

SR. No	DESCRIPTION	UOM	Boq qty.	No.	Length	Width	Height	Total	Remarks
1	PANEL & SWITCHGEAR								
	Supply, installation, testing & commissioning of free standing, floor mounting compartmentalized panels fabricated out of CRCA sheet steel sections after carrying out 7 tank cleaning process and duly powder coated using Siemens Grey Shade No. RAL 7032. The frame structure, doors and gland plates shall have 2.0 mm thick sheets and partitions shall be with 1.6 mm thick CRCA sheet. Base channel size 75 x 40 x 6 mm of ISMC shall be provided. The panel shall be dust and vermin proof with neoprene gasket. The doors shall be provided with concealed hinges and with brazing wherever required to avoid deformation and shall be earthed. The bus bar shall be of tinned Copper with epoxy supports and shall be insulated with colour coded heat shrink sleeves. The control wiring min 2.5 Sqmm shall be ZHLS type. The Panel shall be provided with CTs, phase indication lamps, meters, relays and all switchgear etc as per the STD. The panel shall be complete in all aspects as per the final approval of the Client. (Note: All accessories for this bill shall be B.T.F. General)								
e	Providing & installing MAIN LT PANEL as per SLD & Spec. Material supply at site	Set	1	1	1			1	
	Total qty	Set						1	
	Previous qty	Set						1	
	This bill qty	set						0	
	63 Amps 4 pole, 16kA MCCB with Microprocessor Based overload, short circuit & Earth Fault protection, Energy manager (EM6400NG) with RS485 port for BMS connectivity & 4A with SP MCB with 100/5A-3 Nos., 15VA, CL-1 CT's for metering & of AE make and phase indicating lamps Vaishnc make with SPMCB, CBCT with microprocessor based EFR Busbar chamber - 1 set, 4 pole 100A Tinned Cu. Busbar with necessary. OUTGOINGS:								
i.	63A 4P MCB - 1 Nos								
ii.	40A 4P MCB - 2 Nos								
iii.	40A DP MCB - 2 Nos								
iv.	MPCB suitable for 2.2kW-2 Nos.								
2	Supply, installation, testing & commissioning of Switchgears (Standard Product)								
a	Supply, installation, Testing and Commissioning of 40 Amps, 4 Pole MCB with ELCB at 300mA for HVAC Outdoor. Isolation all complete with mounting accessories	Nos	RO						
b	Supply, installation, Testing and Commissioning of 32 Amps, 4 Pole MCB for HVAC Outdoor. Isolation all complete with mounting accessories	Nos	2						
c	Supply, installation, Testing and Commissioning of 40 Amps, DP, MCB for UPS/INVERTER Isolation all complete with mounting accessories for UPS. UPS isolation DB and MCB snt	Nos		2				2	
	Total Qty	Nos.						2	
	Previous Qty	Nos						2	
	This Bill Qty	Nos						0	
d	Supply & installation of DOL starter L&T/Siemens/Legrand for 3 kW load	Nos	RO						
e	Supply & installation of DOL starter L&T/Siemens/Legrand for 4 kW load	Nos	RO						
f	Supply & installation of Star Delta starter as per Type-2 Coordination for 3 kW (4HP) load with on / off / trip indication Lamp, on off push button, & phase indication Lamp (For Exhaust air fan) (EXISTING UNIT PROVIDED BY MALL)	Nos	RO						
g	Supply & installation of Star Delta starter as per Type-2 Coordination for 9.3 kW (12.5HP) load with on / off / trip indication Lamp, on off push button, & phase indication Lamp. (For Exhaust air fan)	Nos	RO						
h	Supply & installation of Star delta starter as per Type-2 Coordination for 5.5 kW (7.5HP) load with on / off / trip indication Lamp, on off push button, & phase indication Lamp (For Fresh air fan)	Nos	RO						
i	Supply & installation of DOL starter as per Type-2 Coordination for 2.2 kW (3.0HP) load with on / off / trip indication Lamp, on off push button, & phase indication Lamp (For AHU)	Nos	RO						
j	Supply & installation of DOL starter as per Type-2 Coordination for 1.5 kW (2.0HP) pump load with on / off / trip indication Lamp, on off push button, & phase indication Lamp. (For Scrubber)	Nos	RO						
k	60 amps 4P ELMCB 300mA with 63A 5 Pin Ray Roll Socket complete with all mounting accessories - for Indoor Legrand make model No. 6078 80	Nos	RO						
l	63 amps 4P ELMCB 300mA with 63A 5 Pin Ray Roll Socket complete with all mounting accessories - for Indoor Legrand make model No. 6078 80	Nos	RO						
m	32 amps 4P MCB with 32A 5 Pin Ray Roll Socket complete with all mounting accessories - for kitchen Legrand make model No. 6078 80	Nos	RO						
n	25 amps 4P MCB with 25A 5 Pin Ray Roll Socket complete with all mounting accessories - for Kitchen Legrand make model No. 6078 80	Nos	RO						
o	25A Rey roll socket complete with 25 amps SPMCB with 3 pin metal clad socket - Legrand make Model No. 6078 41	Nos	RO						
p	20A Rey roll socket complete with 32 amps DPMCB with 3 pin metal clad socket - Legrand make Model No. 6078 41	Nos	1						

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q	5/15A Rey roll socket complete with 15 amps SPMCB with 3 pin metal clad socket - Legrand make Model No. 6078 41	Nos	7						
r	Set of 1no 25A Metal clad Socket with MCB, and 2nos 6/16A Switch sockets housed in Fabricated SS Panel suitable for hanging arrangement for Kitchen equipments.	Nos	RO						
q	5/15A Swieth socket complete (IP:65) for Kitchen	Nos	20						
	Swieth socket ip65 for kitchen	Nos		10				10	
	Total Qty	Nos						10	
	Previous qty	Nos						10	
	This bill qty	nos						0	
3	S/TC of Standalone Gas leak detector with inbuilt sounder for Kitchen	Nos	RO						
	TOTAL FOR MAIN PANEL & SWITCHGEAR								
II	INVERTER / UPS								
1	Supply, installation, testing and commissioning of 6 kVA UPS System Single Phase I/C & Single Phase O/G complete with 30 Minutes Battery Back-up the required accessories as specified in the drawings & the specifications.	Nos	1						
	UPS	Nos		1				1	
	Total Qty	Nos						1	
	Previous qty	Nos						1	
	This bill qty	nos						1	
	TOTAL FOR UPS								
III	DISTRIBUTION BOARDS								
	supply, installation, testing & commissioning of Distribution Boards surface / flush mounted with Double door containing MCB/ELMCB as incomer and SPMCB as outgoing. All MCBs are of 10KA breaking capacity and ELMCBs/RCCB should be of 30mA/100 mA sensivity. The DB shall have appropriate no. of top and bottom knock outs for outgoing circuits and shall be complete with necessary busbars, interconnection terminals and earth studs. All terminations in DB shall be complete with ferulling, dressing and all circuits shall be properly labeled with PVC strip (sticker type) having identification as per the final approval of Consultant. For UPS DB MCB shall be 'D' type and other MCBs shall be 'C' category for lighting and raw power DB LEGRAND/RT								
1	Lighting Distribution Board - LPDB 12 WAY TPN DB I/C - 1 # 40A FP MCB , 16KA SUB I/C - 3 # 25A DP RCCB 30mA per phase O/G - 30 # 10/20A SP MCB	Ncs	1						
	Distribution board	Nos		1				1	
	Total Qty	Nos.						1	
	Previous bill	Nos.						1	
	this bill qty	Nos.						0	
2	RAW Power Distribution Board - RPDB 6(8) WAY TPN DB I/C - 1 #40 A FP MCB SUB I/C - 3#40 DP ELCB 300mA per ph O/G - 18 # 16/20A SP MCB	Nos	RO						
3	Kitchen Power DB - (KPDB-1) 8 WAY TPN DB I/C - 1 #40 A FP MCB SUB I/C - 3#32 DP ELCB 100mA per ph O/G - 18 # 16/20A SP MCB	Nos	2						
	Supply kitchen dB	Nos		1				1	
	Total Qty	Nos.						1	
	Previous bill	Nos.						1	
	this bill qty	Nos.						0	
4	EMERGENCY LIGHTING DB (ELDB/UPSDB) 12 wav SP N DB Incomer: 40A DP RCBO 30mA Outgoings :10/16 SP MCB, 'D' Type - 8 Nos	Nos	1						
	Emergency DB	Nos		1				1	
	Total Qty	Nos.						1	
	Previous bill	Nos.						1	
	this bill qty	Nos.						0	
	TOTAL FOR DISTRIBUTION BOARDS								

