

Name of work: Providing Electrical arrangements to Renovation/ Upgradation of existing Academic Building Facilities under Component-3 Infrastructure Grants to University under RUSA 2.0 in Thiruvalluvar University campus at Serkadu village of Katpadi Taluk in Vellore District

EMD: Rs. 64000/-			Date of Tender 20.04.22		
Sl. No.	Approximate Quantity	Description of Work	Rate in Figure & in Words	Per	Amount
1	585 Pts (Five hundred and eighty five points)	Wiring with 2x1.5 sqmm (22/0.3) PVC insulated SC unsheathed Cu. Conductor of 1100V grade in suitable PVC rigid pipe concealed in wall and ceiling with PVC accessories in flush with wall with GI Modular Junction and modular switch box and 6A modular FT switch with front white plate in flush with wall and making good of the concealed portion with suitable colour for PVC concealed light / Fan Point (For electronic regulator) (5 Points Per Coil)		1 Pt (One point)	
2	54 pts (Fifty four points)	Wiring with 2x1.5 sqmm (22/0.3) PVC insulated SC unsheathed Cu. Conductor of 1100V grade in suitable PVC rigid pipe concealed in wall and ceiling with PVC accessories in flush with wall with GI Modular Junction and modular switch box and 6A modular FT switch with front white plate in flush with wall and making good of the concealed portion with suitable colour for PVC concealed light (6 Points Per Coil) (For Rooms like Bath, Toilet,& Pump room etc..)		1 Pt (One point)	
3	9 Pts (Nine points)	Wiring with 3x1.5 sqmm (22/0.3) PVC insulated SC unsheathed Cu. Conductor of 1100V grade in suitable PVC rigid pipe concealed in wall and ceiling with PVC accessories in flush with wall with GI Modular Junction and modular switch box and 6A modular FT switch with front white plate (Two way) in flush with wall and making good of the of the concealed portion with suitable colour for concealed staircase light point.		1 Pt (One point)	

4	6 Nos (Six numbers)	Supply and fixing of 2x 2 LED 4000k square type Recessed fitting (Higher end) Complete on wall or ceiling with PVC unsheathed copper leads from terminal to the fitting.		1 No (Each)	
5	60 Nos (Sixty numbers)	Supply and fixing of single box type 4'18 W LED fitting complete (Higher end) with TW round blocks on wall or ceiling with LED tube with PVC unsheathed Copper leads from terminals to the fitting.		1 No (Each)	
6	120 Nos (One hundred and twenty numbers)	Supply and fixing of single box type 4' 18 W LED fitting complete (Higher end) with conduit pipe suspension from the ceiling with PVC unsheathed Copper leads from terminals to the fitting with tube.		1 No (Each)	
7	18 Nos (Eighteen numbers)	Supply and fixing of single box type 4'18 W LED fitting complete with (Higher end)with enamel reflector in suitable Al frame on wall with TW round blocks on wall or ceiling with LED tube with PVC unsheathed Copper leads from terminals to the fitting.(Chalk Board fitting)		1 No (Each)	
8	180 Nos (One hundred and eighty numbers)	Supply and fixing of 2x 2 LED 4000k square type Recessed fitting (Higher end) Complete with 1.0 meter MS chain arrangements on ceiling with PVC unsheathed copper leads from terminal to the fitting.		1 No (Each)	

9	27 Nos (Twenty seven numbers)	Supply and fixing of 9W LED lamp with Battern Holder on wall and Ceiling Higher end)		1 No (Each)	
10	9 Nos (Nine numbers)	Supply and fixing of 9W Surface mounting light fitting (For mirror point light) (Higher end)on ceiling with PVC unsheathed copper leads from terminal to the fitting .		1 No (Each)	
11	222 Nos (Two hundred and twenty two numbers)	Supply and fixing of 1200 mm (48") AC ceiling fan complete with stepped electronic 300W regulator with 500mm down rod on the existing clamp.(Higher end)		1 No (Each)	
12	6 Nos (Six numbers)	Supply and fixing of 375 mm (15") sweep (light duty) AC exhaust fan complete without wall opening in the wall.		1 No (Each)	
13	6 Nos (Six numbers)	Supply and fixing of louvers shutters arrangements for 375 mm (15") sweep light duty AC Exhaust fan.		1 No (Each)	

