



## **Project Managed Change Program**

**JABATAN KERJA RAYA  
MALAYSIA**

# **GENERIC RISKS IN JKR PROJECT**

Cawangan Pengurusan Projek Kompleks  
(PROKOM)  
Ibu Pejabat JKR Malaysia

**Version 1.0  
28 May 2008**

***This page intentionally left blank***



# PREFACE

Risk management in JKR has gained recognition by the department as one of the management tools to assist the project manager improves project delivery. The increasing number of uncertainties particularly in complex projects or projects of high profile has led to the possibility of real project risks eventuating that may jeopardise the achievement of project objectives set by the department. As such, the department has realised the need to develop risk management plans for all projects. The documentation of typical project risks would provide first hand guidance to all project managers in JKR in their effort to develop the Risk Management Plan for their projects.

This document is a compilation of project risks for two types of JKR Projects i.e. Conventional Projects and Design and Build (D&B) Projects. They form typically, the “Generic JKR Project Risks” and are particularly referred to projects undertaken by JKR only.

The main purpose of this document is to facilitate JKR project managers in identifying and managing risks. The list however is not exhaustive and should be revised to include additional risks identified at a later date.

It is hoped that this document will strive to instil greater interest and commitment to all project managers and their associates to practice risk management for all projects.

For any suggestions or feedback please feel free to contact :

Risk Management Unit

JKR PROKOM

at Tel : 03 - 2697 7349.

29 February 2008



## LIST OF ABBREVIATIONS

KPKR	-	Ketua Pengarah Kerja Raya
TKPKR	-	Timbalan Ketua Pengarah Kerja Raya
CKUB	-	Cawangan Kontrak & Ukur Bahan
CPK	-	Cawangan Pengurusan Korporat
IMS	-	Integrated Management System
SBU	-	Strategic Business Unit
PD	-	Project Director
SO	-	Superintendent Officer
PM	-	Project Manager
HOPT	-	Head of Planning Team
HODT	-	Head of Design Team
UTM	-	Unit Teknologi Maklumat
SPK	-	Sistem Pengurusan Kualiti



## TABLE OF CONTENTS

<b>1. BACKGROUND .....</b>	<b>1</b>
<b>2. SUMMARY OF RISKS IN JKR PROJECT .....</b>	<b>2</b>
<b>APPENDIX A .....</b>	<b>4</b>
<i>JKR PROJECT RISKS COMPLETE WITH PROPOSED TREATMENTS FOR CONVENTIONAL PROJECTS.....</i>	
	<i>4</i>
<b>APPENDIX B .....</b>	<b>18</b>
<i>JKR PROJECT RISKS COMPLETE WITH PROPOSED TREATMENTS FOR DESIGN &amp; BUILD PROJECTS.....</i>	
	<i>18</i>
<b>APPENDIX C .....</b>	<b>32</b>
<i>MORE JKR PROJECT RISKS FOR CONVENTIONAL PROJECTS.....</i>	
	<i>32</i>
<b>APPENDIX D .....</b>	<b>39</b>
<i>MORE JKR PROJECT RISKS FOR DESIGN &amp; BUILD PROJECTS.....</i>	
	<i>40</i>
<b>APPENDIX E .....</b>	<b>51</b>
<i>LIST OF WORKSHOP PARTICIPANTS .....</i>	
	<i>52</i>



### 1. BACKGROUND

“There are always risks associated with projects”.

Based on this statement, JKR has embarked on a journey of change to bring about improvements to project delivery through the implementation of RISK MANAGEMENT. The current risk management processes require workshops to be held to identify, analyse and design risk treatments. This is particularly relevant to complex projects or high profile projects. For other projects, risk workshops can be costly and consume plenty of time. For that reason, the department has expressed the need to document typical project risks to assist the project managers in developing the risk management plan (RMP) for any typical project. The list would also provide a first hand tool in identifying project risks.

To realise this inspiration by top management, PROKOM has adopted the appropriate strategy. The typical project risk register would be the outcome from risks workshops participated by senior JKR officers with many years of project management experience. They would contribute the relevant input to project risks pertinent to JKR projects in all the five project phases. Two workshops would be held, one session to identify and analyse projects procured in the conventional method and the other session for design and build projects.

The workshops were successfully carried out on December 10-11 and December 12-13, 2007 at Pearl International Hotel, Jalan Kelang Lama, Kuala Lumpur.

Originally the workshop participants were selected among senior JKR officers of J54 grades. But due to unavailability of selected senior officers, officers of lower grades were substituted.

The list of participants for the workshops is as per **Appendix E**.



## 2. SUMMARY OF RISKS IN JKR PROJECT

The total risks identified for Conventional projects and D&B projects were 106 and 121 respectively. Out of that, only 24 risks were analysed for Conventional projects and 26 risks for D&B projects due to time constraint. Details of the workshop outcome are portrayed in the table below:

Table 1: Results from first session (Conventional Project Risks)

PHASE	RISKS IDENTIFIED	RISKS ANALYSED
PLANNING	19	6
DESIGN	26	6
PROCUREMENT	11	4
CONSTRUCTION	32	5
HANDOVER	18	3
TOTAL	106	24

Table 2: Results from second session (Design & Build Project Risks)

PHASE	RISKS IDENTIFIED	RISKS ANALYSED
PLANNING	40	2
PROCUREMENT	16	5
DESIGN	19	5
CONSTRUCTION	29	6
HANDOVER	11	8
TOTAL	115	26

All risks analysed with proposed risk treatments are listed in **Appendix A** (conventional projects) and **Appendix B** (design & build projects). The entries in the "responsible party" and "action date" columns are merely proposals and it is up to the project manager to adopt in part or in whole. Variations may be required to suit the perspectives of the project.



## GENERIC RISKS IN JKR PROJECT

---

All other risks which were identified but not analysed have been listed in **Appendix C** (conventional projects) and **Appendix D** (design & build projects). These can be used to speed up the risk identification process or complement the risk register in Conventional and D&B Projects.

PROKON





## APPENDIX A

# ***JKR PROJECT RISKS COMPLETE WITH PROPOSED TREATMENTS FOR CONVENTIONAL PROJECTS***



***This page intentionally left blank***



## GENERIC RISKS IN JKR PROJECT

### RISK REGISTER FOR CONVENTIONAL PROJECTS

#### A. Planning & Local Authorities Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
1.	There is a risk that if the brief is not clear, the scope cannot be finalized leading to delaying in commencement of the whole design.	Scope	<ul style="list-style-type: none"> <li>Provide senior competent personnel in planning (cader post) with the client.</li> <li>Client should invite JKR and end user to participate during project inception.</li> </ul>	Pengarah CPK  Client Ministry / department	Before Starting Design works  Before end of planning stage
2.	There is a risk that problem in internal communication within JKR will lead to the poor coordination causing delay in the planning process.	Communications	<ul style="list-style-type: none"> <li>Define and document roles and responsibilities.</li> <li>Increase frequency of soft skill course</li> <li>Have more dialogue between all the disciplines in P&amp;P level ( A special committee must be set up to look into this matter)</li> <li>Establish corporate communication plan.</li> </ul>	Pengarah IMS  Pengarah CPK Pengarah IMS  Pengarah IMS	TBA  TBA TBA  TBA
3.	There is a risk that if land acquisition is not resolved in advance then it will eventually delay the overall scheduling of the project.	Technical	<ul style="list-style-type: none"> <li>Identify pre-development areas (corridor) in advance so proper land acquisition can be done earlier.</li> <li>Initiate and monitor land acquisition 2 years before project implementation</li> <li>Increase frequency meeting with Land Office</li> </ul>	Pengarah SBU/ Pengarah Negeri	2 years before project implementation monthly



