DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF DEFENCE

SUPPLYING, INSTALLATION, TESTING AND COMMISSIONING OF LIGHTNING PROTECTION SYSTEM FOR AUDITORIUM BUILDING OF GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

BIDDING DOCUMENT

(DUPLICATE)

(to be submitted by the Bidder to the employer)

Section 04 – Form of Bid and Qualification Information

Section 07 – Bill of Quantities

ENGINEER

CENTRAL ENGINEERING CONSULTANCY BUREAU, NO. 415, BAUDDHALOKA MAWATHA, COLOMBO 07.

EMPLOYER

VICE CHANCELLOR GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY, KADAWALA ESTATE KADAWALA ROAD, RATMALANA.

JUNE 2021

CONTENTS

SECTION - 04

FORM OF BID AND QUALIFICATION INFORMATION

FORM OF BID

Name of Contract: Supplying, Installation, Testing and Commissioning of Lightning Protection System for Auditorium Building of General Sir John Kotelawala Defence University.

To: Chairman, Department Procurement Committee, General Sir John Kotelawala Defence University.

Gentleman,

2. We/I acknowledge that the Schedule for Conditions of Contract forms part of our Bid.

- 3. We/I undertake, if our Bid is accepted, to commence the Works as stipulated in the Schedule and to complete the whole of the works comprised in the Contract within the time stated in the Schedule.
- 4. We/I agree to abide by this Bid for the period of **Ninety One (91) days** from the date fixed for receiving or any extended period and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- 5. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us/me.
- 6. We/I understand that you are not bound to accept the lowest or any Bid you may receive.

Signature :	
Name	:
Designation	·
Address	:
Witness	:
(Name and NIC]	No)

Qualification Information

To be completed by the bidder and submitted with the bid.

	Eligibility Requirement	Bidder's Qualification			
CIDA Registration					
Registration number					
Grade	N.A				
Specialty	N.A				
Expiry Date					
(Attach certified copies of relevant pages from the registration book)					
Blacklisted Contractors					
Have you ever been declared as a defaulted contractor by CIDA or any other Agency? Yes/No					
IF yes provide details					
		-			
VAT Registration Number					
Legal Status (Public company/Private Company/Partnership/Sole proprietor					

	Eligibility Requirement	Bidder's Qualification
Qualification and experience of Bidder	Bidder should have more than 5 years' experience in the Electrical Works and at least five projects similar to the scope and the estimated cost of more than Rs. 2.50 million projects should have completed within last five years. Documentary evidence of completion certificates shall be provided with the Bid.	Quanneation
Financial Capability	Bidder shall have average annual turnover of at least Rs. 12 Million for last three years. Audited financial statements shall be provided as a documentary proof with the bid. Bidder shall maintain a positive working capital for last three years and shall maintain a working capital Rs. 2.0 Million for the year 2020 or shall provide a credit facility, obtained for the works, of an equal amount, obtained from a commercial bank acceptable to the central bank of Sri Lanka.	

Qualification and experience of key Staff	Category, Experience and qualifications	Required Nos.	Proposed by bidder (Name, experience and Qualifications)
1.Electrical Engineer (Part time)	Electrical Engineer having B.Sc. Degree or equivalent degree recognized by IESL with at least 2 years' experience in installation of lightning protection system in similar nature.	01	
2. Technical Officer (full time)	2. NDT/NCT Electrical with 5 years' experience, in supervising the installations of lightning protection system in similar nature.	01	

Signature of the Bidder:

Note – Bidder should have submitted the following documents along with the Bid for the authentication of the Person who signed the Form of Bid.

- * Legal Status (Sole proprietor, Partnership, Company etc.)
- * Power of Attorney or Board Resolution for the signatory of the bid.
- * Authentication for signatory (Power of Attorney or Letter of Authorization)

SECTION - 05

SCHEDULE

Note:

This section shall be read in conjunction with Section 1 -Instructions to Bidders and Section 3 -Conditions of Contract, and is intended to provide specific information in relation to corresponding Clauses in Sections 1 & 3. Whenever there is an ambiguity, the provisions in Section 5 -Schedule shall supersede these provided in the Section 1 -Instructions to Bidders and Section 3 -Conditions of Contract.

Schedule 1– Experience in services in similar nature in last five years (Installation of Lightning Protection Systems)

(enclose this schedule is part of the technical schedule)

(i) The services provided shall be Electrical Works.

