

Improving business processes to develop standard operation procedures on government building maintenance work in Indonesia

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Abstract. Preventive and corrective work carried out on government structures requires that Standard Operating Procedures for financial planning be developed to put an end to sharp practices which often result in budget wastage. The risk factors that can be instrumental to waste in the planning, implementation, maintenance, and supervision of government structures include Standard Operating Procedure that is not yet developed and organizational functions that are yet to be perfect. Hence, Standard Operating Procedure (SOP) requires good risk management. It will result in risk management strategy to enhance maintenance performance and maintenance of government building with respect to building health, building safety, comfort of the building and ease of constructing government building. The aim of this study is to find out how business processes and activities are organized for the planning, maintenance, implementation as well as supervision of government structures. The methodology used included expert validation, respondent survey and benchmarking analysis to determine its business process. The results of this study indicate that there are 164 activities in 16 business processes for preventive and corrective work relating to execution, planning, and supervision of government structures.

1 Introduction

Government buildings are structures for official purposes which are owned by the government and maintained with funds derived from APBN and/or other legal gains. They include office buildings, hospital buildings, school buildings, country houses, warehouses, and others [1]. They need maintenance to extend their lifespan so that services to the community can be met indirectly. Maintenance of buildings includes requirements relating to health, safety, comfort, and ease of buildings [2].

If buildings are not maintained, they will have a short lifespan. This is because there will be a damage to their structural, architectural, electrical, and mechanical parts. Damage that occurs will cause the failure of the buildings which can result in a collapse. Low-

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quality materials used can make the construction to fail [3]. According to the independent daily (2017), people no longer have faith in government buildings found in various institutions because of the various complaints from different users who are of the opinion that the buildings are – below standard. The huge amount of money expended to maintain government buildings has been a source of concern because the quality of work done falls below expectations. The result is that the target of maintaining government structures is not achieved. Factors that make achievement of feasible performance in the maintenance of government buildings impossible include the lack of readiness on the part of workers to undertake these activities and lack of standard procedures to be followed organizations in maintaining government buildings. These factors result in research questions on the organizational structure, business processes, activities, inputs and outputs and time taken for maintaining government buildings.

The government sought to enforce SOP implementation and this led to the issuance of the regulation of the Minister of Government and State Apparatus Number 35 Year 2012 [4]. With regards to governance, SOP assists the government to be more effective and efficient in providing services to different communities. SOP will help companies control their operational activities [5]. Development of Standard Operational Procedures (SOP) in planning, implementation, maintenance, and supervision guard against budget wastage. It is anticipated that the results of this study will lead to an improvement in the maintenance and its effects on government structures.

This research is geared towards finding out the business process leading to the development of standard operational procedure in the process of Maintenance Planning, Implementation, Supervision Works, and Constructing Government Buildings

2 Theoretical study

2.1 Managing building maintenance

A building is a structure located in air, on land or in water, which people use for shelter or residence, business activities, religious activities, culture, social activities, and special activities [3]. Building maintenance is an effort geared towards maintaining the reliability of buildings functional at all times. Building maintenance entails repairing and/or replacing parts of buildings or building materials for the perpetual functionality of the buildings. [1]. Maintenance of buildings takes into consideration comfort, safety, health, and ease of building [1].

2.2 Standard operating procedures

Standard Operating Procedures (SOPs) are a set of instructions that regulate the administrative processes of government with respect to when and how to do, where and by whom (Regulation Empowerment of State Apparatus, No. 52 Year 2011) [6]. The objective of (SOPs) is to unify the perceptions of parties involved to have a better understanding of the tasks to be undertaken [7]. SOPs, as an important component of quality management system, will greatly help to strengthen transparency and reduce errors in the implementation of procedures, as well as improve the efficiency and quality of service by reducing the level of error and uncertainty [8].

