

# LANDSCAPE MANAGEMENT IN THE ISLAMIC CENTER AREA, BEKASI

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## ABSTRACT

Islamic Center is generally a place of guidance and worship for Muslims who have supporting facilities for worship activities carried out in the Islamic Center area. For a public facility Islamic Center should have areas that are comfortable to use by users both indoors and outdoors. In order to create a good outdoor space functionally and aesthetically, good landscape management is needed, starting from the assignment system to the maintenance implementation system. The problem that occurs at the Bekasi Islamic Center is the ineffectiveness of the workforce assignment in the management and physical maintenance of the outdoor space area, the purpose of this study is to produce recommendations for work effectiveness for the physical maintenance unit at the Bekasi Islamic Center. The method used is a qualitative method by analyzing data through interviews, observation and data collection. The expected results can provide recommendations related to physical maintenance activities at the Bekasi Islamic Center so that they can be in accordance with applicable standards and can affect the effectiveness of the work performed.

**Keywords:** physical maintenance evaluation, Islamic center

## INTRODUCTION

Bekasi city is part of metropolitan area and become satellite city with the largest population in Indonesia. The majority of Bekasi city residents adhere to Islam, which is the largest religion in Indonesia, therefore Bekasi city has places of worship in every district and city, one of which is the Islamic Center. *Islamic Center* In general, it is a place of guidance and worship for Muslims which is equipped with facilities and supporting elements such as soft materials and hard materials. Good physical maintenance in optimizing the function of supporting facilities is important in managing landscape elements. Use *hard material* and soft materials on the site are less than optimal due to lack of physical maintenance on these elements, one of which is which is the center of activity on the site. The significant decline in visitors during the Covid-19 outbreak made the Islamic Center a one of the religious centers experienced a decrease in activity and visits, resulting in minimal use of other religious areas and facilities.

Maintenance of landscape elements is also affected due to this lack of people to carry out physical maintenance at that time (Baskara, 2011; Maulana et al., 2023). Regular maintenance and care of a landscape area will greatly affect the appearance of the garden itself, affect its value as an amenity and even in the long run, will greatly affect the plant community and nature as a whole (Afandi et al., 2012). Based on reviews and location assessments from the Dip.id and Google applications, there are several reviews regarding the lack of optimization in physical maintenance at the Bekasi Islamic Center. Carrying out physical maintenance is very important because the use and function of existing facilities is expected to support the comfort and safety of site users. Considering the importance of this, an evaluation of physical maintenance based on its condition and function needs to be carried out in order to provide recommendations as an effort to optimize the function of each landscape element at the Bekasi Islamic Center.

## RESEARCH METHODS

The research method that I use is a descriptive qualitative research method, namely data that uses descriptions or measurable explanations based on directed and objective assessments that are used to solve problems and find the focus of problems discussed and developed by researchers (Sugiyono, 2018).

The data collection method that will be carried out by researchers is the Observation and Interview method. Observations consist of data on biophysical conditions and physical maintenance. The interview method was aimed at physical maintenance managers who carry

out activities at the Bekasi Islamic Center. By using this method, it is hoped that researchers will get maximum results based on facts in the field by solving the problems that are the case studies in this research.

The variables used in the data collection process are as follows:

Table 1. Research variables

No.	Research Variable	Sub Variable	Indicator Assessment	Source
1.		Maintenance of grass, shrubs, bushes and trees.		
	Physical maintenance of softscape elements	Maintenance: Cleaning/Sweeping, Watering, Pruning, Landscaping, Weeding, and Pest and disease control.	Standards and provisions of physical maintenance on softscape elements.	Literature study (Department of Public Works.2008, Achmad. 2009. Mosque Architecture).

#### Observation data collection

The observation data studied were physical maintenance objects, namely softscape elements and hardscape elements, then the physical conditions at the Bekasi Islamic Center site location as well as photo documentation.

#### Interview data collection

The interview was conducted once with the physical maintenance manager of the Bekasi Islamic Center, by asking 10 questions related to physical maintenance as well as recording equipment along with audio interviews with the resource persons.

