



**BHARAT HEAVY ELECTRICALS LIMITED
RAMACHANDRAPURAM::HYDERABAD::32
FACTORY CIVIL DEPARTMENT**

SCHEDULE- A

Tender Notice No:

HY/FCD/OT- 15 /2010-11 , Dt:- 03.09.2010

PRICE BID

Item no : 1

**Name of the Work:-Modernisation of Safety Engineering building interiors - Civil ,
Electrical Communication , IT Networking , air conditioning , Fire alarm system etc;**

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
	PART 'A' - CIVIL WORKS				
1	Dismantling the brick/stone masonry and conveying the debries to lead of 2 Kms and carefully stacking of materials suitable for re-use including loading, unloading and spreading directed by Engineer-in-charge.	31.00	Cu.m	355.88	11032.28
2	Dismantling the existing wooden / aluminum partitions into small units including removing doors and glass panes and stacking away from the site at place identified by Engineer-in-charge. Also, Removing the old furniture and stacking the same as directed by Engineer-in-charge.	300.00	Sq.m	75.00	22500.00
3	Dismantling the existing wooden doors and windows carefully along with fixtures and fittings handing over to stores as directed Engineer-in-charge. The rate quoted shall include cost of frame, hinges and fasteners.	20.00	Sq.m	50.05	1001.00
4	Dismantling and disposing off (up to 2 Kms lead of reinforced cement concrete work such as slabs, floors, beams and columns etc., using pavement breaker, chipping hammer or other suitable tools etc. complete (Compressor Air pavement breaker will be supplied on hire basis).	1.00	Cu.m	582.68	582.68

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
5	<p>Dismantling of existing windows along with frames and providing Glazed Windows Dismantling and removing the existing windows along with frames including chipping/chasing brick work/concrete for removal and stacking in stores as directed by Engineer in charge. Supplying & fixing of flush window frame with sides openable shutters and fixed double glazed window with fixed ventilators fabricated from roll formed sections made of galvanised steel powder colour coated (Base steel as per IS 513 "D" quality, galvanised as per IS 277 with Zinc of 120 grams/Sq. m) with total coated thickness of 0.60 mm. External frame should be 46 mmx52 mm. Section for glass beading should be of 20 mmx20 mm and centre mullion should be of 46 mmx70 mm and section for shutter should be of 46 mmx46 mm. Coated sections should be with primer coat of epoxy primer of 5-7 microns thick, finish painted with a polyester paint of 12-16 microns thick and back coated with Alkyd backer of 5-7 microns, powder coated with pure polyester powder upto 50-60 microns thick. The frame and shutter sections should be cut to length and mitre joined with corner bracket made of CRCA electroplated.</p> <p>Mullion section should be joined with frame /mullion using Nylon Mullion Cap Ethyl Propylene Diamine Monomer (EPDM) gasket should be used all around glass in shutter between frame and glazed shutter and both sides of fixed glass.</p> <p>Accessories: Handle made of high grade aluminium powder coated and with nylon receiver. Gaskets made of Ethyl Propylene Diamine Monomer (EPDM). Corner brackets made of CRCA with zinc phosphating. Mullion caps made of glass filled nylon.</p> <p>Glass: Glass shutter and fixed glass portions should be provided with a glass of 20 mm (5 mm plain glass + 10 mm Hermitically sealed air gap + 5 mm plain glass).</p> <p>Chipped/chased brick work shall be neatly finished with cement plaster and plastered area shall be applied with water proof paint. Paint will be supplied by BHEL on free of cost. Window frame should be fixed to brick/concrete masonry by using Nylon self-expanding caps and driving MS electroplated 80 mm long screws into the caps through frames.</p> <p>Any minor gaps between frame and brick work shall be sealed with silicon material at both sides to avoid seepage of rain water/loss of air condition system.</p> <p>MAKE: SHAKTI/AJANTHA OF NCLSECCOLOR</p>	20.00	Sq.m	4000.00	80000.00
6	Brick work using 2nd class ground moulded British standard bricks in CM 1:6, in super structure including the cost of all materials, labour, curing etc. complete.	17.00	Cu.m	2357.40	40075.80

