

JABATAN KERJA RAYA MALAYSIA

**PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN
PAHANG DIRAJA DI PENJARA PENOR, PAHANG**

SENARAI KUANTITI

Kami seperti nama syarikat di bawah mengesahkan tawaran harga yang tersenarai di dalam senarai kuantiti ini adalah sama sepertimana di dalam Borang Tender yang dihasilkan di dalam sistem dan sebarang percanggahan akan menyebabkan tawaran kami ditolak.

- A. Nama Syarikat: **Nama Petender**
- B. CIDB/UPKJ/PUKONSA No.: **No.Pendaftaran Petender**
- C. Harga Tawaran: **Harga Tawaran Petender**
- D. No. Siri Tender: **JKR/CKE/22983/2024**
- E. Tarikh Cipta Senarai Kuantiti: **14/10/2024**

Senarai kuantiti ini dikeluarkan oleh CKE, JKR. Sebarang pertanyaan boleh berhubung dengan pegawai yang menyediakan tender dan maklumat pegawai untuk dihubungi boleh didapati di laman iklan.

JABATAN KERJA RAYA MALAYSIA

PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR, PAHANG

SENARAI KUANTITI

No. Tender: JKR/CKE/22983/2024

RINGKASAN TENDER**PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG
DIRAJA DI PENJARA PENOR, PAHANG**

ITEM	DESCRIPTION	PAGE NO.	AMOUNT(RM)
A	PRELIMINARIES		
B	INTERNAL LV SYSTEM		
C	SWITCHBOARD & POWER FACTOR CORRECTION BOARD		
D	UNDERGROUND CABLES & EXTERNAL ELECTRICAL INFRASTRUCTURE		
E	LIGHTNING PROTECTION SYSTEM		
F	STANDBY GENERATOR SET		
G	MISCELLANEOUS		
H	CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM		
I	ELECTRONIC ACCESS CONTROL SYSTEM		
J	VISUAL SYSTEM		
K	WALK THROUGH METAL DETECTOR		
L	PASSIVE INFRASTRUCTURE		
M	ACTIVE INFRASTRUCTURE		
N	TELEPHONE SYSTEM		
O	EARTHING SYSTEM		
P	TESTING & COMMISSIONING		
Q	OTHERS		
Jumlah di bawa ke Borang Tender			-

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PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR, PAHANG

NO. TENDER : JKR/CKE/22983/2024

A) PRELIMINARIES

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
A	<p>PART I - GENERAL INFORMATION</p> <p>Notes: The amounts inserted by the Nominated Sub-Contractor for such Preliminary Items shall be deemed to apply to the whole of the Works carried out under this Sub-Contract.</p> <p>Each Preliminary Item or Clause shall be individually priced. Bulk pricing for sections, trades, groups or pages of Preliminary Items or Clauses shall not be accepted and no subsequent claims for loss or expenses and/or profit shall be entertained for failure to comply with this clause.</p> <p>Where any Preliminary Item or Clause is left unpriced, it shall be deemed that the cost of such Preliminary Items or Clauses have been allowed for elsewhere within these Sub-Contract Document. No subsequent claims arising out of expenses and/or loss incurred against such unpriced Preliminary Item or Clauses shall be entertained.</p> <p>Notwithstanding the above clauses, the S.O. reserves the right to request from the Contractor the detailed breakdown of the pricing for Preliminary Items or Clauses or the rates in the Bill of Quantities for examination and approval. The approved detailed breakdown pricing shall then be used as a basis for the administration of the Sub-Contract.</p> <p>Headings are not comprehensive and do not necessarily reflect or modify the meaning of the items in the B.Q. The exact nature and extent of the work to be carried out shall be ascertained by reference to the Contract as a whole, in particular the Conditions of Contract, the Specification and the Drawings.</p> <p>Where Preliminary Items or Clauses or items in the Bill of Quantities are priced but have not been executed on site by the Contractor, the cost of such priced items or clauses or items in the Bill of Quantities shall accordingly be deducted from the Contract Sum when so instructed by the S.O.</p>				
1.0	<p><u>Pricing of Bill of Quantities</u></p>				
1.1	<p>The sum of the amounts of all items of the Bill of Quantities priced by the tenderer shall truly represent the amount shown in his tender. The rates set down by the Tenderer against each item in the Bill of Quantities shall be the full inclusive rates and prices for the finished work (unless expressly provided to the contrary) and shall be held to include providing and delivering all materials, unloading, cutting and waste on materials, storage, packing, carriage and cartage, hoisting, all labour, setting, fitting and fixing in position, use of plant, providing suspension, establishment charges, profit and all other labour and everything else necessary for the due and proper completion of each item.</p>				

	<p>1.0 <u>Pricing of Bill of Quantities (cont'd)</u></p> <p>1.2 Where the tenderer leaves any item blank in the preliminaries or insert only a dash against any item in these Bill of Quantities the value thereof shall be deemed to be included in the prices or rates of other items therein.</p> <p>1.3 No unauthorised alteration, addition or note entered in these Bill of Quantities shall modify the printed text.</p> <p>1.4 Headings and notes appearing shall not by itself be deemed to be comprehensive and do not modify the meaning of the items in the Bill of Quantities.</p> <p>1.5 Any rates found to be overpriced, inconsistently priced, underpriced or erroneously priced shall be subjected to adjustment, rectification and rationalisation before the signing of the contract and the authority to fix a reasonable rates/amount shall be with the S.O. The amended rates shall be used for computing the progress payments and the measuring of variations.</p> <p>1.6 Where Quantities in these Bill of Quantities are marked provisional, the works shall be remeasured on completion basing on drawings certified as true and correct representation of the completed works by the Superintending Officer.</p> <p>1.7 There shall be no alteration or amendment, specifying or submission of condition in contravention to those contained in Bills of Quantities. If such conditions are included, the tender submitted may not be considered and liable to be disqualified.</p> <p>2.0 <u>Currency of Payment</u></p> <p>Pricing of the Sub-Contract shall be in Malaysian Ringgit to two decimal place. Payment to the Nominated Sub-Contractor under the Sub-Contract shall be in Malaysian Ringgit.</p> <p>3.0 <u>Form of Sub-Contract</u></p> <p>The Conditions of Sub-Contract will be those contained in the Standard Form of Sub-Contract-PWD Form 203N Rev.1/2010 and Instruction To Tenderers (ITT). A copy of the said Form and General Condition which form part of the Tender Table Documents is available for inspection online (for online tendering) or during normal office hours on any working day up to the time appointed for receiving tenders.</p> <p>4.0 <u>Compliance with Safety Requirement and Regulations</u></p> <p>The Nominated Sub-Contractor shall always adhere to all requirement and regulations under Occupational Safety and Health Act and maintain a safe and healthy working environment through out the execution of Sub-Contract Works.</p> <p>5.0 <u>Making Good Defects During Defects Liability Period (DLP)</u></p> <p>5.1 The Nominated Sub-Contractor shall make good of any defects, shrinkage and any other faults which may appear within the Defects Liability Period as provided in the Sub-Contract, commencing from Practical Completion of the Sub-Contract Works as certified by the S.O.</p> <p>5.2 No claim shall be entertained if the repair of any defects results an increment in cost.</p>				
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6.0 <u>Duty Stamping</u> The Nominated Sub-Contractor shall solely bear the cost for stamp duties and anything incidental thereto.				
B PART II - PRICING OF PRELIMINARIES ITEMS				
1.0 <u>Material and Workmanship</u> The description of materials and workmanship in these Bill of Quantities and/or Drawings are to be read in conjunction with the relevant Specifications contained in the Sub-Contract. Materials and equipment supplied and installed shall comply with the condition set down in the Instruction To Tenderers (ITT). Allow for submission of samples of materials and workmanship as the S.O.'s Representative may require for this approval before the materials are supplied and installed or workmanship are embodied in the finished works. All samples which are approved shall be retained on the Site and shall represent or indicate the standard to be maintained in the execution of the Sub-Contract Works. All samples shall be cleared away when no longer so required for the purpose.	Lump Sum	Lump Sum		
2.0 <u>Application To and Testing By The Authorities</u> Allow for submission of applications, inspections, tests and approvals including the registration of the installation and endorsement of documents by professional/competant person in compliance to the requirements of the relevant Authorities having jurisdiction over the Sub-Contract Work. All cost and fees incurred in the process of gettings the Sub-Contract Works inspected, tested and approved by the relevant Authorities shall be included in the Sub-Contract Sum. No additional costs will be entertained in this respect. It shall include the following but not limited to:- a) Earth Resistance test results shall be verified by a Service Engineer (The Earth Resistance Tester shall be calibrated every 2 years). b) Test methods must comply with IEEE Std 81- Guide For Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System.	Lump Sum	Lump Sum		
3.0 <u>Application To Internet and Telecommunication Provider</u> Allow assisting client in liaising with Internet Service Provider (ISP) and Telecommunication Service Provider (TSP) Authorities for submission of registration and application for Internet and telephone	Lump Sum	Lump Sum		
4.0 <u>Clause 24 - Insurance Against Personal Injuries and Property</u> The Nominated Sub-Contractor shall be liable and shall indemnify both the Main Contractor and the Government against any expenses, damage, liability, loss, claim, or proceedings whatsoever arising from any common law or statute in the course of the execution of the Sub-Contract Works as per described under Clause 24.	Lump Sum	Lump Sum		

