

**TENDER**

***FOR***

**Setting up of emergency and critical care department in medical colleges-renovation of IP ward to accommodate ICU at medical College, Kottayam**

**PART-III  
PRICE BID**

**TENDER NO. HLL/ID/13 /- IIA  
APRIL 2013**

**HLL LIFECARE LIMITED  
INFRASTRUCTURE DEVELOPMENT DIVISION**

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## **1 COMMERCIAL CONDITIONS**

1.0.1 The tendered rate shall inter alia be deemed to include for the provision of all materials, process, operation and special requirements detailed in the particular specification irrespective of whether these are mentioned in the description of equipment schedule and Bill of quantities or not. It is an express condition of the contract that the tendered rates for various items in the Bill of Quantities shall be deemed to include for the full, entire and final condition of the contractor respective items of the works in accordance with the provision of the contract.

1.0.2 The tendered rate shall include for all taxes, duties, etc. as applicable and shall be quoted on the works contract basis for contractors for the work of Setting up of emergency and critical care department in medical colleges-renovation of IP ward to accommodate ICU at medical college, Kottayam.

1.0.3 The tendered rate shall remain firm and free from variation due to rise in the cost of materials/equipment, labour or any other reasons whatsoever during the contract period and valid extension on the case may be.

1.0.4 The quantum of excise duty included in the tendered price, the rate at which they were assumed etc. shall be indicated in the tender.

### **1.1 UNIT RATES**

1.12 Only approved work will be measured on completion and priced as per rates quoted against the respective items.

### **1.2 BRIEF DESCRIPTION OF PRICING**

1.2.1. Unforeseen difficulties for which provision has not been made in the tender will in no way relieve the successful tenderer from the full execution of the work.

- 1.2.2 The price quoted shall be the final amount for this finished work.
- 1.2.3 The quoted price shall be inclusive of all taxes and duties whether payable by the contractor or to be deducted at source. This shall include those applicable among VAT, Sales Tax, Income Tax, Customs Duty, Excise Duty, Turnover Tax, Service Tax, Work Contract Tax, Octroi, Labour Welfare Cess or any other Taxes and Duties prevailing in respect of this contract. **ANY BID STATING THAT TAXES ARE EXTRA WILL BE SUMMARILY REJECTED.**

### **1.3 INCOME TAX**

Any payment to the contractor as per contract will be made after deducting income tax as per the rules and regulations.

### **1.4 SALES TAX AND EXCISE DUTY**

The tenderer shall clearly indicate sales tax, Excise and other duties as applicable in his offer for carrying out this work.

### **1.6. SUBMISSION OF BILL**

- 1.6.1. The contractor shall from time to time prepare and submit interim bills of the work executed and on completion of the contract, he shall prepare and submit the final bill. The measurements sheets in support of the interim and final bills shall be prepared by the contractor on the basis of measurements taken by him jointly with the project engineer and the said measurement sheets shall be submitted by him with the relevant bill.
- 1.6.2. Within the above frame work of the terms of payment the contract's interim bills - As per clause 7 in GCC

### **1.7. EXTRA ITEMS**

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items may not have been included in the schedule of probable quantities or rates, such items being necessary or essential for completing the job. Variation order in respect of such additional items and their quantities will be issued in writing by the employer.

- 1.7.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of work and on completion including that of the sub-contractors and special tradesman and all materials condemned by the project engineer shall be cleared and removed from the site by the contractor without any extra charge.
- 1.7.2 All measuring steel taps, scaffolding, ladders instruments and tools that may be required for taking measurements shall be supplied by the contractor.

## **1.8. OVER TIME WORK**

If the contractor is required to work night or on holidays in order to maintain the time schedule he shall take prior approval from the Engineer-in-charge. He should also provide and maintain at his own cost sufficient lights as may be necessary to enable the work to proceed satisfactorily during the night.

- 1.8.1. The contractor shall give full facilities to all other contractors working on site. He shall also arrange his programme of work so as not hinder the progress of other trades. The decision of the Engineer-in-charge on any point of dispute between the various parties shall be final and binding.
- 1.8.2. It is specifically pointed out that the contractor shall not be entitled to any compensation whatsoever on account of delay in procurement or supply of controlled materials and the rates quoted in the contract are fixed till the completion of the contract.
- 1.8.3. The contractor shall co-operate with other agencies appointed by the owners for the work to proceed smoothly with the least possible delay and to the satisfaction of the owners, architects and the consultants.
- 1.8.4. The owners shall provide a source for power supply at one convenient point at site. The contractor shall at his own cost install a separate meter at the said source and lay additional cables from the said source also at his own cost. For the electricity consumed by the contractor he shall pay the owner the actual cost at the rate charged by the local authority for power for constructional purposes. The contractor shall also obtain the necessary permit for utilizing power for constructional purposes.

## **2. SPECIAL CONDITIONS**

### **2.1. EXECUTION WORK**

- 2.1.1. The whole of the work as described in the contract (including bills of materials, specification and all drawings pertaining thereto) and as advised by the Engineer-in-charge from time is to be carried out and completed in all parts to the entire satisfaction of the Employer. Any minor details of construction which are obviously and fairly intended, or which may not have been definitely referred to in this contract, but which are usual construction practice and essential to the work, shall be included in this contract.

### **2.2. CERTIFICATE OF COMPLETION**

- 2.2.1 The contractor shall intimate to the Engineer-in-charge in writing as and when the works are completed and put into beneficial use in order to enable the consultants to check certify to the owners to take over the plants.
- 2.2.2 The work shall not be considered as completed and put into beneficial use until the consultants have certified in writing that the same has been completed and put into beneficial use.
- 2.2.3 The defects liability period shall commence from date of such completion or any specific date mentioned therein.