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
7	Vibrated machine mixed reinforced cement concrete 1:2:4, using 20 mm and down graded granite stone metal including the cost of form work labour, all materials, curing etc. but excluding the cost and fabrication charges of MS reinforcement for slabs. (60% - 20 mm size metal and 40% - 10 mm size metal).	1.00	Cu.m	3394.40	3394.40
8	Providing and fixing in true horizontal level 600 mm x 600 mm false ceiling system manufactured by M/s. Armstrong World Industries using DUNE SUPREME RH 99 MICROLOOK EDGE WITH SILHOUETTE GRID, using hot dipped galvanized steel section, rotary stitched main tee of size 15mm x 42 mm web height, having 0.36 mm gauge at every 600 mm centre to centre maximum and rotary stitched cross tee of size 15 mm x 42 mm, having 0.33 mm gauge at every 600 mm. c/c. and wall angle of size 19 x 19 mm., having 0.35 mm gauge fixed to the periphery of the wall. The above grid is suspended at every 600mm c/c. in both directions using 2.0 mm. thick pre-straightened GI wire laying Dune Supreme Microlook Edge ceiling tiles manufactured by M/s. Armstrong World Industries, of size 600mmx600mmx15mm having NRC 0.50, Light reflectance of >85% (WT), thermal conductivity k = 0.052-0.057 W/m0K, Humidity Resistance of 99% (having LIFETIME GUARANTEE against SAG), having Fire Performance CLASS O / CLASS 1 (BS 476), surface having 3 coats of white paint - crisp finely granulated with microperforations, back of finished with a coat of protective paint over the formed grid and complete in all respects.	180.00	Sq.m	1130.00	203400.00
9	Supply & fixing of aluminium door with single shutter made out of anodised aluminium box section powder coated in required colour of size 101.60 x 44.45 x 2.00 mm for verticals, top and bottom horizontals at spacing suiting to the site requirements as approved inclusive of supply and fixing all aluminium fixtures and fittings. Providing and fixing of 12mm toughened glass for door frame and door hardware with DORMA/OZONE make like floor springs, PIVOT patch fittings, bottom locks, D-Handles, and frosted film with specified design etc. complete as directed by Engineer-in-charge. The rate shall include cost of all materials, glass, door hardware, labour charges etc. complete.	10.00	Sq.m	10000.00	100000.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
10	Supply & fixing of aluminium full height / half height partitions with new anodised aluminium box section powder coated in required colour of size 101.60 x 44.45 x 2.00 mm for verticals, top and bottom horizontals at spacing suiting to the site requirements as approved. Wherever doors are coming wooden runners are to be provided in the box section. The rate shall include grouting of frame to the floor properly fixed to at ends to walls, supply & fixing of 12 mm toughened glass in required sizes, aluminium sections, labour, frosted film on glass with specified design and sizes etc. complete. (The door opening shall be deducted for payment).	72.00	Sq.m	4000.00	288000.00
11	Vitrified flooring: Supplying and laying of vitrified tiles of brighter shades and marble design of Premium Quality (1st quality) in required texture, design and colour, for floors / skirting / cladding using vitrified tiles of size 600 x 600 mm (\pm 5 mm), inclusive of cost of cutting, champering of tiles to required size, with base of Conmax C - 500 / equivalent tile adhesive for fixing tiles on existing mosaic/cement flooring, laying of tiles in required design with spacers or without spacers, jointing the tiles with colour tint etc. complete as directed by Engineer-in-charge. The cost of the tile shall be Rs. 100/- per S Ft. and tiles of required make will be selected by department within the above specified cost. The rate quoted shall include cost of all materials, labour, adhesives, colour tint material, leads and lifts etc. complete. Amount will be paid on the basis of measurement of the area of finished work only. It also includes surface preparation of existing ceramic floor giving necessary slopes, cleaning joints and grouting joints with pigmented additives to match shade of the tile, making pockets for electrical, communication, network cables etc. complete in all respects.	190.00	Sq.m	950.00	180500.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
12	<p>Wall paneling: Supply & fixing with new 12 mm thick particle board one side laminated of approved brand (Eco board) and shade for wall paneling on the wooden frame work (treated with termite and moisture resistant chemical) and also for doors, windows, cup board sliding shutters, pelmets, boxes etc. with necessary fixtures like brass hinges, door handles and stoppers etc. as directed by Engineer-In-charge. The rate quoted shall include of cost of all labour, materials such as particle boards, nails, screws, sliding rollers/bearings, fevicol etc. complete. Frame work with second class teak wood scantlings of size 50 x 25 mm as verticals and horizontals, at an interval of 90 mm c/c shall be made for fixing the Ecoboard. Joints shall be covered with inlay teak design beading and corners shall be covered with corner teak design beadings of suitable sizes. Complete in all respects. Make : Eco board</p>	200.00	Sq.m	1600.00	320000.00
13	<p>Supply and fixing of vertical blinds 100 mm in required colour along with channels, fabric bottom weights etc complete. Make: SONEX</p>	30.00	Sq.m	800.00	24000.00
14	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding grills with binding wire all complete by cold twisted bars.	0.20	MT	42700.00	8540.00
15	Centering and shuttering including strutting, propping etc and removal of form work, for columns, pillars, piers, abutments, machine foundations posts and struts.	20.00	Sq.m	180.40	3608.00
16	Plastering in CM 1:6, 20 mm thick to internal and external surfaces of walls including the cost of all materials, labour, curing etc. complete. - upto 10 M level.	164.00	Sq.m	95.10	15596.40

