

# Project Management Approach CASE STUDY - LRT Extension project

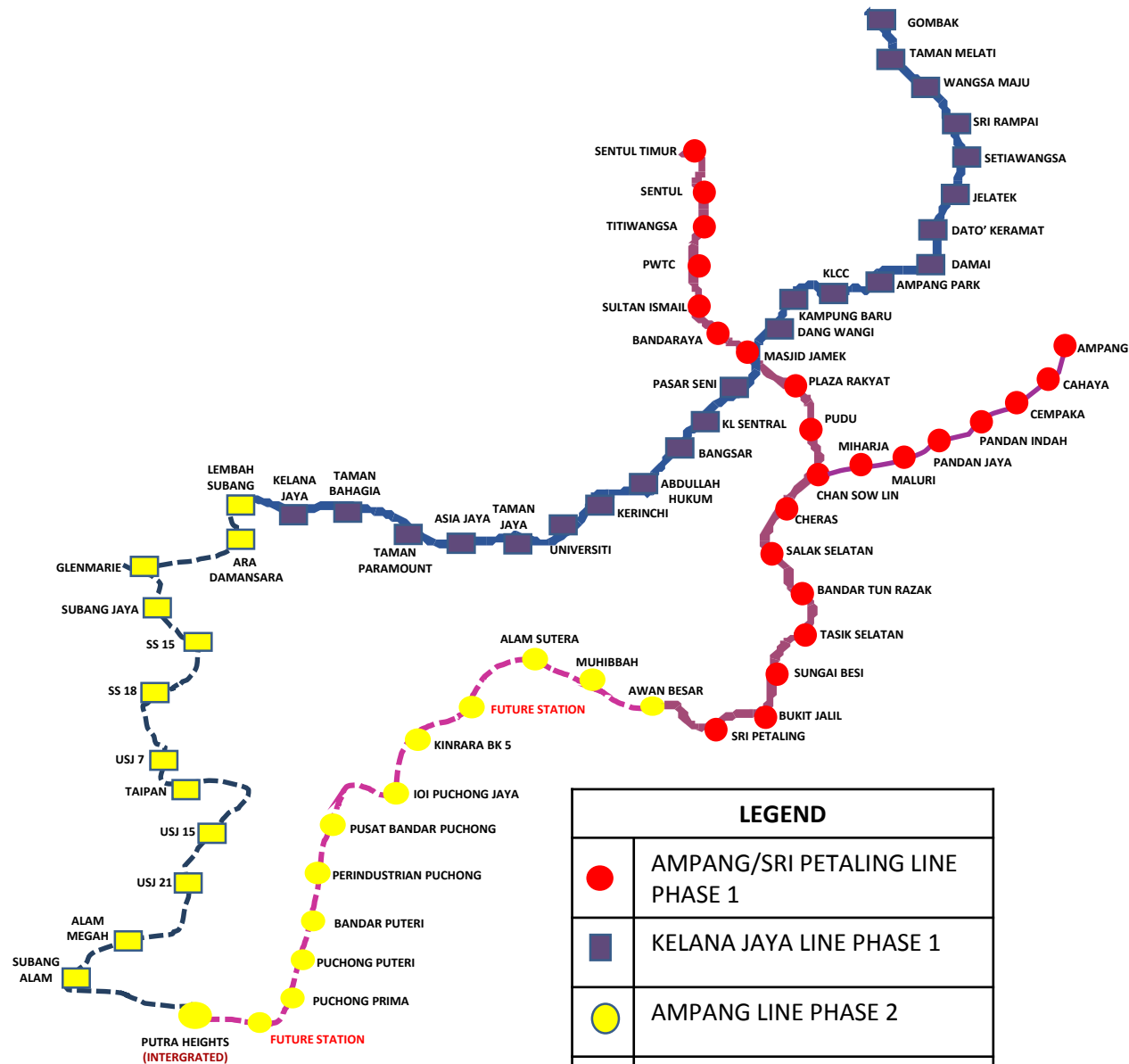
11 September 2019

Presented by Zulkiflee Omar

*Empowered by Science, inspired by Humans*

- **PROJECT BACKGROUND**
- **MAIN COMPONENTS OF THE PROJECT**
- **PROCUREMENT AND CONTRACT STRATEGY**
- **DELINEATION SCOPE OF WORKS BETWEEN PACKAGES**
- **PROJECT MANAGEMENT APPROACH**
  - 1 DESIGN PHASE**
  - 2 CONTRACT MANAGEMENT**
  - 3 CONSTRUCTION PHASE**
  - 4 SITE SAFETY**

# PROJECT BACKGROUND : LRT MAP IN KUALA LUMPUR



## AMPANG/SRI PETALING LINE PHASE 1

- Total Length: 27 km
- Total Station: 25

## KELANA JAYA LINE PHASE 1

- Total Length: 29 km
- Total Station: 25

## AMPANG LINE PHASE 2

- Total Length: 18.1 km
- Total Station: 11

## KELANA JAYA LINE PHASE 2

- Total Length: 17.4 km
- Total Station: 12

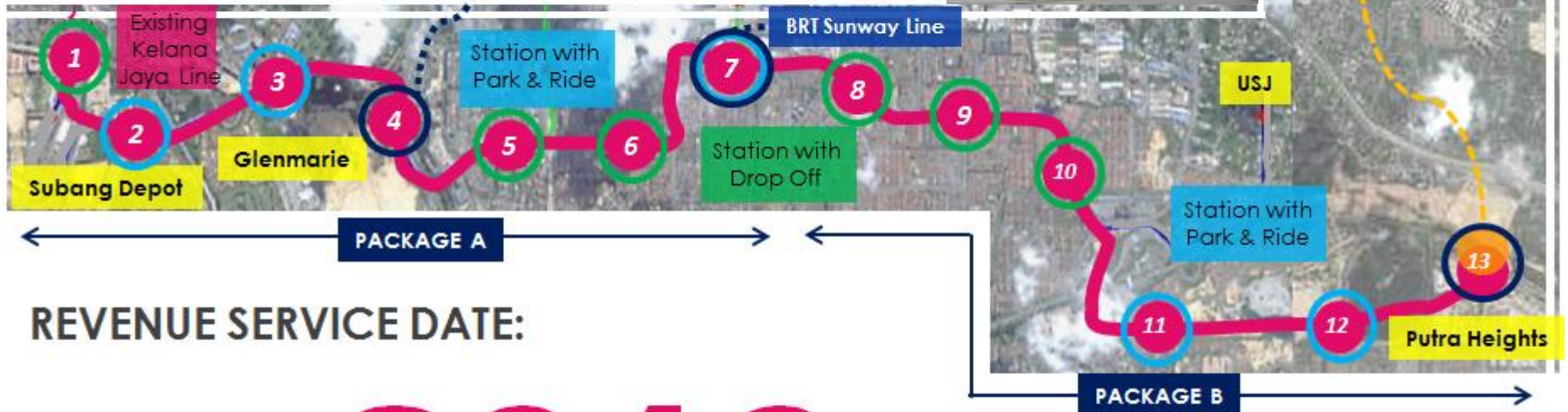
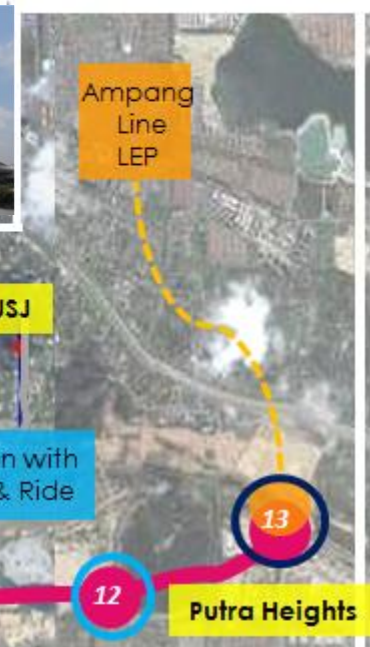


# PROJECT BACKGROUND : KELANA JAYA (KLJ) LINE

● Subang Depot ----- Jalan Lapangan Terbang - Subang Parade ----- USJ Summit ----- USJ Taipan ----- Putra Heights ●



Penyepaduan  
dengan KTM Komuter



REVENUE SERVICE DATE:

June **2016**

**2,629**  
Parking Lots

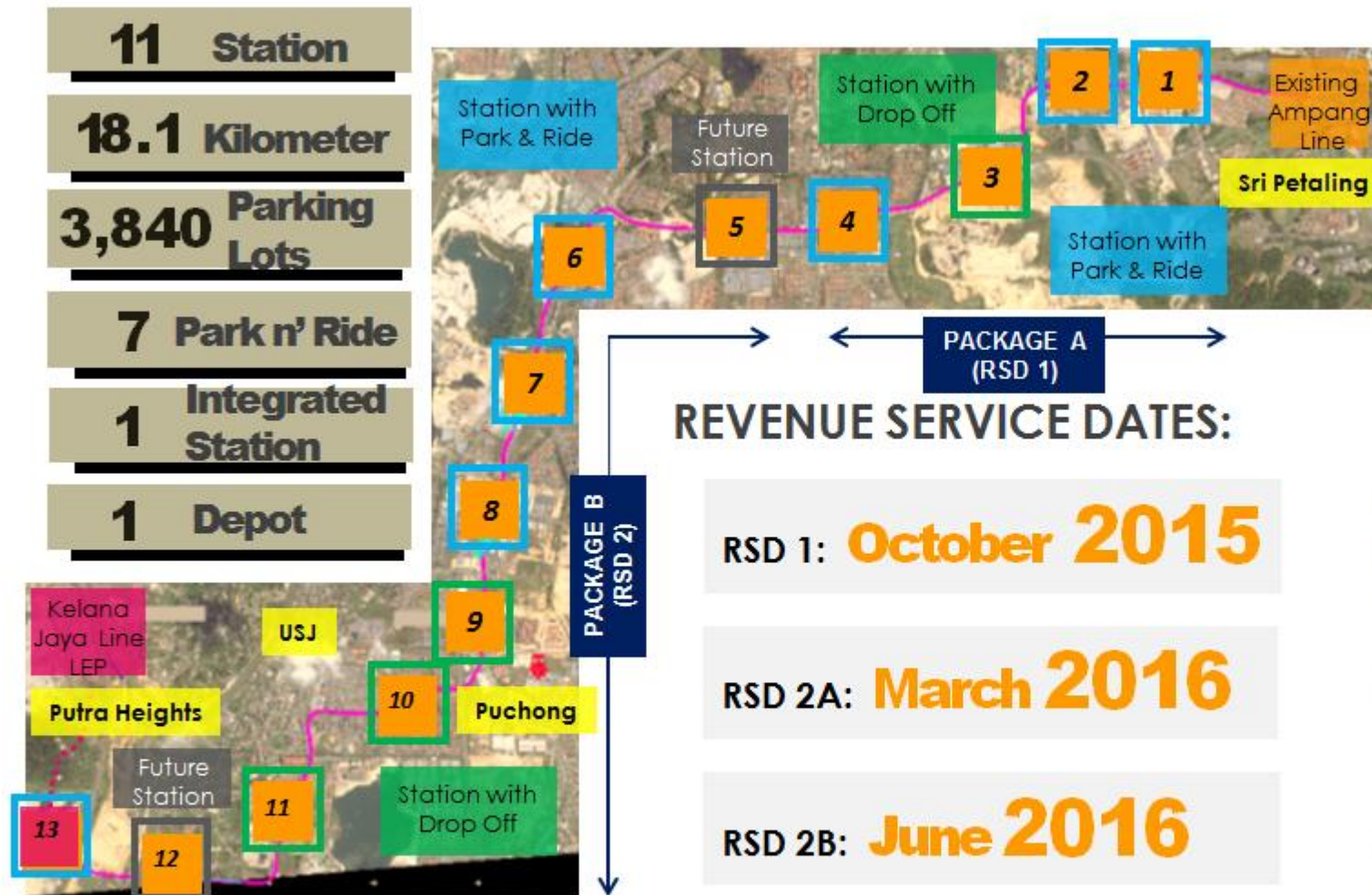
**12** Stations

**17.4** Kilometer

**5** Park n' Ride

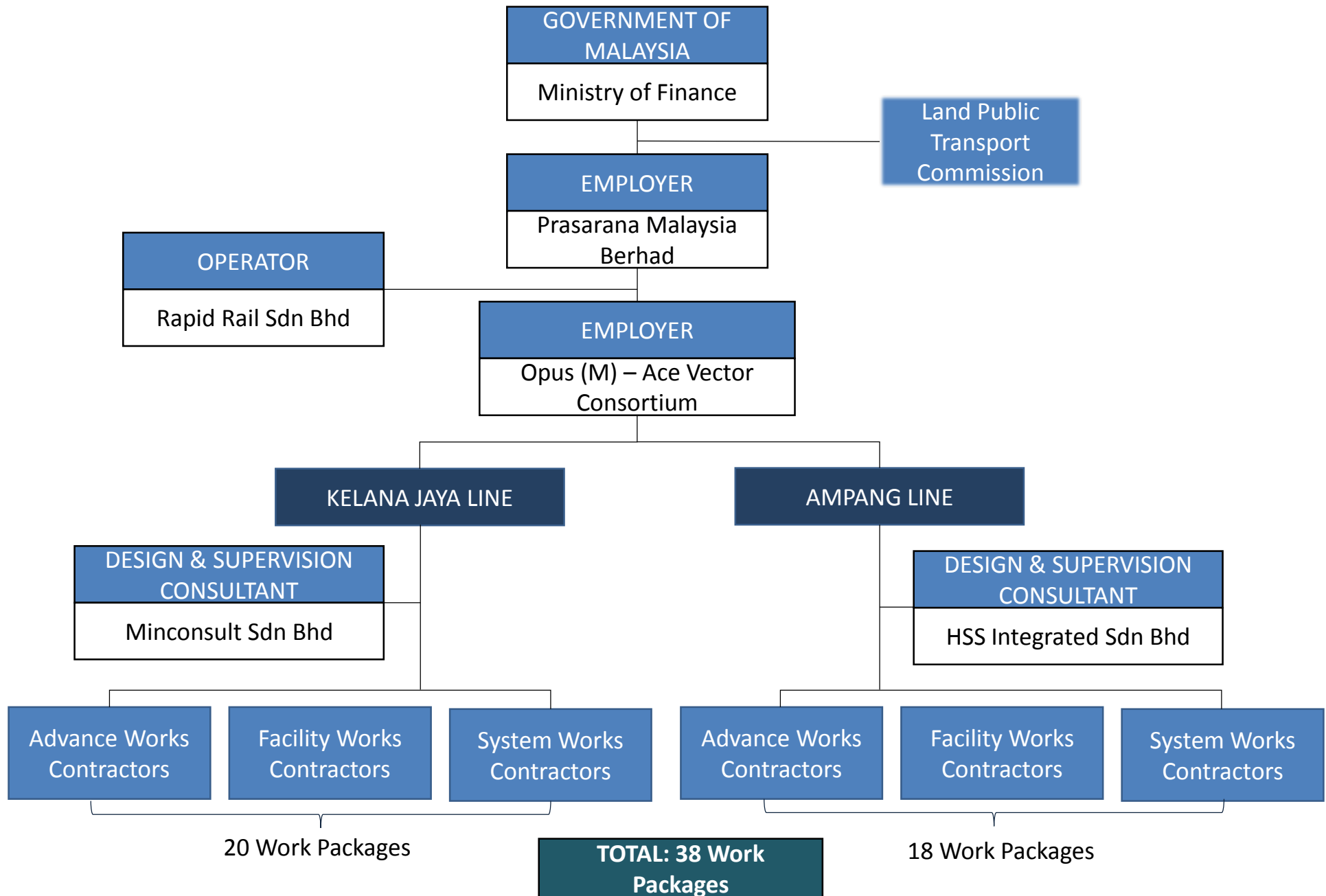
**3** Integrated  
Stations

# PROJECT BACKGROUND : AMPANG (AMG) LINE



■ Putra Heights --- Puchong Prima -- Puchong Perdana --- Bandar Puteri Puchong --- LDP ----- Bukit Jalil Highway -- Sri Petaling ■

# PROJECT STRUCTURE







Piers and segmental box girders (SBG).



Guideway deck slab.





Positioning of precast sleepers.





Casting of edge of platform after completion of track laying.

## PHOTO : STATION 1 KLJ (LEMBAH SUBANG)



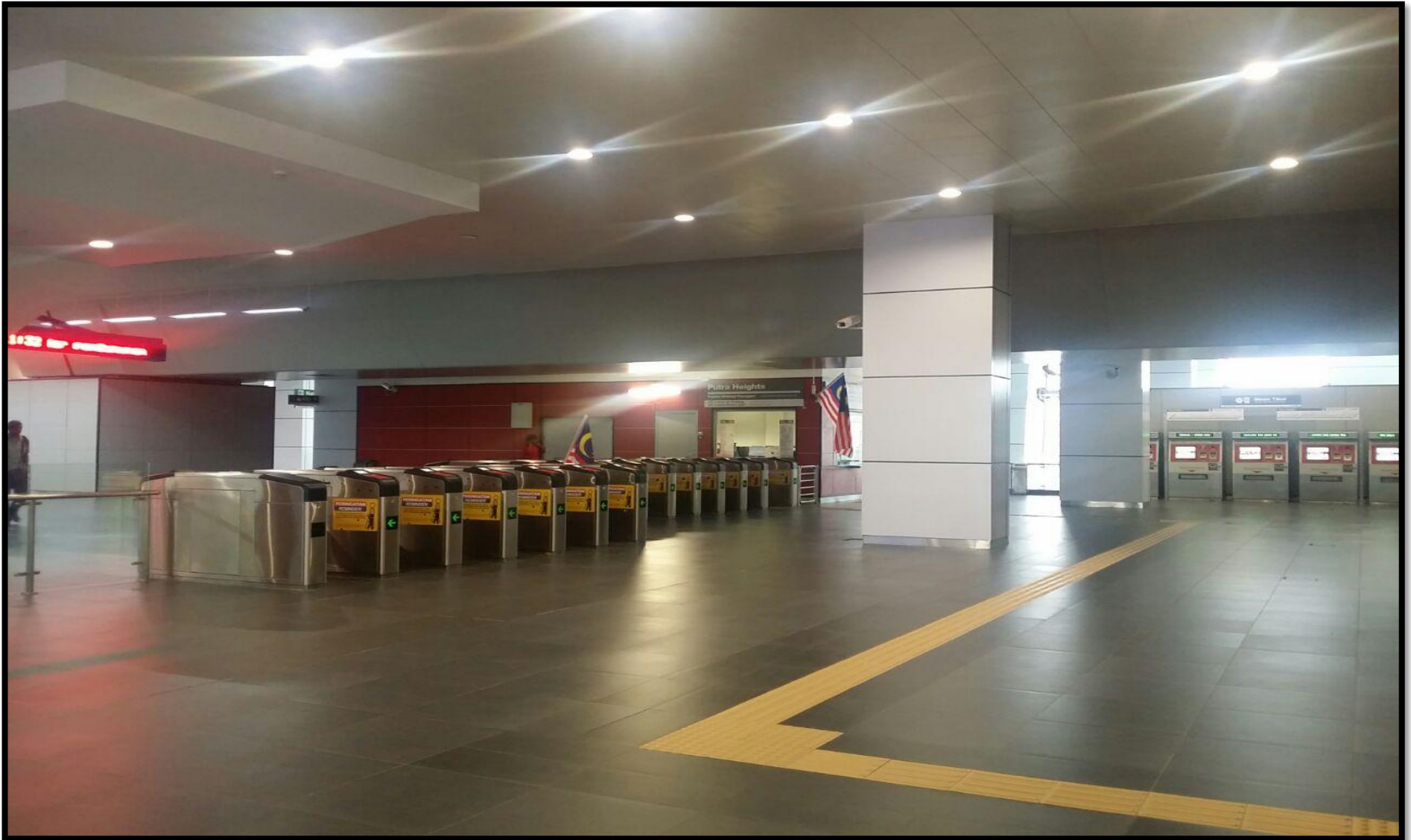


## PHOTO : STATION 3 KLJ (GLENMARIE)









Station : Concourse level.





Station : Platform level.



Electrical & Electronic Room (EER)





Equipment inside the TPSS.



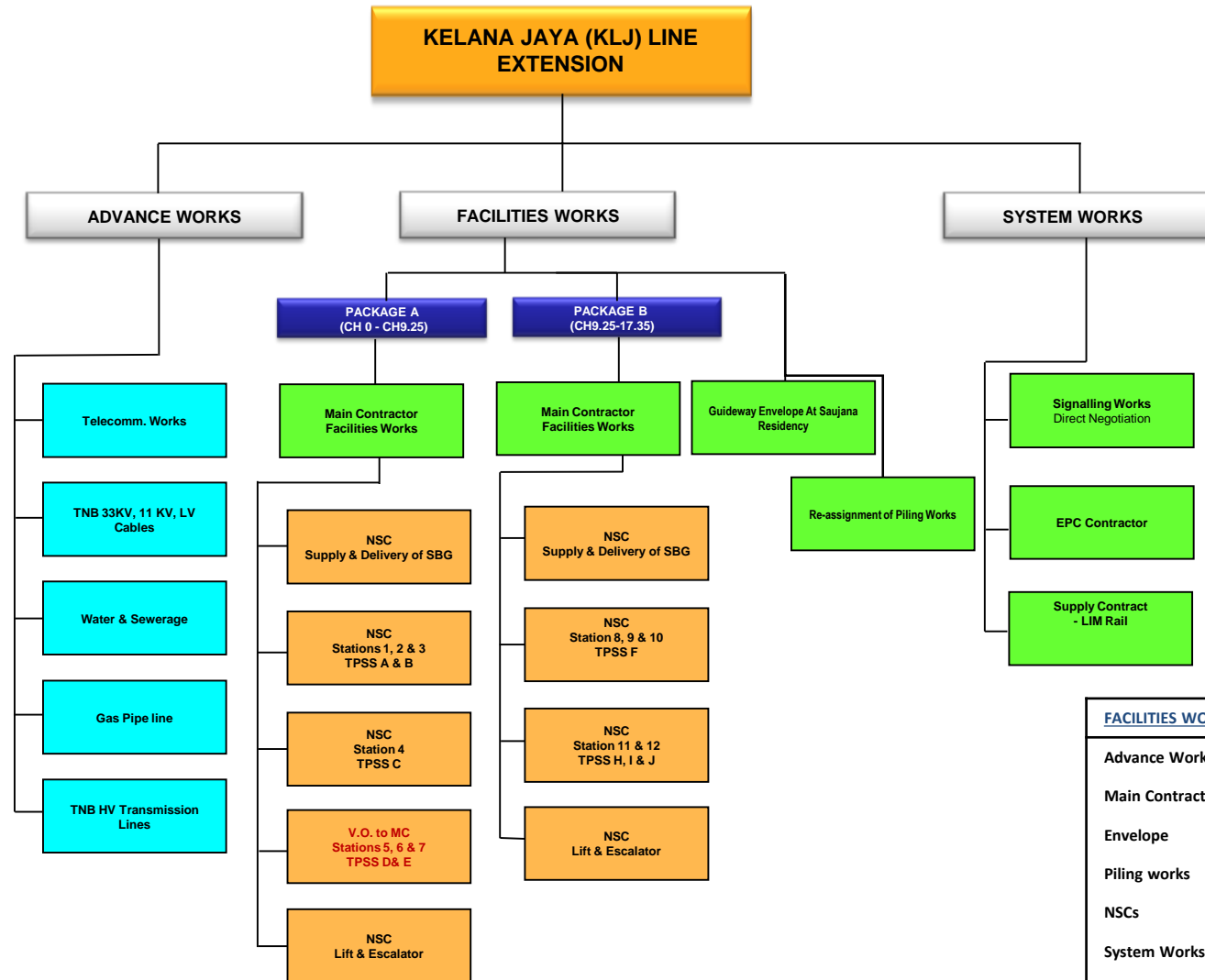
# PHOTO : TRACTION POWER SUBSTATION (TPSS)