**BILL OF QUANTITIES**

**ABSTRACT**

<b>SEC.</b>	<b>DESCRIPTION OF ITEM</b>	<b>AMOUNT (Rs.)</b>
I	CIVIL WORKS	
II	Electrical works	
III	Mechanical Works	
III A	HVAC	
	<b>GRAND TOTAL</b>	<b>Rs.</b>

ADS

Item No	Description of Item	Quantity	Unit	Rate	Amount
<b>I</b>	<b>EARTH WORK</b>				
1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil.	9.82	CUM		
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	22.50	CUM		
3	Supplying and filling in plinth with Msand under floors including watering, ramming, consolidating and dressing complete.	7.50	CUM		
<b>II</b>	<b>PLAIN CEMENT CONCRETE</b>				
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	1.64	CUM		
5	Providing and laying damp-proof course 40 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size).and Applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7 kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	16.37	SQM		
<b>III</b>	<b>REINFORCED CEMENT CONCRETE</b>				



6	Providing and laying in position specified grade of reinforced cement concrete, including the cost of centering, shuttering, finishing and excluding cost of reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	2.09	CUM		
7	Reinforced cement concrete work in beams, suspended floors, roofs, having slope upto 15°, landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral staircases upto floor five level including the cost of centring, shuttering finishing and excluding cost of reinforcement with 1 : 1.5 : 3 ( 1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)..	4.44	CUM		
8	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Thermo Mechanically Treated bars	585.58	kg		
IV	<b>BRICK WORK</b>				
9	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes : in cement mortar 1 : 6 ( 1 cement : 6 coarse sand ).	61.83	CUM		
10	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level. Cement mortar 1:4 (1 cement : 4 coarse sand)	274.98	SQM		
11	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	274.98	SQM		
V	<b>GRANITE WORK</b>				

12	Providing and fixing 18 mm thick mirror polished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high glossfinish etc. complete at all levels. Granite of any colour and shade. Area of slab over 0.50 sqm	18.00	SQM		
13	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. Granite work	36.00	M		
VI	<b>STONE WORK</b>				
14	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with Cement mortar 1:6 (1 cement : 6 coarse sand)	20.46	CUM		
VII	<b>WOOD &amp; PVC WORK</b>				
15	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length ( hold fast lugs or dash fastener shall be paid for separately). Second class teak wood	0.08	CUM		
16	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge. Second class teak wood 30 mm thick shutters Teak Wood	4.80	SQM		

17	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick :	4.32	SQM		
18	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	20.00	EACH		
19	Providing and fixing bright finished brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.	6.00	EACH		
20	Providing and fixing factory made PVC door frame manufa-ctured by M/s Rajshri or equivalent of size 50x47 mm with a wall thickness of 5 mm. made out of extruded 5 rigid PVC foam sheet mitred at corners and joined with 2 Nos. of 150 mm long brackets of 15x15mm M.S. square tube,the vertical door profiles to be reinforced with 19x19 mm M.S. squire tube of 19 guage,EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100 mm size complete as per manufactures specification and direction of Engineer-in-charge	66.00	RM		

21	Providing and fixing 30mm thick factory made PVC rigid foam panelled door shutters manufactured by M/s Rajshri or equivalent made from M.S. tube of 19 gauge thickness, size 19x19 mm for styles and 15x15 mm for top and bottom rails, covered with heat moulded PVC "C" channel of 5 mm thick and 75 mm wide PVC sheets for top rail, lock rail and bottom rail on either side and 5 mm thick 20mm wide cross PVC sheet as gap insert for top rail and bottom rail, panelling of 5mm thick PVC sheet fitted in the 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 as per manufacture specification and direction of Engineer-in-charge fixed to frames with 4 Nos. M.S. powder coated butt hinges (For W.C. and bathroom shutters).	18.90	EACH		
VIII	<b>STEEL WORK</b>				
22	Providing and fixing M.S. grills of required pattern in frames of windows etc with M.S flats, square or round bars etc including priming coat with approved steel primer all complete:- Fixed to openings / wooden frames with rawl plugs screws etc.	383.40	Kg		
23	Steel work in built up tubular ( round, square or rectangular hollow tubes etc.) works etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes	442.20	kg		

24	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 80x1.25 mm M.S. laths with 1.25 mm thick top cover	18.00	SQM		
25	Providing and fixing ball bearing for rolling shutters.	4.00	NOS		
IX	<b>FLOORING</b>				
26	Providing and fixing 1st quality ceramic glazed joint free wall tiles of size 300x400mm conforming to IS: 15622 Of thickness 5MM or nearest size of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete [Basic price of tile not less than Rs.400/M2]	684.90	SQM		
27	Providing and laying Ceramic joint free glazed floor tiles of size 400x400 mm, thickness 7.5mm or nearest size of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown of any size as approved by Engineer-in-Charge, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), including pointing the joints with white cement and matching pigments etc., complete. [Basic price of tile not less than Rs.400/M2]	50.00	SQM		

28	Providing and laying Ceramic antiskid joint free floor tiles of size 400x400 mm, thickness 7.5mm or nearest size of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown of any size as approved by Engineer-in-Charge, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), including pointing the joints with white cement and matching pigments etc., complete.[Basic price of tile not less than Rs.370/M2]	106.12	SQM		
29	Providing and laying vitrified floor tiles in different sizes thickness 10mm or nearest size with water absorption less than 0.08% and conforming to IS : 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), including grouting the joints with white cement and matching pigments etc., complete. Size of tile 600x600mm or as approved by the engineer in charge.[Basic price of tile not less than Rs.865/M2]	930.91	SQM		
30	Providing and fixing 1st quality ceramic joint free tiles of minimum thickness 8 mm or nearest size(size 450x300mm) approved make in all colours, shades except begundy, bottle green, black or any size as approved by Engineer - in - Charge in skirting, risers of steps and dados over 12 mm thick bed of Cement Mortar 1: 3 ( 1 Cement : 3 Coarse sand ) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white cement mixed with pigment of matching shade complete.[Basic price of tile not less than Rs.540/M2]	629.51	SQM		
31	Deduct for not using 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) bedding in laying of floor tiles.	930.91	SQM		
32	Fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness.	930.91	SQM		