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
17	Supply & fixing of 18 mm thick best quality Jet Black colour machine cut mirror polished granite slabs in required sizes for counter wash basins, floorings, vanity counter, claddings, facias etc. including cutting, champering, rounding and mirror polishing etc. complete as directed. Cost of granite slabs shall be Rs. 1600/- per Sq. m and granite slabs of required design and colour will be selected by department.	16.00	Sq.m	3071.00	49136.00
18	Supply & fixing 10 mm thick best quality approved colour and design machine cut granite tiles of size 600 mm x 300 mm with mirror polished granite stone for flooring, platforms, cladding, vanity counter Facia etc and for any other locations including cutting, champering, rounding and mirror polishing etc. complete as directed. Cost of the granite shall be Rs. 650/- per sq. m and tiles will be selected by department within the above specified cost.	25.00	Sq.m	810.00	20250.00
19	Supply & fixing of 6 mm thick mirror of approved quality "Modi float glass", with 6 mm thick hard board back and with best quality teak wood frame (design beading) all round the mirror including necessary clamps, polishing to the beading, cost of all materials etc. complete.	6.00	Sq.m	1445.00	8670.00
20	Thorough cleaning of existing oil bound distemper paint/white washing with water, by scrapers for old walls and stone rubbing for new plastered walls with suitable tools and applying one coat of oil based cement primer and applying 3 coats altek lappam one coat after drying the previous coat and sand papering and applying two coats of acrylic washable distemper etc., complete as directed by the Engineer-in-charge. Rate shall include all materials like lappum, primer, tools and tackles, scaffolding etc. Only acrylic washable distemper will be issued by BHEL at free of cost.	36.00	Sq.m	84.10	3027.60
21	Supply and fixing of "Parryware" make ceramic oval shape below counter wash basin size 550 mm x 450 mm, Code No.: 0418, regular in colour (light Ivory) with all accessories like brackets, screws, waste coupling half thread/full thread (Code No. T9910A), connecting hose 2' (Cat No. T991999) etc. complete.	4.00	Each	2024.00	8096.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
22	Dismantling of existing EWC with flush tank and other fixtures carefully and handing over to stores for reuse and supply & fixing of new "Parryware" make ceramic cascade water closet suite with "P/S" trap including Polypropolene seat cover with all accessories regular in colour along with ceramic matching colour low level cistern 10 liters capacity with wonder flush fittings.	1.00	Each	6985.00	6985.00
23	Supply & fixing of new "Parryware" make, Orissa Pan size 580 mm (Cat 0109/17) with P/S trap box rim with internal foot treads including ceramic low level flushing cistern 10 liters capacity with Parryware wonder flush kit, regular in colour with all required accessories etc. complete.	2.00	Each	4261.00	8522.00
24	Supply & fixing of new urinary pans "Parryware" make, Ceramic, Model (Cat 0575) "New Magnum Urinal" (600 x 400 mm) along with all accessories, CP spreader brackets etc. regular in colour along with partition for Magnum Urinal ceramic, 'Z' type brackets to be screwed to the wall at the bottom size 810 x 390 mm in regular colour etc. complete.	4.00	Each	3933.00	15732.00
25	Supply and fixing of "Jaquar" make Pressmatic pillar cock auto closing system, Cat No. 031	4.00	Each	1400.00	5600.00
26	Supply and fixing of "Jaquar (Continental)" make sink cock with raised 'J' shaped swinging spout, Cat No. 359	1.00	Each	1060.00	1060.00
27	Supply and fixing of "Jaquar" make angular stop cock, Cat No. 053	10.00	Each	495.00	4950.00
28	Supply and fixing of "Jaquar (Florentine)" make 2-way bib cock with wall flange, Cat No. 5041	4.00	Each	1230.00	4920.00
29	Supply and fixing of "Jaquar (Allied)" make Health Faucet with 8 mm dia, 1 m long flexible tube and wall hook, Cat No. 573	4.00	Each	1325.00	5300.00
30	Supply and fixing of Paper Holder	2.00	Each	500.00	1000.00
31	Supply and fixing of towel ring	4.00	Each	500.00	2000.00
32	Supply and fixing of Soap dish	4.00	Each	500.00	2000.00
33	Supply and fixing of Odonil Holder	4.00	Each	500.00	2000.00
34	Supply and fixing of soap dispensors	4.00	Each	500.00	2000.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
35	Supply & fixing coloured glazed tiles of required make ceramic tiles of Premium (First) quality of required size and of approved shade and design, for walls/flooring over a base of CM 1:4, including neat finishing and jointing etc. complete. (Corners are to be joined by mitering the tiles). The cost of the tile shall be Rs. 70/- per S Ft. The make, design and colour of tile will be selected by department within the above specified cost. The rate quoted shall also include the cost of all materials, labour etc. complete. Payment will be made for finished item of work only.	60.00	Sq.m	764.00	45840.00
36	Providing and fixing shutters along with frames for toilets that are 30 mm thick factory made PVC rigid foam paneled door, shutters manufactured by M/s. Rajashri made from M.S. tube or 19 gauge thickness, size 19x19mm for styles and 15x15mm for top and bottom rails, covered with heat moulded PVC "C" channel of 5mm thick sheet and 30x50mm wide to for styles and 5mm thick and 75mm wide PVC sheets for top rail and bottom rail either side and 5 mm thick, 20mm wide cross PVC sheet as gap insert for top rail and bottom rail, paneling of 5mm thick PVC sheet fitted with M.S. frame welded/ sealed to the styles and rails with 5x30mm PVC sheet beading on either side and joined together with solvent cement adhesive etc. complete in all respects as per direction of engineer in-charge fixed to frames. This includes providing brass hinges, brass aldrops, brass tower bolts, brass handles and brass door stoppers (For W.C. and bathroom shutters).	8.00	Sq.m	1830.00	14640.00
37	Plain cement concrete 1:2:4 using 20mm and down graded granite stone metal including the cost of labour, all materials, curing etc., but excluding the cost of all form work, M.S. reinforceent and binding wire etc., complete (60% -20 mm size metal and 40% of 10 mm metal).	34.00	Cu.m	3257.45	110753.30
38	Plain cement concrete 1:4:8 using 20mm and down graded granite stone metal including the cost of labour, all materials, curing etc., but excluding the cost of all form work, M.S. reinforceent and binding wire etc., complete (60% -20 mm size metal and 40% of 10 mm metal).	2.00	Cu.m	2449.00	4898.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
39 a)	Supply & fixing of GI pipes of Class-A including cutting, threading and jointing of with all necessary fittings including chasing brick work/concrete and making good the same including the cost of all materials etc. complete. a) 15 mm (1/2") dia.	60.00	RM	131.00	7860.00
b)	20 mm (3/4") dia.	40.00	RM	146.00	5840.00
c)	25 mm (1") dia.	40.00	RM	191.00	7640.00
40	Supplying & fixing in position with suitable with PVC pipe of approved quality including chasing brick work / concrete and making good the same after replacing wherever necessary etc. complete including all accessories like bends, tees, elbows etc. - 75 mm (3") dia.	50.00	RM	80.78	4039.00
41 a)	Supply & fixing of GM peet valves, heavy quality of Leader/Zoloto make of the following nominal bore. a) 15 mm (1/2") dia	6.00	Each	242.00	1452.00
b)	20 mm (3/4") dia.	6.00	Each	327.00	1962.00
c)	25 mm (1") dia.	6.00	Each	482.00	2892.00
42	Supplying & fixing of Hi-rib single skin colour galvalume / Zinalume sheets of 0.5 mm thick 1 meter width and length upto 12 mts with 50 mm thick glass wool (density min. 24 Kg/Cu. M) and reflective aluminium foil laminate with GI wire mesh insulated construction of roof, cladding and inside duct panelling with air tight boxing type fixing as per drawing factory cut insulated and fixing to the roof shall be crest fixed to roof purlins with number 12-14 x 55 mm long polymert coated galvanised hex head self drilling screws with integral washers and EPDM seals (4 fasteners for support) for sheet etc., complete as directed (including cost of galvalume sheets).	320.00	Sq.m	875.00	280000.00
43	Providing & fixing corner flashing in required girth with 0.5 mm colour galvalume sheets upto the length min. of 2.5 mts having curved width upto 360 mm, fixing to the steel members with self drilling / self stitching fastners at maximum 500 mm c/c along length of capping, flashing etc. complete (including cost of galvalume sheets).	100.00	Sq.m	750.00	75000.00
44	Providing & fixing side curves in required girth with 0.5 mm colour galvalume sheets upto the length of 2.5 mts having curved width upto 600 mm, fixing to the steel members with self drilling / self stitching fastners at maximum 500 mm c/c along length of capping, flashing etc. complete as directed (including cost of galvalume sheets).	50.00	Sq.m	650.00	32500.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
45	Fabrication of structural steel work for roofing including all materials going into the process of fabrication and forming an integral part of steel work together with all shop and site welding as necessary and all site connections. The rate shall include painting with one coat of Red Oxide including all site charges for handling, leading & loading and unloading of materials, fabrication, electrodes at fabrication yard. The raw structural steel sections will be issued at free of cost. This also includes usage of dismantled structural steel into required sizes including cutting, straightening etc. as directed by Engineer-in-charge. Acetylene and Oxygen will be issued at free of cost.	10.00	MT	3795.00	37950.00
46	Erection of structural steel work including the charges for handling, leading & stocking at the site of approved locations and erection includes all site welding, rivetting, bolting, jointing, grouting includes chasing brick work/concrete and fixing the structures, lifting etc. complete as directed by Engineer-in-charge.	10.00	MT	1177.00	11770.00
47	Supply and fixing of toilet doors along with teak wood door frame of size 100 mm x 75 mm teak scantlings and flush door shutter and laminating both door frame and shutter with premium quality teak veneer in required colour and design and malamine polish. Flush door shutter shall be chemically treated and water/insect/borer proof and 30 mm thick. This includes providing brass hinges, brass aldrops, brass tower bolts, brass handles and brass door stoppers.	6.00	Sq.m	3000.00	18000.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
48	Painting with synthetic enamel paint two coats of approved shade and brand to old steel surfaces/structural steel with a base coat of red oxide including scraping the old surfaces, cost of all labour and other incidentals etc., complete. (Paint will be issued by BHEL on free of cost).	200.00	Sq.m	16.50	3300.00
49	Leveling corse for flooring with cement mortar in 20mm thick 1:6 (1 Cement : 6 coarse sand).	225.00	Sq.m	102.90	23152.50
50	Full height glass doors for cabins: Providing & fixing of full height glass doors with 12mm toughened glass adequately anchored to the existing Aluminium Frame Work/ Wood Work with door hardwares Dorma/Ozone make, like floor spring, patch fittings, bottom locks, 'D' handles, etc. with specified design and sizes of frosted film complete in all respects as directed by Engineer-Incharge.	10.00	Sq.m	9000.00	90000.00
51	Supply and fixing of single door with 75 x 200 mm thick BT Wood Frame and the facias of the wooden frame shall be covered with 6 mm Teak Veneer in required colour and design. Supply and fixing of 12 mm toughened glass door fixed in wooden frame all around the glass of size 150mm x 40mm with door hardwares like floor spring, patch fitting/pivot fitting, central lock, D-Handles. All teak wood surfaces shall be fixed with Teak Veneer in required colour and design and shall be finished with melamine polish to a neet finish. providing frosted film to the glass door in required design and size complete in all respects as directed by Engineer – Incharge. Payment will be made for the measurement of finished door along with frame.	3.00	Sq.m	15000.00	45000.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
52	Supply & fixing of Aluminium Composite Panel (ACP), 2 mm thick in required colours for interiors/exterior, consisting of two layers of aluminium skins of 0.15 mm thick sandwiching a thermo plastic core in continuous lamination process with PVDF Resin coating for interior grades ensuring long colour and no fungal attacks. Base framework with aluminium sections shall be fixed over the brick work and the above composite panels shall be fixed to the framework as cladding. There shall not be any colour variation in panels. It includes cost of labour, materials, accessories, adhesives, scaffolding, wastages, transport, taxes, fixing into a neat finish in aesthetic point of view, without any undulations in facias. Any undulations in walls shall be maintained into one level and the required packing material shall be provided to maintain the neat finish. Payment will be made for finished work only.	14.00	Sq.m	3600.00	50400.00
53	Supply and Fixing of Stainless Steel Kitchen Sink of size 24" x 18" x 10" with drain board make NIRALI	1.00	Each	6350.00	6350.00
	PART 'A' TOTAL Rs.	23,34,717.96			
	PART 'B' - AIR CONDITIONING WORKS				
1	Supply, installation, testing & Commissioning of 17.0 TR ceiling suspended Duct able split a/c unit, Three phase with 17.0 TR 1no indoor unit and 8.5 TR 2.nos outdoor Unit with scroll compressor & remote control along with electronic control with remote control pad, necessary cabling, DBs, switches, inclusive of all connected accessories etc for 3rd floor hall, complete in all respects. MAKE: LG/VOLTAS/BATLIBOI/CARRIER/BLUE STAR	1.00	Each	345000.00	345000.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
2	Supply, installation, testing & Commissioning of 2.0 TR cassette air conditioner comprising indoor unit, outdoor unit with electronic control with remote control pad, necessary cabling, DB's, switches, necessary copper piping with insulation, electrical wiring, drain piping between indoor and out door, including necessary civil works, complete in all respects. MAKE: LG/VOLTAS/BATLIBOI/CARRIER/BLU ESTAR Note: All out door Air conditioner units and compressor units shall be located on the terrace/on chajjas of the building, whichever is feasible.	3.00	Each	57000.00	171000.00
3	Supply, installation, testing & Commissioning of following piping / ducting for Air Conditioning units Copper refrigerant piping with insulation foam between indoor and outdoor air cooled condensers of the following sizes. Hard drawn pipe 28mm dia	20.00	RM	989.00	19780.00
4	12mm dia	20.00	RM	661.00	13220.00
5	Soft drawn pipe 12.5mm dia	12.00	RM	402.00	4824.00
6	6.5mm dia	12.00	RM	276.00	3312.00
7	GSS ducting complete with angle iron flanges, high tech supports as per SMACNA specification 20 gauge	10.00	Sq.m	1207.00	12070.00
8	22 gauge	10.00	Sq.m	1053.00	10530.00
9	24 gauge	40.00	Sq.m	862.00	34480.00
10	The acoustic lining in the duct using fibre glass with 26 g aluminum perforated sheet using GI nuts and bolts. 12.5mm thick	20.00	Sq.m	287.00	5740.00
11	Providing Thermal Insulation with 25mm thick fibre glass crown 150mm covered with aluminum foil.	40.00	Sq.m	615.00	24600.00
12	MS black coated Collar Dampers	5.00	Sq.m	21804.00	109020.00
13	Main duct Volume control dampers made out of 18 gauge GI sheet.	1.00	Sq.m	12075.00	12075.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
14	Fire damper made out of 18gauge GI sheet with fusible link.	1.00	Sq.m	3231.00	3231.00
15	Fire retardant flexible canvas connection	1.00	Each	483.00	483.00
16	Condensate drain pipe of standard make PVC with insulation of 50mm dia	25.00	RM	115.00	2875.00
17	Power and control cabling between the panel, indoor unit and out door unit of the following sizes 3c 1.5 SQ.MM	100.00	RM	57.00	5700.00
18	3c 2.5 SQ.MM	70.00	RM	60.00	4200.00
19	Mounting both indoor & outdoor units, pressure testing, vaccumising and commissioning etc. of Duct able a/c unit	1.00	Each	10925.00	10925.00
20	Mounting of in door and out door Hi-wall split unit	3.00	Each	5175.00	15525.00
21	Fabrication and erection of MS channel/angle frame work for installation of mounting of out door units including grouting with concrete/anchor bolts into brick wall/concrete/floors etc complete. Required MS channels/angles shall be supplied by BHEL on free of cost.	4.00	Each	7305.00	29220.00
22	Supply & fixing of Aluminium diffusers and dampers powder coated removable core type, 4-way. These diffusers shall be suitable for Armstrong false ceiling of grid size 600 mm x 600 mm and colour of the diffuser shall be matched with the colour of Armstrong boards.	12.00	Each	1840.00	22080.00
23	Supply & fixing of Aluminium diffusers with powder coated without dampers, removable core type 4-way return air Neck - 18" x 18", Outer 590 x 590 mm, Reflection - 30. These diffusers shall be suitable for Armstrong false ceiling of grid size 600 mm x 600 mm and colour of the diffuser shall be matched with the colour of Armstrong boards.	12.00	Each	1403.00	16836.00
	Note: i. Air balancing to be carried out to show anywhere in the area 24±2°C in peak summer also. Note: ii. Energy Meter for total load (lighting, A/C etc.) of the floor shall be provided.				
	PART 'B' TOTAL	Rs.		8,76,726.00	