#### Data Collection

##### Accessibility



The Bekasi Islamic Center is a fairly large religious and educational center in the city of

North Bekasi which is located in Medan Satria sub-district, Bekasi City which is about 2 km from Summarecon mall Bekasi. Located at an altitude of around 81 m above sea level (asl). The total area is 7.5 ha with a community area of 6.2 Ha with a built-up area of 2.8 Ha and 3.4 Ha for green open land. The research was conducted in the Community area at the Islamic Center, Bekasi City. The visible site boundary is on the north side directly adjacent to the KH Noer Ali Suplesi park, to the west bordering Jl. Prosperity and copper swamp, to the east bordering Jl. Ahmad Yani 16 and South bordering Jl. Ahmad Yani. The average travel time from Jakarta City is around 1-2 hours driving.

### **Human Resources (HR)**

Human resources are divided into 2 groups, namely:

- a. The physical maintenance manager is the person in charge of carrying out all activities related to physical maintenance on the site area
- b. The unit maintenance sub-division is the person who supervises and evaluates daily physical maintenance and recommends the adequacy of the maintenance budget based on needs

The diversity of staffing status above shows that the number of daily workers in the physical maintenance unit can provide input and suggestions to each other, also minimizing the occurrence of worker shortages when the frequency of maintenance needs is high. The work is carried out by 2-5 people per unit using daily shifts with a time distribution of 08.00 – 12.00 and 12.30 – 16.30.

### **Physical maintenance activities**

Physical maintenance activities are carried out routinely and periodically, maintenance is carried out alternately from one unit to another.

### **Maintenance activities Soft elements (Softscape)**

Maintenance is an effort to maintain and care for the landscape area with all the facilities in it so that conditions remain good or as far as possible maintain in a state that is in accordance with the original purpose and function (Ruba et al., 2015). In general, physical maintenance activities at the Bekasi Islamic Center are divided into two types, namely routine and non-routine/incidental maintenance activities. Routine maintenance is maintenance activities carried out at certain periodic intervals such as watering, pruning, fertilizing, and maintaining machines used during work. Meanwhile, incidental activities are activities carried out only when needed, such as controlling weeds, pests and plant diseases. Existing vegetation in the Islamic Center area includes the following.

Table 2. Existing vegetation at the Bekasi Islamic Center

No.	Species Name	Local Name	Species Name	Local Name
1.	<i>Ficus benjamina</i>	Banyan	<i>Hibiscus rosasinensis</i>	Hibiscus
2.	<i>Samanea saman</i>	Trembesi	<i>Tabernaemontana corymbosa</i>	Mini rembosa
3.	<i>Tamarindus indica</i>	Tamarind	<i>Bromelia sp.</i>	Bromeliads
4.	<i>Polyalthia longifolia</i>	Glodogan pole	<i>Soka Ixora</i>	Soka
5.	<i>Cocos nucifera</i>	Coconut	<i>Dracaena trifasciata</i>	Mother-in-law's tongue
6.	<i>Mangifera indica</i>	Mango	<i>Chlorophytum comosum</i>	Lilies of Paris
7.	<i>Citrus</i>	Lime	<i>Lilium candidum</i>	Daffodils
8.	<i>Dypsis lutescens</i>	Yellow palm	<i>Portulaca grandiflora</i>	Bombai silk
9.	<i>Tabebuia sp.</i>	Tabebuia	<i>Bougainvillea</i>	Bougainvillea
10.	<i>Casuarina sp</i>	Fir	<i>Jasminum sambac</i>	Jasmine
11.	<i>Plumeria rubra</i>	Cambodia	<i>Canna indica</i>	Cana
12.	<i>Mimulus elengi</i>	Cape	<i>Axonopus compressus</i>	Mini elephant grass

**a. Maintenance of trees and shrubs**

Routine maintenance is carried out alternately. Pruning is done using a plant pruning machine or plant scissors which is done as the plant grows. Watering is done 1-2x a day in the dry season and once when the rainy season arrives. Fertilization is carried out once every 6 months using compost or NPK chemical fertilizer.

