

Standard Operational Procedures Development for Government Building's Care and Maintenance Work of Outer Spatial and Housekeeping Component to Improve Work Effectiveness and Efficiency using Risk-based Approach

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Abstract: The damage phenomenon that occurs in a building is something that is certain to happen considering that the older the building is, the damage is something that cannot be denied. Regarding the damage, care and maintenance work is needed to maintain the condition of the building in order to remain feasible. Nevertheless, the reality in the field shows that the implementation of care and maintenance is often carried out in accordance with the target because there is no clear implementation procedure. The purpose of this research is to develop procedures for care and maintenance work of outer spatial and housekeeping component in government building. The risk in question is a risk that affects the duration of work activity. The objects in this study are located in the DKI Jakarta Province, especially in the X's Institution Government Building. The research methods used in this study are archival analysis, surveys, and case studies. The products produced in this study are standard operating procedures for the care and maintenance work of outer spatial and housekeeping component in government buildings to improve work efficiency and effectiveness.

1 INTRODUCTION

Today, the development of construction has accelerated rapidly and has encouraged various construction of high-rise buildings, such as office buildings, hotels, shopping centers, hospitals, and others. Investment in the construction sector is considered profitable and able to encourage economic growth that can be enjoyed by all levels of society. Based on information from the Central Statistics Agency of DKI Jakarta Province, with an area of 661.5 km² and a population of 5,244,690 people, developments in the construction sector were able to trigger economic growth because of the thousands of workers that construction services could absorb.

As a national capital city, in order to organize and support the performance of state governments, DKI Jakarta has provided various buildings that have been equipped with facilities and what's in them to realize good governance marked by the construction of government buildings. According to Law Number 28 of 2002, building is a physical form of construction work that is integrated with its place of domicile, partially or wholly above and / or in land and / or water, which

functions as a place for humans to conduct their activities, whether for residential or residence, religious activities, business activities, social activities, culture, and special activities.

If functional buildings can still be used, risks in use can be minimized by care and maintenance. Maintenance of building is an activity to maintain the reliability of buildings and infrastructure and facilities so that building buildings remain functionally feasible (Minister of Public Works of the Republic Indonesia, 2008). Maintenance of building buildings aims to maintain the buildings to reach the calculated age of the plan (Rosalina, 2011). Meanwhile, building maintenance is an activity to repair and / or replace parts of buildings, components, building materials, infrastructure and facilities so that buildings remain functionally feasible (Minister of Public Works of the Republic Indonesia, 2008).

Based on Minister of Public Works Regulation No.24 of 2008, there are several components in the building, namely: architectural, structural, mechanical, electrical, outer space, and housekeeping. The scope of maintenance work on the components of outer space is the maintenance of conditions from

the surface of the land and / or the outer courtyard of buildings, maintenance of elements of landscaping outside and inside the building, maintaining cleanliness outside buildings, gardens and the environment, as well as carrying out garden maintenance efforts correctly by officers who are experts and competent in that field (Minister of Public Works of the Republic Indonesia, 2008). In the housekeeping component, the scope of work covered are all housekeeping activities such as cleaning service, landscape, pest control, and general cleaning, starting from preparatory, operational work, to the final work result (Minister of Public Works of the Republic Indonesia, 2008).

Phenomenon in the field shows that the many inaccessibility of the objectives of the care and maintenance work of government buildings is a result of lack of efficiency and effectiveness in carrying out these two things. According to the Indonesian Dictionary, one of the meanings of effective is to be useful. The purpose of success is to bring a result after doing a business. Meanwhile, some of the meanings of the word efficient are precise and accurate, efficient, and effective (KBBI). This means that all efforts have been carried out correctly and accurately without wasting time, energy, costs, and others.

Related to the previous explanation, to create a proper building maintenance work, a building maintenance work program is needed to achieve the planned age of the building. However, the maintenance work program will not run well if it is not accompanied by implementation procedures. Standard operational procedure of building's care and maintenance work is an important matter to be prepared so that the implementation of maintenance and maintenance activities are done according to procedures, well scheduled, and facilitates workers in carrying out maintenance and maintenance activities (Mohammad et al., 2014).

