

**Estimate for the Internal E.I. Works of Rear Block of
S S Bhatnagar Hall of Residence (Hall-1) , NIT at Rourkela**

SINo	DESCRIPTION	Unit	Qty	Supply of Materials	
				Rate	Amount
A	Internal Electrification				
1	Wiring				
1.1	Wiring to light, with 1.5sqmm FR PVC insulated 1100 volt grade multistranded copper conductor wire for phase, neutral and earth continuity conductor from switch board upto points including circuit wiring with 2(1x2.5)+1(1x1.5) from BDB to Switch Board run inside 2mm thick rigid PVC conduit pipe of rquired sizes recessed in wall/ column/ ceiling of the building including supply of materials such as flush type piano switches, GI concealed box, wire, ceiling rose, angle / batten holder, m.s. junction box, pull box, PVC conduit accessories, etc as per technical specifications complete with making good the damages caused as required and as per direction of Engineer-in-charge.				
(a)	Single light point or first light point of group control controlled by one 5A switch	Nos	907.0	586.00	531,502.00
(b)	Subsequent light point for the group of lights on emergency supply (Avg length=8mtr)	Nos	29.0	770.00	22,330.00
(c)	Ceiling fan point including flush type stepped fan regulator & fan hook made out of 12mm plain round steel .	Nos	177.0	962.00	170,274.00
(d)	Exhaust fan point	Nos	75.0	658.00	49,350.00
(e)	5A plug on same board	Nos	218.0	144.00	31,392.00
(f)	5A plug on separate board	Nos	434.0	569.00	246,946.00
(g)	Two numbers 5A plug with switches for computer plug outlet	Nos	73.0	625.00	45,625.00
(h)	Call bell point	Nos	72.0	658.00	47,376.00
1.2	Wiring to 15-A plug points including circuit wiring from BDB to switch boards with 2.5sqmm PVC insulated 1100 volt grade multistranded copper conductor wire for phase, neutral & 1.5sqmm for earth continuity conductor run inside 2mm thick PVC conduit pipe recessed in wall/ column/ ceiling of the building including supply of materials such as flush type piano switches, GI concealed box, wire, ceiling rose, angle / batten holder, m.s. junction box, pull box, PVC conduit accessories, etc as per technical specifications complete with making good the damages caused as required and as per direction of Engineer-in-charge.	Nos	78.0	717.00	55,926.00
1.3	Wiring for circuits and submain with following number & sizes of FR PVC insulated 1100 volt grade multistranded copper conductor wire run inside 2mm thick PVC conduit pipe recessed in ceiling/ column/ walls of building including supply of all materials such as wires, PVC conduit pipe & accessories, ms junction box & pull box etc complete with making good the damages caused as required and as per direction of Engineer-in-charge.				
(a)	2 numbers single core 2.5 sqmm copper wire for phase & neutral and 1 number single core 1.5 sqmm copper wire for earth continuity conductor.	Metre	1240.0	135.00	167,400.00
(b)	2 numbers single core 4.0 sqmm copper wire for phase & neutral and 1 number single core 2.5 sqmm copper wire for earth continuity conductor.	Metre	1080.0	169.00	182,520.00
(c)	2 numbers single core 6.0 sqmm copper wire for phase & neutral and 1 number single core 4 sqmm copper wire for earth continuity conductor.	Metre	3546.0	220.00	780,120.00

SINo	DESCRIPTION	Unit	Qty	Supply of Materials	
				Rate	Amount
(d)	4 numbers single core 6.0 sqmm copper wire for phase & neutral and 2 number single core 4 sqmm copper wire for earth continuity conductor.	Metre	100.0	374.00	37,400.00
(e)	4 numbers single core 10.0 sqmm copper wire for phase & neutral and 2 number single core 6 sqmm copper wire for earth continuity conductor.	Metre	25.0	612.00	15,300.00
1.4	Supply, delivery, installation & testing of TV antenna outlet boards containing a flush type piano TV antenna socket fixed on GI concealed box including connections and making good the damages caused complete as required and as per direction of Engineer-in-charge.	Nos	73.0	123.00	8,979.00
1.5	Supply, delivery and laying of following sizes of 2mm wall thickness rigid PVC conduit concealed in wall/ column/ roof slab of the building or mounted on surface alongwith other accessories and 18 swg GI fish wire complete for telephone / TV / Circuit or Submain wiring as required and as per direction of Engineer-in-charge.				
