INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI - 110016

NAME OF WORK	:	Maintenance & Operation of Electrical, Mechanical, Fire Services, of Lecture Hall Complex at IIT Delhi.
ESTIMATED COST	:	**Rs. 70,65,026.00**
EMD	:	**Rs. 1,41,301.00 (No exemption allowed)**
N.I.T. No.	:	**9828/27/EW/IITD/2020-21**
Date of Opening	:	**13-10-2020 at 15.00 PM**

Name of Work: -Maintenance & operation of Electrical, Mechanical, Fire Services, of Lecture Hall Complex at IIT Delhi.

NIT for the above work has been prepared with the following:

1	Amount of NIT	:	**Rs.** 70,65,026.00
2	Earnest money	:	**Rs.** 1,41,301.00(No exemption allowed)
3	Completion time	:	12 Months
4	Last date of submission (online)	:	Upto 3:00 PM of 21-09-2020
5	Date of opening	:	**13-10-2020 at 15.00 PM**
6	Form of NIT	:	IITD - 8
7	Schedule applicable	:	DSR/Market Rate
8	Material stipulated	:	As per Schedule of Work
9	Chargeable head	:	NPN-18/23
10	Estimate no.	:	IITD/DB/9828
11	Work Code no.	:	WO3504
12	NIT No.	:	**9828/27/EW/IITD/2020-21**
13	Type of work	:	**Maintenance works including works of up-gradation, aesthetic, special repair, addition/alteration**.

Certified that this NIT contains **1** to 84 pages.

NIT amounting to Rs. 70,65,026.00 is

approved.

AEE, SS **Sr. F.I.** **Sr. TS [Plg]**

Executive Engineer [E]

INDIAN INSTITUTE OF TECHNOLOGY DELHI
NOTICE INVITING E-TENDER
IITD/WORKS (SP- 3171)/2020

Executive Engineer (Electrical), Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, Ph. No. 011-2659 1742 on behalf of Board of Governors invites online **Item Rate Tender** from the **contractors registered with CPWD / MES / BSNL in appropriate class & category** as per details given below

1	Name of Work	:	Maintenance & operation of Electrical, Mechanical, Fire Services, of Lecture Hall Complex at IIT Delhi.
2	NIT No.	:	**9828/27/EW/IITD/2020-21**
3	Estimated cost	:	**Rs.**70,65,026.00
4	Earnest Money	:	**Rs.**1,41,301.00(No exemption allowed)
5	Period of completion	:	12 Months
6	Last date & time of bid submission	:	**Upto 3:00 PM of 12-10-2020**
7	Performance Bank Guarantee	:	**5% of the tendered amount**

The bid forms and other details may be downloaded from Central Public Procurement Portal http://eprocure.gov.in/eprocure/app. Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website http://eprocure.gov.in/eprocure/app . The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.

Bidders can access Quotation / tender documents on the website (For searching in the NIC site, kindly go to Quotation Search option and type 'IIT'. Thereafter, Click on "GO" button to view all IIT Delhi Quotations). Select the appropriate Quotation / tender and fill them with all relevant information and submit the completed Quotation / tender document online on the website http://eprocure.gov.in/eprocure/appas per the schedule given in the next page.

No manual bids will be accepted. All bids (both Technical and Financial should be submitted in the E- procurement portal).

Executive Engineer [E],
For & on Behalf of BOG, IIT Delhi

Ch. Head: NPN – 18/23
Work code- WO3504

Copy to: -

1. Institute Engineer
2. D.A. (Works Accounts) - for opening of tenders in the office of D.R.[SPS]
3. A.E.E. (E)Plg.
4. Sr. F/I
5. D.R.(A/Cs)
6. D.R.[SPS]
7. Notice Boards.
8. Office Copy
9. Web site Administrator, IITD