2 OBJECTIVE RESEARCH

The objective of study is:

- Identifying the state of existing organizations in government buildings in carrying out care and maintenance work on government buildings (RQ 1).
- Identify tasks, responsibilities, and roles of resources for implementing government building care and maintenance work (RQ 2).
- Develop business processes related to the care and maintenance work of the outer spatial and housekeeping component of government buildings (RQ 3).

- Determine the length of duration needed for care and maintenance work of the outer spatial and housekeeping component of government buildings (RQ 4).
- Establish input and output from each activity of maintenance work and care of components of the outer spatial plan and governance of government buildings (RQ 5).
- Identify the risks that may occur from each care and maintenance activity of the outer spatial and housekeeping component of government buildings (RQ 6).
- Develop communication flow in the process of carrying out care and maintenance work of the outer spatial and housekeeping component of government buildings (RQ 7).
- Develop standard operating procedures for the care and maintenance work of the outer spatial and housekeeping component in government buildings using risk-based approach (RQ 8).

3 LITERATURE STUDIES

3.1 SOP for Building Care and Maintenance of Government Building

Standard operational procedure is a series of written instructions standardized on various processes for organizing organizational activities, how and when to do, where and by whom is carried out (Minister of Administrative Reform and Bureaucratic Reform of the Republic Indonesia, 2012). Based on the Guidelines for the Preparation of Operational Standards in Government Administration Procedures within the Secretariat General and the Expertise Board of the People's Representative Council of the Republic of Indonesia (Representative Council of The Republic of Indonesia, 2016), the standard operating procedure is a standardized written instruction on the implementation of the tasks and functions of the General Secretariat and DPR RI BK.

According to the Regulation of the Minister of Administrative Reform and Bureaucratic Reform of the Republic of Indonesia No. 35 of 2012 (Minister of Administrative Reform and Bureaucratic Reform of the Republic Indonesia, 2012), there are 2 elements of standard operating procedures, namely:

- Identity Section This section contains logos, SOP numbers, manufacturing dates, revision dates, effective dates from the entry into force of SOPs,

endorsement by competent officials, titles, legal basis, linkages, warnings, implementing qualifications, equipment and equipment, and recording and data collection.

- Flowchart Flowchart is a description of the steps in sequence of the standardized procedure. Flowchart contained in the SOP document communication flow is described with 5 symbols that have different function which is illustrated in figure 1, 2, 3, 4, and 5, they are:

- Capsule / Terminator Symbol



Figure 1: Capsule Symbol

Function: describes the start and completion of activities

- Box Symbol / Process



Figure 2: Box Symbol

Function: describes the execution process or activity

- Rhombus Symbol / Decision



Figure 3: Rhombus Symbol

Function: describes decision making activities

- Arrow Symbol / Arrow

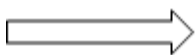


Figure 4: Arrow Symbol

Function: describe the direction of the activity process

- Pentagon Symbol / Off-Page Connector
Function: describes the relationship between different symbol pages

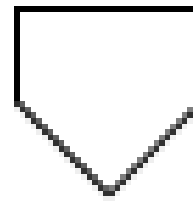


Figure 5: Arrow Symbol

sia No. 71 of 2017 (Minister of Research, Technology, and Education of the Republic Indonesia, 2017), business processes or governance is a set of structured and interrelated work activities that produce output according to user needs. In addition, (Paul, 2003) defines business processes as a series of activities carried out by a business from the initiation of input to produce a number of output. Business process is a key element in ensuring that activities are executed in line with specified requirements (Machfudiyanto et al., 2018).

The purpose of mapping and management (business process) analysis is to see in full the whole set of processes that affect the work and achievements of the organization in serving key external and internal stakeholders (Minister of Administrative Reform and Bureaucratic Reform of the Republic Indonesia, 2011).

The stages of mapping business processes according to the Regulation of the Minister of Administrative Reform and Bureaucratic Reform of the Republic of Indonesia No. 12 of 2011, are:

- Understanding the organization's strategic direction (vision, mission, tasks, and organizational functions).
- Identifying management (business processes) to be mapped based on needs analysis.
- Identifying the name and type of management (business process) in question.
- Determining who are the main users or users of the management (business process) in question.
- Describing the sequence of activities that form the management chain (business process) in question.
- Determining the main input of management (business process) in question.
- Determining the main management (business process) output in question.
- Specifying the owner (owner) the management (business process) in question.