(*ii*) *List works of similar nature and cost first.*

Year	Employer	Description of Works	Amount	Contractor's Responsibility (%)
		Total		

SECTION - 07

BILL OF QUANTITIES

PREAMBLE TO THE BILL OF QUANTITIES

- 1. The Conditions of Contract, the Specifications are to be read in conjunction with the Bill of Quantities.
- 2. The cost of complying with all conditions, obligations and liabilities described in the Conditions of Contract and the Specifications and the Bill of Quantities **including all overhead charges (excluding VAT), profit and Preliminaries** and carrying out the work as described shall be deemed to be spread over and included in the prices or sums stated by the Bidder in the Bill of Quantities. VAT should be separately added.
- 3. If the Bidder failed to price any Items in the Bill of Quantities then the cost of the work under such Item shall be held to be spread over and included in the prices given against other Items of work.
- 4. When trade names, brand and/or catalogue numbers are referred to, sole preference to any material or equipment is not intended. Any other material or equipment may be used, provided that the characteristics of type, quality, appearance, finish, method of construction and/or performance is equal to or superior to specify.
- 5. Whenever the method of measurement is not clear from documents available, the principles as given in the Sri Lanka Standard 573, 1982, Method of Measurement of Building Work shall be applicable.
- 6. All items of work shall comply exactly with the Contract unless otherwise approved by the Engineer and the rates and sums inserted in the Bill of Quantities shall be deemed to apply to the work as specified. If, for his convenience or reasons of availability, the Contractor proposes and the Engineer approves the use or provision of alternative items, materials or method of working, or equivalent or superior quality to those specified in the Contract, the rates and sums inserted in the Bill of Quantities shall not in any case be increased as a result.
- 7. The quantities set out in the Bill of Quantities are provisional and cover the approximate scope of the work which is anticipated to be performed by the Contractor. The actual quantities used for final measurement purposes will be determined by the Engineer by measurement of the work completed by the Contractor.

Where, for his own purposes or due to his own default, the Contractor carries out the Works in such a manner that the quantity of any Item of work in particular component to be measured for payment purposes differs from that directed by the Engineer, then payment shall be made according to the lesser of the actual quantity and that directed. An excess quantity in one part of the component shall not, however, be allowed to offset a deficit elsewhere in the same component for measurement purposes.

Where the determination for payment purposes of the quantity of any Item of work depends upon the measurement of existing features or ground levels and the like, then prior to carrying out any operations which might affect such measurement, the Contractor shall first take such levels and measurements as the Engineer may direct and, after the Engineer has had the opportunity to check the same, they shall be certified as agreed by both the Engineer and the Contractor.

In the event that the Contractor fails to observe the above procedure, the Engineer

shall determine the quantity to be assumed for payment purposes using the best information available to him, and his decision in the matter shall be final.

- 8. Selected Bidder shall comply with the arrangement of work in the buildings and be ready to work part by part as required by the Authorities of **General Sir John Kotelawala Defence University, Ratmalana.**
- 9. The cost related to all the preliminary works listed in the ICTAD publication No. ICTAD/ID/04 published in June 2009 shall be included in to the Rates if not otherwise measured separately.
- 10. The Employer will provide, metered supply connections for water and electricity at site for the relevant works and the Contractor shall pay the relevant bills.
- 11. Bidder should pay special attention to the work to be carried out, causing minimum disturbance or hindrance to the normal functions and activities of the users of the General Sir John Kotelawala Defence University Ratmalana.
- 12. The Bills of Quantities should therefore, be priced to reflect all factors that would affect the bid and the progress of the works.
- 13. Metric units are used throughout the Bill of Quantities for measurement purposes unless otherwise indicated. Abbreviations used in the Contract are as follows: -

mm	-	Millimeter
Lm, and m	-	Linear meter
kg	-	Kilogram
m^2	-	Square meter
m ³	-	Cubic meter
Nos.	-	Number
Rs.	-	Sri Lankan Rupees
Cts.	-	Cents
P. Sum.	-	Provisional sum
L. S.	-	Lump Sum
Per Block	-	Per one Block
MT	-	Metric Ton

Bills of Quantities – BOQ

SUPPLYING, INSTALLATION, TESTING AND COMMISSIONING OF LIGHTNING PROTECTION SYSTEM FOR AUDITORIUM BUILDING OF GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

GRAND SUMMARY

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GRIED SOUMARY					
Α	ELECTRICAL WORKS	Rs.			
	PROVISIONAL SUM	50,000.00			
	SUB TOTAL (I)				
	LESS : PROVISIONAL SUM	50,000.00			
	SUB TOTAL (II)				
	DISCOUNT (IF ANY)				
	ADD : PROVISIONAL SUM	50,000.00			
	SUB TOTAL (III) - BID PRICE (EXCLUDING VAT)				
	VAT (8%)				
	TOTAL (INCLUDING VAT)				

Total Bid Sum Carried to form of Bid in words Rupees

VAT (8% of the Total Bid Sum) LKR
VAT No
Bidder's Details
Signature of Bidder

Date:....