14	468 Nos (Four hundred and sixty eight numbers)	Supply and fixing of 3 Nos. 6A modular 2 in one 3pin wall socket with 3 Nos 6 A modular FT control switches (Higher end) concealed in suitable GI modular Box covered with front white plate in flush with wall with earth connection (For Computer Plug Socket)		1 No (Each)	
15	57 Nos (Fifty seven numbers)	Supply and fixing of 16A modular 3pin wall socket with 16A modular FT control switches (Higher end) concealed in suitable GI modular Box covered with front white plate in flush with wall with earth connection (For Computer Plug Socket)		1 No (Each)	
16	15 Nos (Fifteen numbers)	Supply and fixing of 32Amps DP CB sheet steel enclosure with 32A DP MCB in flush with wall with earth connection (For UPS) [Higher end]		1 No (Each)	
17	15 Nos (Fifteen numbers)	Supply and fixing of 63Amps FP MCB enclosure with 63A FP MCB in flush with wall with earth connection (For 3 PH M/C Plug) [Legrand (MDS) / Hager (L&T) make]		1 No (Each)	
18	48 Nos (Forty eight numbers)	Supply and fixing of 25Amps AC Motors Starter with On/ Off Switch with 2 Modular 32A DP fuse type Switch with Neon - Light on suitable MS 4 Modular box in flush with wall and covered with 4modular cover plate and making good of the concealed portion with suitable colour with interconnection and earth connection for 25A AC Motor Starter (Higher end)		1 No (Each)	

19	30 Nos (Thirty numbers)	Supply and fixing of 8 way single pole and neutral MCB sheet steel enclosure Distribution board with IP 42 protection metal Double door type with 1No 32 Amps DP MCB as incoming and 6 Nos 6 Amps to 32 Amps SPMCB outgoing in flush with wall and making good of the concealed portion with earth connection only. The MCB DB and MCB's should be with ISI mark (Higher end)		1 No (Each)	
20	12 Nos (Twelve numbers)	Supply and fixing of 12 way single pole and neutral MCB sheet steel enclosure Distribution board with IP 42 protection metal Double door type with 1No 40 Amps DP MCB as incoming and 10 Nos 6 Amps to 32 Amps SPMCB outgoing in flush with wall and making good of the concealed portion with earth connection only. The MCB DB and MCB's should be with ISI mark (Higher end) (For Computer Plug DB)		1 No (Each)	
21	3 Nos (Three numbers)	Supply and fixing of vertical type 8 way triple pole neutral MCCB distribution board in sheet steel enclosure with IP 42 protection metal Double door type with 250A 4 pole MCCB 25ka as incoming 4nos. 100A TP MCCB 25Ka 4nos. 63A TP MCB10Ka as outgoing on suitable AI frame work with MS cable entry boxes with earth connection. The MCCBDB MCCB and MCB's should be with the ISI mark(Higher end)(FLOOR MAIN)		1 No (Each)	
22	6 Nos (Six numbers)	Supply and fixing of vertical type 4way triple pole neutral MCB distribution board in sheet steel enclosure with IP 42 protection metal Double door type with 125A 4 pole MCCB 25ka as incoming 4nos. 63A TP MCB10Ka, as outgoing on suitable AI frame work with MS cable entry boxes with earth connection. The MCCBDB and MCB's should be with the ISI mark(LikeLegrand/Hager make) (For Computer lab UPS main)		1 No (Each)	