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
	PART 'C' - ELECTRICAL WORKS				
1	Cable Raceways Supply, installation, testing & Commissioning of separate floor Raceways with covers & Cable Trays with suitable covers for all ratings of power supply points, both 230VAC and 415 V AC Supply & Installation of 300x50x2.0mm GI ladder type Cable Tray with all accessories and supporting arrangement from ceiling or Wall complete in all respects.	50.00	RM	661.00	33050.00
2	Supply & Installation of in-screed floor raceways (to be run separately for power, network and telephone cables) consisting following rectangular Aluminium sections including chasing and refilling the trench as per the route shown in the drawing and approved by Engineer in charge at site including clamping & closing the open pipe ends temporarily by suitable end covers against entry of dust or any other foreign material complete in all respects. 96 x 38 mm	150.00	RM	431.00	64650.00
3	56 x 38 mm	30.00	RM	374.00	11220.00
4	Supply & Installation of floor junction boxes with top cover for above raceways, of size 300mm x 300mm x 50mm /150x150x50 mm fabricated out of MS painted sheets with removable screwed cover plates on all four sides for blocking the entry complete in all respects. Make : Locally fabricated	20.00	Each	546.00	10920.00
5	Removal of existing electrical equipment Removing all existing switch socket, cable, wire, DB, Telephone socket, Networking socket, Telephone and data cable or any other equipments including stacking and transporting to the departmental stores.	1.00	LS	34500.00	34500.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
6	<p>Supply, Installation and commissioning of MAIN LT PANEL, floor mounted, front operated, dead back, totally enclosed vermin proof, indoor, non-draw out, cubicle type power dist. panel fabricated out of 2mm thick CRCA sheet having gasketed hinged door on each cubicle, fully powder coated / enamel painted after seven tank treatment, incorporating horizontal and vertical sleeved copper busbars 'complete with all internal wiring, danger board, two earthing lugs, cable chamber etc. as required' housing below mentioned switchgears / meters complete in all respects. This panel should consist of following.</p> <p>Digital Energy meter with RS 485 port - 1 No.</p> <p>250A 50KA TPN MCCB unit as Incomer - 1 No.</p> <p>160A,50KA TPN MCCB as outgoing - 1 No.</p> <p>63A, TPN MCB as outgoing - 6 Nos.</p> <p>40A, TPN MCB as outgoing - 4 Nos.</p> <p>0-250A, Ammeter with CT & inbuilt S/S - 1 No.</p> <p>0-415V, Voltmeter with inbuilt S/S - 1 No.</p> <p>TP&N, Aluminum busbars of suitable size thick with PVC sleeving - 1 Set</p>	1.00	One set	74750.00	74750.00
	RYB, indicating lamps with resistors and fuses - 1 Set				