**b. Lawn Maintenance**

Lawn maintenance is carried out regularly so that the height of the grass does not disturb the view and atmosphere. Grass cutting is done with a grinding tool, which is a grass cutting tool with a sharp tip in the form of a small gear which functions to cut grass. Watering with a sprinkler is done once during the rainy season and 1-2x a day during the dry season. The use of fertilizer on grass is done by spreading the fertilizer over the growing area and watering it so that the fertilizer is absorbed evenly.

**Maintenance activities on hard elements (Hardscape)**

Routine maintenance for hard materials such as repairing drainage channels, repairing or cleaning park benches, CPG, sweeping or cleaning pavement, cleaning ponds, and all kinds of maintenance to treat hard elements of the park from moss or rust and others. The existence of urban parks with optimal quality is very important for a city besides functioning as an ecological function it also functions as a public space, namely for interaction for urban communities (Pratomo et al., 2019).

**Translated with [www.DeepL.com/Translator](http://www.DeepL.com/Translator) (free version)**

**a. Paving blocks**

As a hard element that is often stepped on by visitors, paving blocks must be in good physical shape and not damaged. Maintenance techniques that can be carried out are sweeping and watering as much as possible using cleaning tools, so that there is no damage or discoloration of the paving blocks.

**b. Footpath paving**

Footpath maintenance is an activity related to road maintenance and repairs that are necessary and planned to maintain the condition of the footpath so that it continues to function optimally throughout the life of the specified road plan and reduce the rate of road damage. Routine maintenance carried out includes repairing minor damage, patching holes, leveling, repairing damage to pavement edges, and maintaining sidewalks.

**c. Bollards**

Bollards are a barrier for motorcyclists with a vertical position, small and sturdy which usually consists of 3-4 bollards in 1 pedestrian. Bollard maintenance includes regular cleaning, namely 1 x 7 days and regular painting.

**d. Light**

Maintaining street lights is very important as a hardscape element. It is important to maintain street light cables by checking the current using a volt meter to prevent short circuits. Short circuits usually occur because there is continuous cable digging activity.

**e. Information boards**

Information boards or signage are hard elements that function to provide information or directions to the area you are visiting or want to visit. The importance of regular maintenance such as cleaning and repainting so that the intended instructions can be read clearly.

**f. Ladder**

Stair maintenance is carried out regularly, including sweeping, cleaning, coating or repainting if the color fades, as well as repairs if damage occurs.

**The Data Analysis Method**

Data was analyzed using descriptive analysis. Based on data from observations and interviews, the following are the results of data analysis carried out on soft element maintenance (*softscape*) and hard elements (*hardscape*) at the Bekasi Islamic Center.

Based on the results of the interview, the following data was obtained:

- a. Softscape physical maintenance work

Soft (softscape)	el	Type of work	Ideal1	Actual	Information
Grass		Sprinkling	Once for the rainy season 1-2 times during the dry season	Done more in the dry season	In accordance
		Pruning	6-10 mm high, Once every 7-15 days	Done every day per area without looking at the high or low grass	In accordance
		Fertilization	Minimum 1-2x per 6 months	Once every 3 months use urea fertilizer	It is not accordance w
		Control of weeds and pests	Using natural pesticides or pulling weeds manually.	Using a push lawn machine along with mowing	It is not accordance w
		<i>Sprinklers</i>	Done during the dry season	Done in the dry season	In accordance
		Sweeping	1-2 times per week	Done at least 7 days after pruning	In accordance
Bush		Sprinkling	Dry season: 1x per day Rainy season: 1x2 Sunday	Done during the dry season	It is not accordance w
		Pruning	Beginning of planting, Routinely 1x2 years	once every 2 weeks	In accordance
		Weed control	If there are weeds grow, Manually.	Done simultaneously with pruning	In accordance
		Fertilization	Done 1-2x within 6 months	Once every 2 weeks, using NPK and once every 6 months using compost	It is not accordance w
		Pest and disease control	Throw away part or whole plant which suffer from disease.	Fishing is carried out	In accordance
		Soil loosening	When the ground conditions are solid	Are not done	It is not accordance w