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IV	CABLES & ACCESSORIES Supply & installation of following LT XLPE FRLSH cables (FINOLEX/RH KABLE/POLYCAR) rated for 600 / 1100 volts AC as per IS standard 1554 Part 1 with necessary M.S. clamps. All cables shall be properly clamped or tied when run on cable trays. All such cables shall be provided with temporary labelling at every 20 mtrs and ten finally with metal identification tags showing the size and the location from/to the specific Panel/DB at each end.								
1	3.5C x 300 Sq. mm A2XFY	Mtr	RO						
2	3.5C x 240 Sq. mm A2XFY	Mtr	RO						
3	3.5C x 185 Sq. mm A2XFY	Mtr	RO						
4	3.5C x 150 Sq. mm A2XFY	Mtr	RO						
5	3.5C x 120 Sq. mm A2XFY	Mtr	RO						
6	3.5C x 95 Sq. mm A2XFY	Mtr	RO						
7	3.5C x 70 Sq. mm A2XFY	Mtr	RO						
8	3.5C x 50 Sq. mm A2XFY	Mtr	RO						
9	3.5C x 35 Sq. mm A2XFY	Mtr	RO						
10	4C x 16 Sq. mm A2XFY	Mtr	100						
11	4C x 10 Sq. mm A2XFY	Mtr	RO						
12	4C x 10 Sq. mm 2XFY (Cu)	Mtr	RO						
13	4C x 16 Sq. mm 2XFY (Cu)	Mtr	RO						
14	4C x 6 Sq. mm 2XFY Cable (Cu)	Mtr	30						
					3			3	
	Total Qty	mtr						3	
	Previous bill	mtr						3	
	this bill qty	mtr						0	
15	4C x 4 Sq. mm 2XFY Cable (Cu)	Mtr	60						
16	4C x 2.5 Sq. mm 2XFY Cable (Cu)	Mtr	RO						
17	3C x 6sq. mm YWY cable (Cu)	Mtr	20						
18	3C x 4sq. mm YWY cable (Cu)	Mtr	40						
19	3C x 2.5 Sq. mm YWY cable (Cu)	Mtr	RO						
20	1C x 10 Sq. mm YY cable (Cu)	Mtr	RO						
21	1C x 6 Sq. mm YY cable (Cu)	Mtr	RO						
22	1C x 4 Sq. mm YY cable (Cu)	Mtr	RO						
23	5Rx1Cx16 Sq. mm YY FRLS Cable (Cu)	Mtr	RO						
24	5Rx1Cx10 Sq. mm YY FRLS Cable (Cu)	Mtr	RO						
25	5Rx1Cx6 Sq. mm YY FRLS Cable (Cu)	Mtr	RO						
26	5Rx1Cx4 Sq. mm YY FRLS Cable (Cu)	Mtr	RO						
B	Termination of following sizes of cables with Single compression cable gland.(COMET/BRAKO)								
1	3.5C x 300 Sq. mm A2XFY	Nos.	RO						
2	3.5C x 240 Sq. mm A2XFY	Nos.	RO						
3	3.5C x 185 Sq. mm A2XFY	Nos.	RO						
4	3.5C x 150 Sq. mm A2XFY	Nos.	RO						
5	3.5C x 120 Sq. mm A2XFY	Nos.	RO						
6	3.5C x 95 Sq. mm A2XFY	Nos.	RO						
7	3.5C x 70 Sq. mm A2XFY	Nos.	RO						
8	3.5C x 50 Sq. mm A2XFY	Nos.	RO						
9	3.5C x 35 Sq. mm A2XFY	Nos.	RO						
10	4C x 16 Sq. mm A2XFY	Nos.	2						
11	4C x 10 Sq. mm A2XFY	Nos.	RO						
12	4C x 10 Sq. mm 2XFY (Cu)	Nos.	RO						
13	4C x 16 Sq. mm 2XFY (Cu)	Nos.	RO						
14	4C x 6 Sq. mm 2XFY Cable (Cu)	Nos.	6						
15	4C x 4 Sq. mm 2XFY Cable (Cu)	Nos.	4						
16	4C x 2.5 Sq. mm 2XFY Cable (Cu)	Nos.	RO						
17	3C x 6sq. mm YWY cable (Cu)	Nos.	4						
18	3C x 4sq. mm YWY cable (Cu)	Nos.	4						
19	3C x 2.5 Sq. mm YWY cable (Cu)	Nos.	RO						
20	1C x 10 Sq. mm YY cable (Cu)	Nos.	RO						
21	1C x 6 Sq. mm YY cable (Cu)	Nos.	RO						
22	1C x 4 Sq. mm YY cable (Cu)	Nos.	RO						
23	5Rx1Cx16 Sq. mm YY FRLS Cable (Cu)	Nos.	RO						
24	5Rx1Cx10 Sq. mm YY FRLS Cable (Cu)	Nos.	RO						
25	5Rx1Cx6 Sq. mm YY FRLS Cable (Cu)	Nos.	RO						
26	5Rx1Cx4 Sq. mm YY FRLS Cable (Cu)	Nos.	RO						
	TOTAL FOR CABLES & ACCESSORIES								
V	WIRING & ACCESSORIES								
	Notes :								
	1) Rates for point wiring shall include supply & installation of Wires & wiring accessories such as angle holders/calling roses as required, conduits, conduit accessories such as junction boxes, T's, elbows etc. Switches, sockets & fixtures shall not be included in the point wiring rates. These will be counted & paid separately.								

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	2) Unless otherwise specified, all wires in point wiring shall be 2.5 sq mm Stranded copper conductor 1.1 KV (grade, I.S.) marked (P+N+E) (LSZH) PVC insulated. Wires shall be colour coded (Red, Yellow and Blue for Phases Black for Neutral & Green for earth).								
	3) Looping of wires shall be in fittings and switch boxes only								
	4) Location of switches/sockets/ DBs shown on the drawings shall be confirmed with the Architect/ Consultant/ Project Manager before installation.								
	5) All Surface and concealed Conduits shall be rigid GI conduits of size not less than 20 mm dia as per applicable IS.								
	6) The Contractor can take more than one circuit in the same conduit provided they are of the same phase. The size of conduit shall be decided according to the number of wires in it as per applicable IS & as specified.								
	7) Payments for light fixtures & fans will be made separately as per the items given in 'Light Fixtures & Accessories'.								
	8) Type & location of light fixtures shown in the drawings are tentative and subject to revision as per the recommendation of Architect/ Consultant. The quantities (number of points and accessories) of point wiring will be revised as actual installed on account of such revisions in the layouts.								
	9) Circuit wiring from DBs to the switch boards or first light point shall be included as primary points & remaining points of the same looping shall be considered as Secondary points and shall be counted in nos.								
	10) Circuit Wiring from DB to kitchen Power points shall be measured in running meters.								
1	Supply, installation, testing & commissioning of point wiring for light points, power points. Point wiring for primary point shall include wiring from Distribution Board upto First point of the circuit and shall be measured in nos. Secondary points shall also be measured in nos and shall include the remaining light points of the circuit controlled from same distribution board where primary points are controlling. The Power points shall be measured in Nos. Cost of GI conduits and accessories shall be included. Average point length of primary & secondary to be derived by Contractor, from the drawing provided AND +/- 1Mtr Measured Radially								
	a) Primary Light points controlled by MCB (3R x 2.5 sqmm wire) Light points	Nos.	20	21				21	
	Total Qty	Nos.						21	
	Previous bill	Nos.						21	
	this bill qty	Nos.						0	
	b) Secondary Light points looped in the same circuit (3R x 2.5 sqmm wire) secondary light point	Nos.	90	98				98	
	Total Qty	Nos.						98	
	Previous bill	Nos.						98	
	this bill qty	Nos.						0	
2	Supply, installation, testing & commissioning of point wiring for light points, power points. Point wiring for primary point shall include wiring from Switch Board upto First point of the circuit and shall be measured in nos. Secondary points shall also be measured in nos and shall include the remaining light points of the circuit controlled from same switch board where primary points are controlling. The Power points shall be measured in Nos. Cost of GI conduits, 6A switch & switch board and accessories shall be included.								
	a) Primary Light points controlled by Switch (3R x 2.5 sqmm wire) Light points	Nos.	1	1				1	
	Total Qty	Nos.						1	
	Previous bill	Nos.						1	
	this bill qty	Nos.						0	
	b) Secondary Light points looped in the same circuit. (3R x 2.5 sqmm wire) Secondary Light	Nos.	2	2				2	
	Total Qty	Nos.						2	
	Previous bill	Nos.						2	
	this bill qty	Nos.						0	

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SR/ No	DESCRIPTION	UOM	Boq qty.	No.	Length	Width	Height	Total	Remarks
c)	DB to SB & SB to SB circuit wiring : For switch Operated Primary point @ SB to SB loop point. Wiring for switch board controlled by MCB already installed in DB by using 3 X 2.5 sq. mm flexible LSZH copper wires in 25mm GI conduits as per IS 9537 part-3 or surface mounted	Mtrs	10						
3	Supply, installation, testing & commissioning of point wiring for emergency light points, power points. Point wiring for primary point shall include wiring from Distribution Board upto First point of the circuit and shall be measured in nos. Secondary points shall also be measured in nos and shall include the remaining light points of the circuit controlled from same distribution board where primary points are controlling. The Power points shall be measured in Nos. Cost of GI conduits and accessories shall be included. Average point length of primary & secondary to be derived by Contractor, from the drawing provided AND +/- 1 Mtr Measured Radially								
a)	Primary Light points controlled by MCB (3R x 2.5 sqmm wire) Primary light point	Nos.	2	2				2	
	Total Qty	Nos.						2	
	Previous bill	Nos.						2	
	this bill qty	Nos.						0	
b)	Secondary Light points looped in the same circuit. (2R x 2.5 sqmm wire) secondary light point	Nos.	9	9				9	
	Total Qty	Nos.						9	
	Previous bill	Nos.						9	
	this bill qty	Nos.						0	
5	Providing point wiring for Raw Power/UPS points Ino. 6/16A switch socket outlet on Skirting level to be looped from the nearest point using 2 x 4.0 sq. mm copper conductor wires and minimum 4.0 sq. mm copper conductor PVC insulated green colour earth wire as per approval of Architect / Consultant. (Cost of GI Conduit / Floor Raceway and switch sockets are considered elsewhere). (Wires shall be LSZH type). Note: Average primary / secondary point length to be derived by Contractor, from the drawing / site provided AND +/- 1 Mtr Measured Radially.								
a)	Primary Point Primary light point TV POINT Additional item	Nos.	8	8	2			8	
	Total Qty	Nos.						8	
	Previous bill	Nos.						8	
	this bill qty	Nos.						0	
b)	Secondary points secondary light point	Nos.	27	27				27	
	Total Qty	Nos.						27	
	Previous bill	Nos.						27	
	this bill qty	Nos.						0	
6	Providing point wiring for Raw Power points Ino. 6A switch socket outlet on Skirting level to be looped from the nearest point using 2 x 2.5 sq. mm copper conductor wires and minimum 2.5 sq. mm copper conductor PVC insulated green colour earth wire as per approval of Architect / Consultant. (Cost of Conduit / Floor Raceway and switch sockets are considered elsewhere). (Wires shall be FRLS type). Note: Average primary / secondary point length to be derived by Contractor, from the drawing / site provided AND +/- 1 Mtr Measured Radially.								
a)	Primary Point	Nos.	RO						
b)	Secondary points	Nos.	RO						
8	Supply and laying of following PVC insulated copper conductor 1100 volt grade stranded flexible LSZH wire in already laid GI conduit concealed or surface mounted making connections where ever required to complete the installation. (For Kitchen and Bar Power Points) Conduit rate shall be paid separately.								
a)	2R x 2.5sqmm + 1R x 2.5sqmm Cu. Wires Lighting	Mtr	60						
	Y6	Rmt		1	27			27	
	R3	Rmt		1	11			11	
	B2	Rmt		1	15			15	
	B4	Rmt		1	16			16	
	B3	Rmt		1	14			14	
	UPS kitchen								
	F3	Rmt		1	25			25	
	Total Qty	Rmt						108	
	Previous qty	Rmt						108	
	This qty.	Rmt						0	
b)	3R x 4sqmm Cu. Wires kitchen circuit KP DB	Mtr	240						
	R1	Rmt		1	25.00			25	