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
7	<p>Supply, Installation and commissioning of UPS OUTGOING PANEL, floor mounted, front operated, dead back, totally enclosed vermin proof, indoor, non-drawout, cubicle type power dist. panel fabricated out of 2mm thick CRCA sheet having gasketed hinged door on each cubicle, fully powder coated / enamel painted after seven tank treatment, incorporating horizontal and vertical sleeved copper busbars 'complete with all internal wiring, danger board, two earthing lugs, cable chamber etc. as required' housing below mentioned switchgears / meters. Complete in all respects. This should comprise of following.</p> <p>Digital Energy meter with RS 485 port - 1 No. 250A 4P MCCB as Incomer - 1 No. 63A, 4P, MCB as outgoing - 5 Nos. 0-250A, Ammeter with CT & inbuilt S/S - 1 No. 0-415V, Voltmeter with inbuilt S/S - 1 No. TP&N, Aluminum busbars of suitable size thick with PVC sleeving - 1 Set RYB, indicating lamps with resistors and fuses - 1 Set</p>	1.00	One set	66890.00	66890.00
8	<p>Supply and installation of 8 way, TPN, MCB type Lighting Distribution Board (LDB) flush mounted on wall, sheet metal fabricated, powder coated, having dust-proof and vermin' proof, and hinged door with all internals such as DIN rails, neutral link, interconnected wiring complete with earthing lugs housing following switchgears: Complete in all respects. This should comprise the following.</p> <p>40A, FP ELCB as incomer(100mA) - 1 No. 10A, SP, MCB outgoing(10KA) - 24 Nos. Make : Siemens/Legrand/Hager</p>	1.00	One set	12334.00	12334.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
9	Supply, Installation and commissioning of 8 way, TPN, MCB type Power Distribution Board (PDB) flush mounted on wall, sheet metal fabricated, powder coated, having dust-proof and vermin' proof, and hinged door with all internals such as DIN rails, neutral-link, interconnected wiring complete with earthing lugs housing following switchgears: 63A, FP ELCB as incomer(100mA) - 1 No. 16/20A, SP, MCB outgoing(10KA) - 24 Nos. Make : Siemens/Legrand/Hager	1.00	One set	9344.00	9344.00
10	Supply, Installation and commissioning of 8 way, TPN, MCB type Computer Power Distribution Board (CPDB) flush mounted on wall, sheet metal fabricated, powder coated, having dust-proof and vermin' proof, and hinged door with all internals such as DIN rails, neutral-link, inter connected wiring complete with earthing lugs housing following switchgears, complete in all respects.: 40A, FP MCB Isolator as incomer(10KA) - 1 No. 16A, SP, MCB outgoing(10KA) - 24 Nos. Make : Siemens/Legrand/Hager	1.00	One set	10988.00	10988.00
11	Supply, Installation and commissioning of 8way SPNDB similar to above but for emergency lighting distribution (ELDB) having below mentioned switchgears, complete in all respects. 32A, DP, MCB as incomer - 1 No. 6A, SP, MCB, outgoing (10KA) - 6 Nos. Supply, Installation and commissioning of 20A, SP, MCB, box with 20A, metal clad plug-socket for termination of cable for room A/C Make : Siemens/Legrand/Hager	1.00	One set	3910.00	3910.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
12	CABLES / MAINS Supply & Installation of 1100V grade FRLS armoured cable having sector / circular shaped copper conductor PVC insulated cores, laid up, PVC tape wrapped inner sheathed, GI strip / wire armoured and overall extruded PVC sheathed conforming to IS:1554 laid on wall/ceiling using GI clamps & spacers as per route shown at site and further as directed by Consultant at site in the following sizes, complete in all respects.: Supply & laying of 4C x 120 SQ.MM Copper armoured flexible cable in suitable size of PVC Conduit.	20.00	RM	3450.00	69000.00
13	Supply & laying of 4C x 70 SQ.MM. copper armoured flexible in suitable size of PVC Conduit.	1.00	RM	2000.00	2000.00
14	Supply & laying of 4C x 16 SQ.MM Copper armoured cable.	10.00	RM	1035.00	10350.00
15	Supply & laying of 4C x 10 SQ.MM copper cable.	20.00	RM	690.00	13800.00
16	Supply & laying of 4C x 6 SQ.MM copper cable.	8.00	RM	517.00	4136.00
17	Supply and installation of end terminations for above mentioned cables, including compressed type brass glands, crimping type copper lugs, insulation tape etc. as required complete with earthing of glands in following sizes, complete in all respects. 4C x 120 SQ.MM copper armoured flexible.	2.00	Each	1380.00	2760.00
18	4C x 70 SQ.MM. copper armoured flexible	2.00	Each	920.00	1840.00
19	4C x 16 SQ.MM Copper armoured flexible cable	2.00	Each	747.00	1494.00
20	4C x 10 SQ.MM copper cable	1.00	Each	747.00	747.00
21	4C x 6 SQ.MM copper cable	1.00	Each	575.00	575.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
22	WIRING Supply & Installation of surface/concealed point wiring FRLS using 600v grade 1.5 SQ.MM copper conductor PVC insulated wires (with proper R,Y,B color code) pulled through 1.2mm thick PVC conduits laid concealed over false ceiling or in wall chases including 1.0 SQ.MM green color copper earth wire and provision of grid plate type switches as approved by architect, complete in all respects. Primary light points of 5A switch.	20.00	Each	1087.00	21740.00
23	Supply & installation of above for Secondary light points looped from the above point.	35.00	Each	385.00	13475.00
24	Supply & installation of Hub/Server Room Power Points(3R of 4sqmm copper wire in PVC conduit) with 32A Metal Clad Socket with M.S Enclosure control by a 32 A DP MCB.with Top in enclosure from Hub/Server room DB.	1.00	Each	2760.00	2760.00
25	Supply and laying of 1100V grade PVC insulated, copper conductor cables in 1.5mm thick P.V.C. conduits, run above the false ceiling, concealed in the wall or partition, saddles at every 600mm c/c. A separate neutral shall be run for each circuit. The rate shall include all fixing accessories like collars, tees, elbows, providing fan hooks, ceiling roses, holders, wooden blocks, switches, sockets, switch mounting MS boxes, MS Junction Boxes etc., of approved make, complete in all respects, for sl.No. 26 to 28 (Separate rate is not required to be quoted for item No.25)				
26	Supply and laying of 2 runs of 4.0 SQ.MM. PVC insulated copper conductor FRLS cable along with 1 runs of 1.5Sq.mm PVC insulated copper conductor cable. (1-PH AC'S) Run in a 25mm dia., 1.2mm thick PVC conduit, on surface of the ceiling or in wall, complete in all respects.	120.00	RM	172.00	20640.00
27	Supply and laying of 2 runs of 2.5 SQ.MM. PVC insulated copper conductor FRLS cable along with 1run of 1.5Sq.mm PVC insulated copper conductor cable. Run in a 19mm dia. 1.2mm thick PVC conduit on surface of the ceiling or in wall.	600.00	RM	144.00	86400.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
28	Supply & fixing of 15A Plug Point directly taken from DB for Pantry/geyser / zerox / fridge/ split AC units.	6.00	Each	862.00	5172.00
29	Supply and installation of 6A, 5 pin 3 nos. shuttered type sockets controlled by 1no. 16A switch with suitable size of front plate etc. (UPS POWER set); Quantity of outlets are: 4nos.; location of the points will be finalised in consultation with engineer in charge, complete in all respects. Make: ROMA OF ANCHOR	30.00	Each	1552.00	46560.00
30	Supply and installation of one no 6A/16A 5pin shuttered type sockets controlled by 1no. 16A switch with suitable size of front plate etc. (RAW POWER set) Make: ROMA OF ANCHOR	10.00	Each	920.00	9200.00
31	EARTHING Supply and installation of 2 nos. of separate earth pits each with material for power and network (including excavation) comprising of 600mm x 600mm x 3mm thick copper plate buried at a minimum depth of 2.5 meter including necessary materials like charcoal, salt etc as required conforming to BIS standards having brick masonry chamber with hinged cover and watering arrangement, complete in all respects	1.00	Each	24150.00	24150.00
32	Supply and installation of copper wire/strips in following sizes 14 SWG copper bare wire	20.00	RM	57.00	1140.00
33	Supply and installation of isolated earthing system for computer etc. using insulated green yellow copper earthing wire laid through 20mm PVC conduits from separately made earth pit to the equipment in following sizes Supply and installation of 16 sqmm, cu., in 20mm PVC flexible conduit.	20.00	RM	172.00	3440.00
34	Supply and installation of 6 sqmm, cu in 20mm PVC flexible conduit.	30.00	RM	86.00	2580.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
35	LIGHTING FIXTURES Supply & Installation of lighting fixtures with lamps as per the details below including necessary hardware such as clamps, nuts, bolts, nails, screws and suspension rods as required for fixing the fixtures in position as directed by architect / consultant, complete in all respects. Supply & fixing of energy efficient light fitting of Philips FBS 450/236 D6 HF wing - C- LX recess mounted direct, indirect light efficiency.	30.00	Each	5175.00	155250.00
36	Supply & Installation of Recess mounted down lighter luminaries with specular finish reflector 1 x 18 W CFL Cat No Philips make:FBH145/118.	4.00	Each	2300.00	9200.00
37	Supply & Installation of Occupancy sensors with bypass facility for Cabins. This includes wiring from sensor to board and supply of required accessories. Make : Philips/Wipro/Steinel	2.00	Each	6325.00	12650.00
	PART 'C' TOTAL	Rs.	8,53,615.00		
	PART 'D' - IT NETWORKING				
1	Supply and installation of CAT 6 Gig speed information outlets with dual face plates. Quantity of outlets are: 2nos. At each work stations, cubicles, rooms of PAs; 4 nos. in all cabins of GM, AGMs, conference rooms, ; location of the outlets to be finalised in consultation with Engineer- in-charge.	20.00	Each	434.00	8680.00
2	Supply, installation and termination of approved make telephone outlets RJ 11jack with dual face plate. Quantity of telephone jacks are: 2nos. At each work stations, cubicles,; 4 nos. each in all cabins of GM, AGMs, conference rooms, rooms of PAs; location of the outlets to be finalised in consultation with Engineer-in-charge.	20.00	Each	434.00	8680.00
3	Supply, laying and termination of Cat 6 Gig speed - 4 Pair 24 AWG UTP Cable, 305m with cross member pair separator complete as required. Each box contain 305 mtrs. of cable.	5.00	Each Box	8050.00	40250.00
4	Supply, laying and termination of 2pair 0.5mm dia shielded PVC insulated Copper conductor Telephone wire conforming to latest Standards.	2000.00	RM	3.00	6000.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
5	Supply, installation and dressing of Cat 6Gigaspeed Patch Panels for accommodating 24 port termination and shall facilitate cross-connection and inter-connection using modular patch cords and shall conform to EIA standard, 19-inch relay rack mounting requirements. Patch Panel shall come with preloaded information outlets. Panel shall have label holders and designation labels as part of the standard device. Shall also come with rear cable management metallic tray with Velcro ties complete as required.	2.00	Each	11500.00	23000.00
6	Supply, installation and dressing of Cat 6Gigaspeed Mounting Cords 3'-0" length for the Patch Panel End Connectivity, Both end shall be RJ 45 with snag less boots complete as required. Make :D-Link or TYCO for all items covered at 1 to 6	10.00	Each	230.00	2300.00
7	End terminations for telephone cables into junction boxes.	1.00	Each	1495.00	1495.00
8	Providing and fixing of Pigtails for Server.	2.00	Each	2415.00	4830.00
9	Providing and fixing of slicing of cores.	2.00	Each	1092.00	2184.00
10	Supply and fixing of fibre patch cards.	1.00	Each	5750.00	5750.00
11	Supply and fixing of Powder coated metallic race ways for tables in cabins and conference halls.	5.00	Each	575.00	2875.00
	PART 'D' TOTAL	Rs.	1,06,044.00		