INDEX

SCHEDULE

1	Name of organisation	**:**	Indian Institute of Technology Delhi
2	Tender / Quotation type (open / limited / EOI / auction / single)	:	Open
3	Tender / Quotation category (services / goods / works)	**:**	Work /services
4	Type of Contract (work / supply / auction / service / buy / empanelment / sell)	**:**	Work /service
5	Form of contract (IITD – 7/8)	**:**	IITD – 8
6	Work Category (civil / electrical / fleet management / computer systems)	**:**	Electrical
7	Is multi-currency allowed?	**:**	No
8	Date of publishing / issue / start	**:**	28-09-2020 at (15:00 Hrs)
9	Document download start date	**:**	28-09-2020 at (15:00 Hrs)
10	Document download end date	**:**	12-10-2020 at (15:00 Hrs)
11	Date & time of pre-bid meeting	**:**	No pre-bid meeting be held
12	Venue of pre-bid meeting	**:**	Not applicable
13	Last date & time of uploading of bids	**:**	12-10-2020 at (15:00 Hrs)
14	Date & time of opening of Technical Bids	**:**	13-10-2020 at (15:00 Hrs)
15	Tender fee	**:**	Free of cost
16	Earnest Money Deposit (EMD)	**:**	**Rs.1,41,301.00** **To be paid through RTGS / NEFT.** IIT Delhi Bank details are as under: Name of Bank A/C: IITD Revenue A/C SBI A/C No. – **10773572622** Name of Bank: **State Bank of India**, IIT Delhi, Hauz Khas, New Delhi – 110016 IFSC Code: **SBIN0001077** MICR Code: **110002156** Swift No.: SBININBB547 This is mandatory that UTR number is provided in the online quotation / bid (Refer UTR column in the Declaration sheet at Annexure – 1)
17	No. of bids / covers (1 / 2 / 3 / 4)	**:**	**2**
18	Address for communication	**:**	Executive Engineer (Electrical), Works Department, IIT Delhi, Hauz Khas, New Delhi - 110016
19	Contact No.	**:**	011- 2659- 7199, 6751, -1742
20	e-mail address	**:**	a26318@admin.iitd.ac.in; a25891@admin.iitd.ac.in; a26335@admin.iitd.ac.in

INSTRUCTIONS FOR ONLINE BID SUBMISSION

As per the directives of Department of Expenditure, this quotation / tender document has been published on the Central Public Procurement Portal (URL: http://eprocure.gov.in/eprocure/app). The bidders are required to submit softcopies of their bids electronically on the CPP portal, using valid Digital Signature Certificates (DSC). The instructions given below are meant to assist the bidders in registering on the CPP portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP portal.

More information useful for submitting online bids on the CPP portal may be obtained at http://eprocure.gov.in/eprocure/app

REGISTRATION

1. Bidders are required to enrol on the e-procurement module of the Central Public Procurement portal (URL: http://eprocure.gov.in/eprocure/app) by clicking on the link, “click here to enrol”. Enrolment on the CPP portal is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique user name and assign a password for their accounts.
3. Bidders are advised to register their valid e-mail address and mobile number as part of the registration process. These would be used for any communication from the CPP Portal.
4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (class 2 or class 3 certificates with signing key usage) issued by any certifying authority recognised by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.) with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
6. Bidder then logs into the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

SEARCHING FOR TENDER DOCUMENTS

1. There are various search options built in the CPP portal to facilitate bidders to search active tenders by several parameters. These parameters could include tender ID, organisation name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organisation name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP portal.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. The tenders can be moved to the respective “My Tenders” folder. This would enable the CPP portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidder should make a note of the unique Tender ID assigned to each other, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bids.

Please note the number of covers in which the bid documents have to be submitted. Any deviations from these may lead to rejection of the bids.

3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black & white option.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor's certificates, etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

1. Bidder should log into the site well in advance for bid submission so that he / she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder has to select the payment option as "on-line" to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, Page no. 5)
4. A standard BOQ Format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the white coloured [unprotected] cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

   OR

   In some cases, financial bids can be submitted in PDF format as well (in lieu of BOQ).

5. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
6. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorised persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
7. The uploaded tender documents become readable only after the tender opening by the authorised bid openers.
8. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the

bid no. and the date & time of submission of the bid with all other relevant details.

9. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

ASSISTANCE TO BIDDERS

1. Any queries relating to tender document and the terms and conditions contained therein should be addressed to the tender inviting authority for a tender or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to CPP portal in general may be directed to the 24 x 7 CPP Portal Help Desk. The contact number of the helpdesk is 18002337315.