33	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete. 11.3.1 40mm thick with 20mm nominal size stone aggregate.	50.00	SQM		
X	<b>ROOFING</b>				
34	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 110 mm diameter	10.40	M		
35	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete - 110 mm	12.00	EACH		
36	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15cm diameter and weighing not less than 440 grams.	2.00	EACH		
37	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. Bend 87.5 degree				
A	110 mm bend.	2.00	EACH		
	Shoe( plain)				
B	110 mm shoe	2.00	EACH		
38	Providing & Fixing of Armstrong Mineral Fibre Acoustical Suspended Ceiling System with BIOGUARD ISO 5 (CLASS 100) (Tegular) EDGE TILES WITH ARMSTRONG Prelude 38 mm EXPOSED GRID.	905.69	SQM		

	<p>The tiles should have Humidity Resistance (RH) of 95%, NRC 0.15, Light Reflectance &gt;90%, Thermal Conductivity k = 0.052- 0.057 w/m K, Colour White, Fire Performance Class 0/Class1 (BS476 Pt:6&amp;7) in module size of 600 X 600 X 15 mm with Anti-bacterial coating on the face of the tile, adhering to Clean room requirement of Class 100 as per US Fed Standard 209 E and washability requirement of 500 wash cycles as per ASTM 4828 and suitable for Green Building application, with Recycled content of 24%. The grid should be of "Armstrong" make with 38mm web ht and 24mm wide T - section flanges colour white having rotary stitching on all T sections i.e. the Main Runner with C3 Coupling, 1200 mm &amp; 600 mm with Hardened XL2 Clip Cross Tees. System load carrying capacity of 15.80 kg/m<sup>2</sup>, with Pullout strength over 100Kg.</p> <p>The Tile &amp; Grid system used together should carry a 15 year warrantee</p>				
XI	<b>FINISHING</b>				
39	15 mm cement plaster on the rough side of single or half brick wall of mix :1:6 (1 cement: 6 fine sand)	453.22	SQM		
40	12 mm cement plaster of mix : 1:6 (1cement: 6 fine sand)	84.00	SQM		
41	18 mm cement plaster in two coats under layer 12mm thick cement plaster 1:5 (1cement :5 Coarse sand) finished with a top layer 6mm thick cement plaster 1:6 (1 Cement : 6 Fine sand)	171.93	SQM		
42	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade :- Two or more coats on new work .	587.22	SQM		
43	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall and ceiling surface for acrylic emulsion.	587.22	SQM		
44	Finishing walls with Acrylic smooth exterior paint of required shade:- New work (Two or more coats applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.2 kg/10sqm.)	171.93	SQM		



45	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :- Two or more coats on new work .	237.0	SQM		
46	Polishing on wood work with ready mixed wax polish of approved brand and manufacture : New work	10.00	SQM		
47	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	300.00	SQM		
XII	<b>REPAIRS TO BUILDING</b>				
48	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq. meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground within 50 metres lead : With cement mortar 1:4 (1 cement : 4 fine sand)	50.00	SQM		
49	Renewing glass panes and refixing existing wooden fillets: Float glass panes of thickness 4 mm	15.00	SQM		
50	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	759.15	SQM		
51	Painting synthetic enamel paint of approved brand and manufacture of required colour to give an even shade. one or more coats on old work	30.00	SQM		
52	Renewing the damaged member of the existing door and window frames with country wood in the fixed condition without affecting the building structure and enabling to function the doors and windows in a good manner etc complete. as per the direction of Engineer in charge	0.20	CUM		
XIII	<b>DISMANTLING &amp; DEMOLISHING</b>				
53	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	2.00	CUM		

54	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar	25.19	CUM		
55	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead:Of area 3 sq. metres and below.	40.00	EACH		
56	Dismantling of CI or asbestos rain water pipe with fittings and clamp including stacking the material within 50 meters lead 100 dia pipe	30.00	RM		
57	Dismantling old plaster or skirting / Mosaic dado raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead	818.40	SQM		
58	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead. 15.23.1 For thickness of tiles 10 mm to 25 mm	202.72	SQM		
59	Easing of doors windows, Ventilators including removing and re fixing of shutters and replacing the damaged hinges where ever necessary.	15.00	SQM		
60	Repairing the existing wooden windows, including replacing the hinges and handles and changing the damaged hook and eye where ever necessary etc as per the direction of the engineer in charge	10.00	EACH		
61	Dismantling of Wash Basin wall hung or counter top including bracket/support of all types (Vitrious China/SS), and WC(Indian /European) with or without trap, foot rest etc. including stacking of useful materials near the site and disposal of unserviceable materials within 50mtrs lead.	20.00	EACH		
62	Dismantling door shutter and repairing the same after cutting the bottom style to suit the floor level including the cost of 100mm butt hinges	6.00	SQM		
63	Dismantling steel work manually by mechanical means in built up sections with out dismembering and stacking with in 50 m lead sa per direction of in charge in site.	100.00	Kg		

64	Dismantling of flushing cistern of all types (C.I./PVC/Vitrious China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.	14.00	EACH		
65	Dismantling aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable surplus material and stacking of serviceable material with in 50 meters lead as directed by Engineer-in-charge.	90.00	SQM		
XIV	<b>SANITARY INSTALLATIONS &amp; WATER SUPPLY</b>				
66	Providing and fixing water closet squatting pan (Indian type WC pan ) with 100 mm sand cast iron P or S trap, 10 litres low level P.V.C flushing cistern manually controlled device ( handle lever ) conforming to IS: 7231, Parryware/Hindware/ Seabird/Orient ( Coral) with all fittings and fixtures complete including cutting and making good the walls and floors wherever required :- White Vitreous china Orissa pattern WC pan of size 580 x 440 mm with integral type foot rests .	2.00	EACH		
67	Providing and fixing white vitreous china pedestal type water closet (European type W.C.pan) with seat and lid, 10 litre low level P.V.C. flushing cistern with manually controlled device ( handle lever ), conforming to IS : 7231, Parryware / Hindware/ Seabrid / Orient ( Coral ) with all fittings and fixtures complete including cutting and making good the walls and flors wherever required :- W.C. pan with ISI marked white solid plastic seat and lid.	12.00	EACH		