3.2 Business Process

According to the Minister of Research, Technology and Education Regulation of the Republic of Indone-

3.3 Assignment Matrix (RAM / RACI)

RAM is a matrix that serves to show the resources assigned to each work package. RAM describes the responsibilities of the project team, group, or unit of each component of work that exists (Institute, 2016). One example of RAM is RACI which is shown in table 1. RACI means responsible (executor), assign (person in charge), consult (advisor), and inform (informed).

Table 1: Example of RAM / RACI Matrix

Activities	Responsible Agency				
	Cisa	Lisa	Fisa	Risa	Tisa
1	R	C	I	I	I
2	A	R	C	I	I
3	I	A	R	C	I
4	I	C	A	R	I

The sample matrix above shows the work that must be done in the left column and who is responsible for the work in the column to the right of the activity column using RACI.

3.4 Risk Management

Risk is a potential event that can be avoided or reduced as small as possible to minimize the impact according to planning or permissible tolerance limits to the intended target (Asiyanto, 2009). According to (Institute, 2016), one method for analyzing risk is to use qualitative risk analysis. Qualitative analysis is a step to prioritize risk based on the possibility and impact of risk. This study uses qualitative risk analysis that refers to PMBOK to make a risk-related study. The risk management process carried out in this study is risk identification, qualitative risk analysis, and risk response preparation.

4 METHODOLOGY

The object of this research is the buildings inside The House of Representatives of the Republic of Indonesia (DPR RI) Complex. There are six buildings there with Nusantara as the main building. Nusantara building consists of a plenary meeting hall with 1700 seating. The other five buildings are used as the office and meetings rooms.

This research was conducted to answer the research objectives by using 3 research strategies,

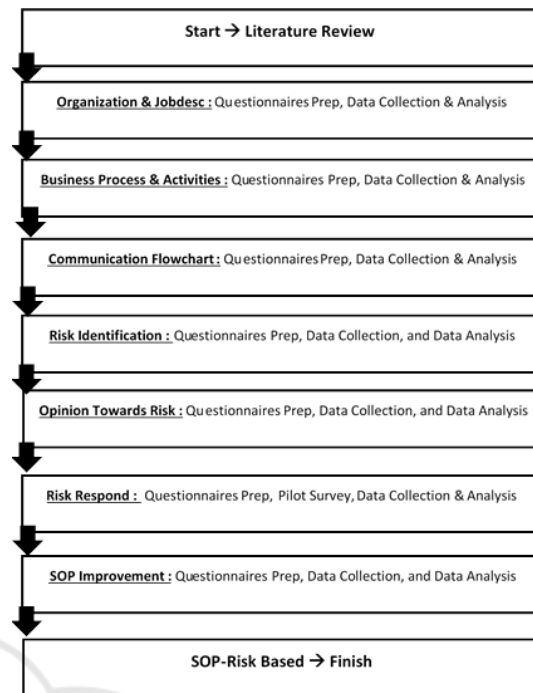


Figure 6: Research Process Flowchart

namely: survey, archive analysis, and case study. The flow of research conducted is illustrated in figure 6.

At the end of this study, the products are standard operating procedures for the care and maintenance work of the outer spatial and housekeeping component in government buildings using risk-based approach. Risks reviewed are occupational risks that affect the duration because of the duration of the relation to efficiency and effectiveness of work. With the development of standard operating procedures for the care and maintenance work of the outer spatial and housekeeping component, it is expected that care and maintenance work can be carried out well.

5 RESULTS AND DISCUSSION

5.1 For Answering RQ 1 and RQ 2

5.1.1 Form of Organization Structure and Job Description There Is Institution X Government Building

In the first stage of data collection process, the author gave questionnaires to the three experts to be verified, clarified and validated. Experts validate the organizational structure and the distribution of job descriptions by referring to the applicable regulations in

the Secretariat General and the The House of Representatives of the Republic of Indonesia (DPR RI) Expertise Agency. Those experts are the Head of State Property Management Bureau of Institution X, the Head of Building and Garden Division of Institution X, and the Project Manager of Procedure from a nation owned company. These three experts are the ones who did all the validation needed for this research.