TPSS building



# PROCUREMENT AND CONTRACT STRATEGY – KELANA JAYA (KLJ) LINE EXTENSION

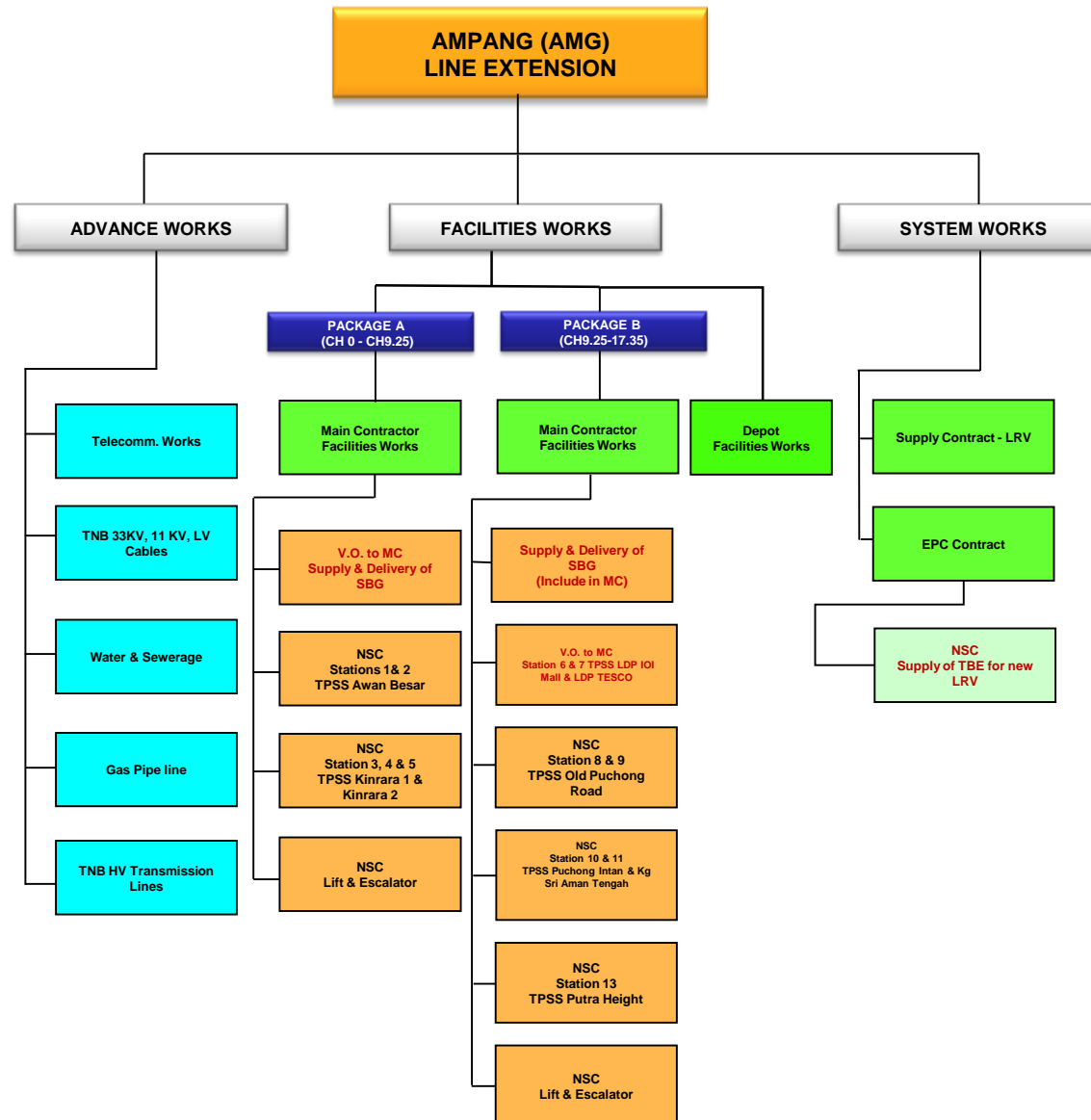
## WORKS PACKAGES BREAKDOWN STRUCTURE SUMMARY OF WORKS PACKAGES



FACILITIES WORKS	
Advance Works	: 5 nos
Main Contractor	: 2 nos
Envelope	: 1 no
Piling works	: 1 no
NSCs	: 8 nos
System Works	: 3 nos
<b>Total</b>	<b>: 20 nos</b>

# PROCUREMENT AND CONTRACT STRATEGY – AMPANG (AMG) LINE

## WORKS PACKAGES BREAKDOWN STRUCTURE SUMMARY OF WORKS PACKAGES



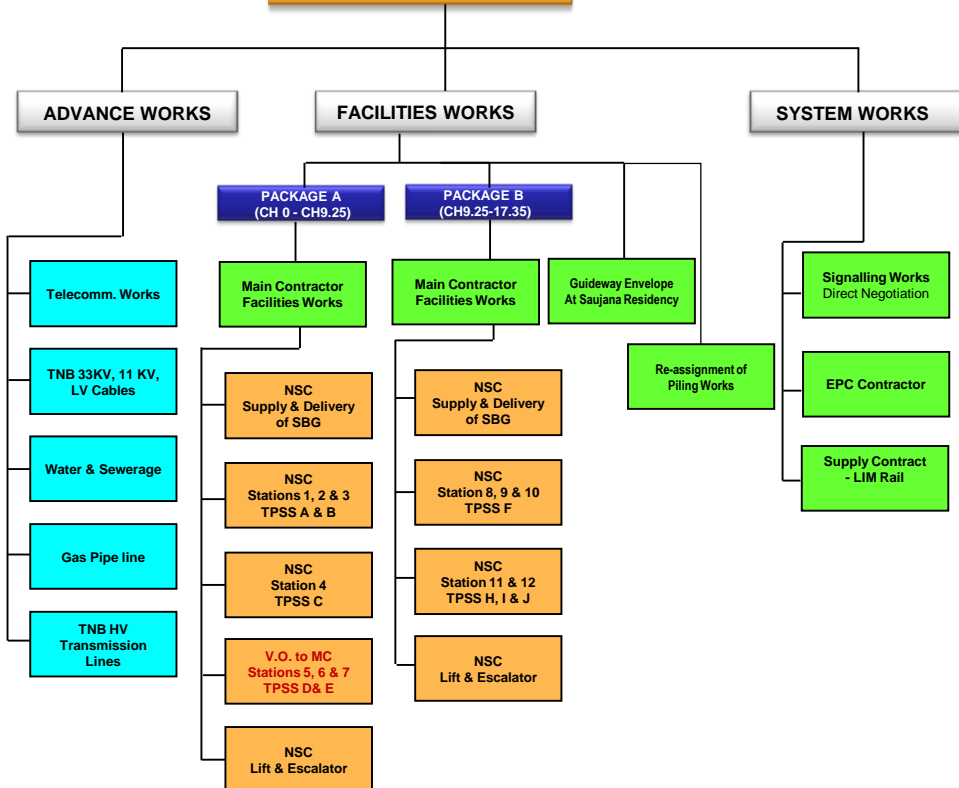
FACILITIES WORKS	
Advance Works	: 5 nos
Main Contractor	: 2 nos
Depot	: 1 no
NSCs	: 8 nos
System Works	: 2 nos
<b>Total</b>	<b>: 18 nos</b>



# PROCUREMENT AND CONTRACT STRATEGY - OVERALL

## WORKS PACKAGES BREAKDOWN STRUCTURE SUMMARY OF WORKS PACKAGES

### KELANA JAYA (KLJ) LINE EXTENSION



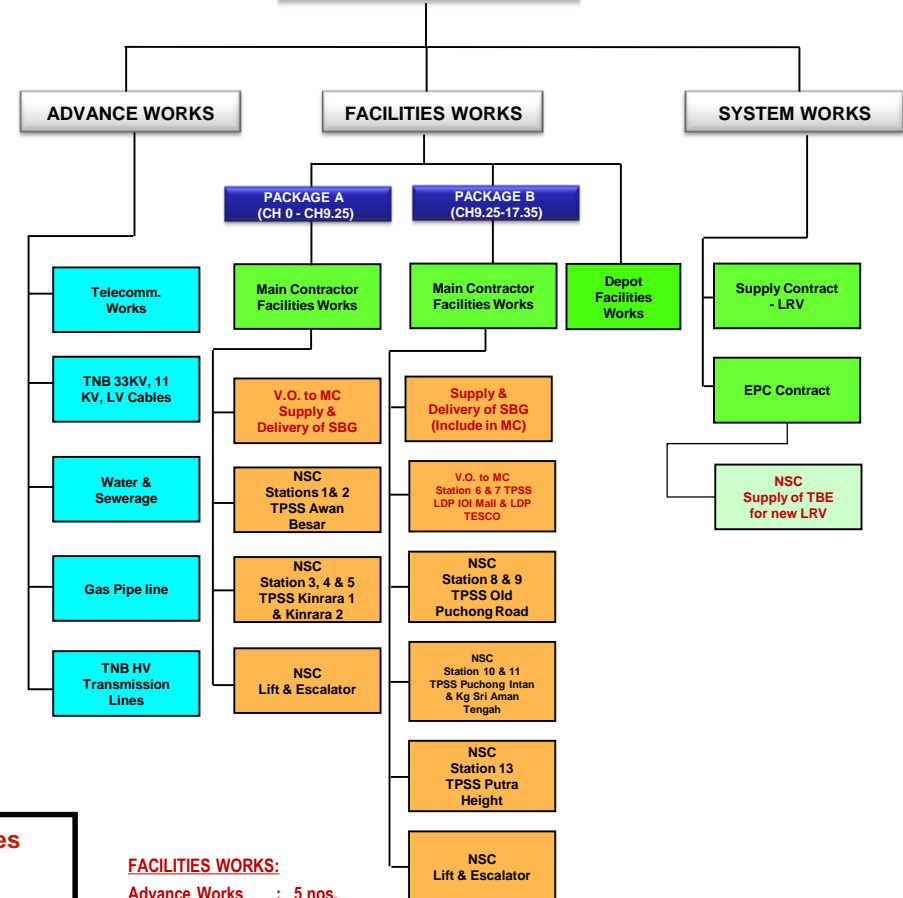
#### FACILITIES WORKS:

Advance Works	: 5 nos.
Main Contractor	: 2 nos.
Envelope	: 1 no.
Piling works	: 1 no.
NSCs	: 8 nos.
System Works	: 3 nos.
<b>TOTAL</b>	<b>20 nos.</b>

#### Summary of Contract Packages

1. KLJ Line	: 20 nos.
2. AMG Line	: 18 nos.
<b>TOTAL</b>	<b>38 nos.</b>

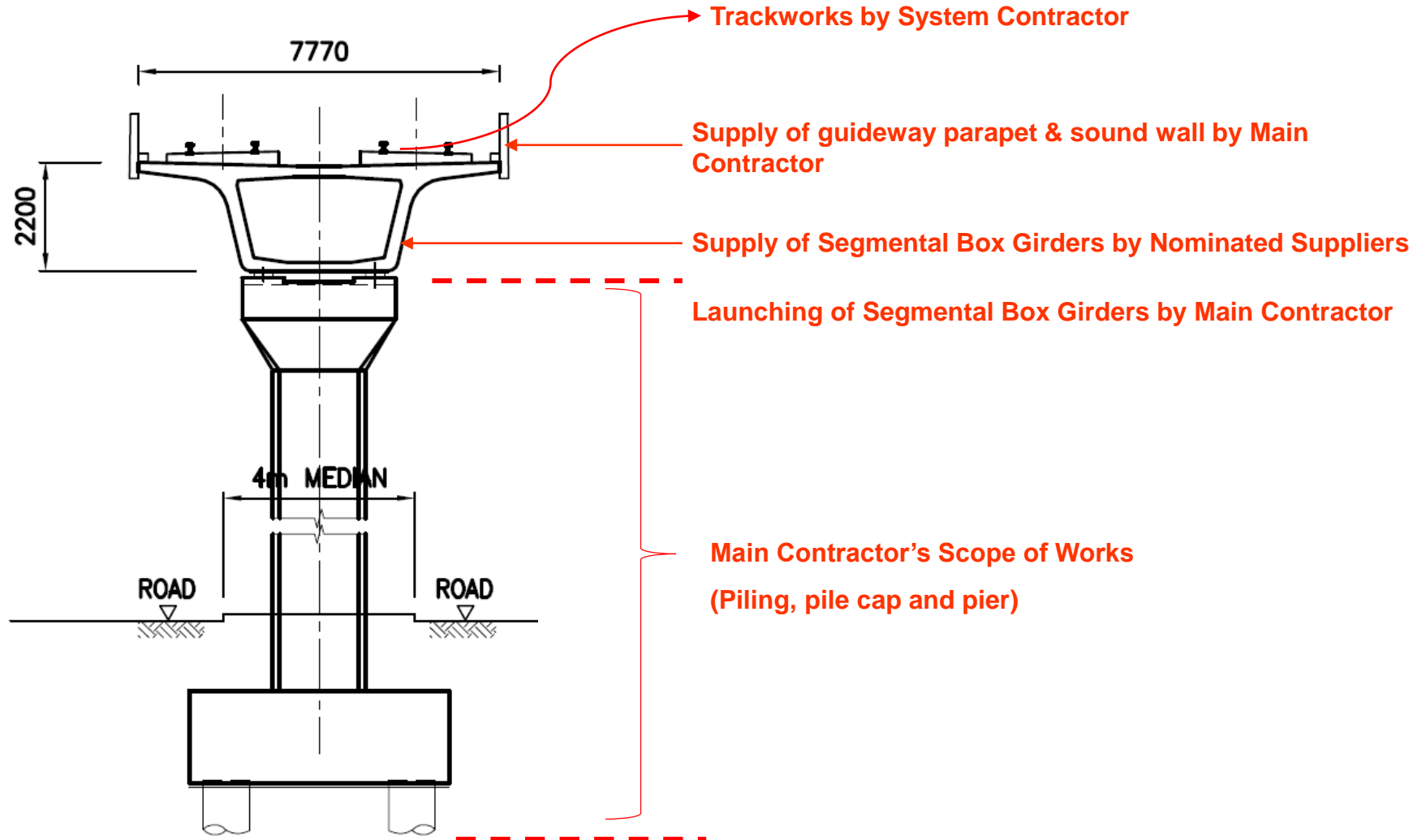
### AMPANG (AMG) LINE EXTENSION



#### FACILITIES WORKS:

Advance Works	: 5 nos.
Main Contractor	: 2 nos.
Depot	: 1 no.
NSCs	: 8 nos.
System Works	: 2 nos.
<b>TOTAL</b>	<b>18 nos.</b>