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SR. No	DESCRIPTION	UOM	Boq qty.	No.	Length	Width	Height	Total	Remarks
	R3	Rmt.		1	24.00			24	
	Y1	Rmt		1	23.50			23.5	
	B3	Rmt.		1	22.50			22.5	
	Y5	Rmt		1	22.00			22	
	Y4	Rmt		1	22.50			22.5	
	Y2	Rmt		1	24.00			24	
	B1	Rmt.		1	25.00			25	
	R2	Rmt		1	24.50			24.5	
	B2	Rmt		1	25.00			25	
	Y3	Rmt		1	25.00			25	
	B4	Rmt		1	25.00			25	
	Power point LP DB								
	Y9	Rmt		1	38.00			38	
	Y8	Rmt.		1	18.00			18	
	R8	Rmt		1	36.00			36	
	B7	Rmt		1	35.00			35	
	B8	Rmt		1	25.00			25	
	R9	Rmt.		1	22.00			22	
	Service UPS DB								
	F4	Rmt		1	19.00			19	
	F5	Rmt.		1	35.00			35	
	Total Qty	Rmt						516	
	Previous Qty	Rmt						516	
	this Bill Qty	Rmt						0	
c)	4R x 4Samm + 2R x 2.5Samm Cu. Wires	Mtr							
d)	4R x 6Samm + 2R x 2.5Samm Cu. Wires	Mtr							
9	Supply & installation of 25 mm dia. GI conduit with pull box / junction box & all accessories for Kitchen & Bar Power wiring as per the requirement								
a	- do - but conduit pipe shall be Rigid type.	Mtr	350						
		Rmt		1	36			36	
		Rmt		1	16			16	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	8			8	
	Cat 6 Wiring for TV-01	Rmt		1	24			24	
	Cat 6 Wiring for TV-02	Rmt		1	24			24	
		Rmt		1	26			26	
	Total Qty	Rmt						267	
	Previous Qty	Rmt						193	
	this Bill Qty	Rmt						74	
b	- do - but flexible conduit pipe	Mtr	25						
		Rmt		1	3.00			3	
		Rmt		1	2.00			2	
		Rmt		1	2.00			2	
		Rmt		1	2.00			2	
		Rmt		1	2.00			2	
		Rmt		1	3.00			3	
		Rmt		1	3.00			3	
		Rmt		1	4.00			4	
		Rmt		1	3.00			3	
	Total Qty	Rmt						24	
	Previous Qty	Rmt						24	
	this Bill Qty	Rmt						0	
10	Supply & installation of 20 mm dia. GI conduit with pull box / junction box & all accessories for Lighting & Power wiring as per the requirement								
a	- do - but conduit pipe shall be Rigid type	Mtr	RO						
b	- do - but flexible conduit pipe	Mtr	RO						
11	Supply and installation of Perforated Cable Tray (ASIAN)out of 14 gauge GI sheet complete with necessary fixing arrangement with Anchor Fastener and all other accessories as per the final approval of the Consultant/Architect								
a	300 x 50 x 2mm	Mtr	30						
b	200 x 50 x 2mm	Mtr	RO						
c	150 x 50 x 2mm	Mtr	10						
d	100 x 50 x 2mm	Mtr	RO						
e	50 x 50 x 2mm	Mtr	RO						

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12	Supply and installation of GI trunking (SV POWER/ASIAN) with 2 mm thickness & properties/clamps for suspension at appropriate intervals & as per the route approved by Architect/Consultant. (For DATA/CONTROL WIRING/LIGHTING & POWER CIRCUITS / KITCHEN)								
a	300 x 50 x 2mm	Mtr	RO						
b	200 x 50 x 2mm	Mtr	RO						
c	150 x 50 x 2mm	Mtr	30						
		Mtr		5				8	
	Total Qty	Rmt						8	
	Previous Qty	Rmt						8	
	this Bill Qty	Rmt						0	
d	100 x 50 x 2mm	Mtr	RO						
e	50 x 50 x 2mm	Mtr	RO						
13	Supply and installation of GI raceway with 2 mm thickness & proper ties/clamps at appropriate intervals & as per the route approved by Architect/Consultant. (Cost of cutting the floor for laying of raceways to be included)								
a	3 runs of underfloor raceways of size 100 x 40 mm	Mtr	RO						
b	2 runs of underfloor raceways of size 100 x 40 mm	Mtr	RO						
c	1 runs of underfloor raceways of size 100 x 40 mm	Mtr	20						
d	1 runs of underfloor raceway of size 85 x 40 mm	Mtr	RO						
e	2 runs of underfloor raceway of size 65 x 40 mm	Mtr	RO						
f	1 runs of underfloor raceway of size 65 x 40 mm	Mtr	10						
14	Supply & installation of GI junction boxes with 2 mm thickness, 2mm thick SS cover with 2" extra on all sides SS cover on top and having screw fixed plates on all four sides with knock out holes for conduits. The plates shall be retained on the sides having no conduit or raceway so as to avoid the entry of any unwanted material. Earth stud to be provided for all Junction boxes for earthing. Junction box to be prepared as per the final approval of Architect/Consultant. The junction boxes shall be protected from the entry of unwanted material till the completion of the project & the SS plates shall be installed after the final polishing of flooring.								
a	suitable for 450 x 450 x 50 mm	Nos	RO						
b	suitable for 350 x 350 x 50 mm	Nos	RO						
c	suitable for 250 x 250 x 50 mm	Nos	4						
d	suitable for 150 x 150 x 50 mm	Nos	RO						
15	Supply, installation, testing & commissioning of flush mounted plate type switch and switch + sockets with hot dipped GI box complete as per the final approval of Architect/Consultant								
a	6A one way plate type switch	Nos	2						
b	6A 5 pin Socket outlet	Nos	RO						
c	6A 5pin switch socket outlet for CCTV & Charging point	Nos	1						
f	3 nos. 6A socket controlled by 1no 16A switch	Nos	2						
g	2 nos. 6A socket controlled by 2no 16A switch	Nos							
	USB Point	Nos	5						
		Nos		4				4	
	Total Qty	Nos						4	
	Previous Qty	Nos						4	
	this Bill Qty	Nos						0	
h	1 nos. 6/16A socket controlled by 1nos 6/16A switch	Nos	32						
		Nos		20				20	
	tv switch socket			2				2	
	Total Qty	Nos						22	
	Previous Qty	Nos						20	
	this Bill Qty	Nos						2	
i	1 phase, 2 Nos x 5/15 amp bakelite socket & switch, housed in Fabricated SS Panel suitable for hanging arrangement for kitchen equipments. (having two outlet /6 modular plate)	Nos	1						
16	Supplying, installation, Testing and commissioning flush mounting floor metallic boxes IP 66 (at terrace level) with 2 nos of 6/16A international switch & socket outlet + 1 set of blanking plate for 2 data/voice outlet suitable for AMP type 1/0's of following modules complete with all installation kits, accessories, required to finish the installation - Sample will Approved by Client/Consultant Cost of Switches, sockets outlet & blanking plat for Data/Voice outlets shall be included.								
16.1	300mm x 300mm x 65/75 mm	Nos	RO						
17	Supply, installation of temporary lighting & power arrangement for construction purpose of with industrial type switch & sockets/MCB's/EICB's & lighting fittings as required to finish the work for interior contractor & necessary electrical protections throughout the site for construction work till the handover of site. Contractor shall maintain the safety rules & regulations as per Airport Security Department. The material shall be taken back by the contractor.	Job	1						
	Temporary lighting and power arrangement at site	Job		1				1	

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SR. No	DESCRIPTION	UOM	Boq qty.	No.	Length	Width	Height	Total	Remarks
	Total Qty							1	
	Previous Qty							1	
	This Bill Qty							0	
	TOTAL FOR WIRING & ACCESSORIES								
VI	LIGHTING FITTINGS								
	Installation, testing & commissioning of the following concealed / surface mounted or suspended light fixtures AS PER FINAL APPROVAL FROM ARCHITECT/CLIENT/CONSULTANT with lamus, ballast & all necessary mounting & supporting accessories. No additional cost shall be paid for supporting.								
1	FILAMENT BULB	Nos	46						
		Nos		31				31	
	Total Qty	Nos.						31	
	Previous Qty	Nos.						31	
	this Bill Qty	Nos.						0	
2	PULLEY LIGHT	Nos.	12						
		Nos.		11				11	
	Total Qty	Nos.						11	
	Previous Qty	Nos.						11	
	this Bill Qty	Nos.						0	
3	CHANDELIER	Nos	4						
		Nos		5				5	
	Total Qty	Nos.						6	
	Previous Qty	Nos.						6	
	this Bill Qty	Nos.						0	
4	KEG LIGHT	Nos	3						
		Nos		3				3	
	Total Qty	Nos.						3	
	Previous Qty	Nos.						3	
	this Bill Qty	Nos.						0	
5	TRACK LIGHT	Nos	32						
		Nos		28				28	
	Total Qty	Nos.						28	
	Previous Qty	Nos.						28	
	this Bill Qty	Nos.						0	
6	DECORATIVE LIGHT	Nos	1						
		Nos		1				1	
	Total Qty	Nos.						1	
	Previous Qty	Nos.						1	
	this Bill Qty	Nos.						0	
7	HANGING SPOT LIGHT	Nos	12						
		Nos		31				31	
	Total Qty	Nos.						31	
	Previous Qty	Nos.						31	
	this Bill Qty	Nos.						0	
8	LED STRIP LIGHT	Mtr	47						
	Led Profile light	Nos		42				42	
	Total Qty	Nos.						42	
	Previous Qty	Nos.						42	
	this Bill Qty	Nos.						42	
9	SPIKE LIGHT	Nos	12						
	Spike light	Nos		12				12	
	Total Qty	Nos.						12	
	Previous Qty	Nos.						12	
	this Bill Qty	Nos.						12	
10	FILAMENT LIGHT EMERGENCY	Nos	6						
11	HANGING SPOT LIGHT EMERGENCY	Nos	5						
	TOTAL FOR LIGHTING FIXTURES								
VII	EARTHING								