GENERAL INSTRUCTIONS TO THE BIDDERS

1. The tenders will be received online through portal https://eprocure.gov.in/eprocure/app. In the technical bids, the bidders are required to upload all the documents in PDF format.
2. Possession of a valid class II / III Digital Signature Certificate (DSC) in the form of smart card / e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorised certifying agencies, details of which are available in the website https://eprocure.gov.in/eprocure/app under the link "Information about DSC".
3. Tenderers are advised to follow the instructions provided in the "Instructions to the tenderer" for the e-submission of the bids online through the Central Public Procurement Portal for e-procurement at https://eprocure.gov.in/eprocure/app.

INFORMATION & INSTRUCTION TO BIDDERS FOR E-TENDERING

Executive Engineer (Electrical), Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, Ph. No. 011-2659 1742 on behalf of Board of Governors invites online **Item Rate Tender** from the **contractors registered with CPWD / MES / BSNL in appropriate class & category** as per details given below:

Sr. No.	NIT No.	Name of Work & Location	Estimated cost put to bid (₹)	Earnest money (₹)	Period of completion	Last date & time of submission of bid	Time & date of opening of Technical Bid	Time & date of opening of Financial Bid
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	9828/27/IITD/EW/2020-21	Maintenance & operation of Electrical, Mechanical, Fire Services of Lecture Hall Complex at IIT Delhi.	70,65,026.00	1,41,301.00	12 months	Upto 3 PM of 12-10-2020	13-10-2020 at 03:00 PM	To be decided after assessing Technical Bids

1. The bidder whose bid is accepted shall be required to submit a performance guarantee of 5 percent of the tendered amount in the form of Bank Guarantee or FDR from a nationalised / scheduled bank within the period specified in Schedule F. in case the bidder fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the bidder shall be forfeited automatically without any notice to the bidder. The Performance Guarantee shall initially be kept valid upto the stipulated date of completion plus sixty days beyond that.

2. Contractors who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted.

a. Should have satisfactorily completed the works as mentioned below during the last Seven years ending **previous day of last date of submission of bids.**

i. **Three** similar works each costing not less than**Rs.28,26,010.00**, or **two** similar works each costing not less than **Rs. 42,39,016.00**, or one similar work costing not less than **Rs. 56,52,021.00**(all figures rounded to nearest thousand).

ii. **Earnest money** of Rs.1,41,301.00to be deposited online as indicated in the Schedule at pg 3.

3. The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of submission of financial bid.

4. **Similar work means :** Operation & Maintenance of E & M Services including, DG sets, Substation, Lifts, Fixed Fire Installations etc.

5. **Work means work done under Government / Public Sector Undertaking / Central Autonomous bodies.**

6. Completion certificates are required to be got issued by an officer not below the rank of Executive Engineer of similar works completed by the Firm. The work experience certificates submitted by the bidders shall clearly indicate that:

   a. The similar work executed shall be **as per '4' above**

   b. The completed cost of the work

   c. Actual date of completion of the work

7. IITD is committed to follow the principle of transparency, equity and competitiveness in public procurement. Before submission of bid, **each bidder should sign integrity pact at respective places** and submit the bid. **If duly signed integrity pact is not submitted by bidder, such bid shall not be considered.**

8. **The intending bidder must read the terms and conditions [both commercial & Additional] & IITD - 6 carefully** which will be the part of the Contract. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.

9. Information and Instructions for bidders posted on website shall form part of bid document.

10. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website e-procure.gov.in free of cost.

11. But the bid can only be submitted after depositing requisite EMD as specified in the "Schedule".

12. Copy of all mandatory documents as desired in the NIT shall be scanned and up-loaded to the e-Tendering website within the period of bid submission. However, certified / original copy of all the scanned and up-loaded documents shall have to be submitted by the lowest bidder only within a week physically in the office of e-tendering authority, if so desired, by the tender inviting authority.

13. Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited requisite EMD and other documents scanned and uploaded are found in order.