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			and constant monitoring.		
4.	There is a risk that lack of integrated utility planning by utility agencies will cause problem in implementation of the project and maintenance management of facilities.	Technical	<ul style="list-style-type: none"> <li>Establish integrated infrastructure plan to incorporate utilities planning from relevant utility agencies.</li> <li>Establish a one stop center to deal with the all utilities agency</li> </ul>	Pengarah SBU/ Pengarah Negeri  Pengarah SBU/ Pengarah Negeri	Immediate  Immediate
5.	There is a risk that change in client priority/scope will lead to scope not being able to finalise and wastage of resources (manpower, time, money) and impacting on planning schedule	Scope	<ul style="list-style-type: none"> <li>Appoint experienced competent personnel as cader post to the client agencies to assists in planning</li> <li>Impose compulsory participation of JKR during project inception.</li> <li>Client should have feedback from end user. (Customer focus).</li> </ul>	Pengarah CPK  KPKR  Client	Immediate  Immediate  Immediate
6.	There is a risk that insufficient project ceiling cost leads to problem in complying to full project scope during planning stage.	Financial	<ul style="list-style-type: none"> <li>Appoint experienced competent personnel as cader post to the client agencies to assists in planning.</li> <li>Impose compulsory participation of JKR during project inception</li> <li>Review project scope with client within the approved project ceiling cost.</li> </ul>	Pengarah CPK  Pengarah Caw.  Pengarah Caw.	Immediate  Immediate  Immediate



## GENERIC RISKS IN JKR PROJECT

### B. Design Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
7.	There is a risk that incomplete project brief will cause difficulty in translating the brief, and delaying the design production and possibly not fully meeting the client needs.	Scope	<ul style="list-style-type: none"> <li>○ Apply Partnering concept during the stage of determining the Client's needs.</li> <li>○ To design standardized format for JKR project briefs incorporating treasury format for clients.</li> <li>○ To use standardized format for JKR project briefs incorporating treasury format for clients.</li> <li>○ To use standard checklist for project brief before detailed design.</li> <li>○ Request client to endorse the final project briefs before detailed design.</li> <li>○ Assign trained and experienced personnel to prepare and review project brief.</li> </ul>	HOPT/ PM  Special Task Force  HOPT/Designers  HOPT/Designers  HOPT/Client  Program Manager/HOPT	
8.	There is a risk that lack of communication between designers will cause incomplete information dissemination resulting in insufficient / inappropriate / discrepancy in design	Communications	<ul style="list-style-type: none"> <li>○ Design and use guidelines on the process of verification and validation</li> <li>○ Design and use communication plan for project manager and team members.</li> <li>○ Apply partnering concept to enhance team building.</li> <li>○ Apply 3D modeling software for designed</li> </ul>	PM/HOPT/HODT  PM/HOPT/HODT  PM/HOPT/HODT  PM/HOPT/HODT	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			drawing including services. <ul style="list-style-type: none"> <li>Implement online document drawing management system (editing, retrieving, tagging and color coding) from the electronic library for standardized detailed drawing</li> </ul>	PM/HOPT/HODT	
9.	There is a risk that change of scope from client will cause difficulty in translating the new Scope resulting in design is not fully meeting client's needs and delay in design schedule.	Scope	<ul style="list-style-type: none"> <li>Apply Partnering concept during the stage of determining the Client's needs.</li> <li>To design standardized format for JKR project briefs incorporating treasury format for client briefs.</li> <li>To use standardized format for JKR project briefs incorporating treasury format for client briefs.</li> <li>To design and use standard checklist for project briefs</li> <li>Request client to endorse the final project briefs.</li> <li>Assign trained and experienced personnel to prepare and review project brief.</li> <li>Conduct a few workshops to determine and finalize project scope.</li> </ul>	PM/HOPT  Special Task Force  HOPT/Designers  HOPT/Designers  HOPT/Client  PM/HOPT  PM/HOPT	
10.	There is a risk that design may not be optimized due to incompetent consultants	Communications	<ul style="list-style-type: none"> <li>Use rating &amp; evaluation system of consultant performance – accreditation (training by JKR</li> </ul>	HOPT/HODT/PM	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
	leading to rework in design resulting in higher project cost and delay to project schedule.		<ul style="list-style-type: none"> <li>or experienced consultant) and involvement of Professional Bodies such as LAM, LJM etc.</li> <li>○ Introduce third party checker (if necessary)</li> </ul>		
11.	There is a risk that delay in design will lead to delay in preparing tender documents impacting on the tender schedule.	schedule	<ul style="list-style-type: none"> <li>○ Organize competency based training for JKR designer</li> <li>○ Apply specialization approach in design.</li> <li>○ Organize regular coordination meetings to monitor progress of design.</li> <li>○ Fill up all vacant posts in design office.</li> <li>○ Outsource designer.</li> <li>○ Acquire latest technology and facilities.</li> <li>○ Coordinate with relevant authorities.</li> <li>○ Set time limit for final design and proper PR to client.</li> </ul>	CPK  HODT  HOPT  CPK CPK CPK HOPT HOPT / HODT	
12.	There is a risk that design may be delayed due to lack of manpower, namely designers and support staffs, resulting in delay to project schedule.	5	<ul style="list-style-type: none"> <li>○ Leverage on ICT from design to production drawing.</li> <li>○ Implement online document drawing management system (editing, retrieving, tagging and color coding) from the electronic library for standardized detailed drawing</li> </ul>	PM/ HOPT/HODT	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			<ul style="list-style-type: none"> <li>Improve effectiveness and competency through training to optimize manpower</li> </ul>		

### C. Procurement Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
13.	There is a risk that delay in calling tender due to incomplete tender document, checking process, frequent client request etc. will result in not meeting tender schedule leading to delay in project implementation.	Schedule	<ul style="list-style-type: none"> <li>Submit early necessary application to Local Authorities.</li> <li>Establish good PR with client.</li> <li>Implement partnering with stakeholders.</li> <li>Apply Advanced Scheduling Technique (CPM).</li> </ul>	HODT  HOPT HOPT/HODT HOPT	Before detail design
14.	There is a risk that drawings, technical specification and BQ not properly documented resulting in ambiguous tender document causing problems in contract administration during construction.	Contractual	<ul style="list-style-type: none"> <li>Provide competency based training for QS officer.</li> <li>Review full document before tender.</li> <li>Review specification regularly every 2 years.</li> <li>Define time frame based on project categorization.</li> </ul>	CPK  HOPT/HODT/CKUB Technical committees HOPT	





## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			<ul style="list-style-type: none"> <li>Plan properly in setting date for tender.</li> </ul>	HOPT	
15.	There is a risk that insufficient information on project data leading to inaccurate cost estimate and causing project cost overrun.	Financial	<ul style="list-style-type: none"> <li>Provide competency based training for JKR officer</li> <li>Establish communication plan with relevant parties to obtain required information on project</li> <li>Establish and update material cost database.</li> <li>Provide training in 'Cost Product Breakdown Structure'.</li> <li>Verify drawings, BQ and Specification.</li> </ul>	CPK  HOPT/PM  CKUB CPK CKUB	
16.	There is a risk that interference from political or individuals lead to selection of successful tenderer not based on recommendation / merit and would cause possible difficulties in project implementations.	Organisational	<ul style="list-style-type: none"> <li>Set a guideline on contractor's performance.</li> <li>Advise Tender Committee selection based on contractor's performance.</li> </ul>	CKUB CKUB	



## GENERIC RISKS IN JKR PROJECT

### D. Constructions Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
17.	There is a risk that delay in possession of site would cause the contractor not being able to start work resulting in delay to project completion and cost overrun.	Schedule	<ul style="list-style-type: none"> <li>Set early meeting with approving agencies before TMT (site possession) for better coordination.</li> <li>Brief to relevant parties during pre-construction meeting.</li> <li>Give clear instructions to successful contractor on documentation required</li> </ul>	PM /HODT  PM  PM	2 weeks from date of LA
18.	There is a risk that lack of resources (material, manpower, machinery and money) could severely affect contractor's performance (progress, quality and cost), ultimately leading to project delay.	Other resources	<ul style="list-style-type: none"> <li>Set policy to encourage usage of IBS</li> <li>Incorporate new techniques on labour intensive activities.</li> <li>Update specifications to keep up with market/ suppliers</li> <li>Apply stringent control on planning &amp; scheduling by using CPM to incorporate resources planning.</li> </ul>	KPKR HOPT  CKUB  PM	
19.	There is a risk that changes in scope would result in changes in design that would result in cost overrun and project delay.	Technical	<ul style="list-style-type: none"> <li>Present details to client the impact of scope changes would affect time and cost project and get his agreement to that effect.</li> <li>Do detail site investigation</li> </ul>	HODT   HODT	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
20.	There is a risk that incompetence of JKR's project team could lead to shoddy work/rework, poor communications resulting in project delay & cost overrun.	Organisational	<ul style="list-style-type: none"> <li>Provide structured training for JKR officers</li> <li>Allocate right person for the right job</li> <li>Clearly define Function Chart (Roles &amp; Responsibility)</li> <li>Clearly define line of communication (communication plan)</li> <li>Use of latest communication tools / gadget.</li> </ul>	JKR CPK PM PM PM	
21.	There is a risk that shortage of materials could lead to instability of material prices, thereby affecting the project schedule, ultimately causing project delay & cost overrun.	Financial	<ul style="list-style-type: none"> <li>Set policy to encourage usage of IBS</li> <li>Encourage contractor to source materials from more suppliers</li> <li>Forecast materials usage (industry guide)</li> <li>Propose additional list of materials to be considered allowing for fluctuation in prices and to be passed to Treasury for approval – Treasury Policy</li> </ul>	KPKR PM / Contractor PM / Contractor CKUB	



## GENERIC RISKS IN JKR PROJECT

### E. Handover Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
22.	There is a risk that if quality of work is not up to mark, then Client will refuse to accept the Project	Quality	<ul style="list-style-type: none"> <li>To ensure the right choice of contractor for the right job. Share &amp; update database of contractors performance record between JKR &amp; other relevant agencies (PKK, CIDB,etc) – PM has to report on contractor's performance.</li> <li>Revise the cut off system of evaluation, to ensure JKR estimate will be the priority</li> <li>Train project team members on managing the site, contract management, specification. Training should also cover attitude &amp; responsibility</li> <li>Distribute work to project team based on norm.</li> <li>Apply stringent supervision and control on contractors work</li> <li>Issue NCR to work not meeting standard and quality specified</li> <li>Appoint competent quality officer to verify construction work</li> </ul>	CKUB/ PM  CKUB  CPK / PROKOM  CPK / PROKOM	
23.	There is a risk that minor works not completed will cause Client to be undelighted to accept the Project.	Contractual	<ul style="list-style-type: none"> <li>Develop check list for issuance of CPC &amp; issue upon compliance only</li> </ul>	Pakar (CKUB)	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			<ul style="list-style-type: none"> <li>o Train PM not well versed in CoC</li> <li>o Appoint only certified / suitable PM to manage project</li> <li>o Don't allow additional V.O. towards the end of project without EOT</li> <li>o Obtain Client's written agreement on handing over project with unfinished works to be completed within agreed time</li> </ul>	CPK CPK S.O. / PD S.O. / PD	
24.	There is a risk that ineffective communication in providing feedback between the construction team and the designer team in JKR will cause standard designs not being improved resulting in product not meeting Clients expectations and requirements.	communications	<ul style="list-style-type: none"> <li>o Make attendance of designer / desk officer compulsory in every site meeting</li> <li>o Provide training in communication and SPK process for the Project team</li> <li>o Review standard design every 3 years</li> <li>o Establish norm of workload of JKR officers</li> <li>o Distribute work to designer / supervisor according to the norm</li> <li>o Audit project</li> </ul>	SO CPK Portfolio (SBU/Pakar) PROKOM PROKOM Unit Naziran	



## GENERIC RISKS IN JKR PROJECT

---

***This page intentionally left blank***



## APPENDIX B

# ***JKR PROJECT RISKS COMPLETE WITH PROPOSED TREATMENTS FOR DESIGN & BUILD PROJECTS***



***This page intentionally left blank***





## GENERIC RISKS IN JKR PROJECT

### RISK REGISTER FOR DESIGN & BUILD PROJECTS

#### A. Planning & Local Authorities Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
1.	Incomplete / unclear Project scope will lead to scope uncertainties and required more time negotiate on final scope impacting on planning schedule.	Scope	<ul style="list-style-type: none"><li>○ JKR to provide guidance to Client in preparing project brief.</li><li>○ Conduct workshop for room data interaction involving Client, end users, and JKR teams to meet client needs and satisfaction.</li><li>○ To improve technical details in pre-bid documents and develop database for product specification and performance specification of products, system and equipment</li></ul>	HOPT  HOPT / HODT  HODT / Pakar	
2.	Block VOTE given is insufficient to implement all the projects causing remaining projects to be delayed or project to be cancelled.	Financial	<ul style="list-style-type: none"><li>○ Client should invite JKR in preparation of budget for every Malaysia Plan</li></ul>	KPKR	RMK-10