68	Providing and fixing wash basin with C.I./M.S brackets painted white ,15 mm C.P brass pillar taps, Kingston / Gem / Techno / Parko, 32 mm C.P brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required :-				
a	Wash basin size 550x400mm with single 15mm C.P.brass pillar tap	6.00	EACH		
b	White Vitreous China Surgeon type wash basin of size 660x460 mm with single 15 mm C.P. brass pillar taps with elbow operated levers ISI marked	2.00	EACH		
69	Providing and fixing 600 x 450 mm bevelled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P brass screws and washers complete .	8.00	EACH		
70	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour. 450 mm long towel rail with total length of 495 mm, 78 mm wide and effective height of 88 mm, weighing not less than 170 gms	8.00	EACH		
71	Providing and fixing P.V.C waste pipe for sink or wash basin, including P.V.C waste fittings complete :- Flexible pipe :-32 mm dia.	10.00	EACH		
72	Providing and fixing PVC trap of self cleansing design including cutting and making good the walls and floors. a)100mm inlet and 75mm outlet.	13.00	EACH		
73	Providing and PTMT Soap Dish Holder having length of 138 mm, breadth 102 mm, height of 75 mm with concealed fitting arrangements, weighing not less than 110 gms ( Prayag or equivalent)	8.00	EACH		

74	Providing and fixing on wall face unplasticised rigid PVC pipes 6kg/cm <sup>2</sup> conforming to I.S 13592 Type A including jointing with Seal ring conforming to I.S 5382 leaving 10 mm gap for thermal expansion Single soaked pipes				
A	75 mm diameter	80.00	M		
B	110 mm diameter	90.00	M		
75	Providing and fixing PVC pipe conforming to IS Standards ( pressure 10kg/cm <sup>2</sup> ) complete including all fittings,fixtures,cutting,chasing in walls and making good the walls, testing of joints, concealing the pipes wherever required etc complete.				
A	20mm PVC pipe	60.00	M		
B	25mm PVC pipe	50.00	M		
C	32mm PVC pipe	20.00	M		
D	40mm PVC pipe	50.00	M		
E	50mm PVC pipe	50.00	M		
F	63mm PVC pipe	30.00	M		
76	Providing and fixing PVC pipe including trenching,refilling etc...external work				
A	25mm pipe	50.00	M		
B	40mm pipe	40.00	M		
77	Providing and fixing PTMT grating of approved quality and colour. 150 mm nominal size square 100 mm diameter of the inner hinged round grating.	13.00	NOS		
78	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS : standards and weighing not less than 690 grams: 15mm nominal bore	13.00	NOS		
79	Providing and fixing unplasticised rigid P.V.C pipe conforming to IS Standards(pressure 4kg/cm <sup>2</sup> ) in drainage lines including cutting and making good the walls,cutting and refilling of earth, jointing all etc complete				
A	75mm	60.00	M		
B	110 mm diameter	60.00	M		

80	Providing & fixing PVC Fittings and fixtures Conforming IS specifications including cutting and making good the walls etc complete				
A	110mm dia plain elbow	20.00	EACH		
B	75mm dia plain elbow	20.00	EACH		
C	110mm dia door elbow	20.00	EACH		
D	75mm dia door elbow	20.00	EACH		
E	110mm dia plain bend	10.00	EACH		
F	75mm dia plain bend	10.00	EACH		
G	110mm dia door tee	10.00	EACH		
H	75mm dia door tee	10.00	EACH		
I	110mm dia air cowl	10.00	EACH		
J	75mm dia air cowl	10.00	EACH		
K	110mm dia offset	10.00	EACH		
L	75mm dia offset	20.00	EACH		
81	Providing and fixing 32mm PVC tank connector	2.00	EACH		
82	Providing and fixing CP brass bib cock of approved quality confirming to IS standards weighing not less than 690gms 15mm nominal bore	28.00	EACH		
83	Providing and fixing CP brass stop cock(concealed) of standard design and of approved make confirming to IS 893115mm nominal bore	28.00	EACH		
84	Providing and fixing C.P. brass shower rose with 15 to 20 mm inlet 100mm diameter	2.00	EACH		
85	Providing and fixing unplasticised P.V.C connection pipe with brass unions :- 45 cm length				
A	15mm nominal bore	28.00	EACH		
B	20 mm nominal bore.	5.00	EACH		
86	Providing and fixing gun metal valve with C I wheel of approved quality (screwed end ):-				
A	25mm dia nominal bore	1.00	EACH		
B	40 mm dia nominal bore	1.00	EACH		
87	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required 510x1040 mm bowl depth 200mm	1.00	EACH		

88	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 a) 15 mm nominal bore 15mm nominal bore	5.00	NOS		
89	Providing and fixing ball valve (brass) of approved quality complete. High or low pressure with plastic floats 20mm nominal bore	2.00	NOS		
XV	<b>DRAINAGE</b>				
90	Constructing soak pit 1.20 x 1.20 x 1.20 m filled with brickbats including S.W. drain pipe 100 mm diameter and 1.20 m long complete as per standard design.	3.00	EACH		
91	Constructing brick masonry manhole in cement mortar 1 : 4 (1 cement : 4 coarse sand) R.C.C. top slab with 1 : 2 : 4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1 : 4 : 8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size) inside plastering 12mm thick with cement mortar 1 : 3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1 : 2 : 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design Inside size 90 x 80 cm and 45 cm deep including C.I. cover with frame ( light duty ) 455 x 610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg)With common burnt clay F.P.S (non modular) bricks of class designation 7.5.	4.00	EACH		
92	Extra for depth for manholes :- With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2.00	M		
<b>SUB HEAD XV : ALUMINIUM WORK</b>					