23	9 Nos (Nine numbers)	Supply and fixing of type 4way 7 segment MCB distribution board in sheet steel enclosure with IP 42 protection metal Double door type with 63A 4 pole MCB 10Ka and 63A FP ELCB 30 MA as incoming and 3 Nos 63A DPMCB Isolator as sub incomer 32A 1ph MCB 12 Nos as outgoing in flush with wall and making good of the concealed portion with earth connection. The MCBDB and MCB's should be with the ISI mark(LikeLegrand/Hager)make) (Floor Lighting DB)		1 No (Each)	
24	1 No (One number)	Supply and fixing of vertical type 8 way triple pole neutral MCCB distribution board in sheet steel enclosure with IP 42 protection metal Double door type with 160A 4 pole MCCB 25ka as incoming 8nos. 63A TP MCB16Ka as outgoing on suitable Al frame work with MS cable entry boxes with earth connection. The MCCBDB MCCB and MCB's should be with the ISI mark(Higher end) (MAIN LIGHTING DB)		1 No (Each)	
25	21 mts (Twenty one metres)	Supply and run of 2 of 1.5 sqmm (22/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe concealed in wall and ceiling with continuous earth wire connection of 14 SWG TC wire and making good of the concealed portion with suitable colour.		1 Mt (One Metre)	
26	3004 mts (Three thousand four metres)	Supply and run of 2 of 2.5 sqmm (36/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe concealed in wall and ceiling with continuous earth wire connection of 14 SWG TC wire and making good of the concealed portion with suitable colour.		1 Mt (One Metre)	

27	1392 mts (One thousand three hundred and ninety two metres)	Supply and run of 2 of 4 sqmm (56/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe concealed in wall and ceiling with continuous earth wire connection of 14 SWG TC wire and making good of the concealed portion with suitable colour.		1 Mt (One Metre)	
28	510 mts (Five hundred and ten metres)	Supply and run of 2 of 6 sqmm (84/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe concealed in wall and ceiling with continuous earth wire connection of 14 SWG TC wire and making good of the concealed portion with suitable colour (lab, computer room 40A double pole single MCB DB)		1 Mt (One Metre)	
29	432 mts (Four hundred and thirty two metres)	Supply and run of 4 of 10 sqmm (140/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe concealed in wall and ceiling with continuous earth wire connection of 14 SWG TC wire and making good of the concealed portion with suitable colour.(63A FP MCB)		1 Mt (One Metre)	
30	495 mts (Four hundred and ninety five metres)	Supply and run of 4 of 16 sqmm (101/0.45) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe concealed in wall and ceiling with continuous earth wire connection of 14 SWG TC wire and making good of the concealed portion with suitable colour.(Lab, computer room 100A MCB DB)		1 Mt (One Metre)	
31	12 mts (Twelve metres)	Supply and clamping of 3 ½ X 150sq.mm PVC LTUG armoured LTUG cable on post or on wall with MS Clamps.		1 Mt (One Metre)	

32	6 Nos (Six numbers)	Supply and fixing of brass cable gland for 3 1/2 x 150 sqmm PVC armoured LTUG cable with earth connection.		1 No (Each)	
33	6 Nos (Six numbers)	Supply and providing cable end termination of 3 1/2 x 150 sqmm PVC LTUG Aluminiumarmoured cable with necessary aluminium cable sockets by crimping etc. with electrical connection complete.		1 No (Each)	
34	300 mts (Three hundred metres)	Supply and laying of 2R of 3 1/2 X 185sq.mm PVC armoured LTUG cable in a trench to be excavated at a depth of 0.75 metre putting 0.15 mt. Layer of sand and covering the cable completely with bricks and sand and refilling the earth to make good.		1 Mt (One Metre)	
35	12 mts (Twelve metres)	Supply and clamping of 2R of 3 1/2 X 185 sq.mm PVC armoured LTUG cable 65mm dia in G.I pipe in a trench to be excavated at a depth of 0.75 metre with refilling the earth to make good.		1 No (Each)	
36	45 mts (Forty five metres)	Supply and clamping of 2R of 3 1/2 X 185sq.mm PVC LTUG armoured LTUG cable on post or on wall with MS Clamps.		1 Mt (One Metre)	