(a)	19mm dia	Metre	1200.0	40.00	48,000.00
(b)	25mm dia	Metre	625.0	51.00	31,875.00
1.6	Supply, laying & testing of following size of XLPE insulated, round/strip armoured aluminium conductor power cable of 1100 volt grade with excavation of trench & laying with sand cushioning, brick protection /clamped on surface of wall/ column/ existing RCC/ inside masonry cable trench/ on the cable tray/ through existing G.I. pipe/ hume pipe / PVC pipe as the case may be, including cost of saddles/ clamps/ markers etc but excluding the cost of G. I. / PVC / hume pipe compete with making good the damages caused as required and as per direction of Engineer-in-charge.				
(a)	4 core x 95 sqmm 2AXFY	Metre	360.0	472.00	169,920.00
1.7	Supply of materials and end termination of following cables including supply of single compression brass cable glands, cable sockets etc complete as required and as per direction of Engineer-				
(a)	4 core x 95 sqmm 2AXFY	Nos	8.0	370.00	2,960.00
2.	<u>Distribution Boards</u>				
2.1	Supply, delivery, installation, testing & commissioning of L.T. indoor floor/ wall mounted type distribution boards made out of 2 mm thick CR sheet metal cubicle fixed on m.s. channel base, duly acid treated for derusting, primered and painted with 2 coats of enamel paint of approved shade; dust, damp & vermin proof ; having hinged door and compartmental arrangement for each equipment & busbar chamber on the top of the panel with busbars(Red, Yellow, & Black coloured) running horizontally; having provision for cable/ conduit entry, earthing studs as per specification mentioned below duly factory wired conforming to the relevant ISS and as per special conditions of contract making good the damages caused complete as per the direction of Engineer-in-charge. <u>Wires/Busbars sizes for Main busbars</u> 1. For 125A MCB = 4nos. 25x5mm Aluminium strips 2. For 40A 4 Pole MCB = 4nos 16sqmm 1.1KV grade FR PVC insulated multistranded copper conductor wires. 3. for 32A 2Pole MCB = 2nos. 10sqmm 1.1KV grade FR PVC insulated multistranded copper conductor wires. NOTE:- Colours coded wires such as Red, Yellow, Blue Black & Green for Phases, Neutral & earth shall be used for the internal wiring of the panel.				
(a)	MDB (Rear Block)				
	Incomer: 1 no. 400A 4P MCCB.with adjustable thermal setting				
	Bus bar: 4 nos. 500A Aluminium Bus bar (C.D=1Amp/sqmm)				

SINo	DESCRIPTION	Unit	Qty	Supply of Materials	
				Rate	Amount
	Outgoing: 5 Nos 125A 4P MCCB with adjustable thermal setting				
	2 Nos 40A 4P MCB.				
	3 Nos 32A 2P MCB as per SLD.				
	Instruments: 3 nos.LED type phase indicating lamps with control fuses & toggle switch.				
	1 no.Multifunction meter with a set of 400/5A CT's				
	1 nos.0-500V a c voltmeter with selector switch & control fuses.	Set	1.0	193,100.00	193,100.00
(b)	FDB - GF/1F/2F/3F (Rear Block)				
	Incomer: 1 no. 125A 4P MCCB .with adjustable thermal setting				
	Bus bar: 4 nos. 25x5mm E.C strips				
	Outgoing: 21 Nos 1Ph 2wire,5-30A KWH Meter inside tamperproof enclosure each followed by 25A 2P MCB 'C' as per SLD				
	Instruments: 3 nos.LED type phase indicating lamps with control fuses & toggle switch.				
	1 no.125/5A CT operated ammeter with selector switch				
	1 nos.0-500V a c voltmeter with selector switch & control fuses.	Set	4.0	116,800.00	467,200.00
(c)	DB - Restaurant				
	Incomer: 1 no. 40A 4P MCI				
	Outgoing: 9 Nos 6-32A 2P MCB 'C' as per SLD				
	Instruments: 3 nos.LED type phase indicating lamps with control fuses & toggle switch.	Set	1.0	12,200.00	12,200.00
(d)	DB - C/S				
	Incomer: 1 no. 40A 4P MCI				
	Outgoing: 2 Nos 32A 4P MCB 'C'				
	6 Nos 6-32A 2P MCB 'C' as per SLD	Set	1.0	12,600.00	12,600.00
2.2	Supply, delivery, installation, testing & commissioning of L.T. indoor wall mounted double door type distribution boards of original factory made enclosures of the same brand as the MCB conforming to the relevant ISS and as per special conditions of contract making good the damages caused complete as per the direction of Engineer-in-charge.				
