



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

SCHEDULE- A

Tender Notice No:

HY/FCD/OT-11/2012-13, Dt: 21.07.2012

PRICE BID

Item no.: 3

**Name of work: Modification of TIC bldg. interiors - Civil, Electrical, Communication, IT Networking, Air Conditioning, Fire Alarm Systems etc.**

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
	<b>PART 'A'</b> <b>CIVIL WORKS</b>				
1	Dismantling the existing wooden / aluminum partitions / half height partitions if required into small units including removing doors and glass panes and stacking in stores, removing the old furniture, almirahs/records and any other items lying in the floor including transportation, loading & unloading, stacking in stores within 2 Kms lead as directed by Engineer-in-charge.	240.00	Sq. m	75.00	18,000.00
2	<p><b>Dismantling of existing windows along with frames and providing Glazed Windows</b></p> <p>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.</p> <p>Supplying &amp; fixing of flush window frame with sides operable 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 center 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 polyster 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. Mullion section should be joined with frame/mullion using Nylon Mullion Cap Ethyl Propylene</p> <p>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 align="right">Contd.....</p>	60.00	Sq. m	4,000.00	2,40,000.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
	<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. 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><b>MAKE: SHAKTI/AJANTHA OF NCLSECCOLOR / FINESTA</b></p>				
3	<p>Supply and fixing of toilet doors along with teak wood door frame of required size consisting teak scantlings of size 100 mm x 75 mm 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.**</p>	6.00	Sq. m.	3,000.00	18,000.00
4	<p>Providing and fixing shutters along with frames for toilets that are 30 mm thick factory made PVC rigid foam paneled, door and shutters manufactured by M/s. Rajashri made from M.S. tube, 19 gauge thick, 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 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 doors).</p>	6.00	Sq. m.	1,830.00	10,980.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
5	<p>Providing and fixing in true horizontal level 600 mm x 600 mm false ceiling system manufactured by M/s. Armstrong World Industries / M/s Daiken 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 center 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, and laying Dune Supreme Microlook Edge ceiling tiles manufactured by M/s. Armstrong World Industries, of size 600mmx600mmx15mm having NRC 0.50, Light reflectance of &gt;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 micro perforations, back of the tile duly sanded</p> <p>and finished with a coat of protective paint over the formed grid and complete in all respects. Boards, where light fixtures to be fixed shall be handed over to Department.</p> <p><b>Make: Armstrong</b></p>	400.00	Sq. m.	1,130.00	4,52,000.00
6	<p><b>Vitrified flooring:</b> Supply and laying of vitrified tiles of brighter shades and required design of Premium Quality (1st Quality), in required texture and colour for floors/skirting/cladding using vitrified tiles of size 600x600 mm (± 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 flooring, laying of tiles in required design with spacers or without spacers jointing the tiles with colour tint if required etc. complete as directed by Engineer-in-charge. The cost of the tile shall be Rs. 60/- per SFt. 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. This includes making pockets for electrical, communication, network cables, junction boxes etc. complete in all respects.</p>	600.00	Sq. m.	950.00	5,70,000.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
7	<p><b>Wall paneling:</b> Supply &amp; 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 900 mm c/c shall be made for fixing the Eco board. Joints shall be covered with Steam Beige beading and corners shall be covered with corner Steam Beige beadings of suitable sizes with malamine polish finish complete in all respects. Make : Eco board.</p>	300.00	Sq. m	1,600.00	4,80,000.00
8	<p>Supply &amp; fixing of Aluminium Composite Panel (ACP), 2 mm thick in required colours for interiors, 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 of size 50 mm x 25 mm x 2 mm 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.</p>	30.00	Sa. m.	3,600.00	1,08,000.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
