

Project: IOM Headquarter
Systems: Lightning Protection , Earthing systems and surge arresters

Date : 11-07-2023
Location : Jnah - Beirut

ELECTRICALWORKS

Item	Description	Qty	Unit	Unit Rate	Amount US.\$
	EARTHING SYSTEM:				
	Supply and installation of complete earthing system consisting of earth rods in the outer garden connected to the existing earth system through an external manhole with 70mm² stranded copper cables. System to be complete with all necessary accessories to obtain low connecting earth resistance less than 3 ohms. System to be as manufactured by Wallis , Furse or equivalent.				
A	Copper earth rod 240cm with 20mm diameter with clamps	4	U		
B	Earth pit 40x40x40cm with cover. Cover to support weight of 2tons.	1	U		
C	Stranded copper cable 70mm ² for the connection between the earth rods and the electrical room	1	LS		
D	Earth bus bars with 8 terminals for electrical room, Server room , UPS Room , top of roof and generators room.	5	U		
E	Earth bus bars with 6 terminals in each floor for data cabinets , SDB and UPS panel	12	LS		
F	Earth bus bars with 6 terminals for the exit stairs in each floor	10	LS		
G	PVC Green/Yellow cable 35mm ² for the earth distributions between the main bus bars and the secondary bus bars	1	LS		
H	PVC Green/Yellow cable 16mm ² for the connections between the secondary bus bars and the surge arresters	1	LS		

ELECTRICALWORKS

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	LIGHTNING PROTECTION SYSTEM:				
	Supply and install a complete set of lightning protection system as per french norm NFC 17 102 including all the necessary fittings and fixing accessories				
A	Early streamer Emission with minimum radius 35m at level 1 including the necessary accessories	1	U		
B	Two down conductors PVC copper tape 25x3mm with clamps each 33cm	1	LS.		
C	Test link	2	U		
D	Counter	1	U		
E	Mechanical protection of down conductor	2	U		
F	Earthing system should be independent from electrical earth, and preferably embedded using earth plates and mixture enhancer for preservation of humidity	1	LS.		
J	Mast should be minimum 10m with fixation	1	U		
	<u>SURGE PROTECTION.</u>				
	The Surge arresters role is to protect the electrical devices form the indirect strikes				
	<u>Phase 1:</u>				
A	MDB Surge arrester 3 phases class B+C (ATS output in electrical room)	1	U		
B	Surge arrester 3 phases class B+C (EDL lines in electrical room)	1	U		
C	Surge arrester 3 phases class B+C (Generators lines in electrical room)	1	U		
D	Surge arrester 3 phases class B+C (Inside the Generators)	3	U		
E	Microwave link Class D surge arrester	2	U		
F	Telephone line arrester classs D	1	LS.		

ELECTRICALWORKS

Item	Description	Qty	Unit	Unit Rate	Amount US.\$
	<u>Phase 2:</u>				
A	SDB Surge arrester 3 phases class B+C (Main breaker at each floor)	1	LS.		
B	UPS Panel Surge arrester 3 phases class C (Main breaker at each floor)	1	LS.		
C	Multiple socket class D (In the cabinets at each floor)	1	LS.		
D	UPS Room surge arresters 3 phases class B+C (Input and output of the UPS)	1	LS.		
	Summary	TOTAL		U.S. \$	
	<u>TOTAL AMOUNT</u>				