## GENERIC RISKS IN JKR PROJECT

### B. Procurement Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
3.	There is a risk that weaknesses in evaluation system and inexperienced evaluation team will cause wrong selection of contractors and will jeopardize product quality.	Technical	<ul style="list-style-type: none"> <li>Identify various of weaknesses in evaluation system.</li> <li>Improve evaluation system</li> <li>Enhance the confidentiality of evaluation information through awareness and training for evaluation team.</li> <li>Appoint only experienced and competent personnel to be in evaluation team</li> </ul>	HOPT	2 months
4.	There is a risk that appointment of inexperienced contractor by treasury will lead to poor project performance and impacting on the cost, time and quality of the project.	Suppliers	<ul style="list-style-type: none"> <li>To propose formation of special task force to audit the contractor appointed by treasury.</li> <li>Apply existing guidelines in selection of contractors</li> <li>JKR to be referred to in the selection process</li> <li>To propose mandatory formation of joint venture with another company of relevant experience and excellent reputation.</li> </ul>	TKPKR I  Project Steering Committee  Project Director  TKPKR I	
5.	There is a risk that leakage of information during tender evaluation leading to lobbying to tender board and manipulation of information causing the image of JKR to be tarnished.	Organizational	<ul style="list-style-type: none"> <li>Quarantine responsible officers during evaluation process</li> <li>Formalize transfer of documents with a checklist from tender opening committee until tender board decision</li> </ul>	HOPT/HODT	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			<ul style="list-style-type: none"> <li>Transfer evaluation documents in sealed envelope/briefcase/box</li> </ul>		
6.	There is a risk that if the contractor overprice the (Direct Negotiated) tender then the approved project budget will burst.	Financial	<ul style="list-style-type: none"> <li>Opt for open tender</li> <li>Propose fixed price contract for Direct Negotiated tender based on cost estimate jointly done by JKR and client.</li> </ul>	CKUB CKUB/ Client	
7.	There is a risk that unclear and incomplete prebid documents by contractor will lead to delay in the issuance of Letter of Award impacting on the project schedule.	Scope	Organize special workshop attended by all stakeholders and designers to review and clarify all the submitted documents and also to furnish all the incomplete documents	HOPT/ HODT	

### C. Design Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
8.	Ignoring standard and cost committee requirements lead to designs being aborted resulting in delay in implementation`	Technical	<ul style="list-style-type: none"> <li>Enforce designers to follow guidelines on the standard and cost requirements</li> <li>Review standard and cost requirements so as to keep abreast to current trend in construction industry and submit for EPU approval.</li> <li>Elevate standard and cost committee to be at a more prominent level</li> </ul>	HOPT  Pakar, Standard and cost committee  Pengarah CKUB	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
9.	There is a risk that inexperience contractor with poor leadership will lead to poor coordination among respective consultants causing production of final design to be delayed	Communications	<ul style="list-style-type: none"> <li>○ Improve communication through teambuilding</li> <li>○ Apply relational contracting/ partnering</li> <li>○ Realign role and responsibilities of contracting parties (risk sharing)</li> </ul>	PM CKUB / HOPT HOPT	
10.	There is risk that design drawing not issued on time will upset design schedule causing delay in implementation (construction)	Schedule	<ul style="list-style-type: none"> <li>○ Impose more rigorous monitoring and control through CPM – show cause letter for failure to comply with agreed deadline</li> <li>○ Explore and adopt latest savvy technology</li> </ul>	HOPT KPKR	
11.	There is a risk that a project brief which does not clearly specify clients intended requirements presents insufficient input to the design team resulting in abortive designs	Scope	<ul style="list-style-type: none"> <li>○ Organize regular workshops on preparation on project brief</li> <li>○ Enhance interpersonal and communication skill of JKR officers through structured training</li> </ul>	SBU CPK	
12.	There is a risk that information not recorded during clarification process of preliminary design between JKR and contractor will lead to contractual dispute	Scope	<ul style="list-style-type: none"> <li>○ Develop and use proper work flowchart and checklist during clarification process</li> <li>○ Document the information agreed upon by relevant parties during clarification process to form part of the contract</li> </ul>	HOPT HOPT / CKUB	Immediate



## GENERIC RISKS IN JKR PROJECT

### D. Construction Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
13.	There is a risk that shortage in labour will cause works cannot be carried out as planned causing delay to construction schedule	Human Resources	<ul style="list-style-type: none"> <li>Encourage usage of IBS / automation in construction</li> <li>Implement training and awareness program in IBS for JKR staff</li> <li>Exercise control and monitoring through resources loaded in Microsoft Project or similar</li> </ul>	HODT/ HOPT  CPK  HOPT/ PM	
14.	There is a risk that over certifying payment by consultant leads to difficulty in recoupment (even more if the contractor is terminated) and will impact on JKR performance and reputation.	Financial	<ul style="list-style-type: none"> <li>Allocate the required number of competent and experienced JKR staff in the project team to monitor consultants' work</li> <li>Develop SOP for checking the status of work for payment purpose.</li> <li>Implement training in project tracking and payment using / Microsoft Project or similar</li> </ul>	CPK  CKUB  CPK	
15.	There is a risk that low quality of work will lead to rework/ reconstruction and delay project completion.	Quality	<ul style="list-style-type: none"> <li>Impose appointment of competent Quality Manager by Contractor in contract document</li> <li>Develop competent Quality Manager in JKR to exercise quality audit</li> <li>Review and simplify SPK process for practicality</li> <li>Implement training program to enhance competency of JKR supervision team</li> </ul>	CKUB  CPK  SPK Committee  CPK	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
16.	There is a risk that lack of awareness in site safety will lead to numerous serious accidents causing construction work to stop and impacting on the project completion.	OH&S	<ul style="list-style-type: none"> <li>Develop comprehensive safety requirements in contract</li> <li>Review and improve SPK process to incorporate safety procedures.</li> <li>Collaborate with NIOSH to provide training on site safety for JKR team</li> <li>Impose appointment of qualified safety officer by contractor in all D&amp;B contract.</li> </ul>	CKUB  SPK Committee  CPK  CKUB	
17.	There is a risk that JKR staff at state level over loaded with work will have insufficient time to supervise and exercise audit of works impacting on quality of product.	Human Resources	<ul style="list-style-type: none"> <li>Create norms for workload per staff for resource planning</li> <li>Invite JKR state in the project planning stage through assignment in SKALA</li> <li>Create human resources planning unit in JKR States</li> <li>Develop department policy to allocate dedicated project team for ACAT 3 (upper) and above.</li> <li>Develop department policy to outsource implementation projects cost between RM 200 thousand to RM 3.0 mil</li> </ul>	CPK/ PROKOM  HOPT / Pengarah Negeri  Pengarah Negeri  PROKOM  JKR Top Management	
18.	There is a risk that project not completed according to schedule due to poor contractor performance will lead to extension of construction time and delay in handing over schedule.	Schedule	<ul style="list-style-type: none"> <li>Improve SKALA to accommodate project reporting and tracking in D&amp;B project</li> <li>Implement effective regular reporting and co-ordination at site and technical meeting</li> </ul>	UTM  PM	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			<ul style="list-style-type: none"> <li>○ Select only competent contractor for D&amp;B Project</li> <li>○ Impose strictly all contractual procedure for non-performance of contractor.(e.g. penalty, etc)</li> <li>○ Improve training &amp; competency for JKR staff on Microsoft Project or similar</li> <li>○ Create new post for competent scheduler / planner for JKR.</li> <li>○ Allocate adequate competent supervisory personnel for JKR's project team.</li> </ul>	Tender Board  PM  CPK  CPK / PM  PM / CPK	