9	<b>Full height glass partitions for cabins:</b> Providing & fixing of Aluminum frame work using 50 x 50 x 1.2 mm box sections placed at approximately 600 mm c/c horizontally and vertically and forming a grid size of 600 x 600 mm. The frame work is to be adequately anchored in RCC slab for a firm support. Then fixing of 12 mm MDF board on both sides of Aluminum frame work upto the false ceiling level. Providing and fixing of 12 mm Toughened Glass in required size for partitions. The glass partition shall be provided with "3M" frosted film in required design. The joints of the glass partitions shall be flushed perfectly without any gaps and joints shall be filled with silicon compound. If necessary bottom of the glass shall be fixed in PVC sleeve, subsequently fixed into floor. The door opening shall be deducted for payment.	140.00	Sq. m.	4,000.00	5,60,000.00
10	<b>Full height glass doors for cabins:</b> 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-In charge.	15.00	Sq. m.	9,000.00	1,35,000.00
11	Supply & fixing of Rollar blinds including channels, fabric etc. complete and the basic cost of the blinds shall be in the range of Rs. 125/- per S Ft. The colour and design of the blinds will be selected by department within the above specified cost.	80.00	Sq. m.	1,500.00	1,20,000.00
12	<b>Single / Double leaved fully glazed patch fitting doors:</b> Supply and fixing of Single / Double glazed door to the door frame of size 75 mm x 200 mm thick BT wood door 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 single / double glass door leaves fixed in wooden frame all around the glass and wooden frame size shall be 150 mm x 40 mm. All teak wood frame surfaces shall be fixed with teak veneer in required colour and design and the teak veneer of door frame and shutter frame shall be finished with malamine polish into a neat finish. The glass doors shall be fixed to the door frame with door hardwares like floor spring, patch fitting / pivot fitting, center lock and 'D' Handles of make "Dorma / Ozone". Supply and fixing of "3M" frosted film on the glass door in required design complete in all respects, as directed by Engineer-in-charge. Payment will be made for the measurement of finished door along with frame. The price quoted shall includes material, labour, accessories etc. complete.	9.00	Sq. m.	15,000.00	1,35,000.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
13	Supply & fixing of Aluminium metal tiles powder coated in false ceiling suitable to the Armstrong false ceiling grid size under the roof mounted AC indoor units. Colour of the tile shall be matched with the colour of Armstrong boards.	20.00	Each	380.00	7,600.00
14	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.**	5.00	Cu. m.	2,104.00	10,520.00
15	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.**	50.00	Sq. m.	65.80	3,290.00
16	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. reinforcement and binding wire etc., complete (60% -20 mm size metal and 40% of 10 mm metal).**	5.00	Cu. m.	1,560.50	7,802.50
17	<b>Supply &amp; fixing of false flooring:</b> The access raised floor in required colour with point load of 3.6 KN/over 25 Sq. mm and UDL of 12 KN/Sq. m; panels manufactured from steel with lightweight cementitious core in the size 600 x 600 x 35 mm. The bottom of the panel shall be embossed in hemispherical shape to give strength and flexural rigidity. The entire panel shall be finished with electro deposition of cathodic epoxy paint on the exposed surface for lifetime protection. The panel has to be placed on the pedestal made from all steel zinc plated construction. Pedestal assembly shall provide for easy adjustment of leveling and accurately align panels to ensure lateral restraint. Pedestal head shall be designed to avoid rattle or squeaks. The steel base plate of the pedestal shall be fixed on to the sub-floor with epoxy pedestal adhesive and/or mechanical fixing. An all-steel rectangular stringer system having prepunched holes at both ends to ensure correct alignment with pedestal heads should be applied.	10.00	Sq. m.	4,650.00	46,500.00
18	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.**	10.00	Sq. m.	3,071.00	30,710.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
19	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, chamfering, 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.	30.00	Sq. m.	810.00	24,300.00
20	Supply & fixing of 6 mm thick mirror of approved quality "Modi float glass", with 6 mm thick hard board back and with best quality Steam beige frame (design beading) all round the mirror including necessary clamps, malamine polishing to the beading, including cost of all materials etc. complete.	6.00	Sq. m.	1,445.00	8,670.00
21	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.	100.00	Sq. m.	84.10	8,410.00
22	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.**	3.00	Each	2,024.00	6,072.00
23	Dismantling of existing EWC with flush tank and other fixtures carefully and handing over to stores for reuse and supply & fixing of new "Parry ware" 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.**	2.00	Each	6,985.00	13,970.00
24	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	4,261.00	8,522.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
25	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	3,933.00	15,732.00