# DELINEATION OF SCOPE OF WORKS

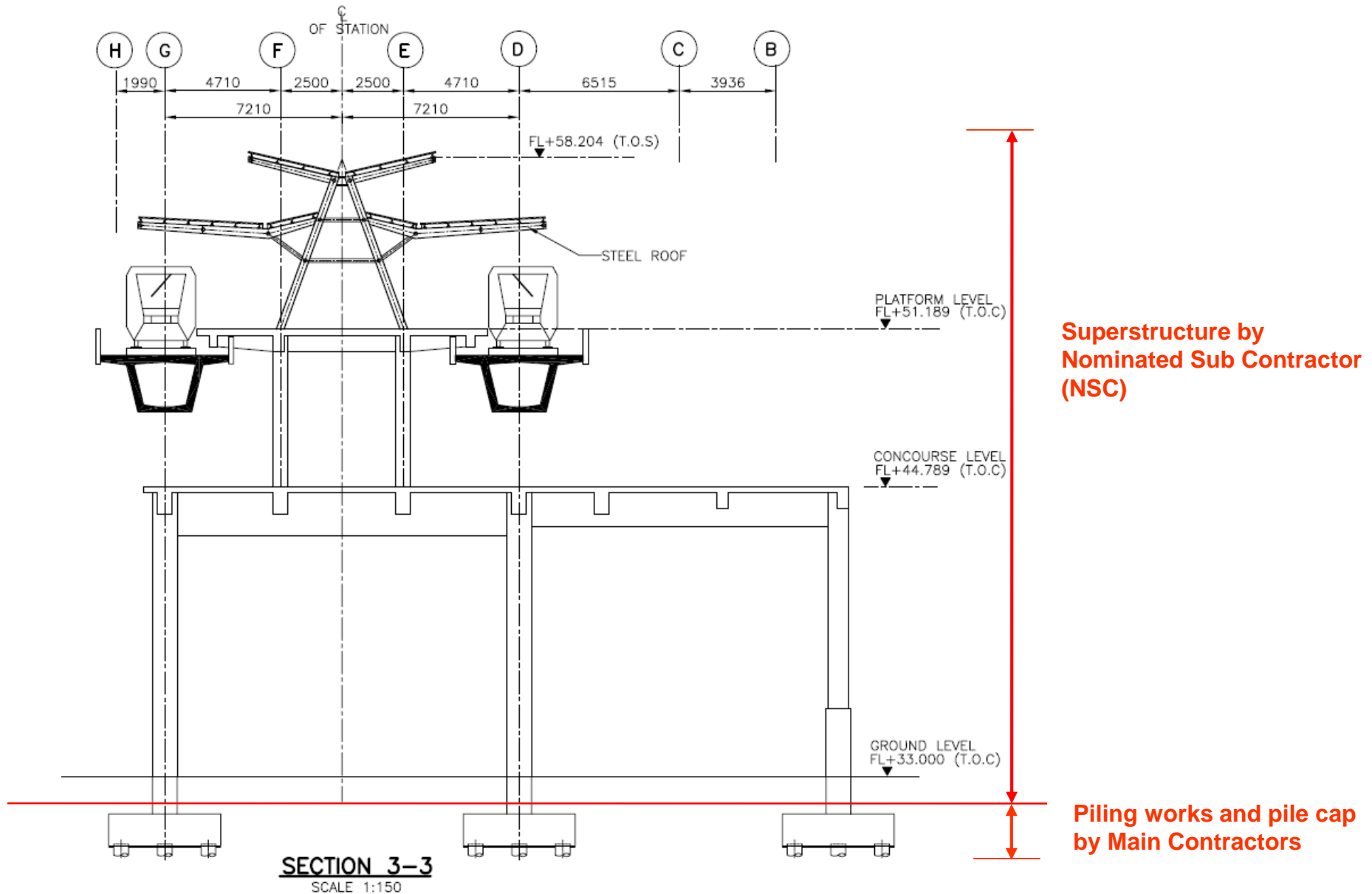


**SECTION 5-5**

SCALE 1:125



# CROSS SECTION : STATION



## Guideway

- **Access Dates To Guideway**

## Station

- **Access Date To Equipment Room**
- **Access Date To Station Platform (Joint Access)**
- **Access Date To AFC Areas (Joint Access)**

## Substation

- **Access Date To Traction Power Substation (TPSS)**



- Prepare “Delegation of Powers”.
- Establish Lines of Communication.
- Establish meeting structure.
- Establish document management system including drawings management.
- Establish Project Specific Procedures.

# PROJECT MANAGEMENT TOOLS (GENERAL)

## Meeting Schedule

ATTACHMENT 1

**LRT EXTENSION PROJECT (LEP)**  
**KELANA JAYA (KLJ) LINE AND AMPANG (AMG) LINE**  
**Meeting Schedule : July, August & September 2013 (Rev.00 : 7-Jun-13)**

Page 1 of 3

ITEM	MEETING DESCRIPTION	Month		JULY 2013																															
		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
		Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed		
		Venue	Time																																
General																																			
1	Land & Squatters Meeting	Wisma Monorail	9.00 AM			O						O							O							O									
2	Design Coordination Meeting - KLJ	Wisma Monorail	9.00 AM									X															X								
3	Design Coordination Meeting - AMG	Wisma Monorail	11.00 AM									✓															✓								
4	Authority Approval Meeting - AMG	Wisma Monorail	9.00 AM			✓				✓ (SEE NOTE 3)									✓				✓ (SEE NOTE 3)												
5	Authority Approval Meeting - KLJ	Wisma Monorail	11.00 AM			X					X (SEE NOTE 4)							X								X (SEE NOTE 4)									
6	Monthly Safety Meeting	Site Office	3.00 PM									O																							
7	Project Meeting KLJ - Prasarana & Opus-AV	Wisma Monorail	9.00 AM							X																X									
8	Project Meeting AMG - Prasarana & Opus-AV	Wisma Monorail	11.00 AM							✓																✓									
Facilities Works - Package A & B																																			
9	Monthly Progress Meeting KLJ Package A - TRC	Site Office - KLJ	11.00 AM		X																														
10	Monthly Progress Meeting AMG Package A - BPTS	Site Office - AMG	11.00 AM			✓																													
11	Site Technical Coordination Meeting KLJ Package A - TRC	Site Office - KLJ	11.00 AM															X																	
12	Site Technical Coordination Meeting AMG Package A - BPTS	Site Office - AMG	11.00 AM																✓																
13	Client Consultants Coordination Meeting KLJ - Prasarana, Opus-AV & Minco	Site Office - KLJ	9.00 AM		X																														
14	Client Consultants Coordination Meeting AMG - Prasarana, Opus-AV & HSSI	Site Office - AMG	9.00 AM			✓																													
15	Pre-Site Coordination Meeting KLJ - Prasarana, Opus-AV & Minco	Site Office - KLJ	9.00 AM															X																	
16	Pre-Site Coordination Meeting AMG - Prasarana, Opus-AV & HSSI	Site Office - AMG	9.00 AM																✓																

40	Telecommunication cable relocation - KLJ	Site Office - KLJ	09.00 AM																																				
41	110V 20kV and 11 kV low voltage cable relocation - KLJ	Site Office - KLJ	10.00 AM																																				
42	Water & Sewer pipe relocation - KLJ	Site Office - KLJ	11.00 AM																																				
43	Gas & Water pipe relocation - KLJ	Site Office - KLJ	12.00 PM																																				
44	Telecommunication cable relocation - AMG	Site Office - AMG	10.00 AM																																				
45	110V 20kV and 11 kV low voltage cable relocation - AMG	Site Office - AMG	11.00 AM																																				
46	Water & Sewer pipe relocation - AMG	Site Office - AMG	12.00 PM																																				

1. Notice of meeting calendar for project meetings, client's consultants meetings and pre-site coordination meetings to be issued by Prasarana.
2. Notice of meeting calendar for working progress meetings and site coordination meetings to be issued by Opus-AV.
3. Authority Approval Meeting (AMG) - Venue : HSSI Office (pending for Prasarana).



- ✓  General Management
- ✓  Design Management
- ✓  Authority Approval
- ✓  Land Acquisition Management
- ✓  Procurement & Contract Management
- ✓  Planning & Progress Monitoring
- ✓  Construction Management

## *Challenges*

- Huge number of drawings involved.
  - Facilities – 8,000 nos.
  - Systems – 30,000 nos.
- Design changes during construction
- Interfaces between facilities/civil & structural works and railway systems.
- Public objections.
- Authorities approvals.
- Long and tedious land acquisition process.

## *Stages of submission*

- Preliminary Drawings
- Detailed / Tender Drawings
- Construction Drawings



## *Design Audit*

- Design Review Sheet
  - ✓ Approved
  - ✓ Approved as Noted
  - ✓ Revise and Resubmit
  - ✓ Rejected

## ***Project Management Tools***

- Design Review Process
- Drawing Monitoring and Submission Schedule
- Monitoring Design Progress
- Monitoring Design Changes
- Monitoring Authority Approvals
- Monitoring Land Acquisition Progress

# PROJECT MANAGEMENT TOOLS (DESIGN)

## Design Review Sheet



### KELANA JAYA (KLJ) EXTENSION PROJECT

#### DESIGN REVIEW SHEET

To: MINCO Sdn. Bhd.

Submittal: Construction Drawings for Advertising Panel, Illuminated Signages and LED Lighting

Our Ref.: Your Ref:

Division/Discipline: Design Management  
Section/ Electrical

Reviewer: RY/AGI

Date: 23/03/2015

DWG/SPEC/CALCS/OTHER

Submittal Stage: Construction

Supervisor Initial: AGI

Item	Referenced Document	Comments	Responses	Status
1	W/KLJ/F/STN7/EE-SLD/1010 Single Line Diagram (Station 7) Advertising Panel	1. No comment.		1
2	W/KLJ/F/TYP/EE-AP/1001 Concourse Level Plan (Typical) Advertising Panel Equipment Ducting Layout	1. No comment.		1
3	W/KLJ/F/TYP/EE-AP/1002 Platform Level Plan (Typical) Advertising Panel Equipment Ducting Layout	1. No comment.		1
4	W/KLJ/F/STN7/EE-SLD/1009 Single Line Diagram (Station 7) Façade Lighting & Illuminated Signages	1. Details of luminaires for the Façade lightings are to be provided. 2. Total connected load (TCL) and Maximum Demand (MD) are to be indicated in the schematic diagram. 3. The 30ATPN MCCB for DB7-FC/SG couldn't be verified whether sufficient or not since the TCL & MD are unknown. Consultant to justify.		2
5	W/KLJ/F/STN7/EE-SG/1001 Concourse Level Plan (Station 7) Illuminated Signages	1. How many nos. of fluorescent lamps for the illuminated signage 7.1.2 & 7.2.2 and 7.1.3 & 7.2.3 ? Consultant to specify. 2. Please provide ducting detail and layout.		2