14. Those contractors not registered on the website mentioned above, are required to get registered beforehand. Bidders should refer "Instruction for Online Bid Submission" given earlier for further assistance.

15. When bids are invited in two / three stages systems and if it is desired to submit revised financial bid it shall be mandatory to submit revised financial bid. If not submitted, then the bid submitted earlier shall become invalid.

16. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

17. Contractors must ensure to quote rate of each item.

List of Mandatory Documents to be scanned and uploaded within the period of bid submission:

1. Annexure – I duly filled in and **duly mentioning UTR No. for EMD deposition and got signed**
2. Enlistment order of the contractor (should be valid on the last date of submission of bid)
3. Certificate of GST Registration of the State in which the work is to be taken up, if already obtained by the bidder. If the bidder has not obtained GST registration in the State in which the work is to be taken up, or as required by GST authorities then in such a case the bidder shall scan and upload following undertaking along with other bid documents.

   "if work is awarded to me, I/we shall obtain GST registration certificate of the State, in which work is to be taken up within one month from the date of receipt of award letter or before release of any payment by IIT Delhi, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by IIT Delhi or GST department in this regard."

4. Affidavit as per provision of the clause 1.2.2of IITD-6 [To be submitted on stamp paper]
5. Acceptance to execute INTEGRITY PACT [see integrity pact]
6. IITD 7 / 8 duly signed.
7. EPF & ESI Registration proof with up to date challan..
8. Valid Electrical License.
9. Attested certificate of work experience as desired.
10. Any other document as specified in the NIT.

[N.B. -- As per CPWD Works Manual 2019, "MSME firms registered in NSIC under PP policy are exempted from payment of EMD for supply of goods and services only" Hence, there is ***no applicability of EMD exemption*** *for this work. BID without EMD will summarily be rejected].*

11. Attested certificate of Engineer along with experience certificate to be deployed for the work as per clause 36(i) Schedule 'F'.

Executive Engineer [Electrical]
For & on Behalf of BOG, IIT Delhi

INDIAN INSTITUTE OF TECHNOLOGY DELHI

NOTICE INVITING E-TENDER

1.0 Item rate tenders are invited on behalf of The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 110016 from **contractors registered with CPWD / MES / BSNL in appropriate class & category** as per details given below for the work of **Maintenance& operation of Electrical, Mechanical, Fire Services of Lecture Hall Complex at IIT Delhi.**

The Enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

1.1 The work is estimated to cost **Rs.70,65,026.00.** This estimate, however, is given merely as a rough guide.

1.1.1 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids.

1.2 Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below: -

1.2.1 Criteria of eligibility for submission of bid documents: Conditions for intending bidders / contractors

1.2.1.1 **Three** similar works each costing not less than **Rs.28,26,010.00**, or **two** similar works each costing not less than **Rs. 42,39,016.00**, or one similar work costing not less than **Rs. 56,52,021.00**in last 7 years ending previous day of last date of submission of bids. The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of submission of financial bid.

1.2.2 To become eligible for issue of bid, the bidders shall have to furnish an affidavit as under: -*"I / We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I / we shall be debarred for bidding in IIT Delhi in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee (Scanned copy to be uploaded at the time of submission of bid)"*

2.0 Agreement shall be drawn with the successful bidders on prescribed Form No. IITD 7/8 which is available as IIT Delhi Publication. Bidders shall quote their rates as per various terms and conditions of the said form which will form part of the agreement.

3.0 The time allowed for carrying out the work will be **12 months**from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.

4.0 The site for the work is available.

5.0 The bid document consisting of plan, specifications the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from the web Site **e-procure.gov.in.**

6.0 After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.

7.0 While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.

8.0 If it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted, then the tender submitted earlier shall become invalid.

9.0 Earnest Money as specified to be paid through RTGS / NEFT. IIT Delhi Bank details are as under:Name of the Bank A/C**:** IITD Revenue Account; SBI A/C No.**:** 10773572622; Name of the Bank**:** State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016; IFSC Code: SBIN0001077; MICR Code: 110002156; Swift No.**:** SBININBB547(This is mandatory that UTR Number is provided in the on-line quotation/bid. Kindly refer to the UTR Column of the

Declaration Sheet at Annexure-1). Interested contractor who wish to participate in the bid has to ensure payment of EMD within the period of bid submission.