26	Supply and fixing of "Jaquar" make Pressmatic pillar cock auto closing system, Cat No. 031	4.00	Each	1,400.00	5,600.00
27	Supply and fixing of "Jaquar (Continental)" make sink cock with raised 'J' shaped swinging spout, Cat No. 359	1.00	Each	1,060.00	1,060.00
28	Supply and fixing of "Jaquar" make angular stop cock, Cat No. 053	10.00	Each	495.00	4,950.00
29	Supply and fixing of "Jaquar (Florentine)" make 2-way bib cock with wall flange, Cat No. 5041	4.00	Each	1,230.00	4,920.00
30	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	1,325.00	5,300.00
31	Supply and fixing of "Base/Parryware/Hind ware" make Paper Holder.	2.00	Each	500.00	1,000.00
32	Supply and fixing of "Base/Parryware/Hindware" make towel ring.	4.00	Each	500.00	2,000.00
33	Supply and fixing of "Base/Parryware/Hindware" make Soap dish.	4.00	Each	500.00	2,000.00
34	Supply and fixing of "Base/Parryware/Hindware" make Odonil Holder.	2.00	Each	500.00	1,000.00
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.**	120.00	Sq. m	764.00	91,680.00
36 a)	Supply & fixing of GI pipes of Class-B 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.** Make: TATA/ZENITH/JINDAL a) 15 mm (1/2") dia.	60.00	R M	91.00	5,460.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
b)	20 mm (3/4") dia.	60.00	R M	97.00	5,820.00
c)	25 mm (1") dia.	60.00	R M	141.00	8,460.00
37	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	R M	80.78	4,039.00
38 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	1,452.00
b)	20 mm (3/4") dia.	6.00	Each	327.00	1,962.00
c)	25 mm (1") dia.	6.00	Each	686.00	4,116.00
39	Supply and fixing of aluminum window grill along with aluminium frame consisting aluminium 'F' section of size 2.5"x1.5"x1.20 mm thick (62x38 mmx1.2 mm thick) and supply and fixing of design of 2" aperture aluminium grill to the above frame work with necessary fixtures. It includes fixing of total frame to the existing brick work, finishing etc. complete.	80.00	Sq. m.	2,500.00	2,00,000.00
	<b>PART 'A' TOTAL</b>			₹	<b>33,89,897.50</b>
1	<b>PART 'B'</b> <b>AIR CONDITIONING WORKS</b> 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 hall, complete in all respects. <b>MAKE: LG/VOLTAS/BATLIBOI/CARRIER/BLUE STAR</b>	2.00	Each	3,45,000.00	6,90,000.00
2	<b>Supply, installation, testing &amp; Commissioning of following piping / ducting for Air Conditioning units</b> Copper refrigerant piping with insulation foam between indoor and outdoor air cooled condensers of the following sizes. <b>Hard drawn pipe</b> 28mm dia	80.00	R M	989.00	79,120.00
3	12mm dia	80.00	R M	661.00	52,880.00
4	GSS ducting complete with angle iron flanges, high tech supports as per SMACNA specification 20 gauge	20.00	Sq. m.	1,207.00	24,140.00
5	---do-- 22 gauge	40.00	Sq. m.	1,053.00	42,120.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
6	--- do-- 24 gauge	200.00	Sq. m.	862.00	1,72,400.00
7	The acoustic lining in the duct using fiber glass with 26 g aluminum perforated sheet using GI nuts and bolts. 12.5mm thick	40.00	Sq. m.	287.00	11,480.00
8	Providing Thermal Insulation with 25mm thick fibre glass crown 150mm covered with aluminum foil.	200.00	Sq. m.	615.00	1,23,000.00
9	MS black coated Collar Dampers	10.00	Sq. m.	21,804.00	2,18,040.00
10	Main duct Volume control dampers made out of 18 gauge GI sheet.	2.00	Sq. m.	12,075.00	24,150.00
11	Fire damper made out of 18gauge GI sheet with fusible link.	2.00	Sq. m.	3,231.00	6,462.00
12	Fire retardant flexible canvas connection	5.00	Each	483.00	2,415.00
13	Condensate drain pipe of standard make PVC with insulation of 50mm dia	100.00	R M	115.00	11,500.00
14	Power and control cabling between the panel, indoor unit and out door unit of the following sizes 3c 1.5 SQ.MM	500.00	R M	57.00	28,500.00
15	--do-- 3c 2.5 SQ.MM	350.00	R M	60.00	21,000.00
16	Mounting both indoor & outdoor units, pressure testing, vaccumising and commissioning etc. of Duct able a/c unit (including necessary civil works).	2.00	Each	10,925.00	21,850.00
17	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.	50.00	Each	1,840.00	92,000.00
18	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.	50.00	Each	1,403.00	70,150.00
19 a)	Supply of 2.0 TR/1.80 TR Cassette AC comprising indoor unit, outdoor unit with electronic control panel and remote control pad, DB's, Switches etc. for mini conference hall and main conference hall complete in all respects. <b>MAKE: LG / VOLTAS / BATLIBOI / CARRIER / BLUE STAR / DAIKIN</b>	2.00	Each	72,500.00	1,45,000.00
b)	Copper piping with insulation between indoor and outdoor	20.00	R M	690.00	13,800.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
c)	Electrical wiring between outdoor and indoor	20.00	R M	126.00	2,520.00
d)	Drain Piping 25 mm	20.00	R M	103.00	2,060.00
20 a)	Supply, installation, testing & commissioning of 1.5 TR Cassette type split room air conditioner with electronic control panel and remote control pad, necessary cabling, DB's, Switches etc. for cabins complete in all respects. <b>MAKE: LG / VOLTAS / BATLIBOI / CARRIER / BLUE STAR / DAIKIN</b>	1.00 No.	Each	43,500.00	43,500.00