2.3 Business processes and activities

The business process encompasses resources, roles, and rules that are required production and delivery of products or services for customers. Majority of the organizational activities are carried out in this process. Nowadays, companies are becoming more aware of the importance of processes for effective performance of business [5]. In this research, Business Process in Maintenance of Government Building is divided into 2 (two) business processes; these are Maintenance and Maintenance. Again, it is divided into 3 (three) namely planning, execution and supervision. Business process activities of budgeting, implementation and maintenance of government buildings are spelt out in line with the literature results and also by archival analysis and interviews with those parties who have carried out the business processes.

3 Research method

Descriptive qualitative method was used in this research. The regulation relating to building maintenance and previous studies served as input for this study. The arrangement of the instrument to be used in data retrieval was the next step. Then, content and construct validity was carried out to determine the variables used. The following steps were taken out of pilot survey as well as continued survey of respondents. The respondents in this research were authorities in building maintenance’s field. The results of the analysis were then substantiated by experts

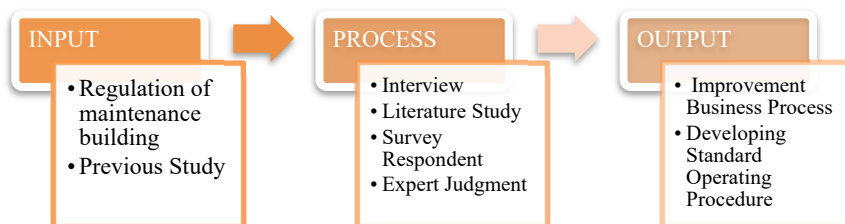


Fig. 1. Methodology of the Research

Also made use of in this study was the delphi method which helped to validate business processes and existing activities to the relevant experts. Hence, the results of validation by experts were processed and re-analyzed. To obtain the approval of previous experts, the results were revalidated.

4 Result and discussion

On premises of the theoretical studies discussed in the literature review, the implementation of maintenance work is categorized into 4 activities, namely, Planning, Implementation, Maintenance and Maintenance Supervision. The results of data collection by experts who performed further analysis revealed 16 business processes. Each business process had activities and the 16 business processes had a total of 164 activities.

Table 1. Business Process and Activities of Maintenance of Government Buildings

THE STAGES OF MAINTENANCE	
1. MAINTENANCE OF GOVERNMENT BUILDING EMERGENCY	
X1	Work Order
X1.1	Receiving users complaints
X1.2	Dissociating into closely related subsections

X1.3	Checking the conditions of the field
X1.4	Determining the work scale
X1.4.1	Scale for Small Work
X1.4.1.1	Undertaking direct execution while presenting the list of consumable materials
X1.4.1.2	Doing the work
X1.4.1.3	Sending a job report to the assignor (pphp)
X1.4.1	Scale for Large Work
X1.4.2.1	Writing an analytics report (letter of suggestion, drawing, boq, photo)
X1.4.2.2	Discussing locations with the assignor
X1.4.2.3	Discussing and waiting for the assignor's response
X1.4.2.4	Receiving a job assignment letter from the assignor
X1.4.2.5	Doing the work
X2	Inspection
X2.1	Making a preventive maintenance schedule
X2.2	Creating checklist of equipment condition
X2.3	Reporting data about equipment's condition
X2.4	Disseminating breakdown news (findings)
X2.5	Creating an analytics report (letter of suggestion, drawing, boq, photo)
X2.6	Discussing locations with the assignor
X2.7	Discussing and waiting for the assignor's response
X2.8	Receiving a job assignment letter from the assignor
X2.9	Doing the work
X2.10	Writing a Work Settlement Report
X3	Overhaul
X3.1	Writing a schedule for preventive maintenance conducted by principal (brand holders)
X3.2	Accepting checklist results of equipment condition
X3.3	Accepting report of equipment condition data from principal
X3.4	Writing breakdown news event
X3.5	Accepting proposal report from principal (plan, boq)
X3.6	Writing a proposal analysis report (letter of proposal, drawings, boq, photo)
X3.7	Sending a proposal report to the assignor
X3.8	Discussing locations with the assignor
X3.9	Discussing and waiting for the assignor's response
X3.10	Receiving a job assignment letter from the assignor
X3.11	Presenting assignment letter to the principal
X3.12	Overseeing supervision work
X3.13	News of the job completion event
2. GOVERNMENT BUILDING MAINTENANCE OF ROUTINE	
X4	Routine Maintenance
X4.1	Prepare a maintenance schedule
X4.2	Present a schedule proposal to the assignor
X4.3	Discuss and wait for the assignor's approval
X4.4	Do the work
X4.5	Write a realization plan report
REPAIR STAGE	
1. REPAIR PLANNING FOR GOVERNMENT BUILDING	
X5	Government Financial Planning for Repair
X5.1	Prepare budgeting concept Work Plan and Budget of State / Institution Ministry
X5.2	Presentation to the planning section
X5.3	Moving into the budget section
X5.4	Presentation to the government / finance ministry
X5.5	Accepting indicative ceilings
X5.6	Having discussions on budget