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
	PART 'E' - FIRE ALARAM SYSTEM				
1	<p>SMOKE AND FIRE DETECTION & ALARM SYSTEM</p> <p>Supply, installation and commissioning of microprocessor based, Two Loop Intelligent Addressable Fire Alarm Control Panel with independent battery backup suitable for 72 hours AND WITH the following features, complete in all respects.:</p> <p>a) 159 detectors and 159 modules per SLC loop</p> <p>b) The system display shall provide a 640-Character backlit alphanumeric Liquid Crystal Display (LCD). It shall also provide ten Light-Emitting-Diodes (LEDs), that indicate the status of the following system parameters: AC POWER, FIRE ALARM, PRE ALARM, SECURITY, SUPERVISORY, SYSTEM TROUBLE, OTHER EVENT, SIGNALS SILENCED, POINT DISABLED, and CPU FAILURE.</p> <p>c) Built in Alarm, trouble and supervisory relays</p> <p>d) Response time of less then 2 seconds</p> <p>f) Pre-signal and Positive Alarm Sequence: The system shall provide means to cause alarm signals to only sound in specific areas with a delay of the alarm from 60 to up to 180 seconds after start of alarm processing.g) Print Functions: The system shall provide means to obtain a variety of reports listing all event, alarm, trouble, supervisory, or security history.</p> <p>h) Shall comply with requirements of NFPA Standard 72 & NFPA - 318. The system shall be electrically supervised and monitor the integrity of all conductors.</p>	1.00	1 set	198145.00	198145.00