Name and address of Bidder

.....

.....

Witnesses Details

Γ

Signature of witness-1	Signature of witness-2
Date	Date
Name and address of witness	Name and address of witness
NIC Number	NIC Number

SUPPLYING, INSTALLATION, TESTING AND COMMISSIONING OF LIGHTNING PROTECTION SYSTEM FOR AUDITORIUM BUILDING OF CENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

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No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)
1.0	NY /				
1.0	Notes				
a.	The rates shall include employing suitably qualified and				
	experienced technical personnel for belowmentioned				
	positions for Construction Management Services at the site.				
	If the personnel are not available at the site, it's the				
	Consultant's right to not certify the works carried out by the				
	Contractor.				
	1. Electrical Engineer (Part time)				
	Electrical Engineer having B.Sc. Degree or equivalent degree				
	recognized by IESL with at least 2 years' experience in				
	installation of lightning protection system in similar nature.				
	2 Tasking Officer (full time)				
	2. Technical Officer (full time)				
	the instellations of lightning protection system in similar				
	net instantions of fighting protection system in similar				
b	If the personnel are not available at the site, it's the Consultant's	Note			
	right to not certify the works carried out by the Contractor.				
с	All the materials and accessories shall be submitted for	Note			
	consultant's approval.				
2.0	Air Tormination System				
2.0	An Termination System				
a	Supply and installation Lightning Protection system of the				
	building up to Roof Level shall including the followings as per the				
	drawing and specification.				
		T .	-		
2.1	Air terminal rod connected to rooting sheet	Item	9		
	Supply and installation of 15 mm diameter, 1m height aluminium				
	using aluminium base plate nut and bolts, rubber washer to				
	prevent water ingress including all necessary accessories and				
	materials(Refer detail H).				
2.2	Air terminal rod connected to masonry wall	Item	3		
	Supply of 15mm diameter, 1m height aluminium air terminal rod				
	complying to BS EN 62561-2 and supporting to the masonry wall				
	25mm x 3mm Aluminium tane down conductor using Aluminium				
	air terminal rod to tane coupling and including all necessary				
	accessories and materials(Refer detail G).				

No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)
2.3	Supply and installation of 25mm x 3mm aluminium tape inside uPVC pipe on roof terrace and fixing the pipe to the roof terrace at each 1m interval using GI pipe clip including all other necessary accessories and materials. The aluminium tape shall comply with BS EN 62561-4(Refer lightning protection system fourth floor drawing).	m	47		
2.4	Supply and installation of 25mm x 3mm aluminium tape on roofing sheet and fixing the tape using at each 1m interval using suitable Aluminium/Stainless Steel tape clip, Aluminium square tape clamp including all other necessary accessories and materials. The aluminium tape shall comply with BS EN 62561-4	m	20		
2.5	Interconnecting of Roof truss and 25 mm *3 mm aluminium down conductor using GI nut and bolt, GI sheet (100 mm x 100 mm x 1mm) or using aluminium tape B bond complying to BS EN 62561-1 including all necessary accessories and materials (As per detail E).	Item	8		
2.6	Interconnecting of Roof truss with purlins using 25mm x 3mm Aluminium tape with GI nut and bolt ,GI sheet (100 mm x 100 mm x 1mm) and all necessary accessories.(As per Detail H2).	Item	24		
2.7	Interconnecting of Roof truss with 25mm x 3mm Aluminium tape using GI nut and bolt ,25mm x 3mm Copper tape(to pass through brick wall),Bimetallic joint inside uPVC box, GI sheet (100 mm x 100 mm x 1mm) and all necessary accessories.(As per Detail F).	Item	24		
3.0	Down Conductor System				
3.1	Supply and Installation of 25mm x 3mm Aluminium tape down conductors supported to concrete columns using heavy duty Aluminium/Stainless Steel Tape clip (at minimum 1m intervals) and cover the tape using plastering including all other necessary accessories complying to IEC 62305(As per Detail A).	m	891		
3.2	Supply and installation of aluminium - copper bimetallic test joint with cover on R/F concrete column and termination of al tape and copper tape including all necessary accessories and materials. The test joint shall comply with BSEN 62561- 1(As per Detail I).	Nos.	24		
3.3	Supply and Installation of 25mm x 3mm Copper tape down conductors supported to concrete columns using heavy duty Gunmetalic Tape clip (at minimum 1m intervals) and cover the tape using plastering including all other necessary accessories complying to IEC 62305 (As per Detail A).	m	96		

