Name of the Employer**: MADRAS SCHOOL OF ECONOMICS, Gandhi Mandapam Road (Behind Anna Centenary Library), Kotturpuram, Chennai-600025.**

Name of the Work: **New Class Room Block (G+2) – Electrical Installation Works.**

PREFERRED BRANDS OF MATERIALS TO BE USED IN THE WORK

PVC CONDUIT (2 mm thick)	EMJAY/PRECISION/AVON-PLAST
WIRING CABLES (FRLS)	POWERFLEX/KEI/RR-KABEL
MODULAR TYPE SWITCHES/SOCKETS	HONEYWEL-CITRIC/PANASONIC-VISION LEGREND MYRIUS
MINIATURE CIRCUIT BREAKERS	LEXIC-DX3/SCHNEIDER-ACTI 9/ABB
RESIDUAL CURRET CIRCUIT BREAKER	AS ABOVE
MCB DISTRIBUTION BOARDS	LEXIC/SCHNEIDER/ABB
UNDERGROUND CABLE 1.1 KV GRADE	KEI/POLYCAB/GLOSTER
CABLE SOCKETS	DOWELLS/JAINSON/LOTUS
MOULDED CASE CIRCUIT BREAKER	SCHNEIDER-CVS/ABB-TMAX/SIEMENS
LIGHT FITTINGS	PHILIPS or Equivalent
FANS/EXHAUST FANS	USHACROMPTON or Equivalent

Note: 1. Tender should include only for the above brands. Contractor should specify the brands to be used by him in the work.

2. All the materials used in the work should be in accordance with the norms specified by TAC

3. The selection of brand also rests with the client and Architect

Signature of Contractor

IMPORTANT CONDITIONS OF CONTRACT

1. The work should be carried out as per IER 1956 amended up-to-date and to the entire satisfaction of Client/Architect/Electrical Consultant

2. Colour coding should be strictly followed for the entire installation as per standards. Circuit wires and point wires should have distinct colour coding

3. All the MCB used in the works should be rated for 10 KA and with 'C' curve

4. The distribution board, A/c control box, switch control boxes etc., shall have the enclosures as supplied by the manufacturer

5. Circuit wiring shall be measured from the distribution board up to first switch control box only. Looping circuit shall be part of Point wiring

6. All circuits shall be run in individual conduits only. Circuits of the same phases if required may be run in the same conduit with the consent of the Electrical Consultant. However the rates for the same shall be revised accordingly

7. Junction/Adopter boxes shall be provided wherever necessary for termination of conduit/cable as required without any additional cost. Junction boxes are permitted only above MDB/PDB/LDB. Junction boxes if required in other places, shall be fixed only with the consent of the Architect

8. The rates quoted shall be inclusive of all Civil works for embedding the conduit (in ceiling/wall/floor), recessing switch control box, distribution boards etc., with rough plastering. Chicken mesh should be used while plastering when number of conduits exceeds two in a row

9. The rates quoted shall be inclusive of all Taxes and Duties currently as applicable

10. The quoted rates shall be self sustaining and shall remain valid for any increase or decrease in quantity

11. The rates quoted shall remain firm till the entire installation is handed over. No revision of rates shall be entertained at any cause

12. All equipment used in the work shall be new and of best quality confirming to IS and ISI stamped unless otherwise approved

13. Additional work if any required by the client shall be carried out with the consent of Client/Architect/Electrical Consultant

14. Necessary shop drawing shall be submitted for all the panel boards for the approval Client/Architect/Electrical Consultant
15. The underground cable laid in g round should be buried to a depth of 750 mm below ground level and shall be protected with well burnt bricks both on sides and on top

over a sand cushion of 150 mm fine river sand. (75 mm below and 75 mm above the cable. The rate should also include for making good the surface as required. Suitable Cable route indicators should be provided at intervals of 25 mts. as per site requirement without any additional cost. HT cable should be buried to a depth of 1000 mm below ground level

16. The earth electrode should be provided only in the presence of Electrical Consultant/Client's Engineer

17. The contractor should test all the cables for insulation and the earth electrode for resistance and submit the results to the Electrical Consultant/Client

18. The Client/Architect reserves the right to accept/reject any or all quotation either in full or in part without assigning any reason