### E. Handover Risks

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
19.	There is a risk that utilities provider are not ready to provide infrastructure of utilities leading to delay in supply of utilities causing delay in handing over of project	Other Resources	<ul style="list-style-type: none"> <li>○ Conduct early Co-ordination meeting during project initiation stage involving top management and all utilities provider.</li> <li>○ Monitor regularly reporting by contractor for utilities supply</li> <li>○ Devise communication plan involving relevant parties i.e. JKR, contractor, consultant &amp; utilities provider</li> </ul>	PM  PM  PM	Monthly / bi-weekly



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			<ul style="list-style-type: none"> <li>Develop Service Level Agreement (SLA) between JKR and utilities provider</li> </ul>	PM	
20.	There is a risk that contractor is not prepared for testing & commissioning due to lack of resources and equipment leading to delay in testing of product for conformance and causing delay to hand over schedule.	Schedule	<ul style="list-style-type: none"> <li>Implement effective planning and co-ordination to establish T&amp;C schedule and method statement.</li> <li>Appoint adequate &amp; competent personnel to oversee the T&amp;C</li> <li>Develop complete checklist &amp; procedure for T&amp;C</li> <li>Impose penalty to contractor on failure to conduct T&amp;C according to schedule</li> </ul>	PM  PM / CPK  PM / Contractor  CKUB	One month before T&C date
21.	There is a risk that non-compliance to local authorities requirements will cause delay in issuance of CCC / CFO and resulting in delay in handing over schedule	Technical	<ul style="list-style-type: none"> <li>Exercise effective planning and regular meeting with relevant local authorities to affirm compliance.</li> <li>Devise communication plan involving relevant local authorities to affirm compliance.</li> <li>Appoint competent personnel to supervise installation to local authorities requirements</li> <li>Develop checklist to check installation compliance to local authorities requirements</li> </ul>	PM  PM  PM / CPK  PM	





## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
22.	There is a risk that low quality product will lead to customer dissatisfaction and resulting in product cannot be handed over.	Quality	<ul style="list-style-type: none"> <li>o Allocate adequate &amp; competent supervisory personnel</li> <li>o Exercise regular external auditing on site</li> <li>o Conduct statistical analysis of result on construction material testing</li> <li>o Check that contractor employs certified skilled workers</li> <li>o Get client's feedback on materials used in mock-up before proceeding any further</li> </ul>	CPK / PM  Asset Management Team / independence Checker  PD  PM  HOPT	
23.	There is a risk that as built drawings and O&M manuals are not submitted in full leading to JKR's refusal to accept the product and causing delay in hand over schedule	Technical	<ul style="list-style-type: none"> <li>o Itemize payment for as-built drawings based on progress</li> <li>o Impose penalty for not producing drawings according to schedule</li> <li>o Itemize preparation, submission and checking of as built drawings and O&amp;M manual in work program</li> <li>o Allocate adequate and competent personnel to check on submitted drawings and manual</li> </ul>	CKUB  CKUB  PM  PM / CPK	
24.	There is a risk that defects in individual systems will lead to delay in T&C and	Technical	<ul style="list-style-type: none"> <li>o Allocate adequate and competent supervision staff to ensure quality of</li> </ul>	CPK	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
	causing delay in hand over		<p>approved material &amp; equipment and accurate installation work</p> <ul style="list-style-type: none"> <li>○ Check that contractor employs certified skilled workers</li> <li>○ Carry out preliminary testing for each individual system to detect early defect.</li> </ul>	<p>PM</p> <p>PM</p>	Immediately after completion of installation of system.
25.	There is a risk that defects not rectified by Contractor will lead to dissatisfaction of the Client and will tarnish JKR's reputation	Contractual	<ul style="list-style-type: none"> <li>○ Carry out site inspection with contractor at least every 2 weeks</li> <li>○ Allocate adequate &amp; competent supervisory personnel</li> <li>○ Check that contractor employs certified skilled workers</li> <li>○ Do not issue CPC until all the defects have been rectified</li> </ul>	<p>PD</p> <p>CPK</p> <p>PM</p> <p>S.O.</p>	
26.	There is a risk that poor preparation in organizing the official handing over ceremony will lead to many shortcoming during the ceremony and will tarnish JKR's image	Communications	<ul style="list-style-type: none"> <li>○ Propose training program in event management for JKR personnel</li> <li>○ Establish guidelines and procedures for organizing official ceremony.</li> <li>○ Develop complete checklists &amp; procedures (SoP) in organizing official ceremony</li> </ul>	<p>CPK</p> <p>CPK</p> <p>CPK</p>	



## GENERIC RISKS IN JKR PROJECT

Risk No.	Risk Event	Risk Category	Probable Treatment Measures	Probable Responsible Party	Indicative Action Date
			<ul style="list-style-type: none"><li>○ Identify and document Roles &amp; Responsibilities of organizing committee</li><li>○ Plan appropriately schedule for ceremony event</li><li>○ Improve public relations and projection of JKR image</li></ul>	PM / CPK SO	



## GENERIC RISKS IN JKR PROJECT

---

***This page intentionally left blank***



## APPENDIX C

# ***MORE JKR PROJECT RISKS FOR CONVENTIONAL PROJECTS***



***This page intentionally left blank***



## RISK LIST FOR CONVENTIONAL PROJECTS

### A. Planning and Local Authorities Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
1.	Unavailability of site	Other Resources
2.	Unsuitability of site	Technical
3.	Project ceiling cost not approved (cost constraint)	Financial
4.	Inconsistency of policy requirements by different utility agencies	Suppliers
5.	Clarity of roles between various disciplines within JKR	Communication
6.	Changes in technology (hospital project)	Technical
7.	Political interference	Political
8.	Unavailability of human resources	Human Resources
9.	Lack in competency	Human Resources
10.	Poor external communications	Communications
11.	Site sitting on historical sit	Technical
12.	Lack of information of existing services	Technical
13.	Local by-law not understood by JKR staff	Human Resources

### B. Design Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
14.	Lack of support staff	Human Resources
15.	Lack of experience of designer	Human Resources
16.	Limited equipment (hardware, software) allocated to designer	Other Resources



## GENERIC RISKS IN JKR PROJECT

---

17.	Change of design scope from client	Scope
18.	Incompetent consultant	Other Resources
19.	High turn-over (frequent transfer) of design team members	Human Resources
20.	Discrepancy between BQ & design, design from other disciplines / incomplete detailing, drawing / specification – incomplete, addendum specification not provided/incomplete (ambiguous)	Technical
21.	Poor communication/interaction between client, end user and JKR	Communications
22.	Appointment of consultant – red tape	Other Resources
23.	Abortive design due to political interference design	Political
24.	Change of procurement methodology	Contractual
25.	Lack evaluation of consultant performance	Other Resources
26.	Lack of involvement from designers during construction	Organizational
27.	Site constraint/problems / access to site / location of site	Technical
28.	Requirement by central agency	Technical
29.	Insufficient ceiling fund to cater design scope	Financial
30.	Land acquisition	Technical/Political
31.	Design changes during construction stage – not through proper process	Quality
32.	Construction not following the contract drawings, specifications - poor site supervision (lack of experience, work over load)	Quality/Human Resources
33.	Poor quality due to inexperience contractors	Quality