Note : Status of Approval

1. Approved
2. Approved as Noted
3. Revise and Resubmit
4. Rejected



**OPUS**  
CONSULTANTS  
AN EDGENTA COMPANY

			Date Of Revision													
Item	Drawing No.	Drawing Title	Size	0	1	2	3	4	5	6	7	8	9	10	11	12
		LIST OF DRAWINGS														
1	W/KLJF/A/M1/LIST/1001	LIST OF DRAWING ( SHEET 1 OF 5)	A1 & A3	15-12-10	15-4-11	18-7-11	1-8-11	8-8-11	27-9-11	12-10-11	24-10-11	11-1-12	9-3-12	17-5-12	22-5-12	11-7-12
2	W/KLJF/A/M1/LIST/1002	LIST OF DRAWING ( (SHEET 2 OF 5)	A1 & A3	15-12-10	15-4-11	18-7-11	11-1-12	13-8-12								
3	W/KLJF/A/M1/LIST/1003	LIST OF DRAWING ( (SHEET 3 OF 5)	A1 & A3	15-12-10	15-4-11	18-7-11	1-8-11	1-8-11	8-8-11	27-9-11	12-10-11	10-11-11	11-1-12	29-2-12	4-5-12	22-5-12
4	W/KLJF/A/M1/LIST/1004	LIST OF DRAWING ( (SHEET 4 OF 5)	A1 & A3	15-12-10	18-7-11	1-8-11	1-8-11	5-9-11	21-9-11	27-9-11	12-10-11	24-10-11	3-11-11	21-11-11	3-1-12	11-1-12
5	W/KLJF/A/M1/LIST/1005	LIST OF DRAWING ( SHEET 5 OF 5)	A1 & A3		21-11-11	29-2-12	9-3-12	28-3-12	22-5-12	6-7-12	27-7-12	02-8-12	31-1-13	4-3-13		
		GENERAL NOTES														
6	W/KLJF/GWY/ST/1000	GENERAL NOTES (SHEET 1 OF 2)	A1 & A3	15-12-10												
7	W/KLJF/GWY/ST/1001	GENERAL NOTES (SHEET 2 OF 2)	A1 & A3	15-12-10	15-4-11											
		VIADUCTS														
		PLAN AND PROFILE - MAINLINE AND DEPOT														
8	W/KLJF/GWY/ST/1100	GENERAL ARRANGEMENT PLAN AND PROFILE (P1 TO P6)	A1 & A3	15-12-10	15-4-11	8-8-11	24-10-11	25-9-12								
9	W/KLJF/GWY/ST/1101	GENERAL ARRANGEMENT PLAN AND PROFILE (P6 TO P15)	A1 & A3	15-12-10	15-4-11	27-9-11	12-10-11	24-10-11	11-1-12	11-1-12	22-5-12	13-12-12 Supercaded	13-12-12			
10	W/KLJF/GWY/ST/1102a	GENERAL ARRANGEMENT PLAN AND PROFILE-NORTH BOUND (P15 TO P25)	A1 & A3	15-12-10	15-4-11		24-10-11	11-1-12	11-1-12	13-12-12 Supercaded	13-12-12					
11	W/KLJF/GWY/ST/1103a	GENERAL ARRANGEMENT PLAN AND PROFILE-NORTH BOUND (P25 TO P38N)	A1 & A3	15-12-10	15-4-11	24-10-11	13-8-12 Supercaded	13-8-12								
12	W/KLJF/GWY/ST/1103b	GENERAL ARRANGEMENT PLAN AND PROFILE-SOUTH BOUND (P25 TO P38S)	A1 & A3	15-12-10	15-4-11	24-10-11	13-8-12 Supercaded	13-8-12								
13	W/KLJF/GWY/ST/1104a	GENERAL ARRANGEMENT PLAN AND PROFILE-NORTH BOUND (P38N TO P49)	A1 & A3	15-12-10	15-4-11	12-10-11	24-10-11	13-8-12								
14	W/KLJF/GWY/ST/1105	GENERAL ARRANGEMENT PLAN AND PROFILE (P49 TO P56)	A1 & A3	15-12-10	24-10-11	13-8-12										
15	W/KLJF/GWY/ST/1107	GENERAL ARRANGEMENT PLAN AND PROFILE (P56 TO P60)	A1 & A3	15-12-10	26-10-11											
16	W/KLJF/GWY/ST/1108	GENERAL ARRANGEMENT PLAN AND PROFILE (P60 TO P64)	A1 & A3	15-12-10	26-10-11	20-1-12										
17	W/KLJF/GWY/ST/1109	GENERAL ARRANGEMENT PLAN AND PROFILE (P64 TO P68)	A1 & A3	15-12-10	15-4-11	26-10-11	15-8-12									
18	W/KLJF/GWY/ST/1110	GENERAL ARRANGEMENT PLAN AND PROFILE (P68 TO P72)	A1 & A3	15-12-10	15-4-11	26-10-11	15-8-12									
19	W/KLJF/GWY/ST/1111	GENERAL ARRANGEMENT PLAN AND PROFILE (P72 TO P76)	A1 & A3	15-12-10	15-4-11	26-10-11	15-8-12									
20	W/KLJF/GWY/ST/1112															

# PROJECT MANAGEMENT TOOLS (DESIGN)

## Design Submission Monitoring

### KELANA JAYA (KLJ) LINE EXTENSION PROJECT DRAWING SUBMISSION STATUS FACILITIES WORKS

Period Ending : 31-Mar-10

No.	Discipline	Preliminary Drawings - 40%					Detailed/Tender Drawings - 60%					Overall Progress %
		Drawings Submitted By DDC					Drawings Submitted By DDC					
		Wt	Nos. of drawings	Actual	% Submitted	% Submitted (Wt)	Wt	Nos. of drawings	Actual	% Submitted	% Submitted (Wt)	
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	Alignment											
	(a) Plan & Profile	0.06	91	91	100.00%	2.55%	0.02	87	87	100.00%	1.02%	3.57%
2	Utilities Relocation											
	(a) TNB	0.04	63	63	100.00%	1.77%	0.01	70	70	100.00%	0.82%	2.58%
	(b) Syabas	0.03	44	44	100.00%	1.23%	0.01	38	38	100.00%	0.44%	1.68%
	(c) Telekom (M) Berhad	0.04	64	64	100.00%	1.80%	0.01	66	66	100.00%	0.77%	2.57%
	(d) IWK	0.01	8	8	100.00%	0.22%	0.00	12	12	100.00%	0.14%	0.36%
	(e) Gas Malaysia	0.00	0	0	0.00%	0.00%	0.00	6	6	100.00%	0.07%	0.07%
	(f) Coordinated Drawings	0.00	0	0	0.00%	0.00%	0.01	68	0	0.00%	0.00%	0.00%
3	Guideway Structures											
	(a) General Arrangement	0.05	68	68	100.00%	1.91%	0.02	82	82	100.00%	0.96%	2.86%
	(b) Structures	0.02	22	22	100.00%	0.62%	0.09	443	443	100.00%	5.17%	5.79%
7	Infra											
	(a) Road	0.01	13	13	100.00%	0.36%	0.01	66	28	42.42%	0.33%	0.69%
	(b) Drainage	0.08	121	121	100.00%	3.39%	0.02	80	66	82.50%	0.77%	4.16%
8	Standard Drawings	0.00	0	0	0.00%	0.00%	0.00	0	0	0.00%	0.00%	0.00%
	TOTAL	1.00	1,426	1,426	100.00%	40.00%	1.00	5,140	2,101	40.88%	24.53%	64.53%

## Design Change Notice (DCN)

Other Works affected By Change :

<input type="checkbox"/>	Architectural	Notified / Not Notified
<input checked="" type="checkbox"/>	C&S	Notified / Not Notified
<input type="checkbox"/>	Mechanical & Electrical	Notified / Not Notified
<input type="checkbox"/>	Interior Design	Notified / Not Notified
<input type="checkbox"/>	Landscape	Notified / Not Notified
<input checked="" type="checkbox"/>	Systems	Notified / Not Notified

Change Implication / Recommendation :

<input type="checkbox"/>	Process A - No Cost and/or Time Effect For Contract; Works Shall Proceed As Shown
<input type="checkbox"/>	Process B - Change Urgently Required; Works Need To Proceed. Minor Implication On Cost/Time
<input checked="" type="checkbox"/>	Process C - Major Cost / Time Implication

Signed :  
Consultant :  
Date :

**Part B :** ( To Be Filled In by DDC For **Process B And C** )

Estimated cost : **RM 595,047,49** (Refer to ERI No.: KLJ-PB-SUN-42)  
**Increase** / Decrease

Detail Estimated As per appendix B ( Details Attached )

Change Implication / Recommendation :



# PROJECT MANAGEMENT TOOLS (AUTHORITY APPROVAL)

## Development Order (DO) Approval Status

TABLE 1 : D.O APPROVAL STATUS FOR STATION AND GUIDEWAY

A STATIONS									
ITEM	LOCAL AUTHORITY	STATION NO	PARK & RIDE / TPSS	CHAINAGE	STATION LOCATION	TARGET DATES		TARGET APPROVAL	APPROVAL
						PRE-SUBMISSION	ACTUAL SUBM.		
1	DBKL	Stn 01	TPSS	Ch 1.400	Bukit OUG/ Awan Besar	04.08.09(S)	27.01.11(S)	06.06.11(MIP)	16.05.11(A)
2		Stn 02	-	Ch 2.400	PPR Muhibbah	DO Resubmission	11.01.12(S)	30.03.12(TA)	06.06.12(A)
3	MPSJ	Stn 03	-	Ch 3.600	Bukit Jalil Highway 1	04.08.09(S)	27.01.11(S)	06.06.11(MIP)	16.05.11(A)
4		Stn 04	TPSS	Ch 5.200	Giant	29.10.09(S)	06.10.10(S)	24.12.10(MIP)	02.06.11(A)
5		Stn 05	-	Ch 6.200	Bandar Kinrara	29.10.09(S)	06.10.10(S)	24.12.10(MIP)	02.06.11(A)
6	MPSJ	Stn 06	TPSS	Ch 8.000	IOI Mall	29.10.09(S)	06.10.10(S)	08.07.11(MIP)	- DO submission withdrawn as construction of Station has been deferred.
7		Stn 07	Park & Ride / TPSS	Ch 9.775	Tesco	29.10.09(S)	08.12.11(S)	05.04.12(MIP4)	19.01.12(A)
8		Stn 08	-	Ch 11.000	Bandar Puteri Puchong	29.10.09(S)	13.12.11(S)	05.04.12(MIP4)	19.01.12(A)
9		Stn 09	-	Ch 11.550	Old Puchong Road	29.10.09(S)	02.05.12(S)	12.07.12(MIP4)	- Tabled in OSC on 22.06.12. - Received Comment on 6 July 2012.
10		Stn 10	-	Ch13.500	Puchong Intan 1	29.10.09(S)	25.07.11(S)	05.04.12(MIP4)	- Endorsement drawings submitted to MPSJ on 9 Nov 2011. - Resubmit endorsement drawings on 17 July 2012.
11		Stn 11	-	Ch 14.850	Puchong Intan 2	29.10.09(S)	25.07.11(S)	05.04.12(MIP4)	- Approval letter received on 1 Aug 12 dated 16 August 2011
12		Stn 13	Park & Ride	Ch 17.850	Putra Height	18.03.11(S)	13.12.11(S)	15.03.12(MIP4)	- Approval letter received on 22 May 12 dated 19 Jan 2012
13		Depot		Ch 17.300		17.02.12(S)	24.04.12(S)	29.06.12(MIP4)	- Submit endorsement drawings on 8 August 2012

B GUIDEWAYS									
ITEM	LOCAL AUTHORITY	GUIDEWAY CH	N/A	N/A	N/A	TARGET DATES		TARGET APPROVAL	APPROVAL
						PRE-SUBMISSION	ACTUAL SUBM.		
1	DBKL	Ch 0.000 - Ch 3.200	-	-	-	01.12.09	24.03.10(S)	28.07.10(MIP)	N/A
2	MPSJ	Ch 3.200 - Ch 7.400	-	-	-	10.12.09	10.03.11(S)	19.04.11(A)	- Approval letter received 25 Oct 2011 dated 18 April 2011
3	MPSJ	Ch 7.400 - Ch 17.850	-	-	Stn 6 - Stn 8	14.03.11	17.10.11(S)	20.03.12(MIP4)	- Approval letter received 8 June 2012 dated 20 Dec 2011
4	MPSJ	Ch 7.400 - Ch 17.850	-	-	Stn 8 - Stn 13	14.03.11	17.10.11(S)	20.03.12(MIP4)	- Approval letter received 9 July 2012 dated 20 Dec 2011

3		TPSS B CH 15.700	-	CH15.700 / P462	Puchong Prima	29.10.09(S)	17.10.11(S)	20.03.12(MIP4)	- Approval letter received 9 July 2012 dated 20 Dec 2011
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RI\FACILITIES\BOMS - INFRA\AUTHORITIES APPROVAL STATUS\WORKING FILE\4 Facilities Approval August 2012\MPR\Table 1 - DO Approval Status for Station & Guideway HSSI 31.06.12.xls

### Legend :

DBKL	Dewan Bandaraya Kuala Lumpur
MBPJ	Majlis Bandaraya Petaling Jaya
MPSJ	Majlis Perbandaran Subang Jaya
MBSA	Majlis Bandaraya Shah Alam

22.11.00(S)	Date of Submission
22.11.00(R)	Date of Resubmission
22.11.00(A)	Date of Approval

22.11.00(TS)	Target Date For Submission
22.11.00(TR)	Target Date For Resubmission
22.11.00(U)	Undertaking Letter