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SR. No	DESCRIPTION	UOM	Boq qty.	No.	Length	Width	Height	Total	Remarks
1	Supply and installation of Maintenance free chemical earthing using electrodes of size approx. 33 mm dia +/- 2mm, 3 metres long bonded with 50x6 copper internal strip complete with excavation, civil works, cast iron cover with backfill compound min. 40 KG. The system shall be CPFI tested. Warranty period of chemical earthing from the date of commissioning shall be 5 years. Warranty implies the voltage between earth and neutral will not exceed 0 volts for earthing pits installed. (Note: Body earthing provided by Base builder. We have considered Neutral earthing for UPS & Server racks.)	Nos.	RO						
2	Supply & erection of GI strip of 10 x 6 mm used for earthing on wall cable trays with necessary clamps fixed on wall painted with bituminous paint in an approved manner.	Mtr.	RO						
3	Supply & erection of GI strip of 25 x 3 mm used for earthing on wall cable trays with necessary clamps fixed on wall painted with bituminous paint in an approved manner.	Mtr.	60						
4	1 no. 4 sq. mm YY cable in 25mm GI conduit for earthing FOR NETWORK RACK	Mtr.	20						
5	Supplying & erecting bare copper conductor of 8 swg for earthing purpose	Mtr.	80						
7	Supplying & erecting bare GI conductor of 8 swg for earthing purpose	Mtr.							
8	Supplying & erecting bare GI conductor of 12 swg for earthing purpose	Mtr.							
9	Supplying & installation testing & commissioning of earth terminal box	Nos.							
TOTAL FOR EARTHING									
VIII MISCELLANEOUS									
1	Supply & installation of BA 3 pin plug top	Nos.	RO						
2	Supply & installation of 16A 3 pin plug top	Nos.	RO						
3	Supply, installation, testing & commissioning of Cable TRIS Cable for Lighting Automation	Mtr.	RO						
4	Supply & laying of Rubber Mats, CPRI tested conforming to standards like BS 921, ASTM D 178 & IEC 479 for different operating voltage ratings as below. Supply of 2M x 1M Rubber mat suitable for operating voltage upto 11KV	Set	1						
5	Supply & fixing of approved shock treatment chart written in English and in local Language. The chart shall be framed in Teakwood and covered with glass.	Nos.	1						
6	Supply & fixing of approved fire Alarm evacuation plan chart written in English and in local Language approved by client requirements.	Nos.	RO						
7	Supply & fixing of the best quality (1) Danger Boards(415V) for of approved shape and size as specified by the local electrical authorities written in English and local Language	Nos.	1						
8	Supply & handed over to client of First Aid Box	Set	RO						
9	SITC of Emergency Exit signage (battery operated) approval by client / architect / consultant. Make: Preitec or Equivalent	Nos.	RO						
TOTAL FOR MISCELLANEOUS									
IX LOW VOLTAGE SYSTEM									
A DATA AND TELEPHONE SYSTEM									
1	Supply & installation of 25mm dia. GI conduit with pull box/ junction box & all accessories for DATA /VOICE/WIFI wiring as per the requirement.	Mtr.	500						
		Rmt		1	25			25	
		Rmt		1	25			25	
		Rmt		1	20			20	
		Rmt		1	14			14	
		Rmt		1	20			20	
		Rmt		1	2			2	
		Rmt		1	22			22	
		Rmt		1	19			19	
		Rmt		1	19			19	
		Rmt		1	26				
	Total Qty	Rmt						147	
	Previous Bill	Rmt						147	
	This Bill	Rmt						0	
2	Providing DATA wiring inside 25mm dia GI conduit from each Data outlet to ICT CP Point by using Indoor Type CAT5A	Mtr.	450						
	V3	Rmt		1	32			32	
	D7	Rmt		1	32			32	
	D8	Rmt		1	32			32	
	D1	Rmt		1	26			26	
	D2	Rmt		1	26			26	
	D3	Rmt		1	29			29	

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SR. No	DESCRIPTION	UOM	Boq qly.	No.	Length	Width	Height	Total	Remarks
	D4	Rmt		1	29			29	
	V1	Rmt		1	29			29	
	Ra-2nd								
	D9	Rmt		1	27			27	
	D10	Rmt		1	21			21	
	D11	Pmt		1	10			10	
	D12	Rmt		1	16			16	
	D13	Pmt		1	19			19	
	D14	Rmt		1	26			26	
	D15	Rmt		1	36			36	
	D16	Rmt		1	23			23	
	D17	Rmt		1	14			14	
	D5	Pmt		1	8			8	
	D6	Rmt		1	8			8	
	V2	Rmt		1	8			8	
	wifi 1	Rmt		1	23			23	
	wifi 2	Rmt		1	4			4	
	projector	Rmt		1	21			21	
	Cat 6 Wiring for TV-01	Rmt		1	24				
	Cat 6 Wiring for TV-02	Rmt		1	24				
	Total Qty	Rmt						499	
	Previous Bill	Rmt						499	
	This Bill	Rmt						0	
3	Supply & installation of internet Jack Unit RJ-45 suitable for CAT6A	Nos.	20						
4	Supply & installation of make Cat 6A UTP Patch Cords, with snagless boots, color matched Blue 3 feet	Nos.	20						
5	Supply & installation of make Cat 6A UTP Patch Cords, with snagless boots, color matched Blue 7 feet	Nos.	10						
6	Supply & laying inducts multi pair 0.5mm dia copper PVC insulated and sheathed armoured telephone cables on walls, ceiling, cable trays, trunking complete with clamps, cable markers etc. from MDF to the various tap blocks as specified								
a	10 pair cable armoured	Mtr	40						
b	5 pair cable	Mtr	RO						
c	3 pair cable	Mtr	RO						
d	2 pair cable	Mtr	RO						
7	Supply & installation of telephone tap block with CRONE terminal connectors, G.I.B as specified & complete with all interconnections and jumper connections between the two tap blocks on all floors as shown on drawings								
a	50 pair tel. tap block	Nos.	RO						
b	20 pair tel. tap block	Nos.	1						
c	10 pair tel. tap block	Nos.	RO						
	TOTAL FOR DATA AND TELEPHONE SYSTEM								
	GRAND TOTAL								

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
A	WATER SUPPLY PIPING								
1	CPVC Pipes conforming to ASTM D-2846. SDR-11 grade and CPVC solvent weld fittings like elbows, tees, couplers, brass threaded adaptors, insert ring etc suitable for (domestic and flushing) cold applications rated concealed piping within wall / floor including jointing with fittings using solvent cement, brass threaded end fittings for making connection to fixtures. The work shall also include chasing the walls with machine wherever required for concealed piping and making good the same after laying of pipes & necessary pressure testing Chasing finishing shall be done with 1:1 cement mixed mortar, restore the same original condition for internal and shaft piping, including necessary hot deep galvanised supports vertical / horizontal, as per direction of Site incharge direction. [The rate shall include supply of S S screws and nut bolts etc chasing in walls done by machine] (For Domestic and Flushing water-Toilet internal) (Pipe shall be tested with 1.5 times working pressure as covered in specifications)								
1.1	20 mm Dia	R.mt	35						
	RO Water Line on expose wall	R mt		1	2.08			2.08	
	Bar area LHS wall	R mt		1	3.05			3.05	
	Tap point vertical	R mt		1	0.27			0.27	
	Bar Front wall	R.mt		1	2.2			2.2	
	Hot Water Gyser line Bar front wall	R mt		1	1.5			1.5	
	RHS wall	R.mt		1	2.3			2.3	
	Fresh Water line main aiportline to column	R.mt		1	1.3			1.3	
	Column Inside vertical	R.mt		1	2.85			2.85	
	Above fasade glass	R.mt		1	5.02			5.02	
	Vertical for near glass fasade	R.mt		1	2.85			2.85	
	Expose main Line	R mt		1	2.48			2.48	
	RHS wall vertical Line	R.mt		2	0.45			0.9	
	RHS wall Horizontal Line	R.mt		1	1.44			1.44	
	Ra-2nd								
	Gyser line horizontal	R mt		1	3.65			3.65	
	RO outline horizontal	R mt		1	4			4	
	Ro waste hprizontal	R mt		1	3			3	
	Gyser line vertical	R.mt		1	3.5			3.5	
	RO outline vertical	R.mt		1	3.5			3.5	
	Ro waste vertical	R.mt		1	3.5			3.5	
	Total Qty.							49.39	
	Previous Qty.							49.39	
	This Bill							0	
1.2	25 mm Dia	R mt	-						
1.3	32mm Dia	R mt	-						
1.4	40mm Dia	R mt	-						
2	Providing & Fixing of gun metal heavy Ball Valves-PN-16 (approved makes as covered in specification) screwed type for water system of the following diameters. Valve shall have with unions								
2.1	20mm Dia	Nos							
	Main line connection	Nos		1				1	
	RO and Gyser	Nos		2				2	
	Total Qty.							3	
	Previous Qty.							3	
	This Bill							0	
2.2	25mm Dia	Nos	-						
2.3	32mm Dia	Nos	-						
2.4	40mm Dia	Nos	-						