b)	Copper piping with insulation between indoor and outdoor	10.00	R M	690.00	6,900.00
c)	Electrical wiring between outdoor and indoor	10.00	R M	126.00	1,260.00
d)	Drain Piping 25 mm	10.00	R M	103.00	1,030.00
21 a)	Supply, installation, testing & commissioning of 1.5 TR Hi-wall split room air conditioner with electronic control panel and remote control pad, necessary cabling, DB's, Switches, inclusive of all connected accessories etc. complete in all respects. <b>MAKE: LG / VOLTAS / BATLIBOI / CARRIER / DAIKIN / BLUE STAR</b>	1.00	Each	25,000.00	25,000.00
b)	Copper piping with insulation between indoor and outdoor	20.00	R M	690.00	13,800.00
c)	Electrical wiring between outdoor and indoor	50.00	R M	126.00	6,300.00
d)	Drain Piping 25 mm	20.00	R M	103.00	2,060.00
	<b>Note: 1) All out door Air conditioner units and compressor units shall be located on the terrace/on chajjas of the building, whichever is feasible. 2 a) Air balancing to be carried out to show anywhere in the area 24±2°C in peak summer also. b) Energy Meter for total load (lighting, A/C etc.) of the floor shall be provided.</b>				
	<b>PART 'B' TOTAL</b>			₹	<b>19,54,437.00</b>
1	<b>PART 'C'</b> <b>ELECTRICAL WORKS</b> <b>Cable Raceways</b> 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.	30.00	R M	575.00	17,250.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
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	400.00	R M	431.00	1,72,400.00
3	-- do -- 56 x 38 mm	120.00	R M	374.00	44,880.00
4	Supply & Installation of floor junction boxes with top cover for above raceways , of size 300mm x 300mm x 50mm / 150x150x50 fabricated out of MS painted sheets with removable screwed cover plates on all four sides for blocking the entry complete in all respects. <b>Make : Locally fabricated</b>	120.00	Each	546.00	65,520.00
5	<b>Removal of existing electrical equipment</b> 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	34,500.00	34,500.00
6	Supply, Installation and commissioning of <b>MAIN LT PANEL</b> , 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 bus bars '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. Digital Energy meter with RS 485 port - 1 No. 250A 50KA TPN MCCB unit as Incomer - 1 No. 160A,50KA TPN MCCB as outgoing - 1 No. 63A, TPN MCB as outgoing - 6 Nos. 40A, TPN MCB as outgoing - 4 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  This includes termination of the cables, end terminators, material, labour, commissioning etc. complete.	1.00	Set	74,750.00	74,750.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
7	Supply, Installation and commissioning of <b>UPS OUTGOING PANEL</b> , 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. 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 LED type and fuses - 1 Set	1.00	Set	66,890.00	66,890.00
8	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. 40A, FP ELCB as incomer(100mA) - 1 No. 10A, SP, MCB outgoing(10KA) - 24 Nos. <b>Make : Siemens/Legrand/Hager</b>	1.00	Set	12,334.00	12,334.00
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. <b>Make : Siemens/Legrand/Hager</b>	2.00	Set	9,344.00	18,688.00
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. <b>Make : Siemens/Legrand/Hager</b>	2.00	Set	10,988.00	21,976.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
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 <b>Make : Siemens/Legrand/Hager</b>	2.00	Set	3,400.00	6,800.00
12	<b>CABLES / MAINS</b> Supply & Installation of 1100V grade FRLS armoured cable having sector / circular shaped aluminum / 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 cable in suitable size of PVC Conduit.	60.00	R M	3,450.00	2,07,000.00
13	Supply & laying of 4C x 70 SQ.MM. copper flexible in suitable size of PVC Conduit.	15.00	R M	2,000.00	30,000.00
14	Supply & laying of 4C x 16 SQ.MM Copper flexible cable.	15.00	R M	1,035.00	15,525.00
15	Supply & laying of 4C x 10 SQ.MM Copper flexible cable.	100.00	R M	690.00	69,000.00
16	Supply & laying of 4C x 6 SQ.MM copper armoured cable.	75.00	R M	517.00	38,775.00
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 cable	2.00	Each	1,380.00	2,760.00
18	4C x 70 SQ.MM. copper flexible cable	2.00	Each	920.00	1,840.00
19	4C x 16 SQ.MM Copper flexible cable	2.00	Each	747.00	1,494.00
20	4C x 10 SQ.MM copper flexible cable	20.00	Each	747.00	14,940.00
21	4C x 6 SQ.MM copper flexible cable	2.00	Each	575.00	1,150.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
22	<b>WIRING</b> 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. (Switch shall be of <b>ROMA Type</b> ).	70.00	Each	1,087.00	76,090.00
23	Supply & installation of above for Secondary light points looped from the above point.	80.00	Each	385.00	30,800.00
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	2,760.00	2,760.00
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, 27 & 28 (Separate rate is not required to be quote for item No.25)				
26	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.	2,000.00	R M	144.00	2,88,000.00