<p>5.0 <u>Clause 26 - Employee's Social Security Act 1969</u></p> <p>The Nominated Sub-Contractor shall cause to register all local workmen under his employment under Employee's Social Security Scheme (SOCSO) in accordance with the Employment's Social Security Act 1969 or any subsequent modification and re-enactment of the said Act. The Nominated Sub-Contractor shall submit Code Number and Social Security Numbers of all workmen under the SOCSO scheme to the S.O for verification.</p> <p>The Nominated Sub-Contractor shall make payment of all contributions from time to time on the first day on which the same ought to be paid and until the completion of the Sub-Contract Works, and upon demand the Nominated Sub-Contractor shall produce to the S.O.'s Representative contribution cards or stamp vouchers as evidence of payment of such contribution.</p>	<p>6.0 <u>Clause 27 - Insurance of Sub-Contract Work</u></p> <p>The Nominated Sub-Contractor shall insure for the full value amount of the Sub-Contract Works (including materials and goods of the Nominated Sub-Contractor properly delivered on the Site for use in the Sub-Contract Works) and keep or have them kept insured against loss or damage by fire, lightning, explosion, storm, tempest, flood, ground subsidence, bursting or overflowing of water tanks, apparatus or pipes, aircraft and other aerial devices or articles dropped therefrom, riot and civil commotion as per described in Clause 27. All excesses, if any, imposed by the Insurance Company shall be borne by the Nominated Sub-Contractor.</p> <p>7.0 <u>Clause 28 - Performance Bond</u></p> <p>The Nominated Sub-Contractor shall, as a condition precedent to the commencement of any work under this Sub-Contract, deposit with the Contractor a performance bond in the form of a Banker's Draft or an approved Banker's or Insurance Guarantee equivalent to five (5%) percent of the Sub-Contract Sum to secure the due performance of the obligations under this Sub-Contract by the Nominated Sub-Contractor.</p> <p>8.0 <u>Protection of Existing Services</u></p> <p>Protect, uphold and maintain all existing and in use pipes, ducts, sewers, services mains, underground cables, etc. During the execution of the Sub-Contract Works, unless otherwise directed. If the Nominated Sub-Contractor discovers any underground cables, pipes, etc, he shall immediately stop work and report to the S.O's Representative of the findings. The Nominated Sub-Contractor shall be responsible for making good all damages to the cable, pipes, etc. and shall indemnify the Government against any claims as a results of such damage.</p> <p>Notes: Applicable for upgrading and renovation projects</p> <p>9.0 <u>Sub-Contract Work Programme</u></p> <p>Provide for implementing the Critical Path Method programme in conjunction with Main Contract Works for planning, monitoring, control of resources and progress of work shall include :</p> <p>Planning, preparing, maintaining and updating the CPM programme preferably using latest version of Microsoft Project. The identification of critical path for the timely execution of the work to completion.</p>	<p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p>	<p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p> <p>Lump Sum</p>		
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10.0	<u>Competent Persons</u>				
10.1	The Nominated Sub-Contractor shall appoint a Competent Person or Competent Persons in compliance with the Electricity Regulations 1994 to provide necessary superintendence over the whole site operation for the full duration of the Sub-Contract Works and as long thereafter as the S.O.'s Representative may consider necessary for the proper fulfillment the Nominated Sub-Contractor's obligation under this Sub-Contract Works.	Lump Sum	Lump Sum		
10.2	The qualification of the Competent Persons shall be in compliance with the Electricity Regulations 1994 and approved by the S.O.'s Representative, and he shall be constantly on the Site and shall devote his whole time to the superintendence of the Sub-Contract Works. He shall take responsibility for the construction, installation testing, commissioning and operation of the whole Sub-Contract Works in compliance with the Electricity Regulations 1994 and any other laws having jurisdiction over the Sub-Contract Works.				
10.3	The S.O.'s Representative will be at liberty to object to and requires the Nominated Sub-Contractor to remove forthwith from the Site such Competent Person, who in the opinion of the S.O.'s Representative, misconducts himself or is incompetent or negligent in the proper considered by the S.O.'s Representative to be undesirable. The Nominated Sub-Contractor shall, upon the removal of such person, thereafter replaced as soon as possible a new Competent Person in compliance with the requirement of this section.				
11.0	<u>Resources For Site Safety</u>				
	The Nominated Sub-Contractor shall provide and maintain all Personal Protective Equipment required for the use of the S.O.'s Representative and his supervisory staff and any other officials complete as specified and complying with DOSH requirements. All items must obtain approval from the S.O.'s Representative. The items are as follows:				
	a) Safety Helmet (white colour c/w JKR's Logo)	Nos	2		
	b) Reflective Safety Vest/Protection Clothing (c/w JKR's Logo)	Nos	2		
	c) Safety Boots (2 Units for HODT Office)	Nos	4		
12.0	<u>Progress Reports and Photographs</u>				
	Allow for providing monthly reports including photographs showing the progress of the Sub-Contract Works in digital format, each of different view of the Sub-Contract Works as directed by the S.O.'s Representative. A total of three (3) sets of reports properly binded and the digital format shall be provided to the S.O.'s Representative (2 sets) and HODT office (1 set).	Lump Sum	Lump Sum		

13.0	<u>Shop / Working Drawings</u>				
13.1	Provide for the preparation, submission and thereafter the approval for construction from the S.O.'s Representative all shop / working drawings for the Sub-Contract Works as required in the relevant Specifications in the Sub-Contract. The contractor will be provided with project site plan and electrical layout drawings in digital format by JKR for shop/working drawing preparation.	Lump Sum	Lump Sum		
13.2	Detail final sub-circuits and switching arrangement, shall be prepared, calculated and approved before installation. Final sub-circuits shall include lighting and power installation.				
13.3	For the project using Building Information Modelling (BIM), all drawings shall be in 3D model using Autodesk REVIT software which includes preparation of all related electrical system complete with conduit and trunking, all components, system modeling and integration with all related building model not limited to Architectural, Structural and Mechanical model and other services. The integrated 3D model shall be used to generate working drawings as specified in the Sub-Contract.				
14.0	<u>Coordination of Work (IBS)</u>				
	All electrical works e.g. conduits, openings, back boxes, etc. shall be coordinated with IBS Provider, architectural and structural works for implementation of IBS including Modular Coordination at IBS plant.	Lump Sum	Lump Sum		
15.0	<u>Electrical Protection Schemes (Calibrations)</u>				
	Allow for fees and charges for the employment of an Electrical Services Contractor registered under Electricity Regulations 1994 to study and submit proposal (with relevant data and calculations) for the electrical protection scheme for the whole electrical installation in the Sub-Contract works. Thereafter, if the proposal is agreeable by the S.O.'s Representative, he shall check, test and calibrate accordingly all protective relays and device provided in the Sub-Contract Works to the requirements of the Electricity Regulations 1994. He shall also prepare, duly sign and submit all certification as required under Electricity Regulations 1994. (including existing MSB at Bilik MSB, Pencawang Elektrik Penjara Penor)	Lump Sum	Lump Sum		
16.0	<u>Clearing and Cleaning of Site</u>				
	The Nominated Sub-Contractor shall, upon completion of the work, remove away immediately from site all plants and surplus materials except those ordered to be left on the site, together with all rubbish and debris. The site is to be restored in a neat, clean and workmanlike manner to the satisfaction of the S.O.	Lump Sum	Lump Sum		

17.0	<u>Equipment Inventory List</u>				
17.1	Allow for preparation of inventory list for equipment installed as per in the Sub-Contract. The inventory list shall include and not limit to all data and particulars of the equipment and accessories pertaining to their types, models, descriptions and quantities. The format shall be in MS Excel of latest version as per Appendix A of Preliminaries. Two (2) sets of softcopy in CD-RW/DVD-RW and four (4) sets of hardcopy in comb binded shall be submitted to S.O.'s Representative.	Lump Sum	Lump Sum		
17.2	To submit four (4) sets of hardcopy & softcopy (CD-RW) of the following documents:- a) List of component in each room as specified in latest version of Sistem Pengurusan Bersepadu (SPB) JKR Malaysia, " <i>Borang Senarai Aset Tak Alih Mengikut Ruang (Lampiran 16)</i> ". A copy of this form should also be attached at each room during T&C for S.O verification purposes.	Lump Sum	Lump Sum		
18.0	<u>Documentation Upon Completion</u>				
	Upon completion of the work and before handing over, the Nominated Sub-Contractor shall submit documents as follow: a) Four (4) sets contained the following documents, properly titled and bound in hard covers :- i) Installation Manuals, Operation Manuals, Service and Maintenance Manuals, and Part Lists for all equipment supplied and installed in the Sub-Contract; ii) All Product Data and Catalogue of equipment supplied and installed in the Sub-Contract; iii) All Supervision and Completion Certificate, and Test Certificate in compliance with the Electricity Regulations 1994; iv) All other Test Certificates; v) As-installed drawings as actually fixed pertaining to the Works including all services and facilities systems. The As-installed drawings shall be submitted by the Contractor for the approval of the S.O / S.O's Representative as to allow for a complete understanding of the Works as they were actually fixed; vi) All Certificate of Warranties and Guarantees copies issued by the original equipment manufacturers.	Lump Sum	Lump Sum		

	<p>b) i) For BIM projects : Four (4) sets of Digital Copies of As-installed drawings in AutoCAD(dwg.) and/or BIM 3D Model Revit MEP format to be stored in compact discs or physical digital storage.</p> <p>ii) For Non BIM projects : Four (4) sets of Digital Copies of As-installed drawings in AutoCAD(dwg.) or any other compatible format to be stored in compact discs or physical digital storage.</p> <p>c) Four (4) sets of Digital Copies of As-installed drawings in Acrobat (.pdf) to be stored in compact discs or physical digital storage.</p> <p>d) All original Certificate of Warranties and Guarantees issued by the original equipment manufacturers.</p> <p>e) One (1) copy of List of username and password (administrator) for logging in of ELV and ICT systems / equipments (if applicable).</p> <p>f) One (1) set maintenance tools as prescribed in the relevant Specifications.</p>				
19.0	<u>Sub-Contract Document</u>				
19.1	Allow for the cost for eight (8) copies of contract document binding. The document format shall follow as per JKR standard.	Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (A) CARRIED TO RINGKASAN TENDER :					

PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR, PAHANG**NO. TENDER : JKR/CKE/22983/2024****B) INTERNAL LV SYSTEM**

(All quantities are PROVISIONAL)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>To supply, install, testing and commissioning as per drawing and specifications.</p> <p>All quantities given are PROVISIONAL.</p> <p>The actual quantities installed shall be measured on site after completion and prices adjusted accordingly.</p>				
1.0	WIRING				
	<p>Notes:</p> <p>i) All wiring shall be installed as per drawing, relevant rules, regulation and specification.</p> <p>ii) Minimum cross section area of cpc in relation to the cross section area of associated phase conductor shall be install as per MS-IEC60364-5-54, Table 54.3</p> <p>iii) For top floor and wiring above ceiling shall be in galvanised steel (G.S), heavy gauge, Class B, screw typed conduits and electrogalvanised sheet steel trunking. The trunking shall be supported by fixing brackets. All accessories shall be provided such as brass bush, elbow, flexible GS conduit, saddle, adaptor and etc for complete installation.</p> <p>Any other items which not mentioned in this section, shall be comply with the latest revision of CKE.LS.01.01.(04).2018</p> <p>iv) All prices shall include the cost of conduits, trunking and any other accessories used for the wiring system.</p> <p>v) All concealed / surface conduit wiring shall use G.S conduit.</p> <p>vi) All wiring for Emergency Light & Keluar Sign shall be in G.S Conduit conduit is embedded in the concrete.</p> <p>vii) All trunking shall used Electrogalvanised Trunking.</p> <p>ix) Switches for lighting and fans shall generally be grouped.</p> <p>x) Switch plates of size 85mm x 85mm (max. allowable number of big rocker switches is 3)</p> <p>xi) Back boxes for switches and switched socket outlet shall be of galvanised sheet steel type of minimum thickness 0.8mm.</p>				
2.0	SURFACE GALVANISED STEEL CONDUIT WIRING				
	<p>As per drawing no.:-</p> <p>HQL.24/2022/LV/11(16)</p> <p>HQL.24/2022/LV/12(16)</p> <p>HQL.24/2022/LV/13(16)</p> <p>HQL.24/2022/LV/14(16)</p> <p>HQL.24/2022/LV/15(16)</p> <p>HQL.24/2022/LV/16(16)</p>				
2.1	Lighting point using 2 x 1.5 sq. mm PVC cable c/w CPC:				
	a) Aras 1	Nos.	21		
	b) Aras 2	Nos.	16		
	c) Aras Bumbung	Nos.	4		
2.2	10A 1 Way SP metalclad switch c/w back box:				
	a) Aras 1	Nos.	6		
	b) Aras 2	Nos.	5		
	c) Aras Bumbung	No.	1		