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
3	Providing ,fixing, testing and commissioning capstan make Water Meter including providing & fixing matching Isolation valves ,strainer, non-return valve,complete with all necessary fittings etc screwed type(15Kgs/Sq cm). Valve shall have with union.								
3.1	20 mm Dia incoming line	Nos	1						
3.2	25 mm Dia incoming line	Nos	RO						
3.3	32 mm Dia incoming line	Nos	RO						
4	Supply, installation,testing & commissioning of Storage Type Electric Hot Water Generator of mentioned capacity, suitable for 3 KG/cm2 pressure. Wall Mounted / Floor standing type, with Auto Shut-off Thermostat, along with isolation Valves, Air Release valve, SS flexible connections and all other std accessories								
4.1	5 L Capacity-	Nos	RO						
4.2	20 L Capacity	Nos	1						
4.3	35 L Capacity- For shower	Nos	RO						
5	Supply, installation,testing & commissioning of Stiebel Type Electric Hot Water Generator of mentioned capacity, suitable for 3 KG/cm2 pressure. Wall Mounted / Floor standing type, with Auto Shut-off Thermostat, along with isolation Valves, Air Release valve, SS flexible connections and all other std accessories (Optional in pantry)								
5.1	3.5kw in pantry- optional	Nos	RO						
5.2	8kw	Nos	RO						
5.3	13kw-3ph- Subject to load permits	Nos	RO						
6	SITC of Eco smart RO-50 with all required accessories (Prior to order capacity and model to need to be confirmed by the kitchen consultant)	Nos	1						
7	SITC of ACO grease trap -model Lipumobil 0.8 -Capacity -48 lit (0.8 LPS) with all required accessories (Order shall be placed as per space available below the counter)	Nos	-						
8	SITC of ACO grease trap -model Lipumobil S -Capacity -32 lit (0.5 LPS) with all required accessories	Nos	-						
B	DRAINAGE								
1	uPVC-SWR pipes conforming to IS 13592/92 including fittings conforming to IS-14935/99 and agri type pipes above 100 mm dia conforming to IS: 4985, cutting the pipes to required lengths, laying in the position to required grade and level, jointing, supporting with PVC cleat hot deep galvanised bracket supports, hot deep galvanised nut-bolts, anchor fasteners, PVC coated U-clamp, testing and rectifying leakages for piping within vertical shafts / supported on wall / hung below slab etc. with all material & labor complete and as directed. [The Rate shall include supply and fixing of hot dip galvanised bracket nut bolts/ PVC Coated U-Clamp and screws] Vertical line bracket shall be fixed at every 0.8 mtr to 1.00 mtr] (For Soil , Waste, Vent and RWP-Internal and vertical shaft)								
1.1	40mm Dia	R mt	2						
1.2	50mm Dia	R mt	6						
1.3	65mm Dia	R mt	-						
1.4	75mm Dia	R mt	7						
	Trap to small GT line	R mt		1	0.7			0.7	
		R ml		1	0.55			0.55	
		R ml		1	0.83			0.83	
		R ml		1	0.58			0.58	
		R ml		1	0.6			0.6	
		R ml		1	1.45			1.45	
	Trap to main GT line	R mt		1	2.05			2.05	
	600x300 to 600x600 main GT line	R ml		1	0.8			0.8	
	300x300 to 600x600 main GT line	R ml		1	0.4			0.4	
	Total Qty.							7.96	
	Previous Qty.							7.96	
	This Bill							0	
1.5	100 mm Dia	R mt	2						
1.6	150 mm Dia	R ml	RO						
2	Supply, Install PVC Floor Trap for the following pipes including making all approved quality Solvent cement joints with material & labour etc. all complete as per direction of the engineer-in-charge.	Nos	2						

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
	Floor trap	Nos		6				6	
	Total Qty.							6	
	Previous Qty.							6	
	This Bill							0	
3	Supply, Install PVC Multi Floor Trap for the following pipes including making all approved quality Solvent cement joints with material & labour etc. all complete as per direction of the engineer-in-charge.	Nos	4						
4	Supply, Install PVC urinal Traps including fixing with necessary consumables with Circular SS Grating with anti cockroach jali Suitable for 75mm Dia outlet	Nos	-						
5	Supply, Install PVC P- Traps including fixing with necessary consumables with Circular SS Grating with anti cockroach jali Suitable for 75mm Dia outlet	Nos	-						
C	SANITARY AND C. P. FITTINGS & FIXTURES								
	Only installation, testing and commissioning of sanitary and C.P. fittings								
1.1	EWC with seal cover	Nos	-						
1.2	Concealed flush tank	Nos	-						
1.3	Concealed flush valve	Nos	-						
1.4	Health Faucet	Nos	-						
1.5	2 Way Bib-Cock with connection for Health Faucet	Nos	-						
1.6	Bided	Nos	R.O						
1.7	Under Counter Wash Basin including waste Coupling	Nos	-						
1.8	Wash Basin Cock	Nos	-						
1.9	shower and mixer	Nos	-						
1.10	Jet Spray	Nos	-						
1.11	Bath Tub including waste Coupling and nessessary connections	Nos	-						
1.12	Under Counter Sink including waste Coupling	Nos	1						
1.13	Sink Pillar Cock	Nos	1						
	Sink Pillar cock	Nos		2				2	
	Total Qty.							2	
	Previous Qty.								
	This Bill							2	
1.14	Bottle Trap for WHB/ sink and urinal with all connecting pipes	Nos	1						
	Connection pipes	Nos	1	2				2	
	Total Qty.							2	
	Previous Qty.								
	This Bill							2	
1.15	Angle Cock with PVC pipe connection upto WHB/sink/Geyser connection	Nos	7						
	Bar area	Nos	1	7				7	
	For Ro and Gyser above ceiling	Nos	1	3				3	
	Total Qty.							10	
	Previous Qty.							10	
	This Bill							0	
1.16	Urinal	Nos	-						
1.17	Auto Flush Valve & Sensor with connecting piping & spreader for urinal(DC)	Nos	-						
D	S.S. GRATING								
	Only installations/ testing and commissioning of S.S.Gratings								
1	Making chamber in brick work including internal tiling etc for S S Grating size. 1200mm x 200mm. in 16 swg 25mm x25mm Square Pipe around the Frame and 20mmX 20mm Square pipe in center of frame with SS perforated tray (304 SWR) Complete as per architectural detail drawing & Site Engineer's instruction.	Nos	-						

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
2	Making chamber in brick work including internal tiling etc for S.S Grating size, 600mm x 300mm, in 16 swg 25mm x25mm Square Pipe around the Frame and 20mmX 20mm Square pipe in center of frame with SS perforated tray (304 SWR). Complete as per architectural detail drawing & Site Engineer's instruction.	Nos	1						
	Floor greeting size 300x600	Nos		1				1	
	Total Qty.							1	
	Previous Qty.							1	
	This Bill							0	
4	Making chamber in brick work including internal tiling etc for S.S Grating size, 300mm x 300mm, in 16 swg 25mm x25mm Square Pipe around the Frame and 20mmX 20mm Square pipe in center of frame with SS perforated tray (304 SWR). Complete as per architectural detail drawing & Site Engineer's instruction.	Nos	3						
	Floor greeting size 300x300	Nos		2				2	
	Floor greeting size 500x500	Nos		1				1	
	Total Qty.							3	
	Previous Qty.							3	
	This Bill							0	

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		MB HVAC			Correction copy																
Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks												
1	CHILLED WATER TYPE CEILING SUSPENDED AHU (AIR HANDLING UNIT):																				
1.1	CEILING SUSPENDED AHU :																				
	Supply and assembly of Ceiling Suspended Double skin cabinet type AHU Integrated (Air handling units) of following specifications:																				
	Frame Structure: It shall consist of 48mm Extruded Aluminium with thermal break profile.																				
	Panel: 45mm +/- 2mm thick double skin sandwich panels with rockwool insulation of density 64 kg/m3 or PUF insulation of 48 kg/m3 . The sheet thickness shall be minimum 0.6 mm for the outer skin pre-coated and 0.8 mm thickness for the inner skin of plain GI.																				
	Filtration Section: It shall be provided with single stage washable type of prefilter 'MERV 8' first stage which shall be placed before coil section.																				
	Coil Section: Chilled water coil Multi row deep constructed with Aluminium fins of min 0.11mm thick 12 Fins per inch, and copper tubes of min 27 Gauge thickness HYDROPHYLLIC coated fins. Copper tube shall be min 12.5mm diameter, AHRI certified coil. The coil face area velocity shall not exceed 2.5m/sec (500 fpm)																				
	Drain Pan: Condensate drain pan shall be fabricated from 18G SS 304 powder coated, insulated with 13 mm thick closed cell elastomeric (nitrile rubber) insulation.																				
	Fan Section: S1SW / D10W Direct drive backward curved fan. The fan section shall be provided with limit switch for safety to shut off fan during Opening of access door. Fan outlet velocity not to exceed 1600 FPM. The sound level shall not be exceed more than 60dB @ 1m from the source. Vibration isolators, Door Limit switch, UV Lamp as per Technical Specifications, AHU Summary Sheet and drawings. Total static pressure has to be calculated by Contractor as per the condensation.																				
	Other Details: AHU to house control box/ terminal box with Auto-Manual switch and incoming power terminal, with SPP, Over/Undervoltage protection, shortcircuit protection and with no-nc contacts (potential free contact) to be provided for tripping on signal from Fire Dampers / Fire Alarm Panel. Power cable from Terminal box to motor & control cabling of required size upto the thermostat / sensor etc. to be provided. Internal electrical and control wiring of AHU to be provided as factory fitted from AHU supplier. The cost shall include all necessary supports & accessories required for installation.																				
	Contractor shall design the chilled water coil according to the following conditions:																				
	a. Coil air entering temperature - 75.4°F DB																				
	b. Coil air leaving temperature - 54 deg. F DB/ 52.99 deg. F WB																				
	c. Chilled water temperature entering - 6.0 deg. C/ 42.8 deg. F																				
	d. Chilled water temperature leaving - 13.3 deg. C/ 55.9 deg. F																				
	Make : VTS / Zeco / Citizen																				
	<table border="1"> <thead> <tr> <th>Type</th> <th>Capacity (Cfm)</th> <th>Tonnage TR</th> <th>ESP (mm WG)</th> <th>No. of Rows</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>CS AHU</td> <td>2500</td> <td>9.2</td> <td>25</td> <td>4/6</td> </tr> </tbody> </table>	Type	Capacity (Cfm)	Tonnage TR	ESP (mm WG)	No. of Rows	a	CS AHU	2500	9.2	25	4/6									
Type	Capacity (Cfm)	Tonnage TR	ESP (mm WG)	No. of Rows																	
a	CS AHU	2500	9.2	25	4/6																
	GENERAL NOTES:																				
	a. LHS & RHS VALVE station location to be confirmed.																				
	b. Fan outlet velocity - 1600 FPM																				
	c. Contractor shall submit static pressure calculation for all above units to Client/Consultant.																				
	d. Any change in motor HP shall be made at no extra cost to client.																				
	e. Fan efficiency shall be minimum 75%																				
	f. The cost shall be included lifting & shifting of each equipment / material with all necessary arrangement. Also, it shall be included the cost of scaffolding required for installation of such material / equipment.																				
2	CHILLED WATER PIPING WITH INSULATION:																				
2.1	CHW PIPE																				
	SITC of MS Heavy duty class 'C' ERW Chilled Water pipe conforming to IS 1239 - 2004 primer painted including bends, tees, MS supports, PUFF saddles, anchor fasteners, steel angles and any other material required to complete the work. The piping flange connection bolts, washers and nuts should be hot dipped galvanised. Flourscent Plastic Sticker/ paint shall be applied to indicate Water flow directions. Only End flanges to be used for capping of pipes. Table																				
	Make: Jindal Hissar / TATA																				
a	Φ 55 mm	Rmt	110																		
	Φ 40 mm	Rmt	30																		
	40 mm Inlet line AHU-1	Rmt		1	3.28			3.28													
	40 mm outlet line AHU-1	Rmt		1	3.28			3.28													

