community activities in a smaller scale compared to *masjid*. As for the public interest buildings where people came just to perform daily prayers such as in the shopping malls, airports, offices, and highway's rest and relax (R&R) area, it is supposed to be known just as a space for *solat* (*ruang solat*).

Surau is a term that is understandable in Malay culture as a small *masjid*, and it should perform the function similar to a *masjid* but on a smaller scale.

It was narrated that Abu Sa'eed Khudri said: "The Messenger of Allah said: 'All the earth is a *masjid*, except for graveyards and hammam.'" The first *masjid* building that was ever built according to the Quran is in Bakkah (Makkah). During the time of Prophet Muhammad (ﷺ), the first building that the Prophet (ﷺ) instructed to build was *masjid* that is *Masjid Quba'*. The propagation of Islam is further coordinated from the *Masjid Nabawi* in Madinah al Munawwarah. *Masjid* that was built has performed as the heart of activities to the community as the daily routines revolve around *masjid*, not concentrating for *ibadah khususiyah* only. These incidents show the utter importance of *masjid* and *surau* to the community.

The main functions of *masjid* during the time of Prophet Muhammad (ﷺ) are the activities of *dakwah* (Islamic propagation), *ta'lim wa ta'alum* (teaching and learning), *ibadat & zikr* (worship & remembrance), and *khidmat* (giving service) to the *masjid's* building and the jamaah. (M. Yusuf, 2013)

Narrated by Aisha r.a., Ummul Mu'minin: The Messenger of Allah (ﷺ) commanded us to build a *masjid* in different localities (i.e., in the locality of each tribe separately) and that they should be kept clean and be perfumed. Abu Hurairah (ra.) narrated the story of the black woman who used to clean the *masjid*. The Messenger of Allah (ﷺ) asked about her, and he was told that she had died. He said to them, "Why didn't you inform me of her death?" It seems that they regarded her as an insignificant

person. The Messenger of Allah (ﷺ) said: "Show me her grave." They showed him her grave, and he offered the funeral prayer for her.' Muslim added in his narration, "Verily, those graves are full of darkness for those buried in them. Allah, the Almighty, will illuminate them for their dwellers by my prayer over them."

These two hadiths show the importance of upkeeping the cleanliness of a *masjid* or *surau*, particularly to the convenience for the congregations (*jamaah*) to do all the religious and daily activities in the building. In a contemporary context, these upkeeping activities for cleanliness and other facilities and services in the building are known as maintenance activities.

1.2 STATEMENT OF PROBLEM - MAINTENANCE ISSUES IN SURAU

Any building that has been built will eventually deteriorate physically due to extensive usage, weather condition, wear and tear. *Surau* and *masjid* are used daily for religious activities whereas in Malaysia, they will generally be utilized to their maximum capacity during the month of *Ramadan*.

Generally, simple maintenance and housekeeping tasks will be done on a certain frequency or ad-hoc basis by a collaborative effort by the community members who are also the users of the *surau*. For maintenance that needs technical knowledge and competencies, such as electrical wiring or air-conditioning works, the task is usually outsourced to expert contractors.

Issues that usually occur due to the lack of maintenance in *surau* is frequent electrical tripping, air-condition not working, water supply not sufficient and dirty,

toilets are not cleaned, toilet cistern is not working, hand bidet is missing, air ventilation is not sufficient, water seeping through walls and flat roof, and sound system is not working well to name a few. When these issues happen, only then will it trigger maintenance action by the responsible person within the *surau*'s appointed committee members who are in charge of handling the maintenance issues.

These recurring issues of failure in facilities and services for the *surau* building can be traced by a few causes that are:

- i. Insufficient budget or no fixed allocation for *masjid* maintenance (Anis, 2010). The biggest issue that hinders the proper implementation of maintenance activities is the limited funds. Most of the *surau*'s management did not allocate a fixed maintenance budget since there are no or limited allocation funds from the relevant bodies, thus making the *surau* rely on other non-fixed sources of income.
- ii. The *masjid* administrators had no prior knowledge of proper maintenance management and strategy (Anis, 2010). The study finds that most of the Person in charge appointed within the *masjid* committee to oversee the maintenance scope are not competent with building maintenance. It gives a drawback for the maintenance aspect as the manager did not have the proper knowledge and skill set needed to strategize maintenance activities.
- iii. No proper planned maintenance schedules (Anis, 2010). Planned maintenance schedules specific for *masjid/surau* need to be established as a guide for the administrator's implementation.
- iv. The maintenance culture adopted is only breakdown maintenance. Since the maintenance budget is insufficient and the knowledge related to

maintenance is limited, the usual practice chosen by the administrator is a run-to-fail approach. Proactive maintenance generally is not being implemented to prevent the breakdown of the essential system in the *surau*.

