DEVELOPMENT OF QUALITY MANAGEMENT SYSTEM IN MAINTENANCE AND MONITORING PROCESS OF REPAIR WORK RISK-BASED IN GOVERNMENT BUILDING

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INTRODUCTION

Quality Management System According to ISO 9001: 2000 concept is "management system to direct and control organization in quality“, and other than is :

1. An order that ensures the attainment of the objectives and quality objectives planned.
2. An order that ensures the quality of output and service / production processes.

Planning Repair is the process of selecting information and making assumptions about future conditions, to develop all activities, combination every action taken to maintain the system / equipment in the process of maintenance until the conditions are acceptable.

LITERATURE

The tendency of many projects that hampered and even failed to be implemented due to the budget process, while the community demands that infrastructure development can be realized quickly (Robby, 2015)

Unsuitable quality use can lead to construction failure (Olanitori, 2011). The cause of the damage is the human factor and the natural factor, where the human factor and the understanding of labor towards the technique of implementation and repair (Daridi, 2012).

Maintenance and Repair of buildings is one of the important topics in construction (Amani et al 2012; Christian & Pandeya 1997; Fu, Kaya & Aouad 2007; Kishk et al. 2003; Lai, AW & Pang 2010; Olanrewaju, Khamidi & Idrus 2011)