<b>Tree</b>	Sprinkling	Dry season: 1x per 2 days Rainy season : Not watered	Depending on the condition of the land, if it is still damp, once a day is enough	In accordance
	Weed control	Weeds grow around the stems and leaves of trees	A maximum of once a week, weed eradication is carried out	In accordance
	Pruning	To form suitable plants its function and stimulate growth.	According to the season, pruning is done to avoid visual obstruction and stimulate growth	In accordance
	Fertilization	Minimum 2-4x per1 year	Once every 3 months using NPK at a dose according to the size of the tree	It is not accordance w
	Pest and disease control	-Mechanics: kill pests one by one in that part not healthy, -Chemistry: with pesticide.	Disposal is manual, but if necessary, pesticides with environmentally friendly chemical levels are used	in accordance

Ideal1 : Department of Public Works 2004 - 2008.

b. Physical hardscape maintenance work

<b>Hard elen (Hardscape)</b>	<b>Type of work</b>	<b>Ideal<sup>2</sup></b>	<b>Actual</b>	<b>Information</b>
<b>Paving Blocks</b>	Cleaning	Cleaning 1-3 days	Regular cleaning is carried out once a week, to avoid dirt in the form of sediment	In accordance
	Checking/repairing	Periodic checki	Done 2x 1 day	It is not in accordance with
<b>Footpath Pavement</b>	Sweeping	1x 1 day	Fallen leaves are cleaned twice a day	In accordance
	Checking/repairing	1x 1 day	Several locations where the road pavement was damaged and mossy	In accordance
<b>Bollards</b>	Cleaning	1-2x 7 days	Incidental	It is not in accordance with



	Painting	1x 30 days	Repainting is done once a year	It is not in accordance with
<b>Light</b>	Replacement	1x 3 months	Incidental	In accordance
<b>Information boards</b>	Repair/check	Periodic check	No repairs have been carried out yet	It is not in accordance with
<b>Ladder</b>	Cleaning	1x 1 day	Every day periodically	In accordance

Source: Researcher data 2023

Ideal1: Arifin and Arifin (2005)

### Calculation of work capacity and effectiveness

No.	Physical Maintenance Area	Work Capacity (m2/Hour)
1	Cleaning	800
2	Drain grass and soil cover plants with plastic hoses	150
3	Shredding grass with a holding machine	250
4	Scouring and seeding of shrubbery and soil cover	40
5	Population in shrubby plants and soil cover	100

Source : Arifin and Arifin (2005)

Work capacity has units of m<sup>2</sup>/person hour (square meters per person per hour) in accordance with the standards stated in Ideal 1 above. To calculate the calculation in HOK, work capacity must be converted into 1 day (1 day is 7 hours in accordance with Law No. 13 of 2003 so the unit for HOK is OH (person day).

Table 3. Physical maintenance area, area and unit workforce

No	Physical maintenance area	Unit area (m <sup>2</sup> )	Labor (Existing)
1	Maintenance unit A	8,192	5 people
2	B maintenance unit	6,325	4 people
3	C maintenance unit	8,013	4 people
4	D maintenance unit	7,780	4 people
5	E maintenance unit	10,155	7 people
6	F maintenance unit	9,562	5 people
7	G maintenance unit	12,985	6 people
<b>TOTAL AVERAGE</b>		<b>63,012</b>	<b>35 (Hok)</b>



**Figure 18.** Size and location of physical maintenance units, Source: Bekasi Islamic Center Management, 2019

Calculation of work capacity and effectiveness per unit can be calculated after knowing the size of the physical maintenance area in each unit.