37	4 Nos (Four numbers)	Supply and fixing of brass cable gland for 3 1/2 x 185 sqmm PVC armoured LTUG cable with earth connection.		1 No (Each)	
38	4 Nos (Four numbers)	Supply and providing cable end termination of 3 1/2 x 185 sqmm PVC LTUG Aluminiumarmoured cable with necessary aluminium cable sockets by crimping etc. with electrical connection complete.		1 No (Each)	
39	21 Nos (Twenty one numbers)	Earthing as per the ISI specification with an earth electrode of 2.1mt class 'B' GI pipe of dia not less than 40mm, with copper earth plate of size 125mm x 50mm x 6mm, with necessary funneling arrangements with necessary masonry work and with 38mm RCC cover slab for the brick masonry.		1 No (Each)	
40	420 mts (Four hundred and twenty metres)	Supply and run of 1 of No.8 SWG CU wire in PVC pipeon wall for earth connection.		1 Mt (One Metre)	
41	102 mts (One hundred and two metres)	Supply and run of 25mm x 3mm tinned copper flat with necessary clamps / supports on wall / floor / ground for earth connection		1 Mt (One Metre)	

42	1 No (One number)	<p>Main Panel. Supply and Erection of 630A capacity dust and vermin proof cubical panel board made up of 16 SWG CRCA sheet steel with supply and fixing of the following interior mounting fuse switch with HRC fuses arrangement in two horizontal rows top and bottom of horizontal bus bar chamber and two ends one on each side next to the fuse switch chamber and cable tray conforming to IE rules;</p> <p>INCOMING: 630A TPN switch disconnecter fuse units interior only with HRC fuse Double Break Switch with Interlock-2 Nos</p> <p>OUTGOING: 200A TPN switch disconnecter fuse units interior only with HRC fuse Double Break Switch -10 nos</p> <p>Space for fixing switches for future = 2 nos (All the TPN Switch should be Siemens / L&T with Front Handle Make)</p> <p>The bus bar chamber will consist of 4 Nos. 50x10mm tinned copper flat for phase and neutral buses on epoxy moulded bus insulated at proper and sufficient spacing between the buses as per IE Rules. This bus bar chamber should be segregated from the adjacent chamber by providing plywood sheet of suitable thickness as per standards. 2 Nos 25x3mm tinned copper flats should be provided all round the panel for earth bus.</p>		1 No (Each)	
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		<p>The fuse Switches should be connected with the phase and natural buses with suitable size of rigid copper flat/rod and each switch should be connected with the 2 Nos earth bus with 2 runs of No.8 SWG rigid Tinned copper rod with suitable lugs. Phase and neutral tinned buses should be tinned properly.</p> <p>The panel should have a separate metering chamber at the top side consisting of 0-600V Digital Voltmeter with Selector Switch, 0-400A Digital Ammeter with Selector Switch and C.T arrangement Pilot lamps, toggle switches, fuse unit(Siemens) indicator lamps should be provided with MCB. The panel should be Powder Coat paint of approved colour, approved by the site officer and also the danger board . The capacity of the switches size of incoming and out going cable the place to which the supply is feed shall be mounted on switch chamber. The panel board should be mounted on 75mm x37mm MS channel provided all round at bottom of the panel. The whole arrangement should be erected on a masonry pedestal to be constructed with suitable foundation bolts and nuts such that the lowest switch handle is at a height of 0.45 m from the ground level with necessary earth connection.</p>			
43	10 Nos (Ten numbers)	Supply and fixing of 65 mm (2 1/2") GI pipe (Class 'B') of 6 mt. Length with 300mm x 300mm x 6mm MS base plate, duly welded at the bottom with concreting with construction of Masonary pedestal with suitable SMC box with 6 A SP MCB to be fixed 1.5m above ground level on post with door and with lock and key arrangements with supply and fixing of 48W LED street light fitting with heat resistant toughened glass with IP 65 Protection in suitable dia GI pipe (Class 'B') complete on the existing post or wall with PVC unsheathed Copper leads MS clamps and aluminium painting (Philips/Havels/equivalent)		1 No (Each)	