X5.7	Getting a definitive cap
X5.8	If, in the current year, there is a change in the need for improvement which results in the change of budget, the budget revision will be submitted
X5.9	Ceiling can be used
X6	Planning Managed by Self
X6.1	Writing a Letter of Instruction of Planning Task
X6.2	Carrying out a damage survey
X6.3	Demanding user validation for damage
X6.4	Processing Data
X6.5	Planning the Plan for Budget
X6.6	Forming an Image Planning Repair
X6.7	Forming RKS
X6.8	Measuring Job Volume
X6.9	Making a comparison of market unit prices (3 prices)
X6.10	Making Budget Plan, Image and RKS Valid
X6.11	Examining technical planning / results of design process
X7	Direction Planning For Procurement Of Direct Consultation Services
X7.1	Writing Terms Of Reference (TOR)
X7.2	Creating a Contract Design
X7.3	Assessing Budget Plan
X7.4	Writing a Task Order to the procurement official
X7.5	Submitting the procurement document
X8	Planning Selection of Simple Selection Consultancy Services
X8.1	Writing Terms Of Reference (TOR)
X8.2	Creating a Contract Design
X8.3	Assessing Budget Plan
X8.4	Applying General Procurement Plan
X8.5	Writing a General Procurement Plan Invitation Letter
X8.6	Implementing a General Procurement Plan (Discussing TOR)
X8.7	Writing a Letter of Invitation Procurement Plan
X8.8	Implementing LPP (Discussing the draft contract and Budget Plan)
X8.9	Writing Auction Application to ULP
X8.10	Presenting Auction Documents To ULP
X9	Planning Election of General Selection Consultation Services
X9.1	Writing Terms Of Reference (TOR)
X9.2	Creating a Contract Design
X9.3	Assessing Budget Plan
X9.4	Applying General Procurement Plan
X9.5	Writing a General Procurement Plan Invitation Letter
X9.6	Implementing a General Procurement Plan (Discussing TOR)
X9.7	Writing a Letter of Invitation Procurement Plan
X9.8	Implementing LPP (Discussing the draft contract and Budget Plan)
X9.9	Auction Application to ULP
X9.10	Presenting Auction Documents To ULP
2. IMPLEMENTATION OF GOVERNMENT BUILDING REPAIR	
X10	Procurement Process of General Selection Construction Service (Above 5 Billion Rupiah)
X10.1	Preparing TOR, material specification to be used
X10.2	Preparing TOR, material specifications to be used
X10.3	Assessing BoQ, RKS, Drawing and making HPS
X10.4	Applying General Procurement Plan to ULP
X10.5	Writing a RUP Invitation Letter
X10.6	Implementing RUP (Discussing TOR)
X10.7	Writing a Letter of Invitation Procurement Plan Implementation