93	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :				
A	For fixed portion . Powder coated aluminium (minimum thickness of powder coating 50 micron)	1918.24	Kg		
B	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) Powder coated aluminium (minimum thickness of powder coating 50 micron)	1919.89	Kg		
94	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge. Pre-laminated particle board with decorative lamination on both sides	129.21	SQM		
95	Providing and fixing glazing in aluminium doors windows, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete. as per the Architectural drawings and the directions of Engineer-in- charge. (Cost of aluminium snap beading shall be paid in basic item.) .				
A	With float glass panes of 5.5 mm thickness	217.75	SQM		
B	With float glass panes of 4 mm thickness	216.61	SQM		



96	Providing and fixing aluminium sliding door bolts ISI marked anodised ( anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc. complete-300x16mm	10.00	EACH		
97	Providing and fixing aluminium handles ISI marked anodised ( anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc. complete-				
A	125 mm	84.00	EACH		
B	100mm	20.00	EACH		
98	Providing and fixing aluminium tower bolts ISI marked anodised ( anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc. complete-				
A	250 x 10 mm	80.00	EACH		
B	150x10mm	30.00	EACH		
99	Providing and fixing aluminium extruded section body tubular typeuniversal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door widthfrom 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	40.00	EACH		
100	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	55.00	EACH		
101	Providing fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete. Powder coated minimum thickness 50 micron aluminium	10.00	EACH		
102	Providing and fixing brass adjustable friction window stays of approved quality with necessary screws etc to the side hung window as per direction of engineer-in-charge complete. 250mm length	10.00	EACH		

103	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete. Twin rubber stopper	45.00	EACH		
104	Supplying and fixing anodized Aluminium glazed two/three track windows (sliding type) made out of aluminium Indal sections, bottom frame 61.98x29.7mm / No 9140, 1.673kg/m and side and top frames with section No.4098, 1.056kg/m, two or three shutters with shutter frame No.9777 of size 39x20mm, 0.632kg/m with 4mm thick plain glass with rubble beading, glazing clips fixed to walls with rawl plugs and stainless steel screws, locking arrangements, aluminium handles etc including cost and conveyance of all materials and labour charges etc complete	30.00	SQM		
105	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	80.00	Kg		
106	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	10.00	SQM		

107	Providing and fixing 3M Fasara froasted/mat film of thickness 25 microns self adhesive of approved colour, shade and quality with cutting as per approved design and pattern including cleaning of glass and making surface smooth for fixing of film all complete as per direction of Engineer in charge 3m milky milky product code SH2MAMM to glazed window/doors	434.36	SQM		
XVI	<b>WATER PROOFING</b>				
108	Providing and laying integral cement based waterproofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc. consisting of following operations: a) Applying a slurry coat of neat cement using 2.75kg/sqm of cement admixed with waterproofing compound conforming to IS:1645 and approved by Engineer in charge over the RCC slab including adjoining walls up to 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25mm to 115mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with waterproofing compound conforming to IS 2645 and approved by Engineer-in-charge over 20mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with waterproofing compound conforming to IS 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls up to 300mm height including rounding of junctions of walls and slabs.	79.19	SQM		

	<p>c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/sqm of cement admixed with waterproofing compound conforming to IS 2645 and approved by Engineer-in-charge. do finishing the surface with 20mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with waterproofing compound conforming to IS 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300mm square 3mm deep.</p> <p>e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge.:</p> <p>With average thickness of 120mm and minimum thickness of khurra as 65mm.</p>				
109	<p>Providing and laying water treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with waterproofing cement compound consisting of applying :</p> <p>a) First layer of slurry cement 2 0.488 kg/sqm mixed with waterproofing cement compound @ 0.253kg/sqm. This layer will be allowed to air cure for 4 hours.</p> <p>b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with waterproofing cement compound @0.126kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.</p>	106.12	SQM		
	<b>Total civil</b>				

	<b>Electrical</b>				
<b>1.0</b>	<b>LT PANEL BOARD AND ACCESSORIES</b>				
1.1	Supply, Installation, Testing & Commissioning of <b>Panel in ICU block</b> , cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system with busbars extendable on both sides, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<b><u>INCOMER</u></b>				
	1 No. 250A, FP, 35kA, MCCB with Thermal Magnetic release, lcs=lcu, having adjustable over load & short circuit protection.				
	<b><u>BUSBARS</u></b>				
	1 Set of 300 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<b><u>INSTRUMENTS</u></b>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 250/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	<b><u>OUTGOING</u></b>				
	4 Nos. 100A, TPN, 16kA, MCCB with Thermal Magnetic release, lcs=lcu, having adjustable over load & short circuit protection.				
	5 Nos. 63A, TPN, 16kA, MCCB with Thermal Magnetic release, lcs=lcu, having adjustable over load & short circuit protection.	1	Job		
<b>2.0</b>	<b>CABLES AND CABLING</b>				

2.1	Supply of following size 1.1 KV grade XLPE insulated, PVC sheathed, armoured Aluminium conductor power cable conforming to IS 7098 (Part 1) amended upto date.				
a	3.5C 185 Sq.mm	500	m		
b	3.5C 150 Sq.mm	150	m		
c	3.5C 95 Sq.mm	100	m		
d	3.5C 50 Sq.mm	350	m		
e	3.5C 25 Sq.mm	280	m		
f	4C 10 Sq.mm	1200	m		
g	2C 10 Sq.mm	100	m		
2.2	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
a	3.5C 185 Sq.mm	2	nos		
b	3.5C 150 Sq.mm	8	nos		
c	3.5C 95 Sq.mm	6	nos		
d	3.5C 50 Sq.mm	14	nos		
e	3.5C 25 Sq.mm	12	nos		
f	4C 10 Sq.mm	28	nos		
g	2C 10 Sq.mm	4	nos		
2.3	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
	Above 95 sq. mm and upto 185 sq. mm	285	m		