No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)
4.0	Common Earth Bar				
	Supply, Installation and Termination of following common earth bar panel using Cu cable lugs, colour caps etc. (As per earthing schematic diagram)	Item	1		
	2 nos of 63A Cu terminal bars with 6 number of cable termination slots.				
	1 nos of 63A Cu terminal bars with 12 number of cable termination slots				
	Spark Gap with Nominal discharge current(10/350) μ S >= 50kA,Nominal discharge current(8/20) μ S >= 100kA, Rated impulse spark over voltage (U imp)=5 kV, Power frequency spark over voltage (50 / 60 Hz) =2.5 kV, Class H complying to BS EN 62561-3.				
	Surface mounted type (IP4X) Form-01 Panel made out of 1.5 mm thick Zn/Al alloy sheet, powder coated to 80-100 micron,(RAL 7032) complete with cover plates and aluminium cable gland plates.				
5.0	Earth-termination system				
5.1	Supply and installation of hot dipped galvanized (to 80 micron	m	260		
	BS EN ISO 1461) 12mm diameter R/F bar under the ground as the type B ring earthing conductor including excavation and back filling. (As per lightning protection system ground floor drawing and Detail A),Rate shall include warning tapes and all connections between hot dipped galvanized bars shall be done using either reinforcement bar couplers(take steps to thread the ends of the reinforcement bars as per the requirement of the coupler prior to hot dipped galvanising, if required) or Arch welding (welding point shall be applied with a zinc-rich paint) and the joint shall be permanently sealed with a concrete cover with a minimum thickness of 100 mm from all sides.				
5.2	Termination of 25mm x 3mm copper down conductor to the earth ring conductor using exothermic welded joint or tape to rod clamp made of gunmetalic material complying to BSEN 62561-1 w including all necessary accessories and materials. (As per detail D)	Item	24		
53	I V Farth Cable	m	50		
	Supply and Installation of 50mm ² CU/PVC earth cable from common earth bar to earth ring (inside PVC pipe) using GI brackets (at minimum 1m intervals) and all other necessary accessories complying to IEC 62305 as indicated in the drawing. (As per detail B)	111			
5.4	Termination of 50mm ² CU/PVC earth cable to the earth ring conductor using exothermic welded joint including all necessary accessories and materials. (As per detail J).	Item	1		
5.5	Supply and installation of test joint (complying to EN 62561-1) inside uPVC box a including all necessary accessories and materials complying to IEC 62305(As per detail K).	Item	2		
1					

No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)
5.6	ELV Earth Cable Supply and Installation of 50mm ² CU/PVC earth cable from common earth bar to ELV earthing point (inside PVC pipe) using GI brackets (at minimum 1m intervals) and including all other necessary accessories complying to IEC 62305 as indicated in the drawing. (As per detail C)	m	50		
5.7	Obtaining soil resistivity test report from a local third party testing laboratory and submitting the hard copy to the consultant.	Item	1		
5.8	Supply and installation of ELV earthing point to achieve earth resistance $< 5\Omega$	PS	1	50,000.00	50,000.00
5.9	LV earth point External earthing point including termination of 50mm ² CU/PVC earth cables (inside PVC pipe) via U bolt rod clamp or Rod to cable clamp (compiling to BS EN 62561-1), Earthing electrode(10 feet copper bonded steel earth rod [dia. 16mm] 250 micron), concrete earthing pit and all other necessary materials and accessories required.	Item	4		
6.0 6.1	Shop Drawings Providing a set of shop drawings including layout drawings, detail drawings for lightning protection system on A3 size standard size drawing sheets drawn in to scale, necessary technical information.	Nos	15		
7.0	Testing and Commissioning				
7.1	Testing the total lightning protection system as specified in BS EN 62305 and submitting test reports obtained from the chartered electrical Engineer	Item	1		
7.2	Providing 3 sets of As built drawings for lightning protection system drawings on standard size drawing sheets drawn in to scale, necessary technical information maintenance manuals and other document to the Engineer's approval in triplicate.	Item	1		
	TOTAL FOR WORKS CARRIED TO SUMMARY				