(a)	DB-Room (12Way SPN DB)				
	Incoming: 1 No 32A 2P RCBO (100mA)				
	Outgoing : 8 Nos 6-32 Amp 1P MCB 'C' as per SLD	Set	72.0	6,600.00	475,200.00
(b)	BDB-L1/L2 (12Way SPN DB)				
	Incoming: 1 No 25A 2P RCCB 30mA				
	Outgoing : 8 Nos 6-32 Amp 1P MCB 'C' as per SLD	Set	2.0	5,800.00	11,600.00
(c)	BDB-L(Restaurant) (12Way SPN DB)				
	Incoming: 1 No 25A 2P RCCB 30mA				
	Outgoing : 8 Nos 6-32 Amp 1P MCB 'C' as per SLD	Set	1.0	5,800.00	5,800.00
3	Fittings & Fixtures				
3.1	Supply& fixing of 1x18 watt CFL lamp on existing Angle/batten holder	Nos	390.0	191.00	74,490.00
(a)					
(b)	Supply & Fixing of 1x28 W T5 FTL in CRCA steel sheet with epoxy coated body and cover channelfittings of pf not less than 0.95 and THD not more than 10 %,testing & making connection from suitable point outlet with supply & connection with 3core 0.5sqmm unarmoured round flexible copper cord complete as required and as per direction of Engineer-in-charge.	Nos	546.0	750.00	409,500.00
(c)	Supply & Fixing of 1200mm energy efficient Ceiling Fan of BEE 5 star rating ,testing & making connection from suitable point outlet with supply supply & connection with 3core 0.5sqmm unarmoured round flexible copper cord complete as required and as per direction of Engineer-in-charge.	Nos	177.0	1,692.00	2,99,484.00

SINo	DESCRIPTION	Unit	Qty	Supply of Materials	
				Rate	Amount
3.2	Supply, delivery, installation & testing of following sweeps and speed of double ball bearing exhaust fans suitable for operation at 250 volt, 50 Hz, a.c. supply complete with a set of propeller metallic blade, tripod leg for mounting of motor, ring frame, gravity louvre complete assembly including supply of sundry materials, making hole of suitable size for housing of exhaust fan, making connection from suitable point outlet, making good the damages caused complete as required and as per direction of Engineer-in-				
(a)	300mm sweep, 1400 rpm.	Nos	75.0	1,990.00	149,250.00
(b)	Receiving from NIT stores, Installation, testing & commissioning of 2.0 KVA Inverter complete as required.	Nos	1.0	1,500.00	1,500.00
3.3	Supply, delivery, installation & testing of ding-dong type call bell complete including supply of sundry materials, making connection from suitable point outlet, making good the damages caused complete as required and as per direction of Engineer-in-charge.	Nos	72.0	240.00	17,280.00
4	<u>Earthing</u>				
4.1	Supply of materials and installation of pipe earth electrode made out of 50mm dia class B G.I. pipe of 3.0 metre long with arrangements for fitting/ termination of G.I. flat / wire with G. I. nut bolts & washers including cost of charcoal, salt, foreign soil, water pouring arrangements, brick masonry enclosure on top with removable RCC cover complete with labour for excavation of pit in all kinds of soil & rock as required and as per direction of Engineer-in-	Nos	4.0	3,000.00	12,000.00
4.2	Supply of materials and laying of 25 x 5 mm GI flat laid under ground including cost of jointing by welding, nut bolts, bituminous tape & bituminous paint, labour charges for excavation of trench in all kinds of soil etc complete as required from earthing electrode upto the GF of Elect room & then GF to 3F as earthing busbar.etc.	Mtr	100.0	100.00	10,000.00
4.3	Supply of materials and laying under ground / floor / wall including making end termination and testing of 8 swg G.I. wire for loop earthing of panels as required complete as per direction of Engineer-in-charge. From earthing busbar to the FDB's of the floors				
(a)	8 swg	Metre	25.0	10.00	250.00
5	<u>Lightning Arrestor</u>				
5.1	Supply of materials and installation of safe earth electrodes (chemical earthing) including cost of electrode, earthing compound, excavation of earthing pit, refilling, etc as required	No	2.0	14,500.00	29,000.00