2.4	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
	Above 95 sq. mm and upto 185 sq. mm	145	m		
2.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.				
	Above 95 sq. mm and upto 185 sq. mm	50	m		
2.6	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.				
	Above 95 sq. mm and upto 185 sq. mm	55	m		
2.7	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
a	Upto 35 sq. mm (clamped with 1mm thick saddle)	385	m		
b	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	80	m		
c	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	50	m		
2.8	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
a	Upto 35 sq. mm (clamped with 1mm thick saddle)	1540	m		

b	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	315	m		
c	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	380	m		
2.9	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	10	Each		
2.10	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep)and re-filling etc as required				
a	50 mm dia	20	m		
b	80 mm dia	60	m		
c	100 mm dia	50	m		
2.11	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.				
a	150 mm dia	80	m		
b	300 mm dia	40	m		



2.12	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
a	100 mm width X 50 mm depth X 1.6 mm thickness	200	m		
b	200 mm width X 50 mm depth X 1.6 mm thickness	180	m		
c	300 mm width X 50 mm depth X 1.6 mm thickness	120	m		
2.13	Supplying and installing following size of perforated pre-painted M.S. cable trays bends with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
a	100 mm width X 50 mm depth X 1.6 mm thickness	10	Each		
b	200 mm width X 50 mm depth X 1.6 mm thickness	10	Each		
c	300 mm width X 50 mm depth X 1.6 mm thickness	6	Each		
2.14	Supplying and installing following size of perforated pre-painted M.S. cable trays Tee's with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
a	100 mm width X 50 mm depth X 1.6 mm thickness	5	Each		
b	200 mm width X 50 mm depth X 1.6 mm thickness	5	Each		
c	300 mm width X 50 mm depth X 1.6 mm thickness	2	Each		
<b>3.0</b>	<b>WIRING AND ACCESSORIES</b>				

3.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.				
	Group C	150	point		
3.2	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.	3	point		
3.3	Wiring of group controlled light point from one light to another light with 1.5 sq. mm. FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit including earthing the point with 1.5 sq. mm. FR PVC insulated copper conductor single core cable as required. Note:- This item does not include the cost of MCB, modular type 6A switch, GI box etc.	105	point		
3.4	Wiring for light/ power plug with 2X4 sq. mm FR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit alongwith 1 No 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	1800	m		
3.5	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required				
a	2 x 1.5 sqmm + 1 x 1.5 sqmm earth wire	1950	m		
b	2 x 2.5 sqmm + 1 x 2.5 sqmm earth wire	650	m		

3.6	Supply and drawing following sizes of FR PVC insulated copper conductor, single core cable in the existing surface / recessed steel / PVC conduit as required.				
a	3 x 1.5 sqmm	150	m		
b	3 x 2.5 sqmm	200	m		
c	3 x 4 sqmm	120	m		
3.7	Supply and drawing following pair 0.5 sqmm FR PVC insulated annealed copper conductor, unarmoured telephone cable in the existing surface / recessed steel / PVC conduit as required.				
a	2 pair	1090	m		
b	4 pair	275	m		
3.8	Supply and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface / recessed / steel / PVC conduit as required.	100	m		
3.9	Supplying and fixing of following sizes medium class PVC conduit along with all accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a	20 mm	180	m		
b	25 mm	150	m		
c	32 mm	50	m		
3.10	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
a	100 mm X 100 mm X 60 mm deep	5	Each		
b	150 mm X 150 mm X 60 mm deep	5	Each		
3.11	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				

a	Telephone socket outlet	20	Each		
b	TV antenna socket outlet	2	Each		
3.12	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	45	Each		
3.13	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	50	Each		
3.14	Supplying and fixing following size/modules, GI box alongwith modular base & cover plate for modular switches in recess etc as required.				
	1 or 2 Module (75mmX75mm)	70	Each		
3.15	Supplying and fixing following Modular base & cover plate on existing modular metal boxes etc. as required.				
	1 or 2 Module	70	Each		
3.16	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required.	155	Each		
3.17	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	55	Each		
3.18	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	150	Each		

3.19	Supplying and fixing brass batten/ angle holder including connection etc. as required.	20	Each		
3.20	Dismantling of ceiling fan complete with motor, double ball bearing, blades, canopy, 30 cm down rod and without speed regulator suitable for 230 V 50 HZ, AC supply as required complete.	40	Each		
3.21	Dismantling of indoor surface/recess mounted fluorescent / CFL light fitting including lamp, ballast complete with all accessories as required.	30	Each		
3.22	Supply & installation of 20 pair krone module including its box with all accessories as required.	2	Each		
<b>4.0</b>	<b>LIGHT FIXTURES AND FANS</b>				
4.1	Supply of 1x28W, indoor surface mountable fluorescent CRCA sheet steel power coated body light fixture, 28W T5 lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WIF 20128 SG or equivalent)	50	nos		
4.2	Supply of 2x28W, indoor surface mountable fluorescent CRCA sheet steel power coated body light fixture, 28W T5 lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WIF 20228 SG or equivalent)	5	nos		
4.3	Supply of 2x36W, indoor clean room, surface mounted fluorescent light fixture with CRCA housing, reflector and control gear tray duly powder coated, clear acrylic diffuser, non-hygroscopic gasket to ensure dust proofing, 36 W T8 lamps, low loss copper ballast, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WIF 52236 SWG or equivalent).	40	nos		