X10.8	Implementing RPP (Discussing the draft contract and HPS
X10.9	Auction Application to ULP
X10.10	Presenting Auction Documents To ULP
X11	Procurement Process of Simple Selection Construction Service (200 million to 5 billion Rupiah)
X11.1	Creating TOR, material specification to be used
X11.2	Creating TOR, material specifications to be used
X11.3	Assessing BoQ, RKS, Drawing and making HPS
X11.4	Applying General Procurement Plan to ULP
X11.5	Writing a RUP Invitation Letter
X11.6	Implementing RUP (Discussing TOR)
X11.7	Writing a Letter of Invitation Procurement Plan Implementation
X11.8	Implementing RPP (Discussing the draft contract and HPS
X11.9	Auction Application to ULP
X11.10	Presenting Auction Documents To ULP
X12	Procurement Process of Direct Construction Services Below 200 Million
X12.1	Creating TOR, material specification to be used
X12.2	Creating TOR, material specifications to be used
X12.3	Assessing BoQ, RKS, Drawing and making HPS
X12.4	Creating SPT to procurement official
X12.5	Presenting procurement documents
X13	The Process of Implementing Maintenance Monitoring
X13.1	Making contract documents
X13.2	Assessing the contract documents
X13.3	Accepting the contract documents
X13.4	Contractors, and Supervision Consultants Go into Coordination
X13.5	Holding coordination meetings for improvement implementation
X13.6	Overseeing and supervising the implementation of activities
X13.7	Making an evaluation report recap
X13.8	Assessing the recap of evaluation report of the implementation of the activity
X13.9	Assessing the results of the activities
X13.10	Presenting a letter of application to PPHP
X13.11	Undertaking job inspection activities
X13.12	PPHP Events Report
X13.13	BAST 1
X13.14	Presenting a letter of application to FHO if there is a maintenance period
X13.15	Doing the job inspection activities for maintenance
X13.16	BAST 2
3. SUPERVISION OF GOVERNMENT BUILDING REPAIR	
X14	Implementation of Supervision of Selection of Providers (Goods and Services)
X14.1	Assessing Procurement Plan
X14.2	Assessing the procurement plan announcement
X14.3	Assessing SK Procurement Committee
X14.4	Assessing the Procurement documents on KAK HPS, the evaluation methods including the Authorization
X14.5	Assessing BA documents Aanwizjing
X14.6	Assessing proposed Winners
X14.7	Assessing the winner determination
X15	Self-Monitoring
X15.1	Accepting SPT with SPMK, Picture, BOQ, RKS and completeness of activity document from Partner who will carry out the activity / project, prepare the disposition sheet.
X15.2	Assessing the received documents.
X15.3	Dispersing for follow-up
X15.4	Assessing the documents and preparing the draft of field supervisor's assignment

	letter
X15.5	Assessing and initialling the Supervisory Task Force
X15.6	Signing the Supervisory Task Force.
X15.7	Undertaking supervision, monitoring / monitoring in the field in terms of quality, quantity and rate of achievement of volume.
X15.8	Filling the BHL, proposing/evaluating and making technical recommendations on job changes in line with the SPK / Contract.
X15.9	Holding meetings on-site and/or elsewhere on a regular basis, making weekly and monthly reports.
X15.10	Going over the field, researching and initialling Minutes of Weight, and BAST Work submitted by Partner / Contractor.
X15.11	Signing Minutes of Weight, BAST of work submitted by Partner / Contractor.
X15.12	Handing over the results of supervision.
X16	Monitoring Supervision by Consultant
X16.1	Accepting SPMK, Picture, BOQ, RKS and completeness of activity documents
X16.2	Assessing the received documents.
X16.3	Dispersing for follow-up
X16.4	Following up on studying the documents and preparing a draft of monitoring supervisory duty letters
X16.5	Assessing and initialling Monitoring Supervisory Tasks
X16.6	Signing of Letter of Assignment Monitoring of Field Supervisor.
X16.7	Carrying out monitoring in the field in terms of quality, quantity and rate of achievement of volume.
X16.8	Assessing BHL and proposing / evaluating and reviewing technical recommendations on job changes in accordance with SPK / Contract.
X16.9	Attending meetings at the site and/or elsewhere on a regular basis, making weekly and monthly reports.
X16.10	Reviewing the field, researching and initialling Minutes of Weight, and BAST Work submitted by Partner / Contractor and supervisory consultant.
X16.11	Signing Minutes of Weight, BAST of work submitted by Partner / Contractor.