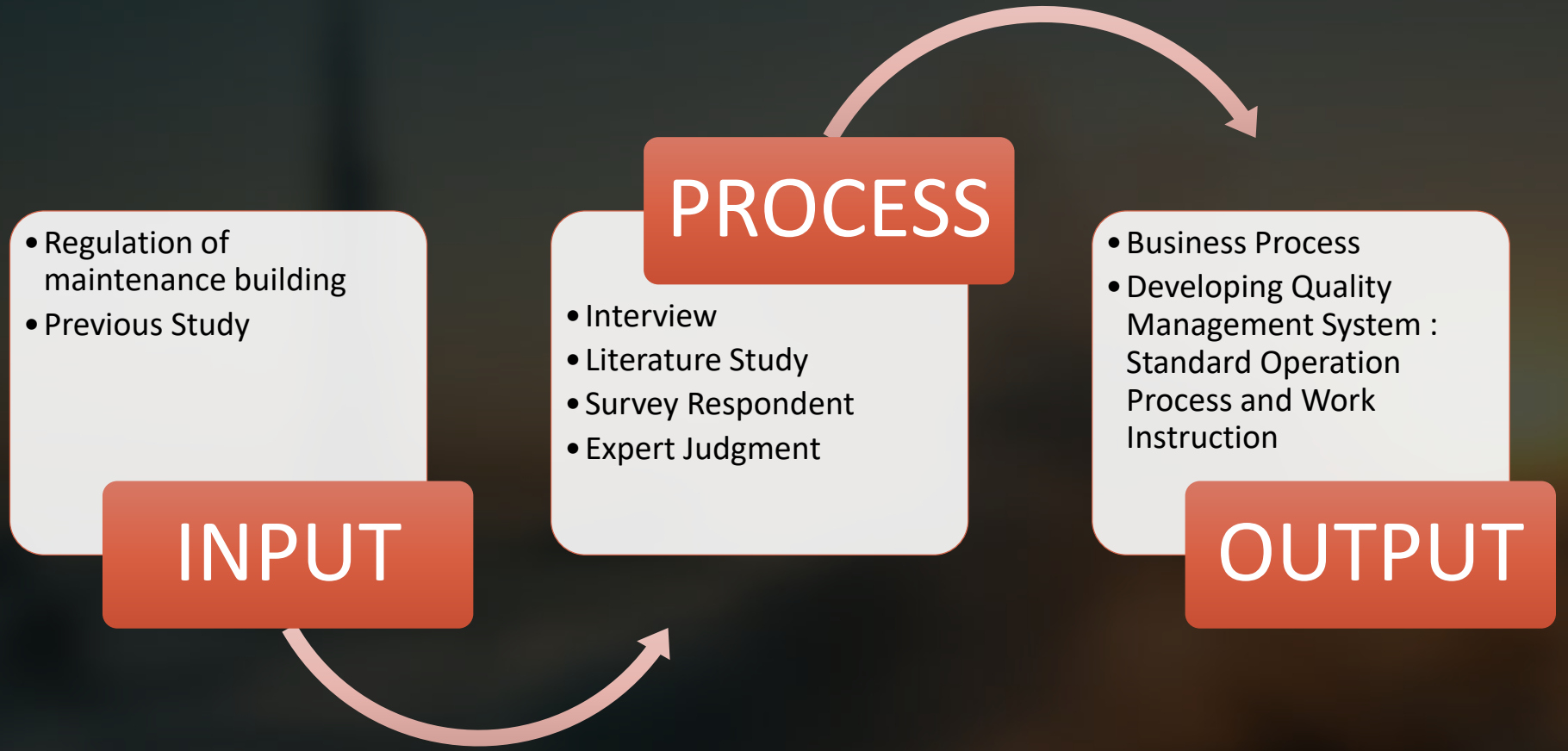
AIM OF STUDY

From the background and identification of problems that the author has described before, the purposes of this study Develop a risk-based Quality Management System in maintenance and monitoring process of repair work of government building

METHODOLOGY

To answer the problem formulation then used various research method that is survey and case study. In this study used questionnaires as research instruments distributed to the respondents. Interviews and secondary data collection were also undertaken to deepen the analysis. Data collection conducted by 8 stages. The data collected by Delphi method analysis to get the form of organization, job description, business process, activity, input, output, duration, person in charge, risk identification. Qualitative Risk Analysis is then performed to obtain the highest risk factor. After that, the QMS Development Action Analysis is done by making Work Instruction, Checklist and Quality Record so that QMS development can be done in planning repair of government building based on risk

METHODOLOGY



Stage of Maintenance
A. Maintenance Emergency
X1. Work Order
X2. Inspection
X3. Overhaul
B. Routine Maintenance
X4. Routine
Stage of Monitoring
X5. Implementation Monitoring Selection Providers (Goods and Services)
X6. Self-Control
X7. Monitoring Supervision Consultant

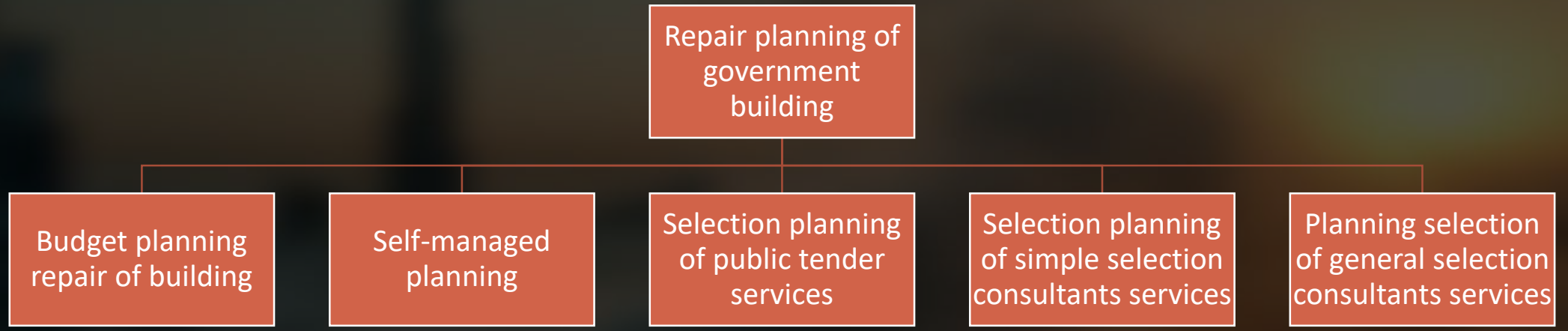
Threats / Probability	0.05 Very Low	0.10 Low	0.20 Moderate	0.40 High	0.80 Very High
0.10	0.01	0.01	0.02	0.04	0.08
0.30	0.02	0.03	0.06	0.12	0.24
0.50	0.03	0.05	0.10	0.20	0.40
0.70	0.04	0.07	0.14	0.28	0.56
0.90	0.05	0.09	0.18	0.36	0.72