### C. Procurement Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
34.	Project re-tender due to change of scope, tender bureaucracy, delay of approval in PDA, etc	Contractual
35.	Late preparation and signing of contract document	Schedule
36.	Discrepancies in tender document	Contractual
37.	Insufficient human resource	Human Resources
38.	Approval of ATDA not on time	Schedule
39.	Delay in tender board decision	Schedule
40.	No confirmation of PDA	Financial

### D. Construction Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
41.	Delay in possession of site – land acquisition / insurance / bond	Schedule
42.	Lack of resources (4M)	Other Resources
43.	Incompetency of contractor & construction team	Organizational
44.	Instability of material prices	Financial
45.	Lack of funds from client	Financial
46.	Late of progress payment	Financial
47.	Inaccessibility to site	Schedule
48.	Changes in scope/design	Technical



## GENERIC RISKS IN JKR PROJECT

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
49.	Workers strike	Industrial relations
50.	Delay in services – relocation by external agency	Schedule
51.	Lack of coordination & communication	Communications
52.	Poor project management	Organizational
53.	Delay in testing & commissioning	Schedule
54.	Delay in construction drawings	Technical
55.	Discrepancy in design	Technical
56.	Delay in approval from Local Authority	Schedule
57.	Delay due to M&E works	Schedule
58.	Poor workmanship	Quality
59.	Low quality material	Quality
60.	Force majeure – flood, earth quake, inclement weather	Schedule
61.	Safety & Health (OSHA) – workers safety, site safety, public safety	OH&S
62.	Pollution to environment	Environmental
63.	Poor traffic management	Quality
64.	Theft, vandalism and gangsterism	Cultural
65.	Improper storage	Other Resources
66.	Interference from external party	Political
67.	Employment of illegal workers	Human Resources



### E. Handover Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
68.	Product / system failure to function as specified	Technical
69.	Refusal of Client to take over project - outstanding items, disputes	Communications
70.	Failure to hand over project based on original contract time	Schedule
71.	Failure to rectify defects – final account cannot be closed	Contractual
72.	Maintenance during defect liability period (DLP) not done	Contractual
73.	Failure to conduct testing & commissioning as scheduled	Contractual
74.	Late supply of utilities (electricity, water, etc)	Contractual
75.	Complacency of JKR's Project Manager	Human resources
76.	Delay in handing over schedule	Schedule
77.	Failure of contractor to respond immediately to S.O.'s instructions	Contractual
78.	CPC issued although contractor failed to complete residual work upon handing over	Contractual
79.	Joint handing over site visit not done <ul style="list-style-type: none"><li>- Inappropriate time</li><li>- not agreeable to management of site visit</li></ul>	Communications
80.	Change of personnel in Client department during handing over period	Organizational
81.	Dissatisfaction of Client upon completion of project due to outdated specifications	Technical
82.	Dissatisfaction of Client during hand over due to repetitive mistakes by JKR	Technical



***This page intentionally left blank***



## APPENDIX D

# ***MORE JKR PROJECT RISKS FOR DESIGN & BUILD PROJECTS***



***This page intentionally left blank***

## RISK LIST FOR DESIGN & BUILD PROJECTS

### A. Planning and Local Authorities Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
1.	Incomplete project brief – clients' need cannot be finalised <i>Brif projek tidak lengkap - tidak dapat memuktamadkan kehendak pelanggan.</i>	Scope
2.	Land status cannot be resolved – layout planning and permission to plan cannot proceed <i>Status tanah belum selesai - S.I., S.S. tidak dapat dijalankan, Layout planning dan kebenaran merancang tak dapat dibuat.</i>	Technical
3.	Safety and comfort of road user are not specified in pre-bid document for road projects <i>Item untuk keselamatan dan keselesaan pengguna tidak dinyatakan dalam pre-bid untuk projek naiktaraf jalan - Risiko kepada pengguna jalan raya untuk projek naiktaraf jalan</i>	OH&S
4.	Safety and comfort of end user are not specified in pre-bid document for building projects <i>Item untuk keselamatan dan keselesaan pengguna tidak dinyatakan dalam pre-bid untuk projek naiktaraf bangunan - Risiko ciri keselamatan yang kurang untuk penghuni bangunan yang diubahsuai/ naiktaraf</i>	OH&S
5.	Road alignment altered due to political interference <i>Jajaran jalan yang telah dirancang perlu diubah kerana campur tangan politik - Dokumen pra-bida tidak dapat disediakan kepada kontraktor, pengambilan tanah baru, survey baru, skop baru.</i>	Political
6.	Alteration in road alignment due to new structures (e.g. temple, etc) <i>Pembinaan yang baru muncul di tapak projek (e.g. kuil) - Pertukaran jajaran jalan, pengurangan skop projek.</i>	Political



## GENERIC RISKS IN JKR PROJECT

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
7.	Project delivery period shortened by client – increases cost <i>Client shortens the project delivery period which require changes in the design and construction methodology - kos meningkat, tekanan kepada JKR.</i>	Schedule
8.	Insufficient ceiling cost to cater full scope <i>Siling tidak mencukup berbanding skop - Review skop, pelanggan perlu minta siling tambahan, virement.</i>	Financial
9.	Incompetent consultant appointed by contractors – design not fully meeting clients' need. <i>Konsultan yang dilantik oleh kontraktor kurang kemampuan - Rekabentuk tidak memenuhi kehendak pelanggan, tidak kos efektif.</i>	Human Resources
10.	Frequent replacement of clients' representative – changes to design <i>Pegawai di pihak pelanggan sering bertukar - Perubahan kepada rekabentuk, projek lewat.</i>	Human Resources
11.	Frequent replacement of end users' representative – changes to design <i>Pegawai pengguna sering bertukar - Perubahan kepada rekabentuk, projek lewat.</i>	Communications
12.	End user are not involved during planning stage – changes to design <i>Pengguna tidak dilibatkan di peringkat perancangan - Perubahan kepada rekabentuk, projek lewat.</i>	Communications
13.	Unavailability of infrastructures to project site <i>Tiada kemudahan infra ke tapak projek - Kos meningkat, lewat pelaksanaan.</i>	Other Resources
14.	Unsuitability of site <i>Tapak tidak sesuai untuk melaksanakan projek - Kompleksiti rekabentuk, kos bertambah, projek tertangguh.</i>	Technical
15.	Squatters on proposed project site <i>Tanah ada penghuni haram - Lewat buat S.S., beban pampasan kepada kerajaan, lewat mula pembinaan.</i>	Technical