5.2	Supply, delivery, installation, testing and commissioning of Early Streamer Emission (ESE) Lightning protection Airterminal complying with NFC - 17-102 standards (RP= 60mtrs.) including air terminal, lightning strike counter, maintenance-free earthings, 25x3mm copper flats, complete as required and as per direction of Engineer-in-charge	No	1.0	210,000.00	210,000.00
6	<u>Area Lighting</u>				
6.1	Supply, delivery, installation, testing & commissioning of L.T. indoor floor/ wall mounted type distribution boards made out of 2 mm thick CR sheet metal cubicle fixed on m.s. channel base, duly acid treated for derusting, primed and painted with 2 coats of enamel paint of approved shade; dust, damp & vermin proof ; having hinged door and compartmental arrangement for each equipment & busbar chamber on the top of the panel running horizontally; having provision for cable/ conduit entry, earthing studs as per specification mentioned below duly factory wired conforming to the relevant ISS and as per special conditions of contract making good the damages caused complete as per the direction of Engineer-in-charge.				
(a)	Street Light Control Panel				
	Incoming: 1 No 32 Amp 4P MCB				

SINo	DESCRIPTION	Unit	Qty	Supply of Materials	
				Rate	Amount
	1 No 72 Amp AC-3 rating power contactor				
	1 No 24 hour daily dial type time switch (Legrand make)				
	2 Nos push button switch with 1no. Selector switch				
	Bus bars: 4 Nos 20x3mm electrolytic copper strips				
	Outgoing: 6 Nos 20A 2P MCB asperSLD				
	Instruments: 3 Nos LED type phase indicating lamps with control fuses	Set	1.0	27,500.00	27,500.00
6.2	Supply, delivery & installation of 4.0m Long Octagonal galvanised from inside & outside pole for fixing of 30watt LED Street Light luminaire similar to Crompton Greaves Limited catalouge No-LSTO15-30/CDL (NEXUS) for operation on 240V, single phase AC complete with a foundation base plate of 300 mm dia with anchor bolt duly embedded in 1:2:4 PCC including cost of the LED luminaire ,excavation pit, concreting, providing GI pipes for cable entry junction box with prewired 3 Amp SP MCB, loop-in -loop-out , terminal block, wiring with copper wire upto the fitting etc., complete as required .	Nos.	13.0	32,000.00	416,000.00
6.3	Supply, delivery, installation, testing & commissioning of following types of Gate post top lantern suitable for 1x42 watt LED lamp with complete assembly, GI pipe bracket, necessary wiring from loop-in-box with 3 core 0.75 sqmm copper flexible cord inside PVC pipes etc complete as required with all materials as per direction of Engineer-in-charge.				
(a)	1x40 watt LED Post top lantern similar to Crompton Greaves Limited catalouge No- 1 x LTPO 40/CDL 40watt LED lamp or equivalent	Nos	6.0	44,100.00	264,600.00
6.4	Supply,Laying & testing of following size of PVC insulated, PVC sheathed, round/strip armoured aluminium conductor power cable of 1100 volt grade clamped on surface of wall/ column/ existing RCC/ stone ware/ masonry cable trench/ cable tray/ through G.I. pipe/ hume pipe as the case may be, including cost of saddles/ clamps/ markers etc but excluding the cost of G. I. pipe/ hume pipe and cable end termination compete with making good the damages caused and returning the balance unused cables to stores as required				
(a)	3 core x 6 sqmm A2XWY	Metre	300.0	185.00	55,500.00
1.7	Supply of materials and end termination of following cables including supply of single compression brass cable glands, cable sockets etc complete as required				
(a)	Terminations of 3 core x 6 sqmm A2XWY with sockets in poles	nos	30.0	180.00	5,400.00
(a)	Terminations of 3 core x 6 sqmm A2XWY with sockets & brass glands in panels	nos	38.0	75.00	2,850.00
				Total:- Rs	5,807,499.00
				or Say	5,807,500.00