These business processes will translate into SOP (Standard Operational Procedure) that will be used as a guide for maintenance activities, planning, implementation and supervision of maintenance work on government buildings. They are a series of activities that produce useful/valuable output [9]. In addition, Business Process is a key element in ensuring that projects are executed in line with specified requirements [10].

5 Conclusion

The results of data collection and analysis revealed that there are 16 (sixteen) business processes which consist of activities that will produce output relating to Maintenance and Planning. Each of these business processes will become SOP (Standard Operational Procedure) which is used as a guideline for implementing maintenance activities, planning, and supervision of building maintenance work on the government buildings which is expected to become a reference for a better and structured implementation in every process.

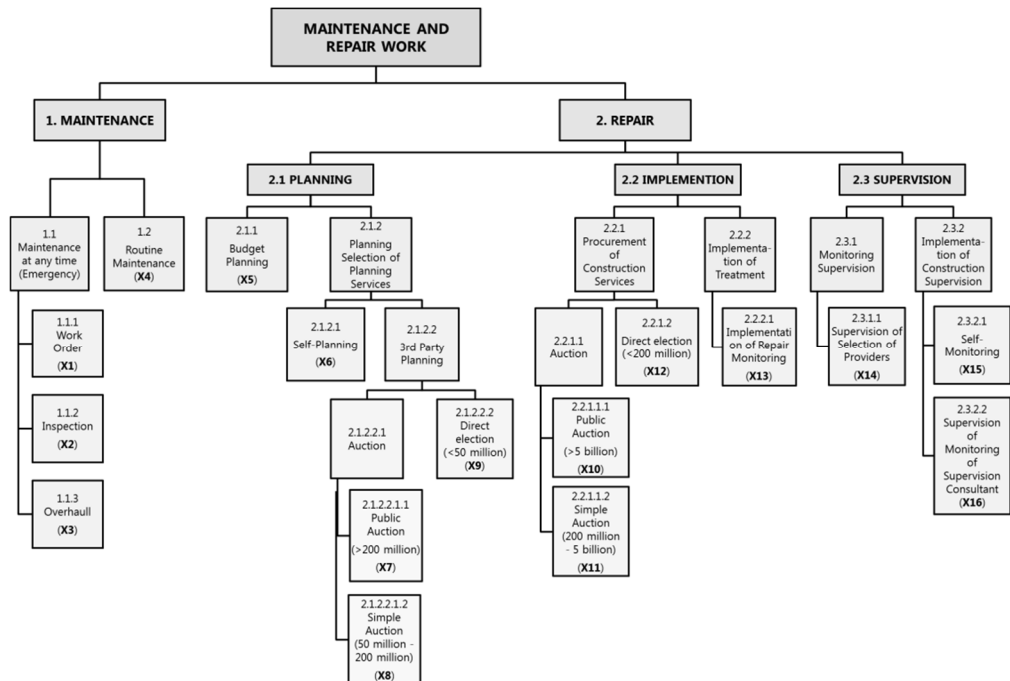


Fig. 2. Business Process of Maintenance and Repair Work on Government Building

The results of data collection and analysis revealed that there are 164 activities. These activities are associated with a series of flowcharts through which sequences of activities can be understood. The flowcharts also include information about inputs for starting activities, outputs of activities, personnel in charge of each activity, and duration of the activities. From the series of business process and activity flowcharts, a Standard Operational Document of Maintenance and Maintenance Procedure for Government Building has been prepared.

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