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
	40 mm Inlet line AHU-2	Rmt		1	3.28			3.28	
	40 mm outlet line AHU-2	Rmt		1	3.28			3.28	
	Total Qty	Rmt						13.12	
	Previous Qty	Rmt						0	
	This Bill	Rmt						13.12	
2.2	CHILLED WATER PIPING INSULATION - INTERNAL USE SITC of insulation for chilled water piping For internal pipe - Stick 25mm thick Nitrile rubber class "O" Closed cell nitrile rubber with anti-microbial coating on it. Insulation shall have Thermal conductivity of 0.033 W/(m.K) and water vapor permeance of 0.10. Joints should be sealed with 50 mm wide 3 mm thick self adhesive tape and outline PVC bands at all supports Make: Armaflex & K-flex								
a	Ø 65 mm	Rmt	110						
	Ø 40 mm	Rmt	30						
	40 mm Inlet line AHU-1	Rmt		1	3.28			3.28	
	40 mm outlet line AHU-1	Rmt		1	3.28			3.28	
	40 mm Inlet line AHU 2	Rmt		1	3.28			3.28	
	40 mm outlet line AHU-2	Rmt		1	3.28			3.28	
	Total Qty	Rmt						13.12	
	Previous Qty	Rmt						0	
	This Bill	Rmt						13.12	
2.3	BALL VALVE SITC of following sizes of Ball Valve consist of Cap, Brass Body, Rated for 150 psi SWP, 600 psi WOG Pressure: Two-piece construction; with brass body, regular port, B-16 chrome-plated ball and stem, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, vinyl covered steel handle, threaded or soldered ends and extended stem for insulated piping. Same valve shall be used as a Drain valve Make: Zoloto / Audco / Kitz								
a	Ø 40 mm	Nos.	8						
	Ball Valve			8				8	
	Total Qty	Nos.						8	
	Previous Qty	Nos.						0	
	This Bill	Nos.						8	
2.4	BALL VALVE WITH Y-STRAINER SITC of following sizes of Brass Ball Valve with Y-Strainer consist of Cap, Brass Body, Rated for 150 psi SWP, 600 psi WOG Pressure: Two-piece construction; with brass body, regular port, B-16 chrome-plated ball and stem, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, vinyl covered steel handle, threaded or soldered ends and extended stem for insulated piping. Filter element shall be of non magnetic SS sheet with perforation Make: Zoloto / Audco / Kitz								
a	Ø 40 mm	Nos.	2						
	Ball Valve Y-Strainer			2				2	
	Total Qty	Nos.						2	
	Previous Qty	Nos.						0	
	This Bill	Nos.						2	
2.5	PIBCV VALVES SITC of Pressure independent balancing control valves (PIBCV) including integrated motorised control valve and balancing device for combined flow and water balancing requirement. Valve body to be rated for PN 16. The valve design flow rate should be factory calibrated with +/- 5% flow accuracy. Valve shall have necessary measuring ports, drain port, flanges etc., Valve shall also provide temperature sensor with necessary cabling (min 2mtr length to be considered with each valve). The balancing to be done through microprocessor based hand held terminal / POT and the same results shall be furnished in the water balancing report as part of completion report and baseline data report Make: Oventrop / Siemens / Danfoss								
a	Ø 40 mm	Nos.	2						
	PIBCV VALVES			2				2	
	Total Qty	Nos.						2	
	Previous Qty	Nos.						0	
	This Bill	Nos.						2	
2.6	Auto Air Vent Valves Make: Anergy / Flamco Providing and fitting Auto Vent Valves								
a	SITC of Auto air vent in each risers & common headers & AHU. 3/4" auto vent valves at each coil / riser / header.	Nos.	4						

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
	Air Vent			4				4	
	Total Qty	Nos.						4	
	Previous Qty	Nos.						0	
	This Bill	Nos.						4	
2.7	SITC of Pressure gauges & Thermometers Make: H Guru / Waree								
	Necessary pressure gauges and thermometers 4" Dial type								
a	Water Pressure gauges 150mm dial complete with gauge valves, mounting, fittings and copper tubing extension wherever required. Pressure gauges Range 0-10 Kg/CM2	Nos	4						
	Pressure Gauge			4				4	
	Total Qty	Nos.						4	
	Previous Qty	Nos.						0	
	This Bill	Nos.						4	
b	Thermometers of the mercury in glass stem type and copper separable well complete with guard etc., of industrial grade mounting on water lines. Length 9/12 inches, Thermometer, Range 0-50 deg C	Nos	4						
	Thermometers			4				4	
	Total Qty	Nos.						4	
	Previous Qty	Nos.						0	
	This Bill	Nos.						4	
c	Thermowells	Nos.	8						
	Thermowells			8				8	
	Total Qty	Nos.						8	
	Previous Qty	Nos.						0	
	This Bill	Nos.						8	
d	SITC of Brass Test Plug of industrial grade mounting on water	Nos.	RO						
2.8	INSULATED CONDENSATE DRAIN PIPE SITC of UPVC pipes of following sizes for drain with necessary supports and fittings such as elbows, tees & reducers etc. The insulation line to be insulated with nitrile rubber insulation of thickness 9mm and wrapped by weather proof protection tape. The Pipe wherever concealed should also have a parallel line as a standby arrangement in case of block of primary pipe. Make: Supreme, Prince, Astral								
a	Ø 25 mm	Rmt	10						
	AHU-1			1	6.61			6.61	
	AHU-2			1	7.90			7.9	
	Total Qty	Rmt						14.51	
	Restricted Qty.	Rmt						10	
	Previous Qty	Rmt						0	
	This Bill	Rmt						14.51	
b	Ø 32 mm	Rmt	20						
	NOTES FOR PIPING:								
a	Cover all open pipe ends with muslin cloth during construction								
b	Pipe cleaning & chemical treatment as per specs shall be included in the piping cost.								
c	Unit rates for all indicated sizes of pipes & valves shall be furnished.								
d	Cleaning/Painting of pipe before Insulation shall be included in piping cost.								
e	The piping support should be as per tender specification and additional supports are to be provided Contractor as decided by Consultant.								
f	All the valves shall be insulated with the same material as that of Chilled water piping and cost of insulation for valves shall be considered.								
	SUB-TOTAL								
3	SHEET METAL WORKS:								
3.1	FACTORY FABRICATED G.I RECTANGULAR DUCT Supply, Fabrication, Testing, and Commissioning of Factory Fabricated GI Sheet Metal 120GSM Rectangular boxed ducting, Plenums, Cows, Elbows with turning vanes, Splitters, Reducers, Flanges, Collars etc as per IS and Installaton as per SMACNA standards, The complete ducting shall be provided with MS Supports, Rods, Angles, Flanges, Bracing, Rubber Gaskets, Wooden frames, Canvas Connections, etc as per drawings and specifications. GI Sheet Makes : Tata, Jindal, SAIL, Ispat								

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
	Make: Rola Star, Zeco & Ductofab								
a	22 Gauge GI Sheet Metal Duct (751-1500mm)	Sq.mtr	RO						
b	24 Gauge GI Sheet Metal Duct (0-750mm)	Sq.mtr	10						
c									
d	FACTORY FABRICATED G.I. FLAT OVAL DUCT Supply, Fabrication, Testing, and Commissioning of Factory Fabricated GI Sheet Metal 120GSM Exposed Flat Oval ducting, Elbows with turning vanes, Splitters, Reducers, Collars etc as per IS and Installaton as per SMACNA standards, The complete ducting shall be provided with MS Supports, Rods, Angles, Flanges, Bracing, Rubber Gaskets, Wooden frames, Canvas Connections, etc. as per drawings and specifications. All exposed ducts has to be powder coated by HVAC contractor, sample and color code to be presented for the validation of Client / Architect								
3.2	GI Sheet Makes : Tata, Jindal, SAIL, Ispat Make: Rola Star, Zeco & Ductofab								
	22 Gauge GI Sheet Metal Duct (751-1500mm)	Sq.mtr	RO						
	24 Gauge GI Sheet Metal Duct (0-750mm)	Sq.mtr	115						
	850x300 mm duct	sqm		1	14.2	2.3		32.66	
	850x300 mm duct Glass screen side	sqm		1	13.6	2.3		31.28	
	550x200 mm duct	sqm		2	6	1.5		18.00	
	550x200 mm counter area	sqm		1	2.56	1.5		3.84	
	Bar counter area	sqm		1	1.8	1.5		2.70	
	Total Qty in sqm							88.48	
	Previous Qty							85.78	
	This Bill Qty							2.70	
3.3	EXTRUDED ALUMINIUM CEILING GRILLES Supply, Installation, Testing and Balancing of Powder coated aluminium supply air grilles complete with removable inner core as per approved shop drawing and specifications. The area of grille can be of any geometrical shape (Square/rectangular/Linear). The grilles shall be with 15/30/45° deflections as per requirement. The Colour shall be decided and approved by client and architect								
	Curve Grille	Sq.mtr	1.5						
	Make: Cosmos, Air Master & System Air								
	Grill	sqm		15	0.4	0.1		0.6	
	Side Throw Curved Grill	Sam		12	0.4	0.1		0.48	
	Total Qty							1.08	
	Previous Qty							1.08	
	This Bill Qty							0	
3.4	SPIGOT DAMPER FOR ELLIPTICAL DUCT Supply, installation and testing of galvanized steel construction dampers for circular ducts (VCD) within ducts provided with suitable lever and quadrants for manual control of volume of air flow and for proper balancing of the air distribution system. Make: Cosmos, Air Master & System Air								
	SPIGOT Damper	Sqm		1	1			1	
	Total Qty	Sqm						1	
	Restricted qty	Sqm						0.5	
	Previous Qty	Sqm							
	This Bill Qty	Sqm						1	
3.5	OPPOSED BLADE DAMPER SITC of Aluminium Opposed blade dampers black powder coated vertical blades type for supply air collar. The damper should be gear operated type.								
	Grill damper	sqm		15	0.4	0.1		0.6	
	Side Throw Curved Grill Damper	Sam		12	0.4	0.1		0.48	
	Total Qty	Sqm						1.08	
	Previous Qty	Sqm						1.08	
	This Bill Qty	Sqm						0	
3.6	CANVAS CONNECTION SITC of Flexible connections between mouth piece of Fan and initial piece of ducting with inspection zip. Flexible connections shall be double thickness non-flammable material (Fire retardant type).								
a	For AHU	Nos.	2						
	Canvas connection	Nos		2				2	
	Total Qty	Nos						2	
	Previous Qty	Nos						2	
	This Bill Qty	Nos						0	
3.7	CURTAIN TYPE FIRE DAMPER								