2.3	10A 1 gang 2 Way SP big rocker switch c/w back box: a) Aras 1 (Tangga 1 & Tangga 2) b) Aras 2 (Tangga 1 & Tangga 2)	Nos. Nos.	2 2		
2.4	Lighting point using 2 x 1.5 sq. mm PVC cable c/w CPC for self-contained emergency light : a) Aras 1 b) Aras 2	Nos. No.	4 2		
2.5	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin metalclad switched socket outlet (1450mm above finished floor level): a) Aras 1 b) Aras Bumbung	Nos. No.	6 1		
2.6	Socket outlet point using 2 x 2.5 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin metalclad switched socket outlet (1450mm above finished floor level): a) Aras 2	No.	1		
2.7	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin switched socket outlet (1450mm above finished floor level): a) Aras 1 b) Aras 2	No. Nos.	1 3		
2.8	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin switched socket outlet for Equipment Rack (1450mm above finished floor level): a) Aras 1 b) Aras 2	No. No.	1 1		
2.9	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin switched socket outlet for Card Reader Controller: a) Aras 1 b) Aras 2	No. No.	1 1		
2.10	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin switched socket outlet for Walk-Through Metal Detector (400mm above finished floor level): a) Aras 1	No.	1		
2.11	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin switched socket outlet for Water Boiler (1450mm above finished floor level): b) Aras 2	Nos.	2		
2.12	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin switched socket outlet (400mm above finished floor level): b) Aras 2	Nos.	4		
2.13	Exhaust fan point using 2 x 1.5 sq. mm PVC cable & CPC c/w ceiling rose (Interlock with lighting): a) Aras 1 b) Aras 2	Nos. No.	4 1		
3.0	CONCEALED GALVANISED STEEL CONDUIT WIRING As per drawing no.:- HQL.24/2022/LV/11(16) HQL.24/2022/LV/12(16) HQL.24/2022/LV/13(16) HQL.24/2022/LV/14(16) HQL.24/2022/LV/15(16) HQL.24/2022/LV/16(16)				

3.1	Lighting point using 2 x 1.5 sq. mm PVC cable c/w CPC: a) Aras 1 b) Aras 2	Nos. Nos.	136 122		
3.2	10A 1 gang 1 Way SP big rocker switch c/w back box: a) Aras 1 b) Aras 2	Nos. Nos.	12 12		
3.3	10A 1 gang 1 Way SP big rocker switch c/w back box, texture gold/gold colour: a) Bilik Rehat Diraja, Tandas Diraja & Pantri Diraja	Nos.	3		
3.4	10A 2 gang 1 Way SP big rocker switch c/w back box: a) Aras 1 at Switch Panel SP (Detail 'B1')	No.	1		
3.5	10A 3 gang 1 Way SP big rocker switch c/w back box: a) Aras 1 at Switch Panel SP (Detail 'B1') b) Aras 2 at Switch Panel SP (Detail 'B2')	Nos. Nos.	9 7		
3.6	Lighting point using 2 x 1.5 sq. mm PVC cable & CPC c/w G.S conduit painted with black colour: a) Aras 1 for LED Pendant luminaire as per drawing no.: HQL.24/2022/LV/11(16) (Refer Detail 'A')	Nos.	50		
3.7	Exhaust fan point using 2 x 1.5 sq. mm PVC cable & CPC c/w ceiling rose (Interlock with lighting): a) Aras 1 b) Aras 2	Nos. Nos.	5 7		
3.8	Lighting point using 2 x 1.5 sq. mm PVC cable c/w CPC for self-contained emergency light: a) Aras 1 b) Aras 2	Nos. Nos.	10 3		
3.9	Lighting point using 2 x 1.5 sq. mm PVC cable c/w CPC for Keluar Sign: a) Aras 1	No.	1		
3.10	Auto fan point using 2 x 1.5 sq. mm PVC cable & CPC c/w safety wire, hook and other necessary accessories: a) Aras 1 b) Aras 2	Nos. Nos.	5 17		
3.11	10A 1 way SP big rocker switch c/w back box: a) Aras 1 at Switch Panel SP (Detail 'C1') b) Aras 2 at Switch Panel SP (Detail 'C2')	Nos. Nos.	5 17		
3.12	Socket outlet point using 2 x 2.5 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin flushed switched socket outlet (400mm above finished floor level): a) Aras 2	Nos.	1		
3.13	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin flushed switched socket outlet (400mm above finished floor level): a) Aras 1 b) Aras 2	Nos. Nos.	12 20		
3.14	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin flushed switched socket outlet (1450mm above finished floor level): a) Aras 1	Nos.	8		

3.15	Socket outlet point using 2 x 4.0 sq .mm PVC cable & CPC c/w 1 gang 13A 3 pin flushed switched socket outlet for Water Boiler (1450mm above finished floor level): a) Aras 1	No.	1		
3.16	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin flushed switched socket outlet for Hand Dryer (1450mm above finished floor level): a) Aras 1	No.	1		
3.17	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w 1 gang 13A 3 pin flushed switched socket outlet for Fire Alarm Panel (1450mm above finished floor level) (extra 1m length to be coil in box c/w blank plate): a) Aras 1	No.	1		
3.18	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC c/w underfloor type SSO through underfloor trunking system from Distribution Boards (DB's) to underfloor service box: a) Aras 2 for Pejabat	Nos.	18		
3.19	Socket outlet point using 2 x 4.0 sq. mm PVC cable c/w CPC with 32A DP switch with indicator light and 15A 3 pin round flushed switched socket outlet for wall mounted aircond (300mm below ceiling level): a) Aras 1 b) Aras 2	Nos. Nos.	2 2		
3.20	Socket outlet point using 2 x 4.0 sq. mm PVC cable c/w CPC with 32A DP switch with indicator light and 15A 3 pin round metalclad switched socket outlet for ceiling cassette aircond (above ceiling level): a) Aras 1 b) Aras 2	Nos. Nos.	2 4		
3.21	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC with 20A DP switch with indicator light c/w 1 gang 13A 3 pin metalclad unswitched socket outlet point for projector (above ceiling level): a) Aras 1	Nos.	2		
3.22	Socket outlet point using 2 x 4.0 sq. mm PVC cable & CPC with 20A DP switch c/w 1 gang 13A 3 pin metalclad unswitched socket outlet point for motorised screen (above ceiling level): a) Aras 1	No.	1		
4.0	LUMINAIRES AND EQUIPMENT				
4.1	INDOOR LED LUMINAIRES				
4.1.1	T8 LED LUMINAIRES				
4.1.1.1	1 x (12 to 20watt) Surface Mounted Weatherproof Bare Channel (IP65) c/w Self Ballasted Double Capped T8 LED Tube (1200mm, CCT 4000K): a) Aras Bumbung	Nos.	4		
4.1.1.2	2 x (12 to 20watt) Wall Mounted Bare Channel c/w Self Ballasted Double Capped T8 LED Tube (1200mm, CCT 4000K): a) Aras 1 b) Aras 2	Nos. Nos.	13 14		
4.1.1.3	2 x (12 to 20watt) Surface Mounted Bare Channel c/w Self Ballasted Double Capped T8 LED Tube (1200mm, CCT 4000K): a) Aras 1 b) Aras 2	Nos. Nos.	8 2		

4.1.1.4	2 x (12 to 20watt) Recessed Mounted Luminaire c/w Self Ballasted Double Capped T8 LED Tube, Single Parabolic Reflector & Cross Blade Louvre (1200mm x 600mm module, Tee Bar Ceiling, CCT 4000K): a) Aras 1 b) Aras 2	Nos. Nos.	17 15		
4.1.1.5	3 x (12 to 20watt) Recessed Mounted Luminaire c/w Self Ballasted Double Capped T8 LED Tube, Single Parabolic Reflector & Cross Blade Louvre (1200mm x 600mm module, Tee Bar Ceiling, CCT 4000K : a) Aras 1	Nos.	78		
4.1.1.6	1 x 38watt T8 Prison Luminaire c/w Acrylic Lens Cover (1200mm, IK10, IP66, CCT 4000K): a) Aras 1 b) Aras 2	No. Nos.	1 101		
4.1.2	LED DOWNLIGHT LUMINAIRES				
	i) The luminaires shall consist two separate components comprising of LED driver and optical system for LED Downlight. ii) The construction of the luminaires shall be either two separate housing/compartements or integrated.				
4.1.2.1	18 to 20watt LED Recessed Downlight Luminaire c/w frosted glass diffuser (150mm dia., CCT 4000K): a) Aras 1 a) Aras 2	Nos. Nos.	14 6		
4.1.2.2	18 to 20watt LED Recessed Downlight Luminaire c/w frosted glass diffuser (200mm dia., CCT 4000K): a) Aras 1	Nos.	20		
4.1.2.3	18watt LED Pendant Luminaire (100mm dia., CCT 3000K): a) Aras 1	Nos.	50		
4.1.3	OTHERS LUMINAIRES				
4.1.3.1	50 to 100watt LED Floodlight c/w bracket, die cast aluminium body, durable high quality paint minimises effect of corrosion, tempered glass, integral non-dimmable LED Driver with 1.5kV surge protection and others necessary accessories (IP66, CCT 5000K):	Nos.	11		
4.1.4	EMERGENCY LIGHT & KELUAR SIGN				
4.1.4.1	Wall mounted LED emergency luminaire c/w 3 hours duration battery back-up (approved by Jabatan Bomba): a) Aras 1	Nos.	4		
4.1.4.2	Recessed type LED emergency luminaire c/w 3 hours duration battery back-up (approved by Jabatan Bomba): a) Aras 1 b) Aras 2	Nos. Nos.	10 5		
4.1.4.3	Wall mounted LED Keluar Sign c/w 3 hours duration battery back-up (approved by Jabatan Bomba): a) Aras 1	No.	1		
4.2	FAN				
4.2.1	400mm dia. Auto Fan c/w regulator and all necessary accessories: a) Aras 1 b) Aras 2	Nos. Nos.	5 17		

5.0 UNDERFLOOR TRUNKING SYSTEM				
i) To supply, install, testing and commissioning of underfloor trunking system for distribution of power, telecommunication and networking services as per specification and drawing. As per drawing no.:- HQL.24/2022/LV/14(16)				
5.1 Single compartment heavy duty gauge super Heavy Duty uPVC ducting of the following sizes and c/w suitable fixing clip, jointing sleeve, etc.: 3 way of size 75mm x 25mm a) Aras 2 (approximate length: 12 meter)	Lump Sum	Lump Sum		
5.2 Supply and install Junction box c/w zinc alloy die-casting cover, gasket, trapframe, disposable lid, etc. of the following sizes and type: 250mm x 250mm x 56mm 3 compartment c/w galvanised steel flyover. a) Aras 2	Nos.	2		
5.3 Supply and install Underfloor Service outlet box c/w zinc alloy die-casting cover of size: 250mm x 250mm x 56mm 3 compartment service outlets for 3 Nos 1 gang 13A 3 pin switched socket outlet underfloor type, 1 no. (RJ 45) underfloor type angular faceplate for telephone and 1 no. (RJ 45) underfloor type angular faceplate for network point. (Flushed socket outlets with side wire entries to suit underfloor service boxes. The trap and frame height to suit finished floor level (6mm for carpet and 9mm for vinyl tile)). a) Aras 2	Nos.	6		
5.4 Supply and install Vertical access box of size: 225mm(W) x 25mm(H) 3 compartment vertical access box. a) Aras 2	No.	1		
6.0 SWITCH DISCONNECTOR (ISOLATOR) / MCCB				
i) To supply and install Metalclad / Polycarbonate Switch Disconnecter (Isolator).				
6.1 20A DP Polycarbonate Switch Disconnecter (Isolator) c/w termination for wall mounted aircond: a) Aras 1 b) Aras 2	No. No.	1 1		
6.2 32A DP Metalclad Switch Disconnecter (Isolator) c/w termination & fixing bracket for ceiling cassette aircond: a) Aras 1	Nos.	6		
6.3 20A TPN Metalclad Switch Disconnecter (Isolator) c/w termination for hose reel pump: a) Aras 1	No.	1		
6.4 20A TPN Weatherproof Switch Disconnecter (Isolator) c/w termination for hydropneumatic pump (install at plate iron with angle iron stand (height = 900mm) as per drawing no. HQL24/2022/LV/15(16) (Approved by S.O): a) Aras Bumbung	No.	1		
6.5 32A TPN Metalclad Switch Disconnecter (Isolator) c/w termination for booster pump: a) Aras 1	No.	1		
6.6 125A TPN MCCB c/w Electrogalvanised Enclosure with termination, extended busbar for ceiling cassette aircond: a) Aras 1	No.	1		