From the results of data collection, 124 risks were identified with the highest 13 high categorical risks, each business process have different activity risk with the following details:

Var	Activity	Risk	Score
Maintenance			
X45	Create a maintenance schedule	Cluttered schedule	High
X43	Monitoring job monitoring	Supervision is not detailed	High
X12	Carry out the work	Workers are less competent	High
X46	Submit a schedule proposal to the assignor	Late submission of schedule proposal	High
X11	Carry out the work	The number of workers is less	High
X42	Giving assignment letter to the principal	Misrepresented the work	High
Monitoring			
X122	Survey location,	Supporting data is incomplete	High
X60	Monitoring and supervising the implementation of activities	Implementation of work does not meet technical specifications	High
X107	Receiving SPMK, Picture, BOQ, RKS and completeness of activity documents	There was a design change that changed BOQ	High
X105	Signing of Minutes of Weight, BAST of work submitted by Partner / Contractor	The proposed weight does not match the field conditions	High
X102	Reviewing the field, researching and initialing Minutes of Weight, and BAST Work submitted by Partner / Contractor.	Error calculation by the contractor	High
X121	Reviewing the field, researching and initialing Minutes of Weight, and BAST Work submitted by Partner / Contractor and supervisory consultant.	Error calculation by the contractor	High
X97	Carry out supervision, monitoring / monitoring in the field in terms of quality, quantity and rate of achievement of volume.	Supervision of implementation is not done properly	High

STAGE OF REPAIR

In this stage of treatment planning is benchmarked against other government agencies and this study is also a guidance on the Public Works Minister No 24 of 2008 and obtained the following business process results:



FINDING RESULT

In the research conducted there are several findings that resulted from the data collection from the expert (expert judgment) and questionnaire.

Phase	Explaint	Results
1	Organization & Job Desk	There are 3 organizational structure changes
2	Business process	5 Business Process approved
3	Activities	46 activities that have been validated to an expert
4	Risk	5 high risk and 1 moderate
5	Respons Risk	➢ 5 high risk with cause, impact, preventive action and Corrective action. ➢ Causal relationships and impacts. ➢ Mapping RBS; *Recognition pattern* ➢ QMS development measures based on 5 high risk (28 actions)
6	SOP and WI	5 SOP and 96 work instruction
7	Development of QMS	12 QMS Development Action planning of government building repair with 1 addition of SOP and 11 work instructions risk-based

With the most dominant risk variables selected using questionnaire and analyzed using SPSS in order to get accurate results. The results of this study are Standard Operational Procedures and Work Instruction based on risks that can improve the quality and performance of the functionality of the building in the management of maintenance and maintenance of the building.

Results from QMS Development in the Government Building Planning Repair stage are SOP and WI based on risks by identifying the activities necessary to eliminate events and possible impacts that may derail the performance objectives of the treatment especially for the related function. The activity resulting from the risk response is a risk-prevention measure that could be the basis for developing QMS. From the analysis and final validation of experts there are some changes and additions from the existing data.

CONCLUSION

From the analysis and final validation of experts there are some changes and additions from the existing data.

Business Process	• Then five business processes are drawn up based on laws and benchmarks against other government agencies and details of related activities
Activity	• In each activity analyzed the possibility of the occurrence of risk or negative impact that can thwart the quality of planning objectives of government building institution
Risk	• The results of the analysis in the form of responses obtained from expert judgment and then into additional activities and the addition of work instructions
Development Quality Management System	• Development of Quality Management System is in the form of 5 SOP with 47 activities and 107 work instructions risk-based that can be implemented into the planning of the government building institution