The effect of less maintained *surau* will create an uncondusive and inconvenient space to focus on the ibadah or other community activities for the jamaah and public who use the *surau* facilities. This condition may lead to fewer people being attracted to that particular *surau* and opting to go to other nearby *surau* or *masjid*.

1.3 PURPOSE AND OBJECTIVES OF THE STUDY

This study is intended to guide the *surau* administrators and stakeholders to select and focus on the essential planned maintenance task to ensure the facility services are safe and operating in their optimum performance. At the same time, the findings should help in optimizing cost through an appropriate planned maintenance prioritization strategy as the budget for maintenance is always kept limited compared to other persistent religious and community activities.

The objectives of this study are as follows:

- i. To identify *surau* with maintenance strategy and planning.
- ii. To identify the important factors between building facilities and services in the *surau* according to the perception of the public/user.
- iii. To recognize which unplanned reactive maintenance action needs to be taken urgently.
- iv. To rank which building services to be maintained periodically to ensure the system or services will not fail abruptly.

1.4 RESEARCH QUESTIONS

There are a few research questions that need to be considered in conducting this research.

- i. Does *surau* have a maintenance strategy and planning?
- ii. What are the important factors in building facilities and services in *surau*?
- iii. What is the most important unplanned maintenance that needs urgent action?
- iv. Which building services need priority to be scheduled for the maintenance program?

1.5 SURAU IN PUTRAJAYA PRECINCT 11

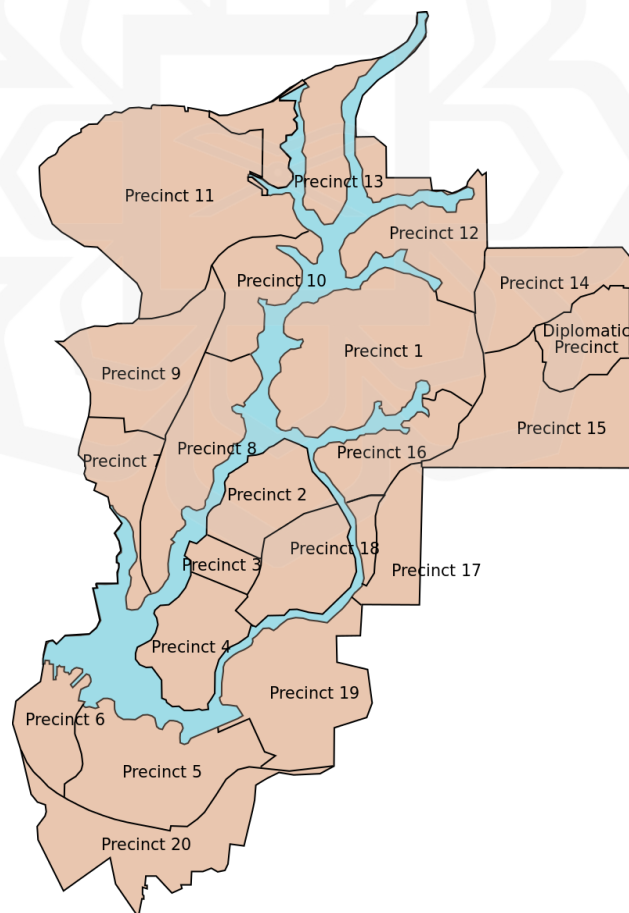


Figure 1.1 Putrajaya map - source Wikipedia

Putrajaya is a federal administrative center of the Malaysian Government. Planned in the '90s to be an intelligent city in a garden, Putrajaya, which spans approximately 49km², is a mixed development of Government office buildings, commercial, residential houses mainly for government servants with 38% of Putrajaya is reserved for green area. Estimated data from the Department of Statistics Malaysia (DOSM) 2010 census, the population of Putrajaya to date is approximately 100,000 people. As of Q1 2019, Putrajaya has a total of 21,574 dwelling units.

There are only three (3) *masjids* in Putrajaya namely Masjid Putra, Masjid Sultan Mizan Zainal Abidin and Masjid Mahmoodiah while there are currently 73 *suraus* registered with Jabatan Agama Islam Wilayah Persekutuan (JAWI). These consist of *surau* in government quarters/residential houses area, schools, and also government offices. This figure shows the significant amount of *surau* compared with *masjid* in Putrajaya, thus cumulatively signifies the importance of managing these buildings and facilities to ensure the investments made worth the value.

Putrajaya Precinct 11 area covers approximately about 4.38km² of Putrajaya's residential and commercial area, including a public park (*Taman Saujana Hijau*). It has comprehensive facilities for the residents such as *Pusat Kejiranan* with cafeterias, swimming pool, badminton and tennis courts and also shoplots. Other facilities such as the Health Clinic (*Klinik Kesihatan*), public schools, a petrol station, and convenience stores are also available at the expenses of the residence.