44	286 mts (Two hundred and eighty six metres)	Supply and laying of 4x 10 sq.mm PVC armoured LTUG cable in a trench to be excavated at a depth of 0.75 metre putting 0.15 mt. Layer of sand and covering the cable completely with bricks and sand and refilling the earth to make good.		1 Mt (One Metre)	
45	38 mts (Thirty eight metres)	Supply and clamping of 4x 10 sq.mm PVC LTUGarmoured LTUG cable on post or on wall with MS Clamps.		1 Mt (One Metre)	
46	20 Nos (Twenty numbers)	Supply and fixing of brass cable gland for 2 x 10 sq.mm PVC armoured LTUG cable, with earthconnection.		1 No (Each)	
47	1 No (One number)	<p>13 (884 Kgs) persons passenger Lift</p> <p>Design, engineering, supply fabrication erection, testing, commissioning and handling over of 1 No Machine Room Less - Gear Less Green Building Concept, 13 (884 Kgs) persons passenger lift as per the following technical specifications including all taxes and duties.</p> <p>TECHNICAL SPECIFICATION:</p> <p>1.Location: Ground +Three Floors in Govt Polytechnic college at Perunthurai</p> <p>2. No of lift: 1 No.</p> <p>3. Type of lift : Passenger</p> <p>4. Capacity of lift: 13 Persons (884kgs)</p> <p>5. Speed : 1.00 Meter/Sec</p>		1 No (Each)	

6. Type of Drive: Specific variable voltage variable frequency V3F drive
65% Power savings with enhanced ride comfort and leveling functions.

7. No of floor : 4 (Ground +3 Upper floors)

8. Total travel: 33.33 feet

9. Leveling Accuracy: High level accuracy with smooth & jerk free stopping.

10. Construction of Car: No 4 finishes High quality stainless steel car, neat Hair Line finish, S.S. Handrail, Granite Flooring.

11. Car Ceiling : Sleek (Medium circular lights) - SS Hairline finish - PVC

12. Position of Machine: Machine Room Less - Gear Less

13. No of landing Entrance: 4(Ground + 3 Upper floors)

14. No. of Car entrance: One in front only.

15. Car Entrance Door: Power operated central opening sliding Door - Stainless Steel (1.5mm) Hairline finish

16. Landing entrance Door: Power operated Stainless Steel (1.5mm) - Hairline finish

17. Lift well : 2450mm (width) X 1850mm)(depth)

18. Lift pit depth available: 1600mm.

19. Car size : 2000 mm (width) X 1100 mm (depth) (as per IS 14665 (part-I)-2000)

20. Car clear opening : 1000 mm wide X 2000 mm height (as per IS 14665 (part-I)2000)

21. Lift Head Room: 4300mm H

22. Power supply: 400/440 V 3 phase 50 Cy/Sec A.C supply and 230 V 50 Hz single phase AC supply for light.

23. Control: Microprocessor based simplex, selective collective control with / without attendant.

24. Car fittings: compact LED light with axial flow fan.
25. Lift well: RCC construction with brick masonry.
26. Indication: up/down digital direction and position indicator for all landing and in car
 - a). Car Indicator : BBS 170 LED light & Regular (circular) fan
 - b). Landing Indicator : BBS 170 LED light
27. Special future: Push Button with "Bailey" engraved.
28. Emergency Alarm Bell: Battery operated alarm bell to be provided with automatic charging device.
29. Emergency Light: Battery operated light to be provided with automatic charging device.
30. Over load weighing device
31. Full load bypass function
32. Fireman's switch: To be provided at ground floor.
33. Minor Builders work: To be provided by lift contractor.
34. Scaffolding: To be provided by lift Contractor.
35. Stainless steel Sill angels and fascia plates: To be provided by lift contractor.
36. Steel for lift Machinery: To be provided by lift contractor.
37. Servicing and Maintenance: Free comprehensive servicing and maintenance should be provided by lift contractor during the guarantee period of one year.
38. Automatic Rescue Device: To facilitate the landing of the lift to the nearest floor at the time of power failure. This shall consists of suitable type battery system with charger, Inverter, under voltage protection system etc, complete with all accessories.
39. Provision of Intercom with phone: to be provided by lift contractor.