4.4	Supply of 1x18W, indoor decorative surface mounted fluorescent light fixture having robust housing made of high quality polyester pre-coated galvanised steel, diffuser in extruded acrylic, 18 W T5 lamps, low loss electromagnetic copper wound ballast, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WRF 21118 SWG or equivalent).	25	nos		
4.5	Supply of 2x18 W, indoor surface mounted mirror optic CFL CRCA powder coated body light fixture, pre-anodised aluminium reflector, CRCA powder coated frame, 18 W CFL lamps, open type copper ballast, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WVP 45218 or equivalent)	15	nos		
4.6	Supply of 250mm sweep, 1250 rpm, louvered ventilating fan suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor, louvers/shutters and all accessories as required complete. (Make : Usha Crisp Air or equivalent)	10	nos		
4.7	Supply of 1200 mm sweep min three star rated ceiling fan complete with motor, double ball bearing, blades, canopy, 30 cm down rod and without speed regulator suitable for 230 V 50 HZ, AC supply confirms to IS 374/1979 as required complete. (Make Usha Technix or equivalent).	30	nos		
<b>5.0</b>	<b>ITC of LIGHT FITTINGS &amp; FANS</b>				
5.1	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall/false ceiling, including connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable, hanging chain, anchor fastner and earthing etc. as required.	135	Each		

5.2	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc., including supplying and fixing ball and socket arrangement, 2 no. down rods of 20 mm dia X 1.6 mm thick steel conduit upto 30 cm length, painting and wiring the down rods and connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	30	Each		
5.3	Providing and fixing extra conduit down rod of 20 mm dia, 2 X 10 cm length wiring with 2 X 1.5 sq. mm FR PVC insulated, copper conductor, single core cable including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	60	Each		
5.4	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable etc. as required.	30	Each		
5.5	Supplying and fixing extra down rod of 10 cm length G.I. pipe ,15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	60	Each		
5.6	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
	Upto 450 mm sweep	10	Each		

5.7	Numbering of ceiling fan/ exhaust fan/ fluorescent fittings as required.	205	Each		
6.0	<b>MCBs AND MCB DISTRIBUTION BOARDS</b>				
6.1	Supplying and fixing following ways surface/ recess mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100 amps TP 16 KA MCCB as incomer, interconnection between incomer MCCB and bus bars (but without MCB's/ MCCB) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
a	4 way	2	nos.		
b	8 way	4	nos.		
6.2	Providing and fixing following rating and breaking capacity MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.				
	100 Amp, 16 KA	6	Each		
6.3	Supplying and fixing following way prewired SP&N MCB distribution board of steel sheet for 240 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator)				
a	2 + 4 way, Double door	2	Each		
b	2 + 8 way, Double door	2	Each		



6.4	Supplying and fixing following way prewired TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required.(But without MCB/ RCCB/ Isolator)				
a	4 way (4 + 12), Double door	4	Each		
b	6 way (4 + 18), Double door	6	Each		
6.5	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	Single pole	30	Each		
b	Double pole	5	Each		
c	Triple pole	20	Each		
d	Triple pole and neutral	20	Each		
6.6	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	20	Each		
6.7	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	40 amps	4	Each		
b	63 amps	2	Each		
6.8	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	40 amps	4	Each		
b	63 amps	12	Each		

6.9	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	40 amps	4	Each		
b	63 amps	2	Each		
6.10	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	40 amps	4	Each		
b	63 amps	6	Each		
6.11	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32amps 240 volts "C" curve DP MCB complete with connections, testing and commissioning etc. as required.	5	Each		
6.12	Supplying and fixing TPN sheet steel enclosure on surface/ recess along with 16/25/32amps 415 volts "C" curve TP MCB complete with connections, testing and commissioning etc. as required.	20	Each		
6.13	Supplying and fixing FP sheet steel enclosure on surface/ recess for 100A FP MCCB without MCCB complete with connections, testing and commissioning etc. as required.	5	Each		

6.14	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 amps "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	5	Each		
6.15	Supplying and fixing 20 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 20 amps "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	3	Each		
6.16	Supplying and fixing 30 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 30 amps "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	3	Each		
6.17	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	3	Each		
6.18	Supply and fixing FP sheet steel enclosure on surface / recess along with 40/63 amps 415 Volts "C" curve FP MCB complete with connections, testing & commissioning etc as required.	10	nos		

6.19	Supply, installation, testing & commissioning of 25 kVA, 3 phase, input, 3 phase output, true on-line UPS system with 30 minutes back up (full load), output isolation transformer, including all accessories, SMF batteries VRLA type with powder coated MS cabinet including all accessories as required complete having following specification.				
	Fully digital controlled based on DSP				
	Power factor corrected from end > 0.9				
	Pure sine wave output.				
	Full time output voltage & frequency regulation				
	Auto regulation of battery end voltage				
	Intelligent interface with LED/LCD display				
	Static bypass switch & manual by pass switch				
	Auto temperature compensation	2	JOB		
<b>7.0</b>	<b>EARTHING AND SAFETY EQUIPMENTS</b>				
7.1	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	8	Set		
7.2	Supplying and laying 6 SWG G.I. wire at 0.50 metre below ground level for conductor earth electrode, including connection/ termination with GI thimble etc. as required.	50	m		

7.3	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	70	m		
7.4	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	40	m		
7.5	Providing and laying earth connection from earth electrode with 6 SWG dia G.I. Wire in 15 mm dia G.I. pipe from earth electrode including connection with G.I. thimble excavation and re-filling as required.	40	m		
7.6	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	200	m		
7.7	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	150	m		
7.8	Providing and fixing testing joint, made of 50x6mm thick GI strip, 125mm long with 4 nos of GI bolts, nuts, check nuts and spring washers etc complete as required.	6	nos.		
<b>8.0</b>	<b>SAFETY EQUIPMENTS</b>				
8.1	Supply & fixing glass framed standard shock treatment chart in three different languages.	1	JOB		
8.2	Supply & fixing of fire retardant/extinguishing electrical insulated synthetic mat of 2.0mm thick, +/- 10% confirming to BIS: DOC No. ET-02 (5440) meeting requirements of IS:15652:2006 (with upto date amendment), suitable for all voltages not exceeding 3.3kV and having minimum width of 1000mm +/- 20mm and including supply of required quantity of adhesive / compound and fixing the same at site as per site requirement.	10	sqm		
	<b>Total Electrical</b>				