Research Question		Existing	Result
1	Organization & Job description	Organizational structure in accordance with the rules applicable in Government Institutions	There are 3 organizational structure changes related to the equalization of workload
2	Business Processes and Activity	7 Business Processes with 63 Activities	7 Business Processes with 64 Activities (include each instruments)
3	Risk	124 risk identification	13 highest risk of further response
4	Risk Based Quality Management System	Nothing and yet risk-based	40 QMS development actions (7 SOP, 180 WI, 7 checklist, 63 quality record)

CONCLUSION

No.	Activity	Committed Officer (Bureau Chief)	Head of Division	Head of Sub-division	Technical Working Group	Instrument: Input	Instrument: Duration	Instrument: Output	Additional
1	Receiving Task Command Letter (SPT) with Work Order Letter (SPMK), Drawing, BoQ, Work Plans and Terms (RKS) and completeness of activity document from Partner who will carry out the activity / project, prepare the disposition sheet.					Task Command Letter (SPT) with Work Order Letter (SPMK), Drawing, BoQ, Work Plans and Terms (RKS), supporting documents	2 days	Project Document Completeness	
2	Receive and check the documents received.					Task Command Letter (SPT) with Work Order Letter (SPMK), Drawing, BoQ, Work Plans and Terms (RKS), supporting documents	1 days	Document Checking Report	
3	Dissociate for follow-up					Task Command Letter (SPT) with Work Order Letter (SPMK), Drawing, BoQ, Work Plans and Terms (RKS), supporting documents	1 days	Dispotition	
4	Studying the documents and preparing the draft of field supervisor's assignment letter					Task Command Letter (SPT) with Work Order Letter (SPMK), Drawing, BoQ, Work Plans and Terms (RKS), supporting documents	1 days	Project Documents	
5	Checking and initialing the Supervisory Task Command Letter					Draft of Supervisory Task Command Letter	1 days	Checked Supervisory Task Command Letter	
6	Signing of the Supervisory Task Command Letter.					Checked Supervisory Task Command Letter	1 days	Signed Supervisory Task Command Letter	
7	Carry out supervision, monitoring / monitoring in the field in terms of quality, quantity and rate of achievement					Project Documents	Everyday	Supervision Documents	
8	Filling in Daily Reports, proposing / evaluating and making technical recommendations on job changes in accordance with SPK / Contract.					The concept of daily reports and technical recommendations	1 days	Daily Report, Technical Recommendation	See Work Instruction for Change of Contract of any changes
9	Hold meetings on-site and / or elsewhere on a regular basis, making weekly and monthly					Minutes of Meeting	1 days	Minutes of Meetings, Weekly / Monthly Report	
10	Reviewing the field, checking the Progress and Handover Report submitted by Partner / Contractor.					Project Documents, Daily Report	2 days	Progress Report and Handover Report	See Work Instruction for Work Opname and Report Signing
11	Checking and signing Progress Report and Handover Report checked by Supervision Consultant					Progress Report & Handover report checked by Supervisor	1 days	Signed Progress Report and Handover Report	
	Total						14 days		

NO.	DOCUMENT	REQUIREMENT FULFILLMENT		
		NOT DONE	DONE	REF.
1	Task Command Letter and Supporting Documents			
2	Document Checking Report			
3	Dispotition			
4	Project Documents and Draft of Task Command Letter			
5	Checked Supervisory Task Command Letter			
6	Signed Supervisory Task Command Letter			
7	Supervision Documents			
8	Daily Report, Technical Recommendation			
9	Minutes of Meetings, Weekly / Monthly Report			
10	Progress Report and Handover Report			
11	Signed Progress Report and Handover Report			
Made by:		Notes :		
Name / ID :				
Position :				
Date :				

NO	ACTIVITY	EXECUTION		ADD.	REF.
		NOT DONE	DONE		
Reviewing the field, researching and initialing Progress Report and Handover Report submitted by Partner / Contractor.					
	The official receiving the work (PPHP) periodically conducts field reviews together.				
	PPHP makes a checklist of supporting documents when conducting a field review				
	Prepare check list implementation in the field				
24	Examining the progress report on the field that has been submitted				
	Head of Technical Work Groups / PPHP create a Field Checking Report				

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THANKS