6.7	16 TPN Weatherproof Switch Disconnecter (Isolator) c/w termination for pump SSTS: a) Rumah SSTS	No.	1		
7.0	SUBMAINS CABLES				
i)	To supply, install, testing and commissioning submains cables as per drawing and specifications.				
ii)	Submain Cable in electrogalvanised trunking c/w CPC, bracket, supports and other required accessories.				
7.1	2 x 2.5 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) MDB - M to 20A DP Polycarbonate Switch Disconnecter (Isolator) for wall mounted aircond at Aras 1 (approximate length 10 meter)	Lump Sum	Lump Sum		
7.2	2 x 10 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) MDB - M to 20A DP Polycarbonate Switch Disconnecter (Isolator) for wall mounted aircond at Aras 2 (approximate length 40 meter)	Lump Sum	Lump Sum		
7.3	2 x 35 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) MDB - M to 32A DP Metalclad Switch Disconnecter (Isolator) for ceiling cassette aircond at Aras 1 (approximate length 80 meter) b) MDB - M to 32A DP Metalclad Switch Disconnecter (Isolator) for ceiling cassette aircond at Aras 1 (approximate length 80 meter) c) MDB - M to 32A DP Metalclad Switch Disconnecter (Isolator) for ceiling cassette aircond at Aras 1 (approximate length 80 meter) d) MDB - M to 32A DP Metalclad Switch Disconnecter (Isolator) for ceiling cassette aircond at Aras 1 (approximate length 80 meter)	Lump Sum Lump Sum Lump Sum Lump Sum	Lump Sum Lump Sum Lump Sum Lump Sum		
7.4	2 x 16 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) MDB - M to 32A DP Metalclad Switch Disconnecter (Isolator) for ceiling cassette aircond at Aras 1 (approximate length 40 meter) b) MDB - M to 32A DP Metalclad Switch Disconnecter (Isolator) for ceiling cassette aircond at Aras 1 (approximate length 40 meter)	Lump Sum Lump Sum	Lump Sum Lump Sum		
7.5	4 x 4 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) MDB - M to 20A TPN Metalclad Switch Disconnecter (Isolator) for hose reel pump at Aras 1 (approximate length 25 meter)	Lump Sum	Lump Sum		
7.6	4 x 16 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) MDB - M to 20A TPN Weatherproof Switch Disconnecter (Isolator) for hydropneumatic pump at Aras Bumbung (approximate length 85 meter)	Lump Sum	Lump Sum		
7.7	4 x 6 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) MDB - M to 32A TPN Metalclad Switch Disconnecter (Isolator) for booster pump at Aras 1 (approximate length 25 meter)	Lump Sum	Lump Sum		
7.8	4 x 70 sq. mm XLPE/PVC cable on HDG Perforated Cable Tray c/w CPC from: a) MDB - M to 125A TPN MCCB c/w Electrogalvanised Enclosure for ceiling cassette aircond at Aras 1 (approximate length 70 meter)	Lump Sum	Lump Sum		
7.9	4 x 10 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) SSB - NKT to DB - 1L at Bilik Suis, Aras 1 (approximate length 10 meter)	Lump Sum	Lump Sum		
7.10	2 x 6 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) SSB - EKT to DB - ELP at Bilik Suis, Aras 1 (approximate length 10 meter)	Lump Sum	Lump Sum		
7.11	4 x 25 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) SSB - EKT to DB - E1LP at Bilik PYB 1, Aras 1 (approximate length 75 meter)	Lump Sum	Lump Sum		

7.12	2 x 6 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) SSB - EKT to DB - E1ELV at Bilik Suis, Aras 1 (approximate length 10 meter)	Lump Sum	Lump Sum		
7.13	2 x 6 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) SSB - NKT to DB - 1PAC at Bilik Suis, Aras 1 (approximate length 10 meter)	Lump Sum	Lump Sum		
7.14	4 x 16 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) SSB - NKT to DB - 2LP at Bilik Suis, Aras 2 (approximate length 50 meter)	Lump Sum	Lump Sum		
7.15	2 x 35 sq. mm PVC cable in electrogalvanised trunking c/w CPC from: a) SSB - EKT to DB - E2LP at Bilik Suis, Aras 2 (approximate length 50 meter)	Lump Sum	Lump Sum		
7.16	2 x 70 sq. mm XLPE/PVC cable on HDG Perforated Cable Tray c/w CPC from: a) MDB - M to DB - 2AC at Bilik Suis, Aras 2 (approximate length 50 meter)	Lump Sum	Lump Sum		
7.17	4 x 50 sq. mm XLPE/PVC cable on HDG Perforated Cable Tray c/w CPC from: a) SSB - NKT to MDB - M at Bilik Suis, Aras 1 (approximate length 10 meter)	Lump Sum	Lump Sum		
7.18	4 x 35 sq. mm XLPE/PVC cable on HDG Perforated Cable Tray c/w CPC from: a) SSB - NKT to Power Factor Correction Board SSB-NKT at Bilik Suis, Aras 1 (approximate length 10 meter)	Lump Sum	Lump Sum		
8.0	MAIN DISTRIBUTION BOARD (MDB)				
i)	To supply, install, test and commission wall mounted Electrogalvanised MDB c/w bracket and including all cable terminations as per specification and drawing. As per drawing no.:- HQL.24/2022/LV/05(16)				
8.1	MDB-M at Aras 1	Lot.	1		
9.0	DISTRIBUTION BOARD (DB)				
i)	To supply, install, test and commission wall mounted Electrogalvanised DB's c/w bracket and including all cable terminations as per specification and drawing. As per drawing no.:- HQL.24/2022/LV/06(16) HQL.24/2022/LV/07(16) HQL.24/2022/LV/08(16) HQL.24/2022/LV/09(16) HQL.24/2022/LV/10(16)				
9.1	8 Ways TPN DB - 1L c/w SPD in separate Electrogalvanised Enclosure at Aras 1	Lot.	1		
9.2	14 Ways SPN DB - ELP at Aras 1	Lot.	1		
9.3	6 Ways TPN DB - E1LP c/w SPD in separate Electrogalvanised Enclosure at Aras 1	Lot.	1		
9.4	6 Ways SPN DB - E1ELV c/w SPD in separate Electrogalvanised Enclosure at Aras 1	Lot.	1		

9.5	6 Ways SPN DB - 1PAC at Aras 1	Lot.	1		
9.6	6 Ways TPN DB - 2LP at Aras 2	Lot.	1		
9.7	14 Ways SPN DB - E2LP at Aras 2	Lot.	1		
9.8	10 Ways SPN DB - 2AC at Aras 2	Lot.	1		
10.0	SWITCH PANEL				
	i) To supply, install, test and commission wall mounted Electrogalvanised Switch Panel c/w bracket and including all cable terminations as per specification and drawing. As per drawing no.: HQL.24/2022/LV/16(16)				
10.1	Electrogalvanised Switch Panel (SP) for lighting:				
	a) SP (See Detail 'B1') at Aras 1	Lot.	1		
	b) SP (See Detail 'B2') at Aras 2	Lot.	1		
10.2	Electrogalvanised Switch Panel (SP) for Auto Fan & Regulator:				
	a) SP (See Detail 'C1') at Aras 1	Lot.	1		
	b) SP (See Detail 'C2') at Aras 2	Lot.	1		
SUB-TOTAL FOR ITEM (B) CARRIED TO RINGKASAN TENDER :					

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C) SWITCHBOARD & POWER FACTOR CORRECTION BOARD

BILL OF QUANTITIES (All Quantities are Provisional and Subjected To Final Remeasurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
1.0 SUB SWITCHBOARD (NON ESSENTIAL)					
	As per drawing no.:- HQL.24/2022/LV/03(16)				
	i) To supply, install, testing and commissioning Floor Mounted Cubicle Type Front Access Electrogalvanised Sub Switchboard (25kA @ 400V, 1sec) including all cable terminations as per specification and drawing.				
1.1	Sub Switchboard SSB - NKT at Bilik Suis, Aras 1	Lot.	1		
2.0 SUB SWITCHBOARD (ESSENTIAL)					
	As per drawing no.:- HQL.24/2022/LV/03(16)				
	i) To supply, install, testing and commissioning Wall Mounted Electrogalvanised Sub Switchboard (25kA @ 400V, 1sec) including all cable terminations as per specification and drawing.				
2.1	Sub Switchboard SSB - EKT at Bilik Suis, Aras 1	Lot.	1		
3.0 EARTHING SYSTEM					
	As per drawing no.:- HQL.24/2022/LV/03(16)				
3.1	Protective conductor 25mm x 6mm tinned copper bar for Sub Earthing Bar SSB to SSB - NKT & SSB - EKT	Lump Sum	Lump Sum		
3.2	25mm x 6mm tinned copper Sub Earthing Bar c/w porcelain insulators to mount the main earthing bar and a transparent protective cover with label engraved and marked in red 'Sub Earthing Bar - Safety Electrical Connections - Do Not Remove' to cover full length of the sub earthing bar (SEB shall be Factory Ready)	Lump Sum	Lump Sum		
3.3	Main protective bonding 25mm x 3mm copper tape	Lump Sum	Lump Sum		
3.4	Earthing conductor 2 x 25mm x 3mm copper tape	Lump Sum	Lump Sum		
3.5	25mm x 3mm copper tape for Telecommunication Bonding Conductor (TBC)	Lump Sum	Lump Sum		
3.6	≥ 14mm dia. x 3000mm (L) copper jacketed (minimum radial thickness 0.25mm) steel core earth electrode c/w precast heavy duty concrete earth chamber & removable concrete cover etc. Repeat if required ($R < 3\Omega$)	Lots.	2		
3.7	Test lead 2.5 sq. mm green cable current probe & potential probe	Lump Sum	Lump Sum		
3.8	≥ 14mm dia. x 1500mm (L) copper jacketed (minimum radial thickness 0.25mm) steel core earth electrode c/w precast heavy duty concrete earth chamber & removable concrete cover etc.	Lots.	2		