9.1 Copy of all 'mandatory documents' and other documents as specified in the press notice shall be scanned and uploaded to the e-tendering website within the period of bid submission.***However, certified copy of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder only within a week physically in the office of tender opening authority.***

10.0 The bid submitted shall become invalid, if:

10.1 The bidder is found ineligible.

10.2 The bidder does not upload all the documents (including GSTIN Registration) as stipulated in the bid document**.**

10.3 EMD not deposited as specified

10.4 If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted ***physically by the lowest bidder*** in the office of the bid opening authority.

11.0 The contractor whose bid is accepted will be required to furnish **performance guarantee of 5% (Five Percent)** of the bid amount within the period specified in Schedule F. This guarantee shall be in the form of Deposit at Call receipt of any scheduled bank / Banker' cheque of any scheduled bank/ Demand Draft of any scheduled bank/Pay order of any Scheduled Bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities or Fixed Deposit Receipts or irrevocable Bank Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.**The earnest money depositedalong with bid shall be returned after receiving the aforesaid performance guarantee.**

12.0 Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and subsoil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

13.0 The competent authority on behalf of the Board of Governors does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.

14.0 Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

15.0 The competent authority on behalf of the Board of Governors reserves to himself the right of accepting the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.

16.0 The contractor shall not be permitted to bid for works in the IITD responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted officer in the IIT Delhi. Any breach of this condition by the contractor would render him liable to be debarred from bidding process in future in IIT Delhi.

17.0 No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or

Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract liable to be cancelled, if, either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.

18.0 The bid for the works shall remain open for acceptance for a period of **ninety daysfromthe date of opening of financial bids**, if any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the IIT Delhi shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the re-bidding process of the work.

19.0 This notice inviting bid shall form a part of the contract document. The successful bidder / contractor, on acceptance of his bid by the Accepting Authority shall **within fifteen days** from the stipulated date of start of the work, sign the contract consisting of:-

19.1 The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

19.2 Standard IITD Form –7/8 or other Standard IITD Form as applicable.

20.0 In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as to be submitted physically in IIT Delhi, if so desired by the accepting authority, then the bid submitted shall become invalid and the IIT Delhi shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the bidding process of the work.

INTEGRITY PACT

To

……..,
……..,
……..

Sub: NIT No. 9828/27/IITD/EW/2020-21 for the work of **"Maintenance & operation of Electrical, Mechanical, Fire Services of Lecture Hall Complex at IIT Delhi."**

Dear Sir,

It is hereby declared that IIT Delhi (IITD) is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the Integrity Agreement, which is an integral part of the tender/bid documents, failing which the tender/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the IITD.

Yours faithfully,

Executive Engineer

[TO BE SUBMITTED DULY SIGNED BY THE BIDDER ALONGWITH BID DOCUMENTS]

To

Executive Engineer (Elect.),
IIT Delhi, Hauz Khas,
New Delhi – 110016

Subject: Submission of Bid for the work of **"Maintenance & operation of Electrical, Mechanical, Fire Services of Lecture Hall Complex at IIT Delhi."**

Dear Sir,

I / We acknowledge that IIT Delhi is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I / We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I / We will sign the enclosed integrity Agreement, which is an integral part of tender / bid documents, failing which I / We will stand disqualified from the tendering process. I / We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I / We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by IITD. I / We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I / We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, IITD shall have unqualified, absolute and unfettered right to disqualify the tenderer /bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully,

(Duly signed by authorized signatory of the Bidder)

[To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of IITD]

INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this ..... day of..... 20.....