## GENERIC RISKS IN JKR PROJECT

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
16.	Inaccurate site surveys works – resurvey <i>Kesilapan kerja-kerja site survey - Survey semula perlu dilakukan, rekabentuk semula, lewat pelaksanaan.</i>	Technical
17.	Insufficient information of SI – design cannot be optimised <i>S.I. tidak mencukupi - Rekabentuk tidak optima, berlaku masalah pembinaan cerucuk.</i>	Technical
18.	Quality standard are not clearly specified by client – unfinalised need statement <i>Rujukan kualiti/piawaian yang dikehendaki oleh pelanggan tidak dinyatakan dengan jelas - menyebabkan need statement tidak dapat dimuktamadkan, rework.</i>	Technical
19.	Pollution to environment <i>Kesan kepada alam sekitar daripada projek – pencemaran air, bunyi, udara, ekologi</i>	Environmental
20.	Lack of cooperation from client – design are not meeting client needs <i>Kurang kerjasama daripada pelanggan - Rekabentuk tidak memenuhi kehendak pengguna.</i>	Industrial Relations
21.	Changes in government policies <i>Perubahan polisi kerajaan - Review skop, review design.</i>	Political
22.	Changes in design concept – longer planning time, delayed implementation <i>Perubahan di dalam konsep rekabentuk - Tempoh perancangan yang panjang, lewat pelaksanaan.</i>	Scope
23.	Late approval from treasury for negotiated tender <i>Kelulusan untuk runding harga daripada Perbendaharaan lambat diterima - Lambat LA, lewat masuk tapak.</i>	Financial
24.	Detailed planning schedule are not well prepared <i>Jadual terperinci aktiviti perancangan tidak disediakan - Keperluan sumber manusia pasukan projek tidak mencukupi</i>	Financial



## GENERIC RISKS IN JKR PROJECT

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
25.	Uncertainty in labor market due to changes in government policy on foreign labour - <i>lewat perlaksanaan.</i>	Human Resources
26.	Lack of skilled workers to produce quality construction - <i>Kualiti produk tidak memenuhi spesifikasi / kehendak pelanggan.</i>	Human Resources
27.	Communication plan not well prepared – poor coordination <i>Perancangan komunikasi oleh kontraktor tidak lengkap menyebabkan availability mesin/ peralatan/ sumber lain tidak dikoordinasi - cadangan teknikal dan kos tidak menyeluruh dan realistik, boleh menyebabkan undercost / overcost.</i>	Communications
28.	Site office cannot be constructed due to unavailability of infrastructures – poor supervision by JKR / contractors. <i>Pejabat tapak tidak dapat dibina di tapak projek atau berhampiran kerana tiada kemudahan infra atau tapak kecil - Pengawasan kerja oleh kakitangan JKR dan kontraktor tidak dilakukan dengan berkesan.</i>	Other Resources
29.	WBS prepared are not resources loaded – resources cannot be optimised to planning schedule <i>WBS tidak dibuat dengan terperinci semasa perancangan hingga menyebabkan keperluan sumber (4M) tidak dikenal pasti - Sumber-sumber tidak dapat disediakan mengikut jadual pada masa persediaan, perlaksanaan tergendala.</i>	Other Resources
30.	Lack of expertise in special fields within JKR in preparing pre-bid documents – outsourcing increase cost <i>JKR tidak mempunyai kepakaran mencukupi untuk menyediakan dokumen pra-bida yang jelas/lengkap bagi kepakaran yang tiada dalam JKR - terpaksa outsource kepada perunding, kos meningkat.</i>	Contractual
31.	Existing underground route / utilities are not identify <i>Laluan servis/utility sediada di bawah tanah tidak dapat dikenalpasti - Lewat perlaksanaan.</i>	Technical



## GENERIC RISKS IN JKR PROJECT

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
32.	Lack of design tools (e.g software) to carry out complex design – design not meeting clients' need <i>Lack of facility to do complex design (e.g software) - rekabentuk tidak memenuhi kehendak pelanggan sepenuhnya.</i>	Technical
33.	Inaccurate contour in site survey <i>Site survey – contour tidak dinyatakan dengan tepat</i>	Technical
34.	Public objection on proposed site - relocation <i>Bantahan awam ke atas tapak cadangan - Risiko mendapat tapak baru.</i>	Cultural
35.	Public objection on proposed project itself – Delayed in implementation / cancellation <i>Bantahan awam ke atas projek itu sendiri - Projek lewat pembinaan / batal.</i>	Cultural
36.	Development order cannot be obtained from local authority <i>Kebenaran merancang daripada PBT tidak dapat diperolehi/tidak diluluskan - Projek tidak sesuai dengan persekitaran sedia ada.</i>	Cultural
37.	Incomprehensive feasibility studies in economic, social, environmental aspects etc <i>Kajian fisibiliti tidak menyeluruh, merangkumi ekonomi, sosial, alam sekitar, teknologi - Jajaran jalan baru memberi impak negatif kepada ekonomi kawasan sedia ada</i>	Cultural
38.	Objection by adjacent property owners towards project <i>Bantahan daripada pemilik hartanah bersebelahan projek</i>	Communications

Note : The above risks were originally described in Bahasa Malaysia by the group and were intentionally included for reference.



## B. Procurement Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
39.	Delay in calling tender	Schedule
40.	Repetitive negotiation meetings - delay in issuance of the Letter of Award	Schedule
41.	External interference	Political
42.	Late approval and confirmation of project fund from client	Financial
43.	Lack of competency and commitment of officer in estimation of project cost.	Financial
44.	Low financial margin fixed by tender evaluation system	Quality
45.	Late appointment of Project Director	Communications
46.	Delay in issuing LA due to authority/power delegation	Organisational
47.	Delay in opening tender by <i>Jawatankuasa Membuka Tender</i>	Organisational
48.	Incomplete pre-bid document – contractor not able to submit technical and cost proposal that meets clients' need.	Contractual
49.	Too much provisional sum & provisional quantities provided in Contract	Contractual

## C. Design Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
50.	Delay in approval by planning authority	Communications
51.	Incompetent designers	Human Resources
52.	Inadequate site investigation	Technical



## GENERIC RISKS IN JKR PROJECT

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
53.	Changes in JKR Standard and need statement	Scope
54.	Authorised representative from client not appointed	Communications
55.	Insufficient fund	Financial
56.	Lack of consultation with relevant authorities (DOE, etc)	Communications
57.	Time stipulated by client to complete project is too short	Schedule
58.	Incorrect choice of construction strategy	Technical
59.	Incorrect choice of material	Technical
60.	Product acceptance criteria not established by JKR/client.	Technical
61.	Replacement in lead designer/ consultant	Human resources
62.	Inaccurate proposal of piling types and methodology <i>Pengesyoran jenis cerucuk atau methodologi penanaman cerucuk tidak tepat - menyebabkan implikasi kos, projek lewat, membahayakan keselamatan harta benda awam dan bantahan awam.</i>	Technical
63.	Lack of expertise on the part of consultants in addressing complexity in the design – design not fully meeting client's needs.	Technical

### D. Construction Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
64.	Changes in scope of work	Scope
65.	Land acquisition issues not resolved	Other Resources
66.	Shortage of materials/ equipments/ machineries	Other Resources
67.	Inclement weather – landslide	Environmental