	<p>Note:-</p> <p>a) The connection of the copper tape to the earth electrode shall be exothermic welded connections.</p> <p>b) The connection of the 2.5mm² green PVC cable to the earth electrode shall be by clamp.</p> <p>4.0 POWER FACTOR CORRECTION BOARD</p> <p><i>(Separate board placed beside the SSB)</i></p> <p>i) To supply, install, testing and commissioning Electrogalvanised cubicle type Floor Mounted (25kA @ 400V, 1sec) Form 2B Power Factor Correction Board as per specification and drawing.</p> <p>As per drawing no.:- HQL.24/2022/LV/03(16) HQL.24/2022/LV/04(16)</p> <p>4.1 Power Factor Correction Board for SSB-NKT (110 KVAR 8 steps) at Bilik Suis, Aras 1</p> <p>5.0 ELECTROGALVANISED TAP OFF UNIT</p> <p>i) To supply, install, testing and commissioning Electrogalvanised Tap Off Unit - KT (25kA @ 400V, 1sec) including all cable terminations as per specification and drawing (install at plate iron with angle iron stand (height = 900mm) (Approved by S.O).</p> <p>As per drawing no.:- HQL.24/2022/LV/01(16)</p> <p>5.1 Electrogalvanised Tap Off Unit - KT at Existing Bilik MSB</p>				
		Lot.	1		
		Lot.	1		
SUB-TOTAL FOR ITEM (C) CARRIED TO RINGKASAN TENDER :					

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D) UNDERGROUND CABLES & EXTERNAL ELECTRICAL INFRASTRUCTURE

BILL OF QUANTITIES (All Quantities are Provisional and Subjected To Final Remeasurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>To supply, install, testing and commissioning as per drawing and specifications.</p> <p>All quantities given are PROVISIONAL.</p> <p>The actual quantities installed shall be measured on site after completion and prices adjusted accordingly.</p> <p>All cable shall be handled, laid and installed accordingly to the specification. All prizes must included excavation of trenches, clean sand, ducting, cable markers, making good and etc. as per specification.</p> <p>Notes:</p> <p>i) Complete with Heat Shrinkable dry type cable termination / cable gland c/w earth tag washer and protective conductor.</p> <p>ii) If the cable size >50 sq. mm, the cable termination shall be using Heat Shrinkable cable termination.</p> <p>iii) For Cable size ≤50 sq. mm, the cable termination shall be using Cable Gland c/w Earth Tag Washer and Protective Conductor.</p> <p>1.0 SUBMAINS CABLES AT EXISTING BILIK MSB</p> <p>i) To supply, install, testing and commissioning submains cables as per drawing and specifications.</p> <p>ii) Submain Cable on HDG Perforated Cable Tray c/w CPC, bracket, supports and other required accessories.</p> <p>As per drawing no.:- HQL.24/2022/LV/01(16) HQL.24/2022/LV/03(16)</p> <p>1.1 4 x 70 sq. mm XLPE/PVC cable on HDG Perforated Cable Tray c/w CPC from: a) Existing Busbar MSB to New Electrogalvanised Tap Off Unit - KT at Existing Bilik MSB</p> <p>1.2 4C 240 sq. mm XLPE/SWA/PVC cable on HDG Perforated Cable Tray c/w CPC from: a) New Electrogalvanised Tap Off Unit - KT to New Electrical Pit at Existing Bilik MSB</p> <p>2.0 UNDERGROUND CABLES</p> <p>i) To supply, install, testing and commissioning copper cables.</p> <p>As per drawing no.:- HQL.24/2022/LV/01(16) HQL.24/2022/LV/03(16)</p> <p>2.1 4C 240 sq. mm XLPE/SWA/PVC Underground Cable from: a) New Electrogalvanised Tap Off Unit - KT at Existing Bilik MSB to New SSB - NKT at Bilik Suis, Aras 1, Kompleks Latihan Tenun</p>				
		Meter	3		
		Meter	6		
		Meter	230		

2.2	4C 6.0 sq. mm PVC/SWA/PVC Underground Cable from: a) New SSB - NKT at Bilik Suis, Aras 1, Kompleks Latihan Tenun to New 16A TPN Switch Disconnecter (Isolator) at Rumah SSTs	Meter	55		
3.0	PIPE CROSSING / DUCTING As per drawing no.:- HQL.24/2022/LV/01(16)				
3.1	To supply and install 150mm dia. HDPE PN10 pipe for road crossing, cable crossing hardstanding and tarmac area.	Meter	15		
3.2	To supply and install 100mm dia. G.I pipe Class 'B' on the wall and to be laid underground and to be extended 600mm beyond the drain.	Meter	10		
4.0	MANHOLE As per drawing no.:- HQL.24/2022/LV/01(16)				
4.1	To supply and install Electrical Pit c/w removable cover 460mm (L) x 460mm (W) x 760mm (D)	No.	1		
SUB-TOTAL FOR ITEM (D) CARRIED TO RINGKASAN TENDER :					

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E) LIGHTNING PROTECTION SYSTEM

BILL OF QUANTITIES (All Quantities are Provisional and Subjected To Final Remeasurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>To supply, install and testing as per drawing and specifications.</p> <p>All quantities given are PROVISIONAL.</p> <p>The actual quantities installed shall be measured on site after completion and prices adjusted accordingly.</p> <p>1.0 LIGHTNING PROTECTION SYSTEM</p> <p>i) To supply, instal and test the lightning protection system as per specification and drawing.</p> <p>As per drawing no.:- HQL.22/2024/LPS/01(04) HQL.22/2024/LPS/02(04) HQL.22/2024/LPS/03(04) HQL.22/2024/LPS/04(04)</p>				
1.1	25mm x 3mm aluminium tape c/w necessary supports, brackets, etc. for air termination system, approved tested and accessories as per standard IEC 62305	Lump Sum	Lump Sum		
1.2	25mm x 3mm copper tape c/w necessary supports, brackets, etc. for down conductor c/w 50mm x 25mm heavy duty uPVC ducting, 100mm x 100mm x 38mm PVC junction box c/w cover and DC Tape Clip. Shall be concealed in RC column	Lump Sum	Lump Sum		
1.3	Testing joint / Bimetalic Testing Joint	Nos.	8		
1.4	To supply and install Heavy duty inspection earth chamber with removable concrete cover c/w 14mm dia. x 3000mm length copper jacketed steel core earth electrodes (with exothermic welded connections). Repeat if required (R < 10 ohm)	Nos.	8		
1.5	To supply and install aluminium air terminal 16mm dia. x 500mm length c/w lock nut and air base terminal as per specification and standard IEC 62561	Set	4		
	<p>2.0 TESTING AND COMMISSIONING</p>				
2.1	To conduct earth electrode resistant test and contuinity test. All the test result must be submitted to S.O. Representative with endorsed by Competent Person two (2) weeks after the completing of the testing.	Lump Sum	Lump Sum		
2.2	Testing and Commissioning.	Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (E) CARRIED TO RINGKASAN TENDER :					

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F) STANDBY GENERATOR SET

BILL OF QUANTITIES (All Quantities are Provisional and Subjected To Final Remeasurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>The catalogues for Standby Genset shall be submitted for technical evaluation.</p> <p>FAILURE to submit will render the tender to be DISQUALIFIED.</p> <p>To supply, install, testing and commissioning to use as per drawing and specification.</p> <p>1.0 AMF BOARD</p> <p>1.1 Wall Mounted Eelctrogalvanised AMF Board, current transformers, Digital Power Meter (DPM), hour meter, kWh meter, control and indicator alarm, phase switch, microprocessor based feeder protection and bay control unit c/w CT, control relay fault alarm, cable box etc. as per specification and drawing. (25kA @ 400V, 1 Sec)</p> <p>As per drawing no.:- HQL24/2022/LV/03(16)</p> <p>2.0 STANDBY GENERATOR SET</p> <p>2.1 50kVA, 0.8 p.f, 3 Phase, 400V, 50Hz system, starting system, protective and alarm system, anti vibration, absorption system (e.g. spring, rubber etc.), automatic shuttered louvre and other associated work as per specification and drawing</p> <p>As per drawing no.:- HQL24/2022/LV/03(16)</p> <p>2.2 24Vdc heavy duty Nickel Cadmium Battery of sufficient capacity (as recommended provide minimum of six (6) successive abortive starts of the engine without recharging shall be provided). The battery shall be equipped with external recombinators which are designed to effect recombination of oxygen and hydrogen to increase the intervals between topping up with distilled water to at least five years. A durable battery stand shall be supplied and installed.</p> <p>2.3 Battery charger (stand alone unit) for Nickel Cadmium Battery. The unit shall be capable of : a) Continuous Charge 14 Amps b) Boost Charge 30 Amps a) Trickle Charge</p> <p>2.4 Electric motor-driven pump for transferring fuel into the fuel tank c/w accessories, fuel valve, etc.</p> <p>2.5 Manual fuel pump c/w accessories as per drawing and specification</p> <p>2.6 Tank c/w piping and other associated work as per drawing and specification</p> <p>2.7 To supply a full tank capacity of fuel at time of handover</p>	<p>Lot.</p> <p>Lot.</p> <p>Set</p> <p>Set</p> <p>Lot.</p> <p>Lot.</p> <p>Lot.</p> <p>Lot.</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p>

3.0 CABLES				
As per drawing no.:- HQL.24/2022/LV/03(16)				
3.1 4 x 1C 16 sq. mm MI/MS Fire Resistant cable (insulated and sheathed) on Perforated Hot Dipped Galvanised cable tray and termination from AMF Board to 50kVA Generator Set	Lump Sum	Lump Sum		
3.2 4 x 1C 16 sq. mm MI/MS Fire Resistant cable (insulated and sheathed) on Perforated Hot Dipped Galvanised cable tray c/w CPC and termination from SSB - EKT to AMF Board	Lump Sum	Lump Sum		
3.3 4 x 16 sq. mm PVC cable in electrogalvanised trunking from M&E interlocks to 60A TPN MCCB at SSB-NKT	Lump Sum	Lump Sum		
3.4 Generator under voltage relay cable using 4 x 2.5 sq.mm MI/MS Fire Resistant cable on Perforated Hot Dipped Galvanised cable tray from SSB - EKT to standby generator set as required	Lump Sum	Lump Sum		
4.0 ACOUSTIC TREATMENT				
4.1 To supply and install a complete acoustic or noise reduction system for the generator and generator room c/w solid acoustic fire rated door (1 hours) with frame acoustic seals, hinge's lock set, primary and secondary exhaust silencers, inlet and outlet air attenuators for radiators to specification and requirement of Dept. of Environment. Shop drawings to be approved by S.O. prior installation.	Lump Sum	Lump Sum		
5.0 GENERATOR SET EARTHING				
As per drawing no.:- HQL.24/2022/LV/03(16)				
5.1 Protective conductor of 25mm x 6mm tinned copper tape for Frame to Genset Earthing Bar	Lump Sum	Lump Sum		
5.2 25mm x 6mm tinned copper Genset Earthing Bar (Factory Ready) c/w porcelain insulators to mount the main earthing bar and a transparent protective cover with label engraved and marked in red " Main Earthing Bar - Safety Electrical Connections - Do Not Remove" to cover full length of the main earthing bar	Lump Sum	Lump Sum		
5.3 Main Protective Bonding 25mm x 3mm tinned copper tape from MEB Genset to Sub Earthing Bar SSB - NKT	Lump Sum	Lump Sum		
5.4 Earthing conductor 2 x 25mm x 3mm copper tape	Lump Sum	Lump Sum		
5.5 ≥14mm dia. x 3000mm (L) copper jacketed (minimum radial thickness 0.25mm) steel core earth electrode c/w precast heavy duty concrete earth chamber & removable concrete cover etc.	Lots.	2		
Note:- a) The connection of the copper tape to the earth electrode shall be exothermic welded connections. Repeat if required (R<20 ohm)				
6.0 NEUTRAL TO EARTH				
6.1 1 x 16 sq. mm PVC BLACK cable as per drawing from N-E to MEB Genset (Neutral to Earth) As per drawing no.:- HQL.24/2022/LV/03(16)	Lump Sum	Lump Sum		
7.0 SERVICE AND MAINTENANCE WORKS DURING DLP				
7.1 To carry out service and maintenance works for Three Phase Generator Set during Defect Liability Period as per Specification for Three Phase Generator Set (LS-5 Appendix C - Schedule of Service and Maintenance)	Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (F)				
CARRIED TO RINGKASAN TENDER :				

**PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR,
PAHANG**

NO. TENDER : JKR/CKE/22983/2024

G) MISCELLANEOUS

BILL OF QUANTITIES (All Quantities are Provisional and Subjected To Final Remeasurement)

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
1.0 DUCT SEALS					
1.1	To supply and install duct seal for all cable entry to all buildings.	Lump Sum	Lump Sum		
2.0 FIRE BARRIERS					
2.1	Supply and install fire barriers for minimum two (2) hours fire rating as per Jabatan Bomba requirement and UBBL to cover all floor/wall openings and Riser Rooms for cable access using 100mm thick mineral wool and 12mm thick non-sag self-leveling fire stop sealant and accessories to UL standards.	Lump Sum	Lump Sum		
3.0 HACKING AND MAKING GOOD					
3.1	Breaking, hacking, cutting holes / coring and making good, restoration, backfilling and permanent reinstatements of damaged brickwall, roads, drains, hardstandings, tarmac area, IBS panel other civil works, etc. necessary for the installation of the system.	Lump Sum	Lump Sum		
4.0 SWITCHROOM					
	To provide switchroom peripherals, labels and signages as follows :-				
4.1	Bilik Suis a) Signage 'Bilik Suis' at Bilik Suis b) 'Dilarang Masuk', 'Bahaya', 'Dilarang Merokok' c) Rubber mat of thickness not less than 6mm & 1000mm width in front of full length of switchboard d) Electrical Layout and Schematic Diagram	Lump Sum	Lump Sum		
4.2	Bilik ICT/ELV a) Signage 'Bilik ICT/ELV ' at Bilik ICT/ELV b) 'Dilarang Masuk' , 'Bahaya', 'Dilarang Merokok' c) Electrical Layout and Schematic Diagram	Lump Sum	Lump Sum		
5.0 LABELING / CIRCUIT TAGGING					
5.1	To provide labeling at faceplate and circuit tagging at DB's.	Lump Sum	Lump Sum		
6.0 CLEAN SAND					
6.1	All trenches in switchrooms shall filled up with clean sand to a level above cable ducts.	Lump Sum	Lump Sum		

7.0	TESTING				
7.1	To inspect and carry out testing for all wiring installations: a) Insulation Resistance and Continuity Tests b) Earth Electrode Resistance Tests c) RCD Tests d) Phase Sequence Tests All the test result must be submitted to S.O Representative with endorsed by Authorised Person	Lump Sum	Lump Sum		
8.0	TRAINING				
8.1	Comprehensive training as per specification for: a) Users training, operation of all electrical system b) Principle operation and maintenance prosedure for electrical system	Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (G) CARRIED TO RINGKASAN TENDER :					

**PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR,
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NO. TENDER : JKR/CKE/22983/2024

H) CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM

All quantities are PROVISIONAL. Actual quantities will be measured at site.

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>All quantities given are PROVISIONAL. The actual quantity installed shall be measured on site after completion and prices adjusted accordingly.</p> <p>Manufacturer's catalogues and technical specification shall be submitted. Failure to do so may result in failure to comply to technical specifications.</p> <p>Contractor shall deemed to have examined the site.</p> <p>Works shall include all termination, labelling and interacking cablings within equipment rack c/w all necessary connectors, mountings and accessories.</p> <p>All network infrastructure cabling and related accessories shall be of type as approved in the JKR JMAL website.</p> <p>All cabling and wiring infrastructure works shall be referred to the current JKR Specification for Low Voltage Internal Electrical Installation (L-S1).</p>				
1.0	TO SUPPLY AND INSTALL				
i)	All works carried out shall comply to the specifications and drawings.				
1.1	Ceiling recessed type varifocal IR dome camera c/w 1.6mm dia. low carbon galvanized steel wire, soffit cleat/ wire hanger for suspension system and other necessary accessories.	Nos.	18		
1.2	Surface mounted type varifocal IR dome camera c/w mounting box and other necessary accessories.	Nos.	15		
1.3	Varifocal IR bullet camera c/w mounting box and other necessary accessories.	Nos.	7		
1.4	Corner mount vandal resistant IR camera c/w other necessary accessories.	Nos.	6		
1.5	Network video recorder (NVR) c/w 240TB storage capacity, CCTV management software and camera licenses.	Lot	1		
1.6	CCTV workstation c/w 22" LCD monitor, MS Office, antivirus software and other necessary equipment to ensure full functionality as per drawing and specification.	No.	1		
1.7	Display CPU for LED monitor c/w antivirus software and other necessary equipment to ensure full functionality as per drawing and specification.	No.	1		
1.8	50" LED monitor c/w display port to HDMI adapter, HDMI cables, bracket as per drawing and specification.	No.	1		
1.9	Wall bracket system for all the LED monitors. The bracket shall be made of epoxy painted sheet steel c/w tilt adjustment mechanism.	Lot	1		

1.10	CCTV operator table made of epoxy painted electrogalvanized sheet steel suitable for a minimum of 2 workstations with monitors and 2 person operation c/w 2 CPU compartments, 2 drawers and 2 nos swivel chairs.	Lot	1		
2.0	OTHERS				
2.1	Testing, commissioning and handover in approved working order of the complete CCTV system.	Lump Sum	Lump Sum		
2.2	Training to client which includes system description, equipment, operation and maintenance. Training duration shall be based on the complexity of the installed system. The number of attendees shall be as advised by the client.	Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (H) CARRIED TO RINGKASAN TENDER :					

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NO. TENDER : JKR/CKE/22983/2024

I) ELECTRONIC ACCESS CONTROL SYSTEM

All quantities are PROVISIONAL. Actual quantities will be measured at site.

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>All quantities given are PROVISIONAL. The actual quantity installed shall be measured on site after completion and prices adjusted accordingly.</p> <p>Manufacturer's catalogues and technical specification shall be submitted. Failure to do so may result in failure to comply to technical specifications.</p> <p>Contractor shall deemed to have examined the site.</p> <p>Works shall include all termination, labelling and interacking cablings within equipment rack c/w all necessary connectors, mountings and accessories.</p> <p>All network infrastructure cabling and related accessories shall be of type as approved in the JKR JMAL website.</p> <p>All cabling and wiring infrastructure works shall be referred to the current JKR Specification for Low Voltage Internal Electrical Installation (L-S1).</p>				
1.0	CABLING				
	i) All internal cabling shall be in G.S conduit/ electrogalvanised (EG) trunking.				
	ii) Wiring works (inclusive breaking, hacking, cutting hole, and making good, restoration, backfilling and permanent reinstatements of damage brickwall, etc. necessary for the installation of the system.				
	iii) All works carried out shall comply to the specifications and drawings.				
1.1	System cabling using RS 485 shielded cable (no. of core to suit requirement) from access controller to card readers c/w all necessary accessories in conduit.	Nos.	11		
1.2	System cabling using 2 x 2.5 sq. mm PVC cable c/w CPC from access controller to siren with strobe light c/w terminal block and all necessary accessories in conduit.	Nos.	6		
2.0	TO SUPPLY AND INSTALL				
	i) All works carried out shall comply to the specifications and drawings.				
2.1	Electronic access control management software.	Lot	1		
2.2	Access Control Workstation c/w MS Office and antivirus software.	No.	1		
2.3	Desktop card reader.	No.	1		

2.4	Access controller c/w power supply, battery, enclosure as per drawing and specification.	Nos.	6		
2.5	Card reader as per drawing and specification.	Nos.	11		
2.6	Contactless smart card as per specification.	Nos.	15		
2.7	Siren with strobe light inclusive of power supply.	Nos.	2		
3.0	OTHERS				
3.1	Testing, commissioning and handover in approved working order of the complete Access Control system.	Lump Sum	Lump Sum		
3.2	Training to client which includes system description, equipment, operation and maintenance. Training duration shall be based on the complexity of the installed system. The number of attendees shall be as advised by the client.	Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (I) CARRIED TO RINGKASAN TENDER :					

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PAHANG**

NO. TENDER : JKR/CKE/22983/2024

J) VISUAL SYSTEM

All quantities are PROVISIONAL. Actual quantities will be measured at site.

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>All quantities given are PROVISIONAL. The actual quantity installed shall be measured on site after completion and prices adjusted accordingly.</p> <p>Manufacturer's catalogues and technical specification shall be submitted. Failure to do so may result in failure to comply to technical specifications.</p> <p>Contractor shall deemed to have examined the site.</p> <p>Works shall include all termination, labelling and interacking cablings within equipment rack c/w all necessary connectors, mountings and accessories.</p> <p>All network infrastructure cabling and related accessories shall be of type as approved in the JKR JMAL website. In the event that the stated brand is not of the type approved in the JKR JMAL website, the contractor shall be required to change the brand appropriately without any cost implication</p> <p>All cabling and wiring infrastructure works shall be referred to the current JKR Specification for Low Voltage Internal Electrical Installation (L-S1).</p>				
1.0	CABLING				
	<p>i) All internal cabling shall be in G.S conduit/ electrogalvanised (EG) trunking.</p> <p>ii) Wiring works (inclusive breaking, hacking, cutting hole, and making good, restoration, backfilling and permanent reinstatements of damage brickwall, etc. necessary for the installation of the system.</p> <p>iii) All works carried out shall comply to the specifications and drawings.</p>				
1.1	Cabling works using CAT 5E shielded twisted pair (STP) cable c/w connector and all other necessary accessories from HDMI receptacle panel to HDMI receiver.	No.	1		
1.2	Cabling works using 2 x 4.0 sq. mm PVC cable c/w CPC and all necessary accessories from wall mounted 20A DP ON/OFF switch to 13A switch socket outlet.	Nos.	2		
1.3	System cabling work using 3 x 1.5 sq. mm PVC cable c/w CPC and all necessary accessories from motorised screen to UP/DOWN switch.	No.	1		

2.0 SUPPLY AND INSTALL					
i)	All works carried out shall comply to the specifications and drawings.				
2.1	HDMI receptacle panel c/w recessed box and other accessories.	No.	1		
2.2	HDMI receiver c/w other necessary accessories as per drawing and specifications.	No.	1		
2.3	3500 ANSI Lumens LCD projector c/w pole, bracket and other necessary accessories as per drawing and specifications.	No.	1		
2.4	108.5" (W) x 67.8" (H) motorised screen (16:10) c/w mounting bracket, up/down switch button and other necessary accessories as per drawing and specifications.	No.	1		
2.5	Factory fitted HDMI cable.	No.	1		
2.6	Custom made enclosure c/w screw and labelled as projector service box as S.O Approval (IP20) as per drawing and specifications.	No.	1		
3 OTHERS					
3.1	Testing, commissioning and handover in approved working order of the complete Visual system.	Lump Sum	Lump Sum		
3.2	Training to client which includes system description, equipment, operation and maintenance. Training duration shall be based on the complexity of the installed system. The number of attendees shall be as advised by the client.	Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (J)					
CARRIED TO RINGKASAN TENDER :					

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K) WALK THROUGH METAL DETECTOR

All quantities are PROVISIONAL. Actual quantities will be measured at site.