27	Supply & fixing of 6/16A Plug Point directly taken from DB for Pantry/geyser / zerox / fridge/ split AC units. <b>Make: Roma of Anchor (or) North West</b>	20.00	Each	862.00	17,240.00
28	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.	400.00	R M	172.00	68,800.00
29	Supply and laying of PVC sleeves in the race ways partition.	1,500.00	R M	25.00	37,500.00
30	Supply and installation of 6A, 5 pin 4 nos. shuttered type sockets controlled by 1no. 16A switch with suitable size of front plate etc. ( <b>UPS POWER set</b> ); location of the points will be finalised in consultation with engineer in charge, complete in all respects. <b>Make: ROMA OF ANCHOR</b>	80.00	Each	1,552.00	1,24,160.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
31	Supply and installation of one no 6A/16A 5pin shuttered type sockets controlled by 1no. 16A switch with suitable size of front plate etc. ( <b>RAW POWER set</b> ) <b>Make: ROMA OF ANCHOR</b>	80.00	Each	920.00	73,600.00
32	<b>EARTHING</b> 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.	2.00	Each	24,150.00	48,300.00
33	Supply and installation of copper wire/strips in following sizes 14 SWG copper bare wire	200.00	R M	57.00	11,400.00
34	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.	200.00	R M	172.00	34,400.00
35	Supply and installation of 6 sqmm, cu in 20mm PVC flexible conduit.	250.00	R M	86.00	21,500.00
36	<b>LIGHTING FIXTURES</b> 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.	80.00	Each	4,500.00	3,60,000.00
37	Supply & Installation of exhaust fans, 12" size, Heavy Duty <b>Make: Philips/Crompton Greaves</b>	4.00	Each	1,437.00	5,748.00
38	Supply & Installation of Recess mounted down lighter luminaries with specular finish reflector 2 x 18 W CFL Cat No Philips make:FBH145/218.	10.00	Each	2,300.00	23,000.00
39	Supply & Installation of Recess mounted down lighter luminaries with specular finish reflector 1 x 18 W CFL Cat No Philips make:FBH145/118.	20.00	Each	1,275.00	25,500.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
40	Supply & Installation of Occupancy sensors with bypass facility for Cabins. This includes wiring from sensor to board and supply of required accessories. <b>Make : Philips/Wipro/Steinel</b>	8.00	Each	6,325.00	50,600.00
	<b>PART 'C' TOTAL</b>			₹	<b>22,17,870.00</b>
1	<b>PART 'D'</b> <b>SMOKE AND FIRE DETECTION &amp; ALARM SYSTEM</b> 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.: a) 159 detectors and 159 modules per SLC loop 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. c) Built in Alarm, trouble and supervisory relays d) Response time of less than 2 seconds. e) UL Listed 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. h) Shall comply with requirements of NFPA Standard 72 & NFPA - 318. The system shall be electrically supervised and monitor the integrity of all conductors.	1.00	Set	1,98,145.00	1,98,145.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
2	<p>Supply &amp; installation of Intelligent Multicriteria Detector with mounting base and surface mounting kit and with following features:</p> <p>a) Addressable device, designed to monitor a minimum of photoelectric and thermal technologies in a single sensing device</p> <p>b) Utilizing advanced electronics that react to slow smoldering fires and thermal properties all within a single sensing device.</p> <p>c) Microprocessor design &amp; 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</p> <p>d) Twin LEDs for 360 degree viewing.</p> <p>e) UL Listed</p> <p>f) Operating Voltage :15 to 32 Vdc</p> <p>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, server room, conference halls etc.</p>	40.00	Each	5,405.00	2,16,200.00
3	<p>Supply &amp; installation of Addressable Duct Sensor with housing and accessories and with following features:</p> <p>a) Continuous sensitivity monitoring and alarm verification from the panel</p> <p>b) Simple change of detector heads</p> <p>c) Easily mounting on round and rectangular ducts</p> <p>d) Air Velocity rating from 150 to 1200 meters per minute</p> <p>e) Poly Carbonate cover for the convenient visual inspection of sampling tube filters</p> <p>f) UL Listed</p> <p>g) Duct sampling tube should be of maximum 3.7 meters</p>	2.00	Each	13,800.00	27,600.00
4	<p>Supply &amp; installation of Addressable Manual Break Glass Point with accessories and with following features:</p> <p>a) Direct decade addressing</p> <p>b) Built in electronics</p> <p>c) LED for Activation</p> <p>d) Designed to the requirement of BS5839 part -2</p> <p>e) Operating voltage: 24 Vdc</p> <p>f) Key reset</p> <p>g) Meets UL-38 rating</p>	2.00	Each	5,060.00	10,120.00
5	<p>Supply &amp; installation of Addressable Isolator Module with accessories and with following features:</p> <p>a) Powered by SLC loop directly</p> <p>b) Plug in connectors</p> <p>c) Address selector switches visible in 2 planes</p> <p>d) Approved to GEA GEI 1-082 and CEA GEI 1-084</p> <p>e) Surface Mounting box</p>	3.00	Each	5,060.00	15,180.00