BETWEEN

The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 represented through **Executive Engineer (Elect.)**, IIT Delhi
....., (Hereinafter referred as the '**Principal/Owner**',
(Address of Division)
'**Principal/Owner**', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....
.....
(Name and Address of the Individual/firm/Company)
Through…….....
……. (Hereinafter referred
(Details of duly authorized signatory)
to as the "**Bidder/Contractor**" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

PREAMBLE

WHEREAS the Principal / Owner has floated the Tender (NIT No. 9828/27/IITD/EW/2020-21) (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for **"Maintenance & operation of Electrical, Mechanical, Fire Services of Lecture Hall Complex at IIT Delhi."**(Name of work) hereinafter referred to as the "**Contract**".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s) AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "**Integrity Pact**" or **"Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

ARTICLE 1: COMMITMENT OF THE PRINCIPAL / OWNER

1. The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
1.1. No employee of the Principal / Owner, personally or through any of his / her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
1.1.1. The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

1.1.2. The Principal/Owner shall Endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

2. If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PoC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

ARTICLE 2: COMMITMENT OF THE BIDDER(S) / CONTRACTOR(S)

1. It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of **fraud or corruption or coercion or collusion** of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2. The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

2.1. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

2.2. The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

2.3. The Bidder(s) / Contractor(s) will not commit any offence under the relevant IPC/PoC Act. Further the Bidder(s) / Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal / Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

2.4. The Bidder(s) / Contractor(s) of foreign origin shall disclose the names and addresses of agents / representatives in India, if any. Similarly Bidder(s) / Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

2.5. The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practices **means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests**.

5. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

ARTICLE 3: CONSEQUENCES OF BREACH

Without prejudice to any rights that may be available to the Principal /Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the

Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by the Principal/Owner**.
2. **Forfeiture of EMD/Performance Guarantee/Security Deposit**: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.
3. **Criminal Liability**: If the Principal/Owner obtains knowledge of conduct a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal / Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

ARTICLE 4: PREVIOUS TRANSGRESSION

1. The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.
3. If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

ARTICLE 5: EQUAL TREATMENT OF ALL BIDDERS/CONTRACTORS/SUBCONTRACTORS

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.
2. The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.
3. The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

ARTICLE 6: DURATION OF THE PACT

1. This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 6 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.
2. If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority of IITDelhi.

ARTICLE 7: OTHER PROVISIONS

1. This Pact is subject to Indian Law, place of performance and jurisdiction is the Head Quarters of the Division of the Principal/Owner, who has floated the Tender.
2. Changes and supplements need to be made in writing. Side agreements have not been made.
3. If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by Board

Resolution.

4. Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intensions.
5. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

ARTICLE 8: LEGAL AND PRIOR RIGHTS

1. All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

   IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

   .....
   (For and on behalf of Principal / Owner)

   .....
   (For and on behalf of Bidder / Contractor)

   WITNESSES:

1. .....

   (signature, name and address)

2. .....

   (signature, name and address)

Place:

Dated :

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI - 110016

Percentage Rate Tender / Item Rate Tender & Contract for Works

Tender for the work of **"Maintenance & operation of Electrical, Mechanical, Fire Services of Lecture Hall Complex at IIT Delhi."**

1. To be submitted online by **Upto 3 PM of 12-10-2020**
2. To be opened on **13-10-2020at 03:00 PM** online

e-TENDER

I / We have read and examined the Notice Inviting Tender, schedule, A, B, C, D, E & F, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, Clauses of Contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I / We hereby tender for the execution of the work specified for the Board of Governors, IIT Delhi within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for ninety (90) days from the due date of its opening / ninety days from the date of opening of financial bid in case tenders are invited on 2/3 envelop system (**strike out as the case may be**) and not to make any modification in its terms and conditions.

A sum of **Rs. 1,41,301.00**is hereby deposited in IIT Delhi Revenue Account No. 10773572622as earnest money. If I / We, fail to furnish the prescribed performance guarantee within prescribed period I / We agree that the said The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I / We fail to commence the work as specified, I / We agree that The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form. Further, I / We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid I / We shall be debarred for participation in the re-tendering process of the work.

I / We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I / We shall be debarred for tendering in IIT Delhi in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I / We hereby declare that I / We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I / We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated:

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for an on behalf of The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 110016 for a sum of (Rupees……..……).

The letters referred to below shall form part of this contract agreement:-

(a)

(b)

(c)

For & on behalf of Board of Governors, IIT Delhi

Signature ……..

Dated: Designation …….