19. The contractors shall submit the bill in quadruplicate for certifying for payment

20. The contractor should submit 4 copies of 'As Executed drawings' for the entire installation showing the conduit layout, location of panels, DBs, switch control boxes etc., along with the Final bill. Final bill will not be entertained without the 'As Executed drawings'

21. It is the responsibility of the contractor to liaise with the local Electricity Board, get the feasibility report, load sanction and obtain the service connection for the premises as required. However the client shall arrange to pay necessary deposit and service connection charges etc., to the Electricity Board

22. Prior approval of the Client/Architect/Electrical Consultant shall be obtained if the contractor wishes to use any other brand of materials in the work other than mentioned in the enclosure

23. Taxes as per statutory requirement shall be deducted from the contractor's bill before making final payment

24. Retention money as stipulated by the Client/Architect will be with held from the contractors bill and the same shall be released after completion of Defects Liability Period of 12 months

25. **Eligibility of Electrical contractors:**
    - Valid Electrical License, Issued by Government of TN-ESA, EA, ESB, EB etc.
    - The tenderer should have done the works for the minimum value of work 20 lakhs for the last 3 Financial years (Each Year).
    - Electrical contractors should have registered in CPWD, PWD, GCC, IITM, etc.
    - **Notes:** Please attach the hard copies of all the above documents for our records.

Signature of Contractor

MADRAS SCHOOL OF ECONOMICS - CHENNAI

General Requirement for Fabrication of Panels

1. Current rating for the Copper bus bars should be rated for 1.2A per sq.mm
2. The bus bars should be with EC grade copper flats
3. The bus bar should be provided for the entire length of bus bar chamber
4. The panels should be fabricated with 16G CRC sheet
5. Pre drilled detachable gland plate should be provided for all cable termination
6. The panel should be provided with ring main earth using 25 x 3 mm copper flat and all the feeders should be provided two distinct earth connections
7. All tapping connections in the earth flat should be tinned
8. Earth flat run inside the bus bar chamber should be suitably shrouded
9. 32/63A feeders shall be provided with minimum 8 SWG Cu. wire for earthling
10. Feeders above 63A capacity shall be provided with 25 x 3 mm copper flat for earthing
11. The earth flat should be distinctly colour coded
12. Additional holes shall be provided in the earth flat for tapping connections for out going cables
13. The minimum and maximum operating height shall be maintained at 450 mm and 1800 mm respectively from the finished floor level
14. Feeders in the panel should be identified with reverse engraving plates
15. The bus bars should be rated for 35KA fault current
16. The panels shall be compartmentalized pattern
17. Neoprene gaskets should be provided for the panel between intermittent sections, periphery of all doors, gland plates etc.
18. Panels that are to be installed in the same room shall be of same height.
19. All the panels shall be accessible from front only
20. Zinc passivated or cadmium plated high tensile strength steel bolts, nuts and washers shall be used for bus bar joints and supports
21. All the CT's shall be Cast Resin only. Wire wound CTs are not permitted
22. All instrument and metering panel doors shall be provided with earth connection using 2.5 sq.mm FRLS copper wire
23. All control wiring shall be with FRLS copper wire
24. All bus bar doors shall be fitted with Hexagonal bolt with lock washers
25. Ventilation louvers/fans shall be provided for all the bus bar chamber and APFC panel as required
26. All the doors shall be made in to two sections when the total length exceeds 1200 mm
27. Key type/push type spring loaded knobs to be provided for all door except bus bar door

28. The incoming and outgoing cables shall be segregated in the cable chamber as required by regulations

29. The mounting of incoming feeder either on left or right side should be decided by the contractor depending upon site condition

30. Cable entries in the cable chamber shall be suitable both for top and bottom entry

31. All the MCCBs should be provided with extended rotary handle, phase barriers and splitters without additional cost

32. For all MCCBs ICU = ICS 100%

33. The width of cable chamber shall be not less than 450 mm. Wherever the incoming and outgoing cables are routed through the same cable chamber the width should be increased taking into consideration of segregation for incoming and outgoing cables in the cable chamber

34. The panels to be fabricated from vendors having CPRI test certificate

Signature of Contractor