	<b>HVAC</b>				
	<b>MACHINERY</b>				
1	Supply, intallation, testing and commissioning (SITC) of 8.5 TR capacity aircooled Outdoor condensing unit with scroll compressor as per specifications complete with suitable capacity drive motor, air cooled condenser with all accessories, hermetically sealed scroll compressor, electronic microprocessor pendant controller with digital display, first charge R 22 refrigerant gas, vibration isolator pads, ODU MS Stand and saftey devices like thermal protector, pressure relief valve, over load relays single phase preventor, high-low pressure cut out, suitable for three phase 440V supply.	4	Each		
2	Supply, installation, testing and commissioning of suitable hard drawn copper refrigerant piping for 8.5TR machine with 13 mm nitrile rubber insulation interconnecting the condensing unit to evaporating unit for packaged units as per site condition.	48	RM		

3	SITC of DX type double skinned air handling units, ceiling suspended type 8.5 TR, 1500 lps capacity complete with suitable DIDW blower (as per approved make), blower section, static pressure of 125mm of water column, built in pre filter(EU4), fine filter(EU7) and HEPA filter(EU13) and controls connected to condensing units, insulated SS drain pan, 6 row cooling coil, electric motor, belt drive package with TEFC motor class 'B' insulation, suitable for 3 phase, 415 V, 50Hz supply, suitable AHU panel, 3 speed fan control, ARI certified, belt guards, thermometers and pressure gauges at the inlet & outlet, suitable supports for suspending from slab, vibration isolator, etc. conforming to specifications. The air handling units shall have 1 inlet refrigerant coils and 1 outlet refrigerant coils suitable for 1 numbers of 8.5 TR capacity ODU and shall conform to specifications.	4	Each		
4	Supply, Laying and Fixing of 4C 4Sq.mm size 1.1 KV grade XLPE insulated, PVC sheathed, armoured Aluminium conductor cable conforming to IS 7098 (Part 1) amended upto date with brass compression glands on surface/ cable tray/ wall / build in trench etc as required from the Indoor to outdoor units of all units for control wiring.	24	RM		
5	Supply, installation, testing and commissioning PVC drain pipe of 25mm dia ISI marked, connecting the drain lines from the indoor units to floor sump, with 9mm nitrile rubber insulation as per specification	16	RM		

6	Supply, installation, testing and commissioning of Air Cooled High Wall mounted Split Air Conditioner of following capacity consisting of high wall mounted type room unit (fan coil) with cordless remote control and one number outdoor condensing unit comprising of energy efficient suitable rotary compressor for operation on single phase, 230 V, 50Hz supply, fixing the outdoor unit on a raised platform as per manufacturers recommendation and fixing of room (fan coil) unit on wall, upto 10 m distance refrigerant copper piping with 13mm nitrile rubber insulation, providing and making interconnection between room & condenser as per site conditions, comprising of 1" dia drain PVC pipe with insulation 10m, canvas connections, full electrical cabling from power plug near indoor unit and to outdoor unit, vibration isolators, ODU MS Stand first charge refrigerant gas, min 5star rated as per BEE suitable stabilizer etc complete as required.				
	1.5 TR	6	Each		
7	Supply and fixing Heater package with Humidistat and contactor for humidity control	1	Each		
	AIR DISTRIBUTION				
8	Supply, installation, testing and commissioning of factory fabricated rectangular GSS sheet metal ducting for Supply/return/fresh air duct/collar connecting to indoor unit as per ducting specifications and with suitable supports using MS angles, channels, rods, anchor bolts, etc to roof /truss as per IS 655 and as per specifications.				
a	20 G	3	SQM		
b	22 G	17	SQM		



c	24 G	57	SQM		
9	SITC of External thermal insulation on supply air ducts using min 12mm thick nitrile rubber class "O" closed cell type with antimicrobial protection as per specifications	71	SQM		
10	Supply, installation, testing and commissioning of Acoustic duct lining using 10mm nitrile rubber insulation open cell type inside the ducts, antimicrobial protection at the outlets of all indoor units upto 4m distance from fan outlet as per spec provided.	13	SQM		
11	Supply, fabrication, installation, testing of flexible connections made out of fire resistant flexible double canvas sleeve.	4	Set		
12	Supply, installation, testing and commissioning of Powder coated extruded aluminium Continuous grilles 16mm frame, 15deg deflection for supply / return air 150mm wide as per spec	16	SQM		
13	SITC of Powder coated extruded aluminium supply air diffusers 4 way both side coated with collar damper aluminium extruded black anodized . (300mmX300mm/600mmx600mm)	1	SQM		
14	SITC of Powder coated extruded aluminium return air diffusers 4 way both side coated without VCD.(300mmX300mm/600mmx600mm)	1	SQM		
15	SITC of Fire Control Damper made of 16G GSS sheet blade and frame with 165mm casing, heavy duty interlocking blades and fully enclosed blade linkage mechanism, SS lateral seal blade seals, self lubricating sintered bronze bushes, fire rating as per UL555-1995 tested as per BS-476 part 20 with 18G extended sleeve 450mm and with fusible link, spring mechanism control panel temp sensor, smoke sensor, limit switch with lever for auto shut off in case of fire/smoke as per specifications.	1	SQM		

16	SITC of multi blade type volume control dampers made of extruded aluminium for ducts/ collars to be provided with suitable links, levers and quadrants for manual control of volume of air flow and for proper balancing of the air distributions system in main ducts & other area as per specification.	2.16	SQM		
17	SITC of Fresh air GI louvers of size 300x300 mm with wire mesh and birds screen for IDUs/AHUs as per specifications.	1	SQM		
	<b>Total HVAC</b>				
	<b>GRAND TOTAL</b>				