# PROJECT MANAGEMENT TOOLS (AUTHORITY APPROVAL)

## Building Plan (BP) Approval Status

KELANA JAYA (KLJ) LINE AND AMPANG (AMG) LINES EXTENSION

TABLE 2 : BUILDING PLAN APPROVAL STATUS

Date : 31.08.2012

jilis)						Submission to BOMBA		Submission to Service Provider				Building Plan Approval																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Landscape pt.	MASMA	Sanitary	Urban Services	Health & Enviroment	Pre-Comp Plan	Arch.	M & E	JPP / IWK	JBA / Syabas	SKMM	TMB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
12(S)	30.03.12 (A)	21.06.12 (R)	12.01.12(S)	12.01.12 (S)	N/A	29.02.12(A)	15.03.12(S)	27.09.10(A)	28.08.09(A)	27.04.12(A)	18.09.09(A)	30.03.12(MIP)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11(S)	30.03.12 (A)	25.10.11(S)	25.10.11(S)	25.10.11(S)	N/A	02.03.12(A)	15.03.12(S)	27.09.10(A)	08.08.09(A)	27.04.12(A)	18.09.09(A)	30.03.12(MIP)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11(S)	21.11.11(A)	08.12.11(S)	08.12.11(S)	N/A	07.05.12(S)	17.02.12(A)	16.05.12(A)	21.09.10(A)	10.10.09(A)	N/A	23.10.09(A)	23.07.12(A)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11(S)	05.03.12(A)	21.12.11(S)	21.12.11(S)	N/A	07.05.12(S)	17.02.12(A)	16.05.12(A)	21.09.10(A)	10.10.09(A)	N/A	23.10.09(A)	30.03.12(MIP)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Y to d dwg. nit after P	31.01.12(A)	N/A	04.06.12(S)	N/A	Item 10 ii KM condition. HSSI to submit by 15.07.12	26.07.12(A)	To finalised after Bomba Passive approved	03.08.11(A)	10.10.09(A)	21.12.11(A) Dwg ready. To forward to TM	23.10.09(A)	15.06.12(MIP)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Y to d dwg. nit after P	26.03.12(A)	N/A	04.06.12(S)	N/A	Item 10 ii KM condition. HSSI to submit by 15.07.12	26.07.12(A)	To finalised after Bomba Passive approved	18.10.10(A)	10.10.09(A)	21.12.11(A) Dwg ready. To forward to TM	23.10.09(A)	15.06.12(MIP)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	15		TPSS 157.00	on 13.07.12. Drawings not ready yet. To submit for info	on 13.07.12. Drawings not ready yet. To submit for info	on 13.07.12. Drawings not ready yet. To submit for info	N/A	N/A	on 13.07.12. Drawings not ready yet. To submit for info	N/A	N/A	on 13.07.12. Drawings not ready yet. To submit for info	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A</

Legend :

22.11.09(S) Date of Submission  
22.11.09(R) Date of Resubmission  
22.11.09(A) Date of Approval

22.11.09(A,C) Date of Approval with Condition  
22.11.09(TS) Target Date For Submission  
22.11.09(TR) Target Date For Resubmission

22.11.00(U) Undertaking Letter

RE FACILITIES DMS - INFRA AUTHORITY'S APPROVAL STATUS WORKING FILE Site Facility Approved July 2012 Table 2 - Building Plan Approval & Drawings Status HSSI 21.08.2012

# PROJECT MANAGEMENT TOOLS (AUTHORITY APPROVAL)

## Third Party Approval Status

THIRD PARTYS' APPROVAL - PRINCIPAL APPROVALS & WORK PERMIT APPROVALS					
					Date : 31.05.2013
Item	Guideway	Chainage	Stakeholder Involved	Principal Approval	Work Permit Approval
<b>1</b>	<b>Ch 0.001 - Ch 1.250 (Within MBPJ area)</b>				
1	Crossing NKVE	Ch0.143 - Ch0.176	MHA/PLUS	Bil.(9) dlm.LLM/KS/2000/2/53-2009 Jld 3	Pending submission of TMP to MHA for Approval
2	Crossing over Sq. Kayu Ara	Ch0.700 - Ch0.800	JPS	Ruj (22) dlm.JPS.Sel.010/2/1/1 Jld 12	No issue - Physical works is in progress
<b>2</b>	<b>Ch 1.250 - Ch 3.750 ( Within MBSA area)</b>				
1	Crossing Jalan Lapangan Terbang Subang	Ch1.299 - Ch1.367	JKR	JKR(P) 600-1/3/58(19)	No issue - Physical works in progress for pier P43 (Road Median)
2	Crossing NKVE	Ch1.639 - Ch1.674	MHA/PLUS	Bil.(9) dlm.LLM/KS/2000/2/53-2009 Jld 3	Pending submission of TMP to MHA for Approval
3	Crossing Ramp NKVE	Ch2.066 - Ch2.084	MHA/PLUS	Bil.(9) dlm.LLM/KS/2000/2/53-2009 Jld 3	Pending submission of TMP to MHA for Approval
4	Crossing Gas Malaysia Reserve	Ch2.150 - Ch2.650	Gas Malaysia	( 25.08.09)A	Permit Obtained from Gas Malaysia - Physical works is in progress
5	Crossing TNB Reserve (Transmission)	Ch2.410 - Ch2.425 Ch2.540 - Ch2.570	TNB	P75, P80 and P81	No submission
6	Guideway / Station 3 in the median of Jalan Lapangan Terbang Subang	Ch2.250 - Ch2.800	JKR	JKR(P) 600-1/3/58(19)	No submission
<b>3</b>	<b>Ch. 3.750 - Ch. 17400 (Within MPSJ area)</b>				
1	Crossing Federal Highway	Ch3.872 - Ch3.976	MHA/PLUS	Bil.(11).dlm.LLM/KS/2000/2/53-2009 Jld 3	Pending submission of TMP to MHA for Approval.
2	Crossing TNB Reserve (Transmission)	Ch4.000 - Ch4.060	TNB		Raised by TNB end of this year. To apply permit from TNB for pier 113.
3	Crossing KTM Track	Ch.4725 - Ch4.740	RSC/KTMB		To get official approval from KTMB
4	Crossing NPE (under MPSJ)	Ch5.893 - Ch5.929	MHA	Bil.(8).dlm.LLM/KS/2000/2/53-2009 Jld 3	No submission
5	Crossing KESAS - Pararel up to Ch. 7650	Ch7.005 - Ch7.100	MHA	Bil.(6).dlm.LLM/KS/2000/2/53-2009 Jld 3	Discussion with KESAS based on MIP 4 for TMP presentation to LLM
6	Jalan Kewajipan	Ch7.750 - Ch7.840	JKR	JKR(P) 600-1/3/58(17)	Pending submission of RSA report.
7	Crossing Petronas Gas Berhad	Ch11.900 - Ch12.000	PGB		N/A
8	Lebuhraya Damansara Puchong	Ch12.300 - Ch12.875 (parallel)	MHA/LDP	Bil.(7).dlm.LLM/KS/2000/2/53-2009 Jld 3	Sunway preparing submission
9	Crossing ELITE	Ch12.875 - Ch12.925	MHA/PLUS	Bil.(21).dlm.LLM/KS/2000/2/53-2009	Facilities works will proceed based on 4th lane widening. Minco to do submission based on this criteria.
10	Crossing Gas Malaysia	Ch13.000 - Ch13.100	Gas Malaysia	25.08.09(A)	Pending completion of relocation.
11	Crossing Persiaran Klang	Ch13.150 - Ch13.250	JKR	JKR(P) 600-1/3/58(17)	TMP submitted to Minco for approval prior to presentation to JKR and MBSJ.
12	Pararel with TNB reserve	Ch13.300 - Ch15.350	TNB	29.12.09(A)	No issue, TNB have given conditional approval.
13	Main Drain	Ch14.260 - Ch14.560	MPSJ		Minco is awaiting for JPS approval letter before submission to MPSJ
14	Crossing TNB Reserve (Transmission)	Ch16.200 - Ch16.250	TNB		Study report submitted to TNB by Prasarana highlighting no interference from high tension powerline.
15	Crossing PGB pipeline	Ch16.250 - Ch16.290	PGB	Ruj. SA 126/09:OST7E-3300-1	N/A
16	Crossing ELITE	Ch17.250 - Ch17.300	MHA	Bil.(21).dlm.LLM/KS/2000/2/53-2009	Minco preparing submission to LLM/Elite based on collaboration design with AMG consultant HSSI.
17	Tale track crossing PGB pipeline	Ch17++	PGB	Ruj. SA 126/09:OST7E-3300-1	N/A



## Land Acquisition Status

### 1.5 Land Acquisition Status

The land acquisition status for the respective LRT lines are as shown in the following tables:

#### Kelana Jaya Line

No.	Phase	No of Lots to be Acquired	Form G/H Issued	Form K Issued	Percentage of Form K Issued
<b>INITIAL</b>					
1	Phase 1	10	10	10	100%
2	Phase 2	10	10	10	100%
3	Phase 3	4	4	4	100%
<b>Sub-Total</b>		<b>24</b>	<b>24</b>	<b>24</b>	<b>100%</b>
<b>ADDITIONAL</b>					
4	Phase 1	-	-	-	-
5	Phase 2	1	1	1	100%
6	Phase 3	1	1	1	100%
<b>Sub-Total</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>100%</b>
<b>Grand Total</b>		<b>26</b>	<b>26</b>	<b>26</b>	<b>100%</b>

# PROJECT MANAGEMENT TOOLS (LAND ACQUISITION)

## Land Acquisition Status

### PROJEK CADANGAN LALUAN SAMBUNGAN SISTEM TRANSIT ALIRAN RINGAN (LRT) Status Report on Land Acquisition Under Section 8, LA 1960 (Stage 2)

#### AMG LINE (WILAYAH PERSEKUTUAN) CH.0000 TO CH. 3100

No	State	District	Lot Affected (Private)	Area Acquired (m2)	SPNB	MOT	KPTG	JKPTG	JKPTG File No.	PTG	MB's/EXCO's (Approval)	Form D Sign By PTG	JKPTG	Gazette Date	Hearing Date	Remarks
1	WP	Petaling	3	59,372.00	13-Apr-09	21-Apr-09	8-Jun-09	12-Jun-09	PTG/WP 08/03/08	2-Jul-09	5-Aug-09	6-Aug-09	7-Aug-09	Gazett No. 16631/13.08.09	14 & 15 Oct 09 8-Dec-09 28-Dec-09	Private lot = 3 Federal Land = 3 State Land = 13

#### AMG LINE (SELANGOR PHASE 1) CH. 3100 TO CH. 6400

No	State	District	Lot Affected (Private)	Area Acquired (m2)	SPNB	MOT	KPTG	JKPTG	JKPTG File No.	PTG	MB's/EXCO's (Approval)	Form D Sign By PTG	JKPTG	Gazette Date	Hearing Date	Remarks
1	SEL	Petaling	-	-	13-Apr-09	21-Apr-09	8-Jun-09	11-Jun-09	PTG SEL 3/KP/02/160	22-Jun-09	7-Jul-09	STATE LAND				Kelulusan dari PBN melalui Kertas Ringkasan drpd PTG Selangor bil. (7)dim PTG. SEL 3/KPT/02/160 bertarikh 7.7.08

#### AMG LINE (SELANGOR PHASE 2) CH. 6400 TO 11300

No	State	District	Lot Affected (Private)	Area Acquired (m2)	SPNB	MOT	KPTG	JKPTG	JKPTG File No.	PTG	MB's/EXCO's (Approval)	Form D Sign By PTG	JKPTG	Gazette Date	Hearing Date	Remarks
1	SEL	Petaling	64	65,419.00	30-Jun-09	2-Jul-09	8-Jul-09	15-Jul-09	PTG SEL 3/KP/02/161	20.8.09	25.8.09	26.8.09	27.8.09	Gazett No. 3144/10.09.09	24, 25 & 26 Nov 09	Private lot = 64 State Land = 24

#### AMG LINE (SELANGOR PHASE 3) CH. 11300 TO CH. 17500

No	State	District	Lot Affected (Private)	Area Acquired (m2)	SPNB	MOT	KPTG	JKPTG	JKPTG File No.	PTG	MB's/EXCO's (Approval)	Form D Sign By PTG	JKPTG	Gazette Date	Hearing Date	Remarks
1	SEL	Petaling	79	186,720.00	2-Oct-09	5-Oct-09	7-0kt - 09	9 - Okt - 09	PTG SEL 3/KP/02/167	23-Oct-09	9-Nov-09	9-Nov-09	10-Nov-09	Gazett No. 3863/19.11.09	-	Private Land = 79 Federal Land = 1 State Land = 33

**GRAND TOTAL (AMG)** 146 311,611.00

#### Note

PTG  
KPTG  
JKPTG  
JPPH

Pengarah Tanah Dan Galian  
Ketua Pengarah Tanah Dan Galian  
Jabatan Ketua Pengarah Tanah Dan Galian  
Jabatan Penilaian Dan Perkhidmatan Harta

MOT  
PNMB  
PBN

Ministry of Transport  
Percetakan Nasional Malaysia Berhad  
Pihak Berkuasa Negeri

**OPUS**  
CONSULTANT  
AN EDGEMTA COMPANY

Progress Report on Land Acquisition Under Section 8, LA 1960 (Stage 3)  
AMG LINE (W/P KUALA LUMPUR)

Gazette No. No : 16631/13.8.08

### 30.4.10

[illegible]

### **Pre-Award**

- ☐ Procurement and Contract Strategy.
- ☐ Prequalification
- ☐ Tender documents, including tender advertisement.
- ☐ Evaluation criteria.
- ☐ Evaluation reports.
- ☐ Contract Documents.
- ☐ CAPEX



### **Post-Award**

- ☐ Evaluate and prepare progress payment certificates.
- ☐ Review and process Variation Orders / Claims from Contractors.
- ☐ Monitor / Track Variation Orders for all Contract Packages.
- ☐ Employer's Variation Order Committee (VOEC).
- ☐ Prepare Financial Cost Report (Cost Monitoring).
- ☐ Evaluate Extension of Time claims from Contractors.