PROFORMA OF SCHEDULES

SCHEDULE "A"

Schedule of Quantities (enclosed)

SCHEDULE "B"

Schedule of materials to be issued to the contractor

Sr. No.	Description of item	Quantity	Rates in figures & words at which the materials will be charged from the contractor	Place of issue
(1)	(2)	(3)	(4)	(5)
	--- NIL ---			

SCHEDULE "C"

Tools and Plants to be hired to the contractor

Sr. No.	Description	Hire charges per day	Place of issue
(1)	(2)	(3)	(4)
	--- NIL ---		

SCHEDULE "D"

Extra schedule for specific requirements / documents for the work, if any.

------ NIL ------

SCHEDULE "E"

Reference to General Conditions of Contract

1	**Name of work**	**:**	**Maintenance & operation of Electrical, Mechanical, Fire Services of Lecture Hall Complex at IIT Delhi.**
2	Estimated cost of work (₹)	**:**	70,65,026.00
3	Earnest Money (₹)	**:**	1,41,301.00
4	Performance Guarantee	**:**	5 percent of tendered value
5	Security Deposit	**:**	5 percent of tendered value

SCHEDULE "F"

GENERAL RULES & DIRECTIONS:

Officer inviting tender	**:**	Executive Engineer (E)
Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3	**:**	**See below**

DEFINITIONS:

2 (V)	Engineer-in-charge	**:**	Executive Engineer (E)
2 (viii)	Accepting authority	**:**	Institute Engineer
2 (x)	Percentage on cost of materials and labour to cover all overheads and profits	**:**	15 percent
2 (xi)	Standard Schedule of Rates	**:**	Market Rates
2 (xii)	Department	**:**	Estate & Works, IIT Delhi
9 (ii)	Standard IITD Contract Form	**:**	IITD Form 7 / 8 as modified and corrected upto date

CLAUSE 1

i)	Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance	:	15 days
ii)	Maximum allowable extension beyond the period provided in (i) above with late fees @0.1% per day of performance guarantee	:	10 days

CLAUSE 2

(i)	Authority for fixing compensation under Clause 2	:	Institute Engineer

CLAUSE 2A

(i)	Whether Clause 2A shall be applicable	:	No

CLAUSE 5

(i)	Number of days from the date of issue of letter of acceptance for reckoning date of start	:	10 days

TABLE OF MILE STONE(S):

Sr. No.	Description of Milestone (physical)	Time allowed in days (from date of start)	Amount to be with-held in case of non-achievement of milestone
(1)	(2)	(3)	(4)
	--- NOT SPECIFIED ----		

Time allowed for execution of work	:	12 Months

Authority to decide:	**Extension of time**	:	Engineer-in-charge
	Rescheduling of milestones	:	Institute Engineer

CLAUSE 6, 6A

Clause applicable – (6 or 6A)	:	6 A

CLAUSE 7

Gross work to be done together with net payment / adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment	:	Not Applicable

CLAUSE 10A

List of testing equipment to be provided by the contractor at site lab					
1	**NIL**	**2**	**NIL**	**3**	**NIL**
4	**NIL**	**5**	**NIL**	**6**	**NIL**

CLAUSE 10B (ii)

Whether Clause 10 B (ii) shall be applicable (Yes / No)	:	No

CLAUSE 10 C

Component of labour expressed as percent of value of work	:	72 Percent

CLAUSE 10 CA

Materials covered under this clause		Nearest materials (other than cement, reinforcement bars & structural steel) for which All India Wholesale Price index to be followed	Base Price of all the materials covered under clause 10 CA*
1	**NIL**		
2	**NIL**		
3	**NIL**		
4	**NIL**		

*base price of all materials covered under clause 10 CA is to be mentioned at the time of approval of NIT

CLAUSE 10CC(Not Applicable)

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column	**:**	00 months
Schedule of component of other Materials, Labour, P.O.L. etc. for price escalation.		
Component of Civil (except materials covered under clause 10 CA) / Electrical construction materials - expressed as percent of total value of work	**:**	**X_m = percent**
Component of labour - expressed as percent of total value of work	**:**	**Y = percent**
Component of P.