## GENERIC RISKS IN JKR PROJECT

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
68.	Incompetent contractor teams	Human Resources
69.	Contractor facing financial problem	Financial
70.	Dispute between contractor & consultants	Technical
71.	Delay in relocation of services by utility companies	Other Resources
72.	No provision for variation of prices	Contractual
73.	Damage to neighbouring properties	Technical
74.	Raid by labour enforcement authority	Human Resources
75.	Sub-letting of works	Contractual
76.	Delay in interim payment	Financial
77.	Dispute between contractor & JKR	Contractual
78.	Changes in technology not catered in need statement	Technical
79.	Low quality material used in construction due to price increase (in fuel, other resources etc)	Other Resources
80.	Changes by end users	Scope
81.	Social issues – squatters	Political
82.	Damage caused by other projects	Technical
83.	Incompetent JKR teams – Roles & Responsibility for D&B not clearly defined	Human Resources
84.	Changes requirement by Regulatory Authority	Other Resources
85.	Delay by contractor to submit relevant document required by contract	Contractual
86.	Delay in signing document contract by JKR	Contractual



### E. Handover Risks

<u>NO.</u>	<u>RISK EVENT</u>	<u>RISK CATEGORY</u>
87.	Incomplete project records due to missing documents for archiving project documentation	Communications
88.	Lessons not recorded and communicated - repetition of similar mistakes or mishaps to future projects	Cultural
89.	Delay in approval of APK/PHK - delay in closing project account	Contractual



***This page intentionally left blank***



## APPENDIX E

## LIST OF WORKSHOP PARTICIPANTS

Date Of Workshop : 10 & 11 DISEMBER 2007

Location of Workshop : PEARL INTERNATIONAL HOTEL, KUALA LUMPUR

**SESSION 1 (Conventional Project Risks)**

**GROUP 1 (Planning & Local Authorities Risks)**

- 1) Ang Chai Hoon (Caw. Bangunan Am)
- 2) Hj. Zulkifle bin Ahmad (JKR Labuan)
- 3) Ismail bin Hashim (JKR Wilayah Persekutuan KL)
- 4) Ir. Zamri bin Darus (Caw. Pakar – Forensik)

**GROUP 2 (Design Risks)**

- 1) Cik Selmah binti Ahmad (Caw. Kerja Kesihatan)
- 2) Khairazan Mansoor Roosnam Damha (Caw. Kerja Kesihatan)
- 3) Datin Ir. Hjh. Nor Asiah binti Othman (Projek LPT 2)
- 4) Amalina binti Hj. Taib (JKR Perlis)

**GROUP 3 (Procurement Risks)**

- 1) Syed Abdul Rahman bin Syed Abdullah (JKR Pahang)
- 2) Abdul Hamid bin Ismail (Caw. Jalan & Geoteknik)
- 3) Hjh. Mariam binti Hj. Ibrahim (Caw. Kerja Keselamatan)
- 4) Zulkiply bin Bakar (JKR Melaka)

**GROUP 4 (Construction Risks)**

- 1) Abdul Shukor bin Ibrahim (Caw. Kontrak & Ukur Bahan)
- 2) Jayawant a/l Vithal (Kem. Tenaga, Air & Komunikasi)
- 3) Mohd. Nor Rashidi bin Abdul Jalil (Caw. Alam Sekitar)
- 4) Muhamad bin Adam (JKR Selangor)
- 5) Nik Azman bin Nik Osman (JKR Wilayah Persekutuan KL)

**GROUP 5 (Handover Risks)**

- 1) Ir. Aishah binti Othman (Caw. Jalan & Geoteknik)
- 2) Hj. Hassan bin Long Ahmad (JKR Perak)
- 3) Yahaya bin Ibrahim (Caw Kerja Kesihatan)
- 4) Noor Azman bin Mastor (JKR WP KL)



### **SESSION 2 (Design & Build Project Risks)**

#### **GROUP 1 (Planning & Local Authorities Risks)**

- 1) Sarpudin bin Muda (Caw. Bangunan Am)
- 2) Ir. Mohamad Nor bin Omar (Caw. Jalan & Geoteknik)
- 3) Ir. Mohd. Azhari bin Mohd. Salleh (Caw. Penyelidikan & Pembangunan)
- 4) Mohamad Azman bin Abu Bakar (JKR Selangor)
- 5) Ar. Rosila binti Mohamed (Caw. Bangunan Am – Projek Istana KL)

#### **GROUP 2 (Design Risks)**

- 1) Hj. Ghazali bin Jaafar (JKR Johor)
- 2) Cheong Pui Keng (Caw. Alam Sekitar)
- 3) Hj. Mahmood bin Hj. Hassan (Caw. Kerja Keselamatan)
- 4) Ir. Arshad bin Hj. Abdul Rashid (Kem. Tenaga & Komunikasi)

#### **GROUP 3 (Procurement Risks)**

- 1) Nik Zainal Alam bin Hassan (Caw. Kontrak & Ukur Bahan)
- 2) Ir. Rusli bin Embok (JKR Terengganu)
- 3) Ir. Noor Azman bin Ramlee (JKR Selangor)
- 4) Muhammad Azman bin Jamrus (Caw. Kejuruteraan Struktur)
- 5) Ahmad Zaidi bin Mat Said (Caw. Pengurusan Korporat)

#### **GROUP 4 (Construction Risks)**

- 1) Aminuddin bin Md. Yusuf (JKR Pahang)
- 2) Kanagarajah Rasiah (Caw. Kejuruteraan Struktur)
- 3) Hj. Abdul Kadir bin Abdul Samad (JKR Kedah)
- 4) Ar. Azman bin Abdul Manaf (JKR Selangor)
- 5) Faridah binti Ahmad (JKR Pulau Pinang)

#### **GROUP 5 (Handover Risks)**

- 1) Mohd. Jamal bin Sulaiman (Caw. Pengurusan Korporat)
- 2) Zawawi bin Parjan (JKR Johor)
- 3) Saliha binti Daud (JKR Kuala Lumpur)
- 4) Jamree bin Mohd Jawaini (Cawangan Bangunan Am)



## ACKNOWLEDGEMENT

---

PROKOM wishes to thank Ketua Pengarah Kerja Raya Malaysia, Dato' Sri Prof. Ir. Dr. Judin bin Abdul Karim for his inspiration and to Pengarah PROKOM, Ir. Hj. Mohd Aminudin bin Md. Amin for his encouragement to PROKOM in developing this document.

PROKOM also wishes to express its gratitude to all workshop participants which comprised of senior JKR officers who shared their invaluable experience in project management to produce the risk list and design risk treatments in the two separate workshops held in December 2007. The management acknowledges that their full participation has largely contributed to the success of the development of this document.

Not forgetting the excellent work by all the PROKOM facilitators in providing the assistance and direction to the participants, the department wishes to extend their heartiest thanks to :

Ir. Nazari Hashim, Yaakob Abdul Latif, Hj. Sanusi Awi, Mas Abdul Rahman Mas Mohammad, Zawidatul Asma Ghazali, Junaidah Sulaiman, Noor 'Ain Zainal Abidin, Nor Hazlin Mohammad, Norsiah Hassan, Shari Keling, Maslinda Mohamed, Noraniza Mohamad Yusof, Muzammil Musa, Sabirin Marlizan and Amilia Chikon.