# PROJECT MANAGEMENT TOOLS (PROCUREMENT & CONTRACT)

## Summary of ERI/VO

**KELANA JAYA (KLJ) LINE EXTENSION PROJECT**  
**THE CONSTRUCTION AND COMPLETION OF FACILITIES WORKS (PACKAGE A)**  
SUMMARY OF ERI / STATUS OF WORKS / JOINT MEASUREMENT / VO

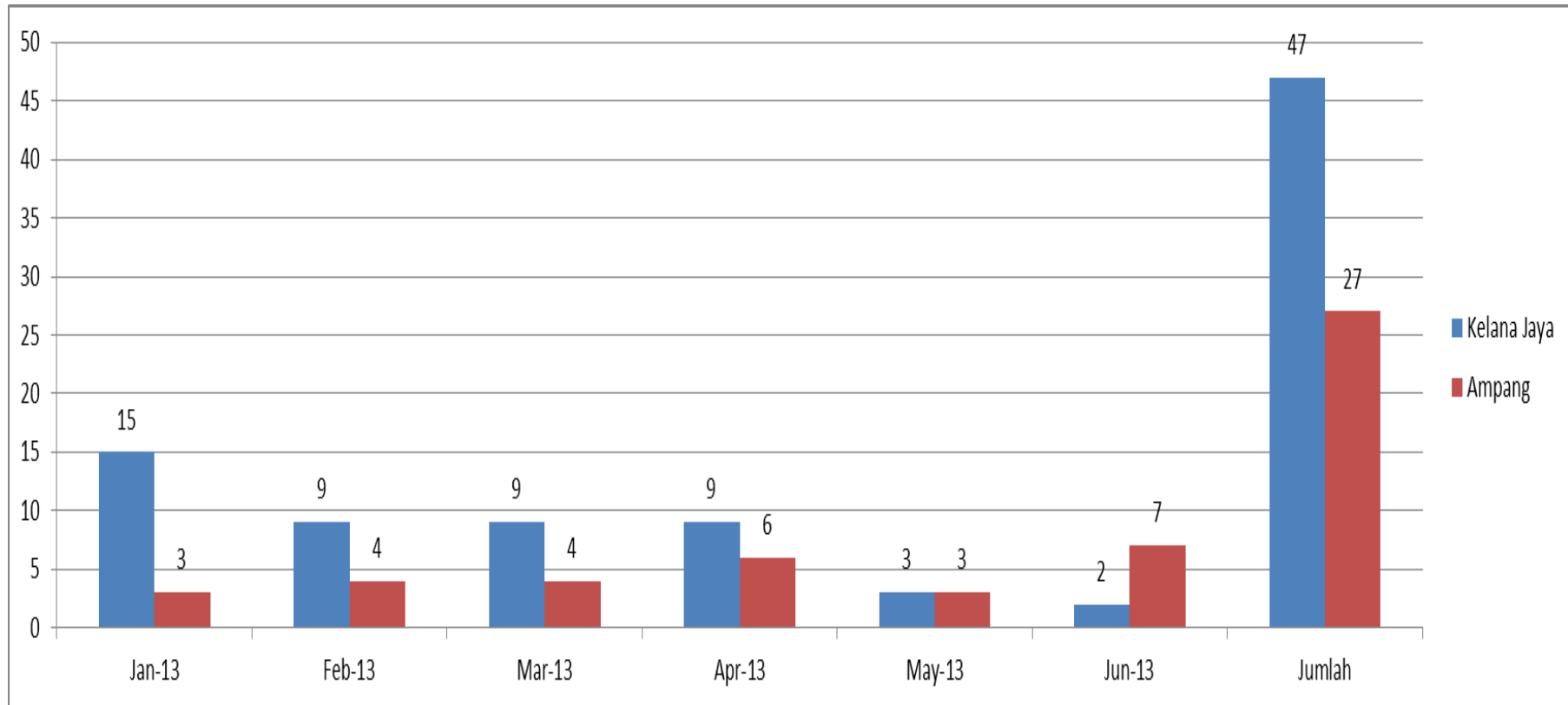
ERI Status				Progress of ERI				VO Under Preparation	VO Status		
Pending Approval	Under Preparation	No of ERI Withdrawn	Approved and Issued to Contractor	Not Started Yet	Ongoing	Completed	Joint Measurement		VO Recommended by ER	VO Pending VOEC	VO Approved by Prasarana
9	5	1	39	7	20	12	0	11	1	0	1
0	0	0	5	0	4	1	1	0	0	0	0
2	0	0	9	3	3	3	0	2	1	0	1
0	0	0	1	0	0	1	0	1	0	0	0
0	0	0	1	0	0	1	0	1	0	0	0
11	5	1	55	10	27	18	1	15	2	0	2

#### **Pre-Construction**

- ☐ Monitor the approval of construction Method Statement.
- ☐ Monitor the approval of the Traffic Management Plan.
- ☐ Monitor approval of the Work Permit from local authorities.
- ☐ Review and approve Safety Plan and Environmental Management Plan submitted by Contractors.

## Public Complaint Statistic

### Statistic of Public Complaints (2013)





## 4 SITE SAFETY MANAGEMENT

- ☐ Increased the required number of safety personnel especially in the contractors' set up.
- ☐ Organized high level safety meetings with the Senior Management of Contractors and Consultants / [Safety Committee](#).
- ☐ Impose requirement for the contractors to also conduct high level safety meeting with their sub-contractors and suppliers.
- ☐ Awareness/road show lead by the project leader.
- ☐ [Understand Opus's and contractors' responsibilities or scope of works on safety related matters.](#)
- ☐ Organized safety conference/workshop.
- ☐ Conducted safety walkabout by Senior Management.
- ☐ [Periodical and ad-hoc audit/inspections on HSE \(Day & night\).](#)
- ☐ Issued NCR/[CAR](#) for the non-compliance.

- ☐ 3<sup>rd</sup> party inspection on cranes and lifting equipment.
  - ✓ All cranes or machinery must be less than 15 years.
  - ✓ Operators must have at least 5 years working experience of operating the cranes or machinery.
- ☐ Site Safety Supervisor (SSS) shall supervise all heavy lifting works.
- ☐ Free standing casing limited to 6 meter height for bore piling work.
- ☐ Audit, tool box meetings and safety trainings.
- ☐ Introduction of Safety Patrol Unit.
- ☐ Introduction of Permit To Work (PTW) before commencing any lifting activities.
- ☐ Introduction of Permit To Operate (PTO) prior to operate any machinery on site.
- ☐ Safety enhancement of scaffold structures including false work. PE to approve and inspect.

# 5 PROJECT MANAGEMENT – PLANNING AND PROGRESS MONITORING

## Construction Stage

- ❑ Review and approve Contractors' baseline programme.
- ❑ Monitor physical progress and contractors' performance.
  - ✓ Productivity
  - ✓ Resources
- ❑ Revise Master Implementation Programme (MIP) / Recovery Programme.
- ❑ Identify problems and propose mitigation measures.
- ❑ Present the proposed MIP to client's Senior Management for approval.











# Thank You



## Establishment of Safety Committee

### Site Team Personnel (latest)

	KLJ Line			AMG Line		
		 			 	
Construction Team	-	15	75	-	19	75
Safety Team	(4) *	2	2	(4) *	3	2

Note : \* 4 nos. of Prasarana's safety personnel for KLJ & AMG Line are based in HQ.

Monthly Safety  
Coordination  
Meeting  
(Jointly chaired  
by Prasarana  
& PC)

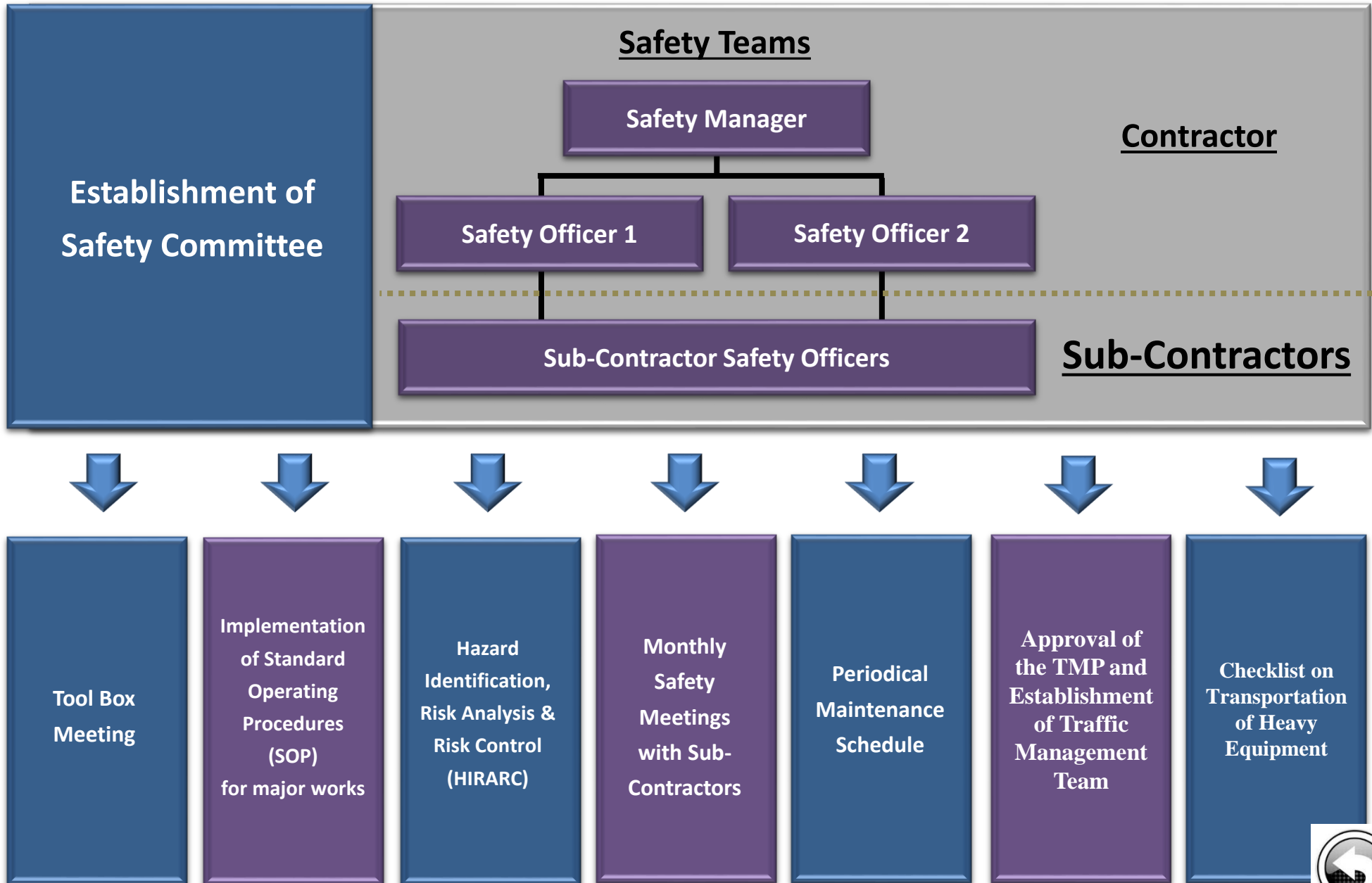
Safety  
Monitoring &  
Issuing Non-  
Conformance  
Reports (DDC)  
& Letters (PC)

Carry Out  
Regular Joint  
Inspection &  
Night Audits  
(Jointly by  
PC & DDC)

Audit on  
documents  
submitted by  
Contractor on  
PMA & Crane  
operators  
license (DDC)

Approving all  
Method  
Statements  
(DDC)  
including  
safety  
requirements  
prior to  
construction









Establishment  
of Inquiry  
Panel  
(Prasarana,  
PC & DDC)



# SAFETY RESPONSIBILITIES

## Establishment of Safety Committee

### Site Team Personnel (latest)

	KLJ Line			AMG Line		
		 			 	
Construction Team	-	15	75	-	19	75
Safety Team	(4) *	2	2	(4) *	3	2

Note : \* 4 nos. of Prasarana's safety personnel for KLJ & AMG Line are based in HQ.