Sl. No.	Description	Approx. Qty	Unit	Rate Rs.	Amount Rs.
6	Supply & installation of Addressable Control Output Module with accessories and with following features: a) Addressable Relay Module with dry contact output to activate auxiliary devices. b) Built in type identification. c) High noise immunity d) Operating Voltage: 15-32 Vdc e) UL Listed	2.00	Each	5,405.00	10,810.00
7	Supply & installation of Addressable Analogue Horn sounders and with following features: a) Addressable Horn Sounders shall be of general area coverage. b) Designed with dual front and rear sound paths, providing an 'all around' sound output - ideal for open area coverage. c) Powered directly from Panel. d) Rotary address switches e) Operating voltage: 24 Vdc f) UL Listed Cables and accessories: as required- 2 Core 1.5 sq mm armoured FRLS cable with suitable accessories. <b>Make : Notifier</b>	2.00	Each	43,700.00	87,400.00
8	Supply & laying of fire alarm cable 2 core, 1.5 Sq. mm armoured FRLS twisted cable with suitable accessories. <b>Make: Notifier</b>	600.00	R M	103.00	61,800.00
	<b>PART 'D' TOTAL</b>			₹	<b>6,27,255.00</b>
1	<b>PART 'E'</b> <b>IT NETWORKING</b> Supply and installation of CAT 6 Gig speed information outlets with single 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. <b>Make: Tyco/D-Link/Molex</b>	125.00	Each	434.00	54,250.00
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.	125.00	Each	434.00	54,250.00
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.	35.00	Box	8,050.00	2,81,750.00
4	Supply, laying and termination of 2pair 0.5mm dia shielded PVC insulated Copper conductor Telephone wire conforming to latest Standards.	8,000.00	R M	3.00	24,000.00