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
2	Supply & installation of Intelligent Multicriteria Detector with mounting base and surface mounting kit and with following features: a) Addressable device, designed to monitor a minimum of photoelectric and thermal technologies in a single sensing device b) Utilizing advanced electronics that react to slow smoldering fires and thermal properties all within a single sensing device. c) Microprocessor design & shall be capable of selecting the appropriate sensitivity levels based on the environment type and then have the ability to automatically change the setting as the environment changes d) Twin LEDs for 360 degree viewing. e) UL Listed f) Operating Voltage : 15 to 32 Vdc 40 Nos. of these Multicriteria Detectors will be located above the false ceiling for detecting any short circuits and balance 52 Multicriteria Detectors will be located in ALL the cabins electrical control room	15.00	Each	5405.00	81075.00
3	Supply and installation of addressable duct sensor	1.00	Each	13800.00	13800.00
4	Supply and installation of addressable manual break glass point	1.00	Each	5060.00	5060.00
5	Supply and installation of addressable isolator module	1.00	Each	5060.00	5060.00
6	Supply and installation of addressable control output module	1.00	Each	5405.00	5405.00
7	Supply and installation of addressable analogue horn sounders	1.00	Each	43700.00	43700.00
8	Supply and laying of fire alarm cable	200.00	RM	103.00	20600.00
	PART 'E' TOTAL	Rs.	3,72,845.00		
	PART (A+B+C+D+E) TOTAL				45,43,947.96
	Total : Rs. Forty Five Lakhs forty three thousand nine hundred forty eight only.				