Based on the results of processing the first stage of data collection taking into account the recommendations of experts, the authors made several adjustments to the existing form of organizational structure because of the inequality of responsibilities between one position and another. The previous organizational structure and the results of developing a new organizational structure are illustrated in figure 7 and 8:

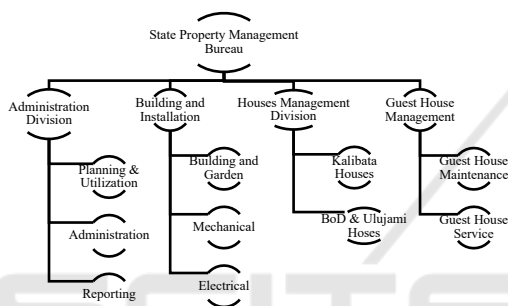


Figure 7: Organizational Chart Before Development

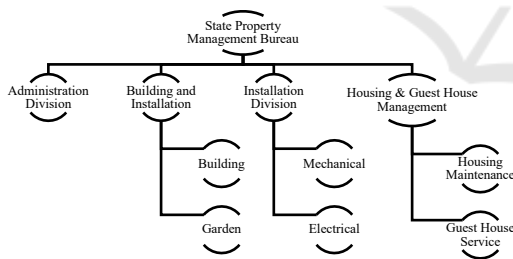


Figure 8: Organizational Chart After Development

5.2 For Answering RQ 3, 4 and 5

5.2.1 Business Processes, Duration, and Inputs and Outputs Activities for Maintenance and Maintenance of Outer Spatial Components and Governance of Government Buildings

The second stage of the data collection process is to determine the technical procedures for the care and maintenance work of government buildings. This

stage begins with the collection of business processes, activities, output, input, and the duration of the care and maintenance work on government buildings through literature studies and followed by validation on experts.

Based on the literature study, 12 components of building space and 26 components of building structure in the building were found. After being verified, clarified, and validated by experts, we found a reduction of 7 outer spatial components and the addition of 4 components of housekeeping component, so that the final total components produced by this study were 7 components of outer spatial and 30 components of housekeeping.

There are several activities in each component of care and maintenance work. The activity is then supplemented with input, output, and duration of implementation in the form of documents. The example of the details of each component that includes the activity, input, output, and the duration will be given at the same time as the SOP product discussed in the next discussion.

5.3 For Answering RQ 7

5.3.1 Communication Flow

The third stage of the data collection process is to map the communication flow by defining the person in charge and executor of each activity in each business process.

After getting the organizational form, business process, duration, input and output from the activities in the work and maintenance of the outer spatial and housekeeping component of government buildings, the author makes communication flows that show the relationship between activities that need to be done by parties involved with the activity.

In the outer spatial component, there are seven care communication flow charts and nine maintenance communication flow charts. Whereas in the housekeeping component, there are thirty maintenance communication flowcharts and no care communication flowcharts.

The communication flow chart is made by referring to the results of data analysis in stage three which is collected using the RAM / RACI method. The RAM / RACI method is used to define the person in charge of each activity. The communication flow chart serves as an instrument that is useful for showing those responsible (responsible) for an activity in each business process.

Figure 9 is an example of the development of a communication flowchart in one of the care and main-

tenance work for the outer spatial and housekeeping component that are part of the SOP.

5.4 For Answering RQ 6

5.4.1 Risk Identification

The fourth stage of data collection process is carried out to identify the risks of each activity in each business process by conducting a literature study and proceeding with the validation of the experts. Based on the results of risk identification with a literature study, there were 43 risks related to the duration of work that could affect work efficiency and effectiveness.

After being verified, clarified, and validated by experts, 24 additional risks were obtained so that the total risk in the building maintenance and maintenance work became 67 risks.

5.4.2 Risk Assessment (Qualitative Risk Analysis)

The previously identified risks are then assessed for frequency and impact through the fifth stage of data collection carried out with the survey method of respondents beginning with the pilot survey to determine whether all identified risks are understood.