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	<p>All quantities given are PROVISIONAL. The actual quantity installed shall be measured on site after completion and prices adjusted accordingly.</p> <p>Supply, install and commissioning of the following in accordance to specification ad drawing. Manufacturer's catalogues, technical specification and test data shall be submitted. Failure to do so may result in failure to comply to technical specifications.</p> <p>Contractor shall deemed to have examined the site.</p> <p>Works shall include all termination, labelling and interacking cablings within equipment rack c/w all necessary connectors, mountings and accessories.</p> <p>All network infrastructure cabling and related accessories shall be of type as approved in the JKR JMAL website. In the event that the stated brand is not of the type approved in the JKR JMAL website, the contractor shall be required to change the brand appropriately without any cost implication</p> <p>All cabling and wiring infrastructure works shall be referred to the current JKR Specification for Low Voltage Internal Electrical Installation (L-S1).</p> <p>1.0 SUPPLY AND INSTALL</p> <p>(i) All works carried out shall comply to the specifications and drawings.</p> <p>(ii) All equipment shall be provided with a standard warranty not less than 2 years from the completion date.</p> <p>1.1 To supply and install a complete set walk through metal detection system c/w UPS, power conditioner and other necessary accessories as per drawing and specifications.</p> <p>2.0 OTHERS</p> <p>2.1 Testing, commissioning and handover in approved working order of the complete Walk-through Metal Detector system.</p> <p>2.2 Training to client.</p>				
		No.	1		
		Lump Sum	Lump Sum		
		Lump Sum	Lump Sum		
SUB-TOTAL FOR ITEM (K) CARRIED TO RINGKASAN TENDER :					

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L) PASSIVE INFRASTRUCTURE

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
A1	STRUCTURED CABLING				
A1.1	HORIZONTAL CABLING				
A1.1.1	Supply, install and terminate Network point with the following requirement:				
	i. Pathways: In electrogalvanised trunking Connecting pathway to down drop: Heavy Duty uPVC conduit				
	ii. Cable: UTP Cat 6A 23 AWG (EIA/TIA) Low Smoke Zero Halogen (LSZH) from patch panel to faceplate / equipment				
	iii. Outlet: Metalclad back box, 1 gang angular faceplate and modular RJ45 jack / 1 gang angular faceplate and modular RJ45 jack comply with underfloor finishing floor				
	a. Camera Point	Nos.	42		
	b. Access Controller Point	Nos.	6		
	c. Network Point	Nos.	14		
	d. Telephone Point	Nos.	14		
	e. Network Printer Point	Nos.	4		
A1.1.2	Supply and install UTP Cat 6A 23 AWG (EIA/TIA) Low Smoke Zero Halogen (LSZH) factory terminated patch cords c/w RJ45 connectors and boots				
	a. 2.0 meter (patch panel to network switch)	Nos.	50		
	b. 1.5 meter (faceplate to end device)	Nos.	32		
A1.2	BACKBONE CABLING				
A1.2.1	FIBRE OPTIC CABLE (Outdoor)				
A1.2.1.1	Supply, install, test and commission Singlemode outdoor corrugated steel-armoured fibre optics cable with the following requirements:				
	i. Type: OS2 singlemode outdoor armoured fibre optics cable. All core shall be terminated to the patch panel.				
	ii. Installation shall be partly in electrogalvanised trunking.				
	8 core from existing fibre optic patch panel at Existing Bilik Server, Blok Pentadbiran to fibre optic patch panel at:				
	a. Bilik ELV/ICT, Aras 1, Kompleks Latihan Tenun	Meter	520		
A1.2.1.2	Termination of 8 core OS2 Singlemode outdoor armoured fibre optic cable c/w pigtail and splicing cassette	Nos.	16		
A1.2.2	FIBRE OPTIC CABLE (Indoor)				
A1.2.2.1	Supply, install and terminate Multimode indoor fibre optic cable with the following requirements:				
	i. Type: Minimum OM4 multimode indoor fibre optic cable. All core shall be terminated to the Fibre Optic patch panel.				
	ii. Installation shall be partly in electrogalvanised trunking.				
	8 core from fibre optic patch panel at Bilik ICT/ELV, Aras 1, Kompleks Latihan Tenun to fibre optic patch panel at:				
	a. Bilik ELV/ICT, Aras 2, Kompleks Latihan Tenun	Meter	40		

A1.2.2.2	Termination of 8 core OM4 Multimode indoor optic c/w pigtail and splicing cassette	Nos.	16		
A1.2.2.3	8 core from existing fibre optic patch panel at Existing Bilik Server, Blok Pentadbiran to fibre optic patch panel at:				
a.	Existing MCR, Blok Pentadbiran	Meter	30		
A1.2.2.4	Termination of 8 core OM4 Multimode indoor optic c/w pigtail and splicing cassette	Nos.	16		
A1.3	FIBRE OPTIC PATCH CORD				
A1.3.1	Supply and install 3.0 metre length 1 pair OM4 factory terminated patch cord	Nos.	4		
A1.3.2	Supply and install 3.0 metre length 1 pair OS2 factory terminated patch cord	Nos.	2		
A2	EQUIPMENT RACK				
	Supply and install 19" Equipment Rack with the following requirements:				
	i. Cable Management Units and Blank Plate (Please refer to Rack Population Drawing)				
	ii. Perforated 1.5mm panel, frame thickness of 2mm				
A2.1	Wall Mounted Network Rack				
	Size: 15U network rack - at Existing MCR, Blok Pentadbiran (Please refer to Rack Population drawing)	Lots	1		
a.	Dimensions: Min. 600mm (w) x 800mm (d)				
b.	Power Distribution Unit (Factory Fabricated): 3 Nos 13A SSO				
A2.2	Network Rack				
	Size: 42U equipment rack - at Bilik ICT/ELV (Aras 1 & Aras 2) (Please refer to Rack Population drawing)	Lots	2		
a.	Dimensions: Min. 800mm (w) x 1000mm (d)				
b.	Power Distribution Unit (Factory Fabricated): 2 x C13 socket outlet (32A) (Left and Right)				
A2.3	UTP Patch Panel				
	To supply and install 24 port Cat 6A (EIA/TIA) rackmountable patch panel c/w cable support and cable management	Nos.	6		
A2.4	Fibre Optic Patch Panel				
	To supply and install 12 port Fibre Optic Panel c/w duplex for singlemode fibre optic cable	Nos.	3		
SUB-TOTAL FOR ITEM (L)					
CARRIED TO RINGKASAN TENDER :					

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M) ACTIVE INFRASTRUCTURE

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	Supply, install, configure, testing and commissioning all the equipment rack using the latest image software, redundant power supply and complete quarantine functionality as per specification. Please refer to SOA, Compliance statement and Network Schematic Diagram to understand the detail design. All the active shall be onsite 8 x 5 x NBD (8 Hours, 5 Days Next Business Day Service Level) support service during DLP and Warranty for 3 Years of the delivery date.				
B1	ACCESS SWITCH POE or POE+				
B1.1	Supply, install, and configure 24-port stackable Layer 2/4 switching Access Switch with the following minimum requirements:	No.	1		
	a. 24-port 1000 Base-T (Ethernet)				
	b. Switching capacity is 128 Gbps				
	c. Forwarding rate is 95.2 Mpps				
	d. POE or POE+ switch 24 port				
	e. 4 ports SFP+ fixed 1/10 GbE				
	f. 10Gb Stacking module c/w cable				
B1.2	Supply, install, and configure 24-port stackable Layer 2/4 switching Access Switch with the following minimum requirements:	Nos.	5		
	a. 24-port 1000 Base-T (Ethernet)				
	b. Switching capacity is 128 Gbps				
	c. Forwarding rate is 95.2 Mpps				
	d. POE or POE+ switch 24 port				
	e. 2 ports SFP+ fixed 1/10 GbE				
	f. 10Gb Stacking module c/w cable				
B2	TRANSCEIVER MODULE				
B2.1	10G Base-SR SFP+ Transceiver module with LC connector	Nos.	5		
B2.2	10G Base-LR SFP+ Transceiver module with LC connector	Nos.	2		
B3	UNINTERRUPTIBLE POWER SUPPLY (UPS)				
B3.1	Supply and install 1.0kVA rack mount UPS c/w 30 minutes full load with 50% battery discharge with SNMP enable and 15A power cable for 15A 3 pin switched socket outlet.	No.	1		
B3.2	Supply and install 2.0kVA rack mount UPS c/w 30 minutes full load with 50% battery discharge with SNMP enable and 15A power cable for 15A 3 pin switched socket outlet.	Nos.	2		
SUB-TOTAL FOR ITEM (M)					
CARRIED TO RINGKASAN TENDER :					

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N) TELEPHONE SYSTEM

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	Supply of material, construct the complete telephones systems as per drawings and scope of works & accordance to the requirements and spesification of JKR/ TELCO (Refer to drawing). <i>All shall must be done by registered contractor with TMB.</i> To liase on and coordinate with TM's technical and sales team for the application of a new Multiline Session Initiation Protocol (SIP)/ direct line as per S.O representative instruction and TELCO requirement. The Multiline SIP line shall be connected to the new IP PBX.				
C1	TELEPHONE SET				
C1.1	To supply, install and configure telephone set with the following specification c/w required licensing, cablings and/ or other necessary accessories, 1 year onsite or approve equivalent to comply with requirement as below:				
a.	Basic IP Phone	Nos	14		
C2	EXTERNAL INFRASTRUCTURE				
	Supply of material, construct the complete infrastructure of telephones systems as per drawings and scope of works & accordance to the requirements and specifications of JKR/TELEKOM (refer to drawing). All works shall be done by registered contractors with TMB.				
C2.1	To supply and install of TELCO point chamber/box inclusive of duct seal, cover cable bearer and brackets as per specification. Manholes, handholes and joint boxes including excavation, internal fitting, back filling with suitable materials, compaction and disposal of surplus materials				
a.	460mm (L) x 460mm (W) x 400mm (H)	Lot	7		
C2.2	Supply and install the following telephone ducts including subduct / innerduct, excavation works, backfilling and guide rope as per Telco specifications and requirements				
a.	1 way 100mm dia. HDPE PN10 Duct	Meter	470		
C3	CORING WORKS				
C3.1	Supply and install 150mm dia. G.I pipe (Class B) for Coring works through Longkang 7				
a.	1 way 150mm dia. G.I pipe (Class B)	Meter	2		
SUB-TOTAL FOR ITEM (N)					
CARRIED TO RINGKASAN TENDER :					

PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENON PABANG DIRAJA DI PENJARA PENOR, PAHANG

NO. TENDER : JKR/CKE/22983/2024

O) EARTHING SYSTEM

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	a. It accordance to recommendations contains in IEC 30129, ANSI/TIA/EIA 607 and IEC 60364 Telecommunication Bonding and Earthing Standard for all equipment rack and raise flooring in SDF,MDF,TCR, all Distribution Frame/ Panels and Telephone System.	Lump Sum	Lump Sum		
	b. Installation shall comply with JKR Specification (L-S38)				
	c. Brand shall be comply with JKR Electrical Material Approved List (jMAL)				
	d. Please refer to drawing for details information				
D1	To supply, install, testing and commissioning as per JKR specification of earthing system c/w 2 Nos earthing conductor copper tape 25mm x 3mm copper tape (for Telecommunication Bonding Conductor (TBC) and Telecommunications Bonding Backbone (TBB)), 25mm x 6mm copper as Primary Bonding Bar, 25mm x 6mm copper as Secondary Bonding Bar, 16 sq.mm earth cable Rack Bonding Conductor RBC, Rack Bonding Terminal (RBT)				
SUB-TOTAL FOR ITEM (O) CARRIED TO RINGKASAN TENDER :					

PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR, PAHANG

NO. TENDER : JKR/CKE/22983/2024

P) TESTING & COMMISSIONING

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
	Testing and commissioning the following systems and guarantee full functionality of the system during defect and liability period as per scope of works & according to the requirements and specifications of JKR. (Contractor need to carry out pre-T&C for all the systems and submit the test results to JKR before T&C with JKR)				
E1	Structure Cabling System Test by using Fluke Tester min model DSX5000	Lump sum	Lump sum		
E2	Network Equipment Test	Lump sum	Lump sum		
E3	Telephone System Test	Lump sum	Lump sum		
SUB-TOTAL FOR ITEM (P) CARRIED TO RINGKASAN TENDER :					

**PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR,
PAHANG**

NO. TENDER : JKR/CKE/22983/2024

Q) OTHERS

ITEM	DESCRIPTION OF WORK	UNIT	QTY	RATE (RM)	AMOUNT (RM)
F.1	TRAINING				
F1.1	To organize and arrange formal and hands-on training sessions with the following requirements:				
	a. Networking Technology - Introduction & Intermediate	Pax	1		
	b. Network System Configuration, Operation and Maintenance	Pax	1		
	c. Telephone System Configuration, Operation and Maintenance	Pax	1		
F.2	ASSET TAGGING, LABELLING AND REGISTRATION				
F2.1	Asset labelling and tagging for all equipments, devices and rack using printed label, permanent marker and approved permanent paint for "HAK KERAJAAN MALAYSIA" label	Lot	1		
F2.2	To provide and install labelling of faceplate, Distribution Frame, patch panel, fibre cabling, equipment rack and telephone system as specified in JKR Specification L-S38 and L-S16	Lump Sum	Lump Sum		
F2.3	Asset Registration Works				
F2.4	Shall submit 4 sets hardcopy and digital copy in the form of Microsoft Word/MS Excel files of the following:	Lot	1		
	a. Label identification layout plan drawings using 'SKATA room naming convention' in hard cover binding.				
	b. Assest Information's form (D.A.3 -D.A.6) & template (MS Excel) format as approved by S.O./P.D.				
	c. List of DAK Komponen in each room (as per Borang D.A. 7 in Garis Panduan Pengumpulan Data & Pelabelan Aset TaH Alih (PeDATA): Aset Bangunan. A copy of this form should also be attached at each room during T&C for JKR's verification purposes.				
F2.5	Shall be compile the asset informations as per requirement of latest version Garis Panduan Pengumpulan Data & Pelabelan Aset Tak Alih (PeData): Aset Bangunan for the approval of the S.O./P.D.	Lot	1		
SUB-TOTAL FOR ITEM (Q)					
CARRIED TO RINGKASAN TENDER :					

PEMASANGAN ELEKTRIK UNTUK PEMBINAAN KOMPLEKS LATIHAN TENUN PAHANG DIRAJA DI PENJARA PENOR, PAHANG**SENARAI JENAMA BAHAN DAN PENGILANG**

ITEM	MATERIALS	BRAND	COUNTRY OF MANUFACTURE	MODEL
1	LV MAIN SWITCH BOARDS/POWER FACTOR CORRECTION BOARDS/ SUB SWITCH BOARDS/ FEEDER PILLAR/ DISTRIBUTION BOARDS, FIREMAN RELAY AND ACCESSORIES.			
	(Other items please itemize)			
1.1	Sub Switchboard (SSB) (25kA@400V, 1 sec)			
1.2	Distribution Board (DB)			
1.3	Earth Leakage Relay (ELR)			
1.4	Surge Protective Device (SPD)			
1.5	Moulded Case Circuit Breaker (MCCB)			
1.6	Miniature Circuit Breaker (MCB)			
1.7	Residual Current Operated Circuit Breaker (RCCB)			
1.8	Power Factor Correction Board			
1.9	Power Factor Controller			
1.10	Capacitor For Power Factor Correction			
1.11	50kVA Generator Set			
2	EARTHING & LIGHTNING PROTECTION SYSTEM			
	(Please itemize)			
2.1	Aluminium Tape			
2.2	Copper Tape			
2.3	Earth Chamber			
2.4	Exothermic Weld			
2.5	DC Tape Clip			
2.6	Test Clamp			
2.7	Earth Electrode			
2.8	Air Terminal			
2.9	Test Joint			
2.1	Heavy Duty uPVC Ducting			
3	COPPER CABLE & ACCESSORIES			
	(Other items please itemize)			
3.1	PVC/SWA/PVC Cable			
3.2	XLPE/SWA/PVC Cable			
3.3	XLPE/PVC Cable			
3.4	PVC Cable			
3.5	MIMS Fire Resistance Cable			
3.6	Galvanised Steel Conduit			
3.7	Cable Tray			
3.8	Cable Trunking			
3.9	Heavy Duty uPVC Conduit			
4	SWITCHES, SOCKETS AND ACCESSORIES			
	(Other items please itemize)			
4.1	10A 1 Way SP Big Rocker Switch			
4.2	10A 1 Way SP Metalclad Switch			
4.3	10A 2 Way SP Big Rocker Switch			
4.4	20A 1 Way DP Big Rocker Switch			
4.5	20A 1 Way DP Big Rocker Switch With Indicator Light			
4.6	10A 1 Way SP Big Rocker Switch c/w Texture Gold/Gold Colour			
4.7	13A 3 Pin Switched Socket Outlet			
4.8	15A 3 Pin Switched Socket Outlet			
4.9	Polycarbonate Switch Disconnecter (Isolator)			
4.10	Metalclad Switch Disconnecter (Isolator)			
4.11	Weatherproof Switch Disconnecter (Isolator)			

5	INDOOR LUMINAIRES & ACCESSORIES			
	(Other items please itemize)			
5.1	Keluar Sign			
5.2	Emergency Light			
5.3	LED Downlight			
5.4	LED Pendant Light			
5.5	T8 LED Self Ballasted Double Capped Recessed Mounted Luminaire c/w Aluminium Reflector Louvre			
5.6	1 x 38W Prison Light			
5.7	T8 LED Tube Self Ballasted Double Capped Wall/ Surface Mounted Bare Channel			
6	WEATHERPROOF OUTDOOR LUMINAIRE & ACCESSORIES			
	(Please itemize)			
6.1	LED Floodlight Luminaire			
7	FAN			
	(Other items please itemize)			
7.1	400mm Dia. Auto Fan			
7.2	Exhaust Fan			
8	UNDERFLOOR DUCTING SYSTEM			
	(Other items please itemize)			
8.1	3 Compartments Underfloor Service Box			
8.2	3 Compartments Underfloor Junction Box			
8.3	3 Compartments Vertical Access Box			
8.4	3 Compartments Heavy Duty uPVC Ducting			
9	CCTV SYSTEM			
	(Other items please itemize)			
9.1	Varifocal IR Dome Camera			
9.2	Corner-Mount Vandal Resistant IR Camera			
9.3	Varifocal IR Bullet Camera			
9.4	Network Video Recorder (NVR)			
9.5	CCTV Workstation			
9.6	Display CPU For LED Monitor			
9.7	50" LED Monitor			
9.8	CCTV Operator Table			
10	ELECTRONIC ACCESS CONTROL SYSTEM			
	(Other items please itemize)			
10.1	Electronic Access Control Management Software			
10.2	Access Control Workstation			
10.3	Dekstop Card Reader			
10.4	Access Controller			
10.5	Card Reader			
10.6	Contactless Smart Card			
10.7	Siren With Strobe Light			
10.8	RS 485 Shielded Cable			
11	VISUAL SYSTEM			
	(Other items please itemize)			
11.1	HDMI Receptacle Panel			
11.2	HDMI Receiver			
11.3	3500 ANSI Lumens LCD Projector			
11.4	108.5" (W) x 67.8" (H) Motorised Screen			
11.5	Cat 5E Shielded Twisted Pair (STP) Cable			
11.6	HDMI Cable			
12	WALK THROUGH METAL DETECTOR			
	(Other items please itemize)			
12.1	Walk Through Metal Detector			

13	PASSIVE INFRASTRUCTURE			
	(Other items please itemize)			
13.1	UTP / STP Cat 6A			
13.2	1 Gang Angular Faceplate and Modular RJ45 Jack			
13.3	OS2 Singlemode Outdoor Armoured Fibre Optic Cable			
13.4	OM4 Multimode Indoor Fibre Optic Cable			
13.5	Fibre Optic Patch Cord			
13.6	Equipment Rack			
13.7	UTP Patch Panel			
13.8	Fibre Optic Patch Panel			
14	ACTIVE INFRASTRUCTURE			
	(Other items please itemize)			
14.1	Access Switch POE / POE+			
14.2	Transceiver Module			
14.3	Uninterruptable Power Supply (UPS)			
15	TELEPHONE			
	(Other items please itemize)			
10.1	Basic IP Phone			
10.2	460mm (L) x 460mm (W) x 400mm (H) Manhole			
10.3	1 Way 100mm Dia. HDPE PN10 Duct			
10.4	1 Way 150mm Dia. G.I Pipe (Class B)			
	OTHER EQUIPMENTS PLEASE ITEMIZE			

Note: Tenderer is required to submit Manufacturer's catalogue, technical specifications and test data for all equipment offered shall be submitted together with the tender. Tender without complete catalogues and technical details will be rejected.

Deklarasi Petender:

Saya sedar dan ambil maklum bahawa kegagalan saya untuk menyemak maklumat terkini *online* dalam EMAL serta Pekeliling Kontrak Perbendaharaan Bil 14/2012 yang mengakibatkan keperluan teknikal tidak ditepati dan kegagalan saya untuk mengisi maklumat yang diperlukan dalam ruang-ruang yang disediakan ataupun kegagalan saya mengembalikan maklumat katalog serta dokumen yang lengkap dalam dokumen tender ini boleh menyebabkan tender saya ditolak.

Tandatangan Petender:
 Nama Petender:
 Cop Rasmi Petender:

Tarikh :