	<p>40. Lift License: Preparation of drawing payment of charges to CEIG and Insurance policies if any and obtaining CEIG safety certificated as per lift act should be done by lift contractor.</p> <p>41. Floor annunciator with music.</p> <p>42. Special Futures :</p> <p>(a). Infra red door sensor with full height screen.</p> <p>(b). Full width half height rear panel Mirror.</p> <p>(c). Tubular stainless steel handrail in car.</p> <p>(d). Voltage stabiliAer for circuit control.</p> <p>(e). Stainless steel signal fixtures.</p> <p>(f). Vandal proof S.S button with S.S Cover.</p> <p>(h) VF door operator.</p> <p>(i) Call register Signal</p> <p>(j) Stainless steel fascia plate for car operating panel and landing fixtures.</p> <p>(k) Steel ladder for machine room.</p> <p>(l) On- Off switch for fan and light.</p> <p>(m). Over load warning indicator.</p> <p>43. Over speed governor, phase failure and phase reversal relay, alarm bell, T guide brackets for car and counterweight rubber padding, Motor of adequate capacity, electromagnetic brake with compression springs, car safety gears, buffer, electro mechanical door locks emergency key side supporting angles motor over load protection devices, final limit switch, main suspension ropes, counter weights, lifting joint joist</p> <p>For mounting the machineries.</p>		
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		<p>44. Guarantee: Guarantee for the materials of workmanship of equipments complete should be offered by the lift firm for a period not less than on year.</p> <p>45. Site testing in accordance with IS 14665 should be carried out by the firm at the time of Handing over the lift.</p> <p>Rate of one lift as per above specifications like Johnson Sugrathy Model, OTIS AEN 2000 Model, Koney Monospace Model,</p>			
		Lightning conductor			
48	280 mts (Two hundred and eighty metres)	Supply and run of 25mm x 6mm Alu flat with necessary FRB Bus insulators at each 0.5metre internal and with suitable MS clamp grouted on wall /Terrace with necessary Bolts and nuts ensuring complete electrical continuity.		1 Mt (One Metre)	
49	123 mts (One hundred and twenty three metres)	Supply and run of 25mm x6mm Alu. Flat for vertical drop from terrace to ground level through alkathene hose on porcelin insulator on suitable MS clamp including scaffolding.		1 Mt (One Metre)	
50	20 mts (Twenty metres)	Supply and run of 25mm x6mm Alu. Flat with suitable (2" dia) GI pipe on wall with suitable clamp set.		1 Mt (One Metre)	

51	8 Nos (Eight numbers)	Supply and erection of lightning arrestor / conductor made up of 2.5" dia Electrolytic copper ball with 5 Nos spikes each 5 long 1" dia copper pipe of 4' long (2mm thick) with suitable base to be fixed on suitable supporting structure and supply and fixing of 5 meters of 2" dia GI pipes (B Class) for the lightning conductor with necessary heavy duty clamping arrangements on top wall supporter with stay set arrangements with masonry pedestal to withstand wind pressure.		1 No (Each)		
52	40 Nos (Forty numbers)	Supply and fixing of LT cable route indicator with suitable angle not less than 38mm x 38mm 6mm and 0.6mtr long excavation of earth to a depth of 0.6mtr and concreting the ground level and making good of the ground as directed by the departmental officers		1 No (Each)		
			TOTAL			
		12%	GST			
			GRAND TOTAL			
		52 Items (Fifty two items)				