The stages of risk analysis are carried out by referring to PMBOK 6th Edition as a guideline. Qualitative risk analysis is carried out by multiplying the weighting results of the frequency and impact level, then categorizing the results of the values according to the risk criteria. The scale of frequency, impact, and risk weighting used in this study are displayed in table 2, 3, 4, and 5. They are:

Table 2: Scale Rating Frequency

Scale	Frequency Level	Remarks
1	Rarely (rare)	Chance of occurring is small and only occur under certain conditions
2	Few possibilities (unlikely)	Can occur in a condition
3	Maybe (possible)	Can occur occasionally
4	Frequent (likely)	It may occur in many circumstances
5	Almost certain (almost certain)	Estimated to occur in many circumstances

Based on the results of data processing using risk qualitative analysis, 2 variables of the 67 variables tested were considered high level risk. According

Table 3: Scale Rating Impact

Scale	Impact Rate	Remarks
1	Not significant (Insignificant)	Does not cause financial losses and delays
2	Small	Does not cause financial losses and cause delays of less than 1 day
3	Moderate	Cause moderate financial losses and cause delays of less than 1 day
4	Severe	A mild-moderate financial loss and a delay of more than 1 day
5	Disastrous	A high financial loss and a delay of more than 1 day

Table 4: Weighting frequency and impact

Value	Criteria F	Weight F	Criteria D	Weight D
1	Very Low	0,1	No effect	0,05
2	Low	0,3	Less influential	0,1
3	Moderate	0,5	Pretty Influential	0,2
4	High	0,7	Influential	0,4
5	Very High	0,9	Very influential	0,8

Table 5: Risk Category

Risk Score	Risk Category (FR)
0,18 – 0,72	High Risk
0,06 – 0,17	Moderate Risk
0,01 – 0,05	Low Risk

to (Tan, 2011), it takes at least 10% of the variable sample to conduct a further review of a research variable. Therefore, the researcher took 7 risk events from 67 variables to be followed up. The seven risk events consist of 2 high level risks and 5 medium level risks. Those high risk activity in the procedure for care and maintenance and maintenance of outer spatial and housekeeping components of the government buildings are displayed in table 6.

5.4.3 Causes and Effects of Risk

The sixth stage of data collection is carried out to identify the causes, impacts, and risk responses to high-risk activities. This process is carried out using literature studies followed by validation on experts. As for the causes of the risk is displayed in table 7 and the impact of the risk in table 8.

No	Activities	Implementation							Input	Output	Duration	Remarks
		Head of State Property	Commitment Officer	Head of Building and Garden	Head of Building Subdivision	Civil Working Group	Third Party	Work Inspector				
1	Provide a schedule or work instructions / repairs.								Disposition	Maintenance Work Schedule and Instructions	1 day	Done as soon as possible.
2	Making RKS Implementation of Maintenance Works								Maintenance Work Schedule and Instructions	RKS Concept Maintenance Work	1 month	
3	Making HPS Maintenance Work Implementation								Maintenance Work Schedule and Instructions	HPS Maintenance Work Concept	1 month	
4	Submitting RKS for Implementation of Maintenance Works								RKS Concept Maintenance Work	RKS Maintenance Work	1 month	
5	Submitting HPS Maintenance Works								HPS Maintenance Work Concept	HPS Maintenance Work	1 month	
6	Inform maintenance schedule in the relevant ranks.								Maintenance Work Schedule	Schedule Submission Report	1 day	Done as soon as possible.
7	Prepare work equipment.								Maintenance Work Schedule and Instructions	Form checklist complete tools	1 day	Work equipment prepared by Building Management is limited to standard routine work equipment.
8	Check Uniform and Identification Completeness.								Schedule and List of Officer Names	Form checklist completeness of officer	1 day	
9	Conduct periodic checks.								Maintenance Work Schedule and Instructions	Form checklist work	1 day	
10	Check the zinc cover listplank.										1 day	
11	Clean the surface of GRC with emery no.2.										1 day	
12	Re-paint with emulsion paint.								Form checklist previous work	Form checklist work	1 day	
13	Check the results of maintenance work.								Form checklist work	Maintenance Work Report	1 day	
14	Report the results of maintenance work.								Maintenance Work Report, Activity Documentation, Report Progress 0%, 50%, and 100%	BA Submission of Job Reports	1 day	