As for religious facilities, currently, there is no *masjid* being built in Precinct 11, but there is a plan to construct it in the near future. The nearest masjid is located

around 8km from here is Masjid Putra. To complement this basic needs of the residents, there are fourteen (14) numbers of *surau* built in this Precinct 11 alone. Typically, most of the residents in Precinct 11 opt to choose the nearest *surau* to their respective houses for convenience rather than going to the *masjid*, which is relatively far. However, some residents who go to different *surau* of their preference even though it is a bit far from their house.

From the field survey, *surau* in Precinct 11 Putrajaya basically can be divided into two (2) categories that are Government Quarters/Schools *Surau* and Residential/Community *Surau*. Below is the list of *surau* in Precinct 11 Putrajaya.

Table 1.1 List of *Surau* in Precinct 11, Putrajaya - source field study

<i>Surau's Name</i>	<i>Government Quarters/School</i>	<i>Residential/Community</i>
1. Surau An Nur, P11K		1
2. Surau Kondominium Saujana Aster		1
3. Surau Abdul Rahman Auf, P11B (<i>Surau Jumaat during MCO</i>)	1	
4. Surau Al Ehsan, P11B	1	
5. Surau Al Intisar, Zon 6B	1	
6. Surau Silaturrahim, Zon 3A	1	
7. Surau Al Furqan, P11A (<i>Surau diri Jumaat</i>)		1
8. Surau Al Ansar, Balai Polis P11	1	
9. Surau Al Itqan, SMKPP(2)	1	
10. Surau Al Aziz, PRIMA (<i>Surau Jumaat during MCO</i>)		1
11. Surau De Palma, PPAM Palma		1
12. Surau Az Zakirin, Putra Damai (<i>Surau Jumaat during MCO</i>)		1
13. Surau Darul Ulum, SMKA Putrajaya (<i>Surau diri Jumaat</i>)	1	
14. Surau Fathur Rahman, PPAM Melinjau (<i>Surau diri Jumaat</i>)		1
<i>Total</i>	7	7

Due to some limitations, this study will only focus on the four (4) Residential/Community's *surau* that are *Surau Al Furqan*, *Surau Az Zakirin*, *Surau Al Aziz*, and *Surau Fathur Rahman*, as their maintenance allocation is not funded by government's Operating Expenditure (OE) through a fixed allocation from Bahagian Pengurusan Hartanah (BPH) Jabatan Perdana Menteri, Malaysian Royal Police Department (PDRM) or Ministry of Education (MOE).

Understandably these four (4) *suraus* are having a limited budget because they are largely dependent on the donation collection of the public/residents as compared to the government's quarters or schools *surau*. Other sources of income identified are through allocation given from the office of Ahli Parlimen Wilayah Persekutuan Putrajaya or political parties donation, government agencies (such as Jabatan Agama Islam Wilayah Persekutuan (JAWI), Pusat Zakat, or Kementerian Wilayah Persekutuan) Non-Governmental Organizations (NGO) and Corporate Social Responsibility (CSR) from Private Companies.

1.5.1 *Surau Al Furqan*

Surau Al Furqan was completed in March 2004 and operated since June 2004. It was built on a piece of land in Jalan P11A with the design inspired from *Masjid Kampung Laut* Tumpat, Kelantan. It was officiated on the 1st October 2004. As one of the earliest *surau* in Putrajaya, it has a full capacity of 700 people inside the main hall, and 1,200 people can perform *jamaah* in the overflow area (corridors, walkway & covered area)



Figure 1.2 Surau Al Furqan - source field survey

This surau also has *Koperasi Kariah Surau Al-Furqan Putrajaya Berhad*, which conducts business such as *Al-Furqan* Minimart (convenient store), food outlet, catering services, selling mineral water, men's barbershop, managing distribution of necessities to the asnaf, besides providing death management & benefit services (*khairat kematian*).



Figure 1.3 Al Furqan Cafe & Minimart - source field survey

Pelan Strategik Surau Al Furqan 2017-2020 is a three (3) year strategic plan published by *Surau Al Furqan* in a booklet form. It is one of its kind for a *surau* in Putrajaya. It has outlined five (5) Key Result Areas (KRA) that is:

- i. Sustainable Governance
- ii. Economic activity, funding, and financing
- iii. Improvement of knowledge, ibadah, and dakwah program
- iv. Unity of ummah & community
- v. Women's development and family welfare

One KRA element that is related to this study is the Development, Facilities, and Safety Management in the Sustainable Governance KRA with the strategic objective to improve and maintain infrastructure & facilities for the comfort of the *kariah* members. Among the activities include toilet upgrading, asset and inventory records, landscape improvements, kitchen upgrading, *solat* area extension, car park area, and air-conditioning *solat* area.



Figure 1.4 Main prayer hall and extension area - source field survey



Figure 1.5 Giant Fan, Flex Ducted Air-condition system - source field survey