## Responsibilities

Monthly Safety  
Coordination  
Meeting  
(Jointly chaired  
by Prasarana  
& PC)

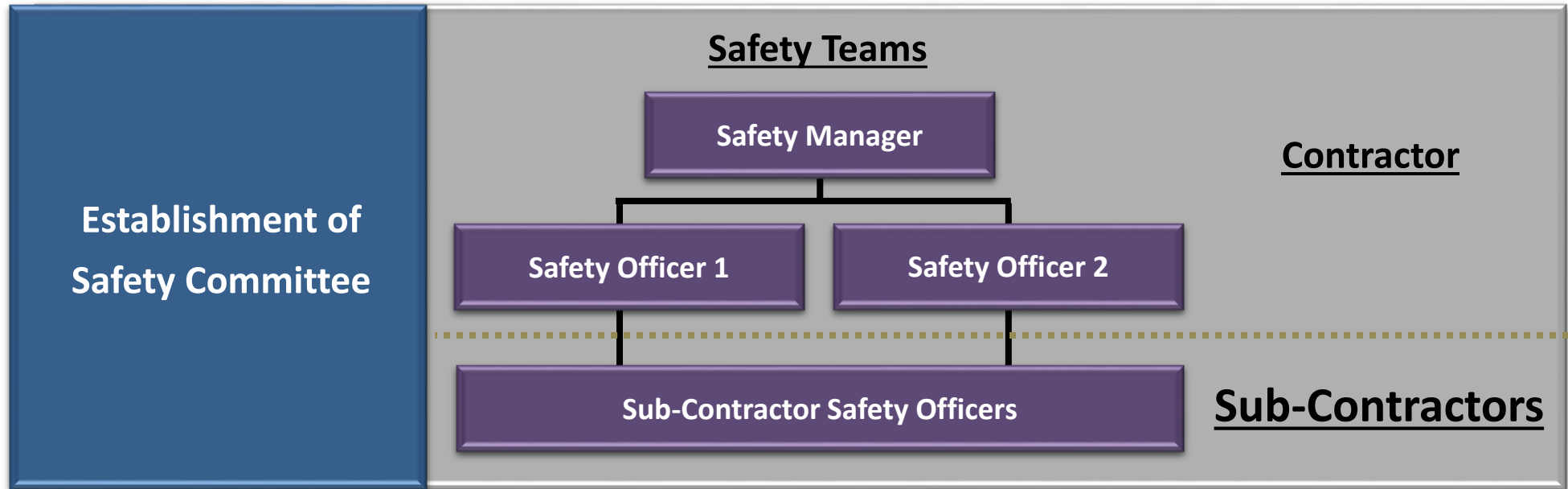
Safety  
Monitoring &  
Issuing Non-  
Conformance  
Reports (DDC)  
& Letters (PC)

Carry Out  
Regular Joint  
Inspection &  
Night Audits  
(Jointly by  
PC & DDC)

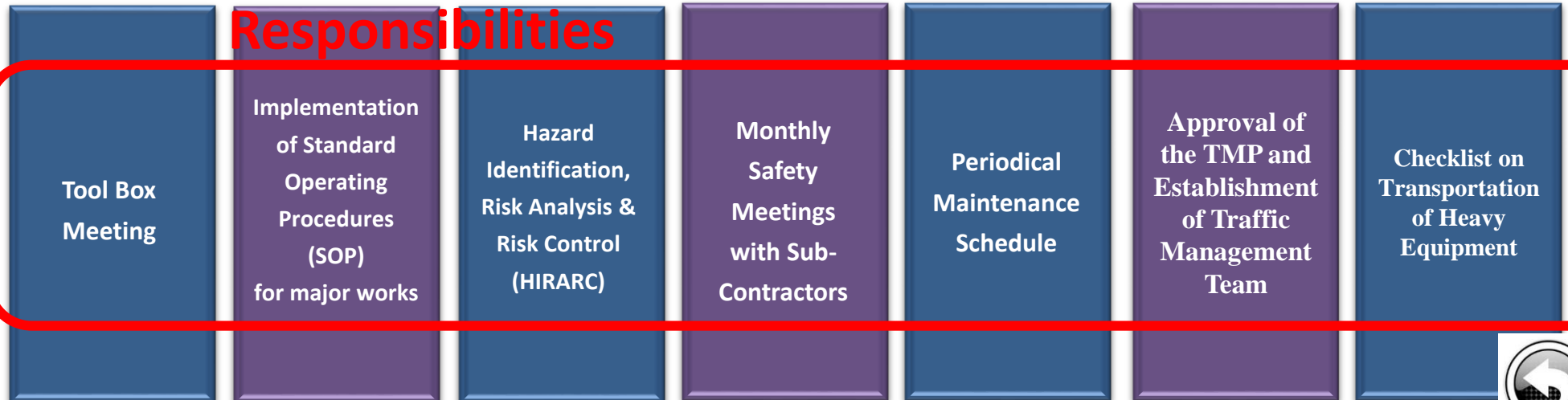
Audit on  
documents  
submitted by  
Contractor on  
PMA & Crane  
operators  
license (DDC)

Approving all  
Method  
Statements  
(DDC)  
including  
safety  
requirements  
prior to  
construction

Establishment  
of Inquiry  
Panel  
(Prasarana,  
PC & DDC)



## Responsibilities





# SAFETY TRACKING TOOLS (AUDIT)

## AMPANG (AMG) LRT LINE EXTENSION PROJECT

### JOINT SAFETY AUDIT/INSPECTION

Auditor \_\_\_\_\_ Total Workforce \_\_\_\_\_  
Contractors Rep. \_\_\_\_\_ Date of Audit \_\_\_\_\_

TOTAL SCORE LAST MONTH :

%

TOTAL SCORE THIS MONTH :

%

No	OSH Issue	Details	Weightage of Score	Checked Items (Please ✓)			Section Score Awarded	Comments
				Y	N	NA		
1	Project Readiness	a. Approved & updated OSH Plan	1.0					
		b. Updated OSH Organisation Structure.	0.5					
		c. Updated site logistic plan	0.5					
		d. Risk assesment updated to current activity	1.0					
2	Chemical Storage	a. Containers properly labelled	1.0					
		b. Material Safety Data Sheets for chemicals	1.0					
		c. Segregation of chemicals	1.0					
		d. Proper storage area	1.0					
		e. Adequate safety equipment	1.0					
		f. Signage available	0.5					
3	Unfired Pressure Vessel/ Generator Sets	a. Properly stored	0.5					
		c. Drip trays provided to control spillage	1.0					
		d. Excessive smoke discharge controlled	1.0					
		e. Proper hoses and connectors	1.0					
		f. PMT certificate available	1.0					
		g. Regular maintenance record	0.5					
				Score for all check items (Y+N)		Score for YES item (Y)		
This page								



# PROJECT SPECIFIC PROCEDURE

NO	PROCEDURE TITLE	PROCEDURE REF.	REV. NO.	REV. DATE	ROD
1	Project Quality Plan	OPUS-AV/LE/PQP/001	2	30/06/11	LE/PQP/001-2
<b>Documentation and Communication</b>					
2	Document Control and Data Management Correspondence	OPUS-AV/LE/PSP1/001	3	30/04/14	LE/PSP1/001-3
3	Document Control and Data Management - Drawings	OPUS-AV/LE/PSP1/002	2	16/12/11	LE/PSP1/002-2
4	Preparation and Revision of Procedures	OPUS-AV/LE/PSP1/003	0		
5	Corrective and Preventative Actions	OPUS-AV/LE/PSP1/004	0		
6	Quality Records	OPUS-AV/LE/PSP1/005	0		
<b>Design Management</b>					
7	Design Review & Monitoring Activities	OPUS-AV/LE/PSP2/001	1	30/06/11	LE/PSP2/001-1
8	Authorities' Approvals	OPUS-AV/LE/PSP2/002	2	30/10/12	LE/PSP2/002-2
9	Design Change Management	OPUS-AV/LE/PSP2/003	0		
<b>Planning</b>					
10	Monthly Progress Report	OPUS-AV/LE/PSP3/001	1	30/06/11	LE/PSP3/001-1
11	Master Implementation Programme	OPUS-AV/LE/PSP3/002	1	30/06/11	LE/PSP3/002-1

# PROJECT SPECIFIC PROCEDURE – con't

NO	PROCEDURE TITLE	PROCEDURE REF.	REV. NO.	REV. DATE	ROD
<b>Procurement &amp; Contracts</b>					
12	Progress Payment To Consultant	OPUS-AV/LE/PSP4/001	1	30/10/12	LE/PSP4/001-1
13	Pre-Qualification of Contractors	OPUS-AV/LE/PSP4/002	0		
14	Tender Documentation	OPUS-AV/LE/PSP4/003	0		
15	Tender & Award	OPUS-AV/LE/PSP4/004	1	30/10/12	LE/PSP4/004-4
16	ER's Instruction & Variation Orders	OPUS-AV/LE/PSP4/005	2	30/10/12	LE/PSP4/005-2
17	Interim Payments to Contractors	OPUS-AV/LE/PSP4/006	2	26/09/13	LE/PSP4/006-2
18	Change Request, E.R.'s Instruction & Variation Orders for Systems Works	OPUS-AV/LE/PSP4/007	2	30/01/15	LE/PSP4/007-2
19	Cost Control	OPUS-AV/LE/PSP4/008	0		
20	Delegation of Powers	OPUS-AV/LE/PSP4/009	1	30/06/11	LE/PSP4/009-1
21	Cost Claim	OPUS-AV/LE/PSP4/011	1	16/12/11	LE/PSP4/011-1
22	Contract Documentations	OPUS-AV/LE/PSP4/012	1	30/10/12	LE/PSP4/012-1
23	Provisional & Prime Cost Sum	OPUS-AV/LE/PSP4/013	0		
24	Extension of Time	OPUS-AV/LE/PSP4/014	1	16/12/11	LE/PSP4/014-1


## PROJECT SPECIFIC PROCEDURE – con't

NO	PROCEDURE TITLE	PROCEDURE REF.	REV. NO.	REV. DATE	ROD
25	Line of Communication	OPUS-AV/LE/PSP4/018	0		
<b>Construction Management</b>					
26	Review of Contractor's Submissions	OPUS-AV/LE/PSP5/001	1	30/12/11	LE/PSP5/001-1
27	Monitoring Construction Progress	OPUS-AV/LE/PSP5/002	1	30/12/11	LE/PSP5/002-1
28	Monitoring of the Construction Works and Quality Control	OPUS-AV/LE/PSP5/003	1	30/12/11	LE/PSP5/003-1
29	Monitoring & Tracking of Construction NCR	OPUS-AV/LE/PSP5/004	1	30/12/11	LE/PSP5/004-1
30	Progress Photographs and Videos	OPUS-AV/LE/PSP5/005	1	30/12/11	LE/PSP5/005-1
31	Construction Site Health, Safety & Environment	OPUS-AV/LE/PSP5/006	3	30/05/14	LE/PSP5/006-3
32	Response to Incidents & Accidents	OPUS-AV/LE/PSP5/007	3	30/05/14	LE/PSP5/007-3
33	As-Built Drawings	OPUS-AV/LE/PSP5/008	0		
34	Material Acceptance	OPUS-AV/LE/PSP5/009	0	-	-
35	Handing Over of Completed Facility Works to System Works	OPUS-AV/LE/PSP5/010	0	-	-





# AMPLE CORRECTIVE ACTION REPORT (CAR)

		
IMBRT	OCM CORRECTIVE ACTION REPORT (CAR)	CAR Reference No.
PACKAGE:	To: Attn: Cc:	CAR Issued Date:
Location of Non-Compliance:		Date Non-Compliance Defected:
TYPE OF CAR * <input type="checkbox"/> 1) Quality <input type="checkbox"/> 2) Safety & Health <input type="checkbox"/> 3) Environmental <input type="checkbox"/> 4) Others .....		
<b>DESCRIPTION OF THE NON-COMPLIANCE</b>		
Prepared by: Signature: Name:	Issued by: Signature: Name:	Received by: Signature: Name:
<b>ROOT CAUSE(S) IDENTIFIED (To be filled up by Contractor)</b>		
<b>CONTRACTOR'S CORRECTIVE ACTION (To be filled up by Contractor)</b>		
Target Completion Date: .....		
Name:	Signature:	Date:
<b>VERIFICATION OF CORRECTIVE ACTION BY OCM AUTHORIZED PERSONNEL</b>		
The above rectification works have been carried out satisfactory and recommend CAR to be closed.		
Remarks/Comments:		
Signature/Date: Name:		