Figure 9: GRC Maintenance List Communication Flowchart

Table 6: High Risk Activities

Activities	Code	Risk Potential	Risk Level
Submitting Technical Proposals and Maintenance Schedule.	X8	There are changes in conditions on the ground that affect job demand.	High Risk
Submitting Technical Proposals and Maintenance Schedule.	X7	Additional work / change in job demand	Moderate
Making HPS Maintenance Work Implementation	X13	The incompatibility of specifications is determined by the conditions in the field	Moderate
Making HPS Maintenance Work Implementation	X11	Calculation error	Moderate
Making HPS Maintenance Work Implementation	X12	Error determining specifications in making HPS	Moderate
Provide schedules or maintenance work instructions	X2	Unclear work instructions	Moderate
Submitting Technical Proposals and Maintenance Schedule.	X5	Lack of workforce expertise	Moderate

Table 7: Causes of Risk for Duration

Code	Cause
P1	Incorrect design information
P2	Investigation of imperfect locations
P3	Bad communication
P4	Imperfect administration of contracts
P5	Uncontrolled external events
P6	Incomplete contract information
P7	Lack of coordination
P8	List of ingredients prices is not appropriate
P9	There is a new government policy
P10	Error math operations when counting
P11	typing / inputting data error
P12	Fatigue conditions when calculating RAB
P13	Job drawing errors as a guideline for calculations
P14	Deliberately creating confusion for the benefit of specific groups
P15	Poor ability to present instructions (communication)
P16	Instructions are not well prepared
P17	Low education level
P18	Not Certified
P19	Not experienced

Table 8: Impact of Risk on Duration

Code	Effect
D1	Work late
D2	Change of fees
D3	Work cannot be carried out
D4	There was a change after the technical document and the file was created
D5	Late notice regarding changes in conditions
D6	Price is not up to date
D7	There is a policy misuse
D8	Inaccurate calculations
D9	Invalid data
D10	RAB is wrong
D11	There is a deviation from the calculation made
D12	Harm certain parties
D13	Inaccurate HPS
D14	Instructions cannot be understood
D15	It is not appropriate to determine the technical proposal
D16	It is not appropriate to determine the schedule for carrying out the work

5.4.4 Risk Response

Based on literature studies and validation by experts, it can be concluded that there are 14 preventive actions and 10 corrective actions that are shown in ta-

ble 9.

Table 9: Preventive Action

Code	Preventive Action
TP 1	Check conditions in the field
TP 2	Hold a coordination meeting routinely
TP 3	Providing communication training
TP 4	Check specifications used on HPS
TP 5	Update price lists regularly
TP 6	Adjust to changes
TP 7	Make gradual corrections when doing calculations
TP 8	Stop working before getting tired
TP 9	Ensure that the image to be calculated has been approved.
TP 10	Supervise in calculations
TP 11	Establish minimum competency standards for instructors
TP 12	Checking education background
TP 13	Check worker certification
TP 14	Check worker experience

Table 10: Corrective action

Code	Corrective action
TK 1	Review
TK 2	<i>rework</i>
TK 3	Hold a coordination meeting
TK 4	Aligning communication disagreements
TK 5	Recalculation
TK 6	Addendum to work contract / work instruction
TK 7	There is a calculation adjustment
TK 8	Changes
TK 9	Certification
TK 10	Training

5.5 For Answering RQ 8

5.5.1 Risk-based SOP Development

Based on the results of the collection of risk responses in the previous discussion, the authors carried out

the development of communication flowcharts for the care and maintenance work of the outer spatial and housekeeping components which are part of the SOP by adding risk control activities.

Of the overall preventive actions and corrective actions that have been collected, several supervisory actions are chosen to be used as additional activities. The results of the identification of risk responses that are used as additional activities in care and maintenance work are:

- Ensure that the image to be calculated has been approved.
- Check specifications used on HPS
- Judicial review
- Check conditions in the field
- Hold a coordination meeting

Given that all high-risk activities are classified as administrative activities, additional activities will always be the same and are located at the beginning of the work process. Apart from administrative activities, there is no additional activity and the SOP remains the same. Figure 10 shows an example of developed SOP.

6 CONCLUSION

Based on the research that has been done, there are several things that can be concluded.