Sl. No.	Description	Approx. 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.	8.00	Each	11,500.00	92,000.00
6	Supply, installation and dressing of Cat 6 Gigaspeed 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	125.00	Each	230.00	28,750.00
7	End terminations for telephone cables into junction boxes.	4.00	Each	1,495.00	5,980.00
9	Providing and fixing of Pigtails for Server.	4.00	Each	2,415.00	9,660.00
10	Providing and fixing of slicing of cores.	4.00	Each	1,092.00	4,368.00
11	Supply and fixing of fiber patch cards.	4.00	Each	5,750.00	23,000.00
12	Supply and fixing of Powder coated metallic race ways for electrical, telephones, IT net working sockets.	50.00	R M	575.00	28,750.00
13	Supply and fixing of 1 KVA online UPS system with all accessories with one hour back up. <b>Make: APC</b>	1.00	Each	51,175.00	51,175.00
	<b>PART 'E' TOTAL</b>			₹	<b>6,57,933.00</b>
	<b>Grand Total (Part A+B+C+D+E)</b>			₹	<b>88,47,392.50</b>
	<b>Add increase in Vat 1% over the material cost (70% of Above value)</b>			₹	61,931.75
	<b>Total value of work</b>			₹	<b>89,09,324.25</b>

**Note:** \*\*Cement, structural steel/MS reinforcement steel will be issue by BHEL on free of cost at their stores.

1	A penalty of 0.5% of the gross value of work will be levied for every week's delay of work subject to a maximum penalty of 10% of the gross value of work (executed).
2	Service tax, which is extra as per service tax norms will be paid by BHEL to the agency after submission of necessary documents
3	The rates are inclusive of all taxes and duties.

**Note :** The bidders are required to quote the tender value on percentage (%) basis at excess or less or on par with estimate value in figures and words.

Tender %	In figure	In words
Excess		
Less		
Estimated value		

Name of the Contractor :  
CONTRACTOR(S)

Signature of the Contractor  
ISSUING AUTHORITY