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
	SITC of fire dampers consist of 16G GI frame, 20G GI interlocking blades secured with SS springs, blades outside airstream clamped with fusible link UL-555 listed with melting point 165 / 225°F, etc; as per the approved shop drawings and specifications. Make: Carryaire / System Air / Dynacraft / Air Master								
a	Bare fire dampers	Sq.mtr	0.5						
b	Fusible link as per specification UL 555	No	1						
	NOTES: The ducting support should be as per tender specification and additional supports are to be provided by Contractor as decided by Consultant. Muslin cloth cover for all air outlets during construction. Pressure testing of complete duct work as per DW/ SMACNA standard. Silicon sealant for longitudinal & transverse joints as per specification. Diffusers & grilles shall be powder coated as per color approved by Architect.								
	SUB-TOTAL								
4	THERMAL & ACOUSTIC INSULATION:								
4.1	THERMAL INSULATION Supply & fixing of Thermal insulation for supply air duct using 13mm thick class "O" Closed cell nitrile rubber with anti-microbial coating on it. Insulation shall have Thermal conductivity of 0.035 W/(m.K) and water vapor permeance of 0.10. Joints should be sealed with 50 mm wide 3 mm thick self adhesive tape. The duct shall be stick with recommended adhesive. Make: Armaflex & K-flex	Sq.mtr	100						
	850x300 mm duct	sqm		1	14.2	2.3		32.66	
	850x300 mm duct Glass screen side	sqm		1	13.6	2.3		31.28	
	550x200 mm duct	sqm		2	6	1.5		18.00	
	550x200 mm counter area	sqm		1	2.56	1.5		3.84	
	Total Qty in sqm	Sqm						85.78	
	Previous Qty	Sqm						85.78	
	This Bill Qty	sqm						0.00	
4.2	ACOUSTIC INSULATION Supply & fixing acoustic insulation for ducting using Class "1" closed cell elastomeric insulation of 10mm thick Nitrile rubber insulation adhesive, longitudinal & transverse joints sealed with adhesive in neat & clean manner. Material shall be processed Nitrile Rubber foam with anti-microbial protection. Insulation shall have thermal conductivity of 0.047 W/(m.K) and density of 140 - 180 kg/m³. Make: Armaflex & K-flex	Sq.mtr	25						
	AHU and Duct Mouth connection	sqm		2	0.3	2.3		1.38	
	Total Qty in sqm	sqm						1.38	
	Previous Qty	sqm						1.38	
	This Bill Qty	Sqm						0.00	
	Note: a. Insulation work to be coordinated with other agencies and repair to be included by contractor as per site requirement. b. Vendors to take care of the installation, if any damages takes place the vendor to repair or replace and hand over to clients in good and acceptable condition. c. Thermal insulation shall be internal for Elliptical / Exposed ducting.								
	SUB-TOTAL								
5	ELECTRICAL WORKS:								
5.1	STARTER PANEL								

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Item No.	Description	Unit	Boq Qty	No.	Length	Width	Height	Total	Remarks
	SITE of indoor / outdoor, wall mounting type 3PH, 415VAC MOTOR STARTERS IN CRCA SHEET STEEL ENCLOSURE with necessary supporting brackets and required accessories, etc., The Enclosure shall be provided with knockouts suitable for cable termination at TOP & BOTTOM for incoming and outgoing power cables of A2XFY type and size specified. The starters shall be complete with suitable MPCB/MCCB, Contactor, Bi-metal O/L relay with SPP, ON/OFF Push buttons, on / off / trip indication Lamp, on off push button, & phase indication Lamp. Selection of relay, contractor, MPCB/MCCB etc. as per Type-2 Coordination. Panel shall have provision to connect with								
a	Suitable for 2500 CFM AHU, DOL Starter Panel	Nos.	2						
	AHU Starter	Nos.		2				2.00	
	Total Qty in nos	Nos.						2.00	
	Previous Qty	Nos.						0.00	
	This Bill Qty	Nos.						2.00	
6.2	POWER CABLING								
	Supply, handling, laying effecting proper connections testing and commissioning of following sizes of 1.1 KV grade XLPE insulated FRLS Aluminium /Copper conductor cables laid over MS supports cable racks or fixing on walls including clamping the cable to supports in an approved manner as required complete with Copper earthing as specified for continuous earthing along with cable. All complete as required and as per final instruction as given by Owners/ Consultants and as per Technical specifications. Earthing shall be measured separately and shall be connected in two runs. Power to ELCB to be provided near each ODU by electrical contractor.								
a	Suitable Power Cable:								
	Suitable for 2500 CFM AHU, DOL Starter Panel	Rmt	10						
	AHU Starter	rmt		2	20.5			41	
	Total Qty in nos	Nos.						41.00	
	Previous Qty	Nos.						41.00	
	This Bill Qty	Nos.						0.00	
b	Earthing:								
	8 SWG	Rmt	20						
6.3	BTU METER								
	Supply, fixing and testing of inline Btu meter for the flow rate & temperature measurement consisting mainly of following 3 parts								
	a) Ultrasonic Flow Meter								
	b) Matched pair of temp sensor								
	c) Flowcell Sensor								
	c) BTU Meter - 4 - 20mA DC from flowmeter								
	insertion type flowmeter shall be suitable for chilled water application for temp. Ranging from 0 to 50 deg C. Power supply shall be 240V AC (+/-) 15 %. Display shall have 16 characters LCD display with Back light, flow rate, Velocity, totaliser etc. Output shall be BMS Modbus compatible & shall have keypad lockout security option. It also should be able to show various units such as gallons, ft^3, lbs, liters, m^3, kg etc.								
	Make: Honeywell / Danfoss / Siemens								
a	Dia 65 mm	No	1						
6.4	CABLE TERMINATION :								
	Supply & Making of Cable termination of armoured / unarmoured cables 1.1 KV grade including installation of cable glands, cable lugs (Aluminium for A2XFY & copper for 2XFY & YY Double compression type), heat shrinkable sleeves on long ends, crimping paste etc. The work includes testing & commissioning of cables, meggering values & submitting reports of tests. (One set includes termination of all cores of one end only) All crimping tools & dies shall be arranged by contractor								
a	Suitable for 2500 CFM AHU	Nos	4						
	CABLE TERMINATION :	rmt		4				4	
	Total Qty in nos	Nos.						4.00	
	Previous Qty	Nos.							
	This Bill Qty	Nos.						4.00	
6.5	CABLE TRAYS								
	Supplying & Fixing of following sizes of GI cable tray duly painted perforated type of height 50mm along with necessary bends, reducers etc. anchored along the wall / suspended from the ceiling with necessary MS supports.								
a	50mm wide	Rmt	10						

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MB Sheet Fire Alarm System -The Irish House

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SR.NO	DESCRIPTION	UNIT	Boq Qty.	No.	Length	Width	Height	Total	Remarks
A	ADDRESSABLE FIRE ALARM SYSTEM - NOTIFIER MAKE								
1	operation and 15 minutes alarm operation. The control panel, battery charger etc. The panel shall be with 1 loop and expandable upto 2 loop capacity. The Fire Alarm Control Panel shall include a full featured operator interface control and annunciation panel that shall include a backlit 640 character liquid crystal display, individual, color coded system status LEDs, and a QWERTY style alphanumeric keypad for the field programming and control of the fire alarm system. Number of Loops / Fire alarm panels should be worked out based on loop capacity. It shall be selected keeping atleast 20 addresses as spare capacity in each loop. The control panel shall be capable of network expandable upto multiple panels. The panel & all devises should be FM approved and comply UL 864 or equivalent. The enclosure shall also be UL listed or equivalent. The quoted rate shall include supply of necessary software and hardware for programming the panel with all necessary licence. Should have the facility to get integrated with the MAIN FAS Panel of the Building. Electrical main LT panel, (FAC) Connecting to BMS on Bascnet or TCP/IP i) Each loop with Min. 125 Devices & Detectors, modules connection capability of Addressable FACPI 2 Loop Panel. ii) FACPI with all in-built modules & displays. iii) 240 volts AC power supply, automatic battery charger, 24 volts sealed lead acid batteries sufficient for 24 hours normal working. iv) Programming & setting up v) system to be capable of operating the system for 2 hours during an emergency condition including all necessary software for remote programming of fire alarm system through central control station.	Nos	RO						
2	Passive Repeater Panel with 80 Character (2x40) display with supervised power supply from FACPI. Repeater Panel shall monitor and control (Scroll, Acknowledge, Reset & Mute) all the events of the FACPI to which it is connected and it shall have Port Vectoring / Event Filtering capability of showing only ALARMS, TROUBLES or SUPERVISORY or customized combinations of user selected events.	Nos	RO						
2.1	Supply installation and testing of signal loop components in a suitable galvanised steel junction box.	Nos	1						
3	Detectors and Devices								
3.1	Supply installation, Testing & Commissioning of Analogue Addressable Monitor module having Rotary decimal addressing system for monitoring the field devices & shall be capable of providing DFD contact rated at 24V DC 2A. Monitor module	Nos	2					2	
	Total Qty	Nos						2	
	Previous Bill	Nos						0	
	This Bill	Nos						2	
3.2	Supply installation, Testing & Commissioning of Analogue Addressable Relay module having Rotary decimal addressing system and shall be capable of providing DFD contact rated at 24V DC 2A. Relay Module	Nos	2					2	
	Total Qty	Nos						2	
	Previous Bill	Nos						0	
	This Bill	Nos						2	
3.3	Supply installation, Testing & Commissioning of wall / ceiling mounted Horn cum Strobe rated at 82 dBA @ 3m for Audible annunciation and 75cd flashing at 1 Hz for visual indication and necessary accessories including back box. Horn	Nos	2					2	
	Total Qty	Nos						2	
	Previous Bill	Nos						0	
	This Bill	Nos						2	
3.5	Supply installation, testing & commissioning of above / below ceiling mounted Analogue Addressable Flash scan Type Photoelectric smoke detectors having Rotary, decimal addressing system with standard base, built in radiation function and junction box. The detector shall be capable to address in the range of 1-159. The detector shall be with Visible bi-color LEDs for 360 deg viewing and shall blink green every time the detector is addressed, and illuminate steady red on alarm. Smoke Detector	Nos	6					6	
	Total Qty	Nos						6	