First, it is necessary to adjust the organizational structure of the Institution's X State Property Management Bureau because of work imbalances in certain parts / sub-sections.

Second, adjustment of job description is required in the Institution's X State Property Management Bureau following the adjustment of the organizational structure.

Third, there are 7 business processes in the outer space component and 30 business processes in the housekeeping component of the care and maintenance work of government buildings.

Forth, the duration of each activity in each business process varies according to the level of difficulty of each activity.

Fifth, inputs and output in each activity studied are documents that are needed and produced when starting and completing work.

Sixth, there are 67 risks that affect the duration of all activities in the care and maintenance work of government buildings.

No	Activities	Implementation							Input	Output	Duration	Remarks
		Head of State Property	Commitment Officer	Head of Building and Garden	Head of Building Subdivision	Civil Working Group	Third Party	Work Inspector				
1	Provide a schedule or work instructions / repairs.								Disposition	Maintenance Work Schedule and Instructions	1 day	Done as soon as possible.
2	Making RKS Implementation of Maintenance Works								Maintenance Work Schedule and Instructions	RKS Concept Maintenance Work	1 month	
3	Ensure that the image to be calculated has been approved.											
4	Check specifications used on HPS											
5	Making HPS Maintenance Work Implementation								Maintenance Work Schedule and Instructions	HPS Maintenance Work Concept	1 month	
6	Review											
7	Submitting RKS for Implementation of Maintenance Works								RKS Concept Maintenance Work	RKS Maintenance Work	1 month	

Figure 10: Risk Based SOP

Seventh, There are 7 communication flowcharts for the outer spatial component and 30 communication flowcharts for the housekeeping component in the government building's care and maintenance work.

Lastly, in developing SOP for care and maintenance work in government building, the authors use the integration result of adjusted organizational structure and job description in Institution's X State Property Management Bureau to delegate the responsibilities of each activity in each of the business processes obtained. The SOP is presented in the form of document communication flow. Activities in each business process are added with risk prevention activities to anticipate the risks that might occur. The risk prevention activities are obtained from the risk identification process that has been carried out previously.

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REFERENCES

- Asiyanto (2009). *Risk Management for Contractors*. Pradya Paramita, Jakarta.
- Institute, P. M. (2016). *Project Management Book of Knowledge (PMBOK GUIDE) 6th Edition*. PMI Indonesia Chapter, Jakarta.
- Machfudiyanto, R. A., Latief, Y., Soepandji, B. S., and Putri, P. A. (2018). Improving business processes to develop standard operation procedures on government building maintenance work in Indonesia. In *MATEC Web of Conferences*, volume 195, page 06006. EDP Sciences.
- Minister of Administrative Reform and Bureaucratic Reform of the Republic Indonesia (2011). *Regulation from Minister of Administrative Reform and Bureaucratic Reform of the Republic Indonesia No.12 of 2011*.
- Minister of Administrative Reform and Bureaucratic Reform of the Republic Indonesia (2012). *Regulation from Minister of Administrative Reform and Bureaucratic Reform of the Republic Indonesia No.35 of 2012*.
- Minister of Public Works of the Republic Indonesia (2008). *Regulation from Minister of Public Works of the Republic Indonesia No.24 of 2008*.
- Minister of Research, Technology, and Education of the Republic Indonesia (2017). *Regulation from Minister of Research, Technology and Education of The Republic of Indonesia No. 71 of 2017*.

- Mohammad, A., Resty, A., Marsudi, and Martono (2014). *Maintenance Management Model for Building Architectural*. Semarang State Polytechnics, Semarang.
- Paul, H. (2003). *The Evolution of Business Process Management*. DCI BPM, New Orelans.
- Representative Council of The Republic of Indonesia (2016). *Guidelines for the Preparation of Operational Standards in Government Administration Procedures within the Secretariat General and the Expertise Board of the People's Representative Council of the Republic Indonesia*.
- Rosalina (2011). *Building Maintenance System Judging From the Reliability of Buildings (Case Study: Simple Rental Flats in Cilangkap Regency)*. Sebelas Maret University, Surakarta.
- Tan, D. W. (2011). Project finance in construction: A structured guide to assessment. *Construction Management and Economics*, 29(10):1074–1075.