Table 4. Physical maintenance area of the unit

No.	Types of Maintenance Work	Unit A	Unit B	Unit C	Unit D	Unit E	Unit F	Unit G	Units per hour
1	Cleaning	4500	3470	3800	4780	5155	4850	6560	m2
2	Drain grass and soil cover plants with plastic hoses	655	680	715	980	885	832	940	m2
3	Shredding grass with a holding machine	150	184	285	330	224	200	260	m2
4	Scouring and seeding of shrubbery and soil cover	1080	1379	1356	1108	2705	1706	2158	m2
5	Population in shrubby plants and soil cover	615	780	717	575	583	687	840	m2

Working capacity is calculated by the formula:

$$Work\ capacity = \frac{maintenance\ area}{work\ hour \times people\ work}$$

Work effectiveness is calculated by the formula:

$$Work\ effectivity = \frac{Observation\ area}{Lecture} \times 100\%$$

Example of working capacity calculation for physical maintenance work cleaning and sweeping:

$$\begin{aligned} \text{Work capacity} &= \frac{4500 \text{ m}^2}{6 \text{ jam} \times 1} \\ &= 750 \text{ m}^2/\text{jam} \end{aligned}$$

$$\begin{aligned} \text{Efektivitas kerja} &= \frac{\text{Observation}}{\text{lecture}} \times 100\% \\ &= \frac{750}{800 \text{ (Ideal)}} \times 100\% = 93\%* \end{aligned}$$

Add up all the units, then divide by unit to get an average percentage of work effectiveness of 86%.

Table 5. Effectiveness of hourly work in physical maintenance area

No.	Types of Maintenance Work	Unit A	Unit B	Unit C	Unit D	Unit E	Unit F	Unit G	Units per hour	Average	Work Effectivity
1	Cleaning	4500	3470	3800	4780	5155	4850	6560	m2	839 m2	86%
2	Drain grass and soil cover plants with plastic hoses	655	680	715	980	885	832	940	m2	133 m2	66%
3	Shredding grass with a holding machine	150	184	285	330	224	200	260	m2	38,8 m2	125%
4	Scouring and seeding of shrubbery and soil cover	1080	1379	1356	1108	2705	1706	2158	m2	257 m2	114%
5	Population in shrubby plants and soil cover	615	780	717	575	583	687	840	m2	114 m2	90%

Information:

Ideal (physical maintenance work capacity standards based on Arifin and Arifin (2005)),

Unit A-Unit G (Physical maintenance area at Islamic Center Bekasi)

## RESULTS AND DISCUSSION

Referring to the results of interviews and direct observations on the site and physical maintenance standards in the Department of Public Works in 2004-2008 and Arifin in Arifin

(2005), the following is the interpretation of the results of the analysis of physical maintenance at the Bekasi Islamic Center: Based on the results of interviews and observations, it is proven that physical maintenance At the Islamic Center in Bekasi city there is no harmony in the implementation of maintenance activities. For example, physical maintenance activities such as cleaning and sweeping, watering grass and ground cover plants with a hose and fertilizing plants have not reached maintenance targets according to standards because the value is far from 100%. Additional physical maintenance workers are needed in the cleaning and sweeping maintenance unit, watering grass and plants. covering the ground with a hose and fertilizing plants to maximize physical maintenance work in accordance with standards based on the Department of Public Works No. 8 of 2008 concerning street landscape work, as well as to achieve physical maintenance targets, it is necessary to have a daily, weekly and monthly to yearly work agenda or schedule to evaluate and assess the effectiveness of the performance of physical maintenance workers.

## CONCLUSION

Based on data collection and analysis, the physical maintenance work at the Islamic Center in Bekasi city is sufficient to meet maintenance work standards, but in its implementation it cannot be said to be ideal. The work standards and references made by the Islamic Center do not meet the criteria for balanced and adequate physical maintenance work according to applicable standards. Other supporting factors include limitations in the use of work tools and also a lack of coordination between physical maintenance work implementers at the Bekasi City Islamic Center, therefore maintenance work strategies and daily to annual work schedules are needed to maximize and develop the potential for physical maintenance in the Bekasi Islamic Center Area.

## Suggestion

Physical maintenance of the site area is really needed to improve quality by using performance standards and work references, therefore the importance of an effective maintenance schedule and establishing coordination and cooperation between managers.

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