Service Tax:- The Service tax as applicable is extra which will be paid by BHEL to the agency after submission of necessary valid documents by the agency.

Note : The Tenders are required to quote the tender value on percentage (%) basis at excess or less or on as per estimate value

Tender %	In figure	In words
Excess		
Less		
Estimated value		

Name of the Contractor :

Signature of the Contractor

Accounts Representative

Opening officer

S No	Description of the item	Qty	Unit	Rate (Rs)	Amount (Rs)
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MAKE OF BOUGHT OUT ITEMS

Sl. No.	Description of Materials	Name of Make
1	Wires	Finolex / L&T
2	Telephone Wire	Finolex / L&T
3	Telephone Socket	Roma / Cabtree
4	Cable	Finolex / L&T
5	Modular Switch & Socket	Roma / Cabtree
6	Distribution board	AGER / GE / SIEMENS
7	MCB/ELCB	AGER / GE / SIEMENS
8	MCCB	AGER / GE / SIEMENS
9	Measuring Instrument	Conzerve
10	CT (Tape wounded)	Kappa
11	Indicating lamp	L&T / SIEMENS
12	Selector Switch	Kaycee
13	Light fixtures	Philips
14	Exhaust Fan	Crompton
15	Flourescent Tubes	Philips
16	Crimping/Soldering	Dowels/Braco
17	Terminal Connectors	Wago
18	PVC Pipe	Sudhakar
19	Insulation Tapes	Steelgrip
20	Data Cable	D-Link/Krone
21	Data Socket	D-Link/Krone
22	Panel	CPRI Approved Panel Manufacture
23	Raceways	Locally fabricated