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MB Sheet Fire Alarm System - The Irish House

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SR.NO	DESCRIPTION	UNIT	Boq Qty.	No.	Length	Width	Height	Total	Remarks
	Previous Bill	Nos						0	
	This Bill	Nos						6	
3.6	Supply, Installation Testing & Commissioning of above / below ceiling mounted Analogue Addressable Heat / Thermal detectors having Rotary decimal addressing system with standard base, built in isolation function and junction box. The detector shall be capable to address in the range of 1-159. The detector shall be with Visible bi-color LEDs for 360 deg viewing and shall blink green every time the detector is addressed and illuminate steady red on alarm.	Nos	1						
	Heat Detector			1				1	
	Total Qty	Nos						1	
	Previous Bill	Nos						0	
	This Bill	Nos						1	
3.7	Supply, Installation Testing & Commissioning of Addressable Break Glass Manual Call Point having Rotary decimal addressing system and having an integrally mounted addressable module that monitors and reports contact status.	Nos	2						
	Call point			2				2	
	Total Qty	Nos						2	
	Previous Bill	Nos						0	
	This Bill	Nos						2	
4	Response indicator	Nos	R.O.						
	NOTE: FIRE PANEL SHALL BE PROVIDED WITH FACILITY TO INTEGRATE WITH AIRPORT PANEL								
5	CABLES								
	Supplying, laying, testing and commissioning of 1100V grade FIRE RESISTANCE LOW SMOKE multicore, round type, insulated, sheathed, flexible copper conductor control cables with including necessary end terminations with copper lugs, junction box, crimping, identification tags at each end etc. (1 SET) COLOUR ONLY (MAKE - RR CABLE)								
a	2 core x 1.5 Sq.mm armoured cable (Un-screened, LSZH armoured)	Mtr	220						
	ceiling Looping Cable	mtr		55				55	
	Total Qty	Mtr						55	
	Previous Bill	Mtr						0	
	This Bill	Mtr						55	
6	REWORKS								
	Shifting, relocation and reworking including extending of cable & testing and commissioning of the following devices								
a	Photoelectric Smoke Detectors (BFC) at actuals	Nos	R.O.						
b	Response Indicator of AFC detectors at actuals	Nos	R.O.						

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MB Sheet Fire Fighting -The Irish House

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Item No.	Description	unit	Boq qty	No.	Length	Width	Height	Total	Remarks
1	Providing, laying, jointing, testing and commissioning of G.I. 'C' Class pipes (IS:1239 (Part-I)-1979) including cutting, threading welding etc providing all malleable galvanized iron fittings conforming to IS 1879, viz. Flanges, bends, tees, elbows, reducers, unions, supporting with G. I. clamps, hangers, M.S. brackets etc. including cutting holes and chases in brick or RCC wall / slabs and making good the same to the Approval of Architect / consultant, complete including painting with one coat of primer and two or more coats of synthetic enamel paint of approved make and shade. (Note- Rigid pipe extension from existing line is considered)								
i)	25 mm dia.	RMT	18						
	Branch -1 above Bar counter	RMT		1	4.00			4.00	
	Sprinklar branch bar area	RMT		2	0.90			1.79	
	Branch -2 above rafters	RMT		1	1.11			1.11	
	Sprinklar brances	RMT		1	2.69			2.69	
	Sprinklar brances	RMT		1	1.10			1.10	
		RMT		1	1.30			1.30	
		RMT		1	0.90			0.90	
	Above hut both side line	RMT		2	4.14			8.27	
	3 rd branc above C- bench sofa	RMT		1	6.00			6.00	
		RMT		1	3.00			3.00	
	Total Qty in Rmt.							30.15	
	Previous bill qty.							30.15	
	This bill qty.					30.145		0.00	
ii)	32 mm dia.	RMT	0						
iii)	40 mm dia.	RMT	3						
	Branch -1 above Bar counter	RMT		1	2.02			2.02	
		RMT		1	0.79			0.79	
	Branch -2 above rafters	RMT		1	0.82			0.82	
	Above hut both side line	RMT		2	1.32			2.64	
		RMT		2	2.08			4.16	
	3 rd branc above C- bench sofa	RMT		1	2.06			2.06	
		RMT		1	0.83			0.83	
	Total Qty in Rmt.							13.31	
	Previous bill qty.							13.31	
	This bill qty.							0.00	
iv)	50 mm dia.	RMT	10						
	Branch -2 above rafters	RMT		1	5.23			5.23	
	3 rd branc above C- bench sofa	RMT		1	4.82			4.82	
	Total Qty in Rmt.							10.05	
	Previous bill qty.							10.05	
	This bill qty.							0.00	
v)	65 mm dia.	RMT	5						
	Airport chilled line to main Header	RMT		1	5.50			5.50	
	Down	RMT		1	0.60			0.60	
	Main Header run	RMT		1	5.25			5.25	
	Total Qty in Rmt.							11.35	
	Previous bill qty.							11.35	
	This bill qty.							0.00	
vi)	80 mm dia.	RMT	0						
vii)	100 mm dia.	RMT	0						
2	Providing , fixing testing and commissioning of pendant type sprinkler heads 68 deg Temp.(Quick response type)	No.	0						
3	Providing , fixing testing and commissioning of concealed type sprinkler heads 68 deg. Temp.(Extended coverage /Quick response type)	No.	0						
4	Providing , fixing testing and commissioning of upright type sprinkler heads 68 deg temp(Quick response type)- Optional Subject to liasion team requirements	No.	0						
5	Providing , fixing testing and commissioning of upright type sprinkler heads 79 deg Temp (Quick response type)	No.	12						
	Sprinkler	No.		26				26.00	
	Total Qty in Rmt.	no						26.00	

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Item No.	Description	unit	Boq qty	No.	Length	Width	Height	Total	Remarks	
6	Providing & fixing testing and commissioning of braided UL Rated SS Flexible pipe									
i)	1 MT Long	No.	0							
ii)	1.6 MT Long	No.	12							
7	Gun metal chrome finished Ball valves (PN 16) with fittings of screwed end type.									
i)	40 mm dia.	No.	R.O.							
ii)	32 mm dia. (Sprinkler drain-OPTIONAL)	Nos.	1							
8	Butterfly Valves (PN 16) with CI Body, Black Nitrile Body Liner and Nylon Coated SG Iron Disc with material and labour including hydraulic testing etc. complete as per drawing, specification & to the level of satisfaction of Site- Incharge.									
i)	150 mm dia.	No.	R.O.							
ii)	100 mm dia.	No.	R.O.							
iii)	65 mm dia. (OPTIONAL)	No.	2							
	Main Header connection 2 nos.	Nos.		1	2.00			2.00		
	Total Qty in Rmt.							2.00		
	Previous bill qty.							2.00		
	This bill qty.							0.00		
9	6kg capacity ABC type dry chemical powder fire Extinguishers with wall mounting brackets	Nos.	4							
	AbC Type fire extinguisher	No.		4				4.00		
	Total Qty in Rmt.	no						4.00		
	Previous bill qty.	no								
	This bill qty.	no						4.00		
10	6kg capacity K type fire Extinguishers with wall mounting brackets	No.	0							
11	5kg capacity CO2 type fire Extinguishers with wall mounting brackets	No.	2							
	co2 Type fire extinguisher	No.		2				2.00		
	Total Qty in Rmt.	no						2.00		
	Previous bill qty.	no								
	This bill qty.	no						2.00		
12	9Lit AR-AFFF type fire Extinguishers with wall mounting brackets	Nos.	R.O.							
13	Flow switch on sprinkler distribution header on each floor with 2 SPDT contacts suitably rated, capable of the high pressure system and connected to fire alarm panel through cable									
i)	100 mm dia.	No.	0							
14	Ceasefire 5 Kg Ceiling Mounted Fire Extinguisher Clean Agent H1-36, Zero ODP, Stored Pressure Type, Pressure Gauge, Gross Weight 7.7 Kg, empty Weight 2.7 Kg, Can Height 264MM, Diameter 240MM, Discharge Time less than 8 Secs, Auto discharge mechanism on temperature rise, applicable on Class A,B,C and electrically started Fire, Can Construction : Deep drawn & Co2 Mig welded, Valve Construction : Forging & Machining, Internal Coating of Can : Epoxy Powder coating, External Coating of Can : Epoxy Polyester Powder coating, Sheet metal thickness : 2.0MM, Helium Leak Detection Test, 5 Years Warranty- model no. FCH21CF	No.	0							

Divesh Tarkathi
24/04/24

MB Sheet Fire Fighting -The Irish House

Correction copy

Item No.	Description	unit	Boq qty	No.	Length	Width	Height	Total	Remarks
	• Previous bill qty.	no						26.00	
	This bill qty.	no						0.00	

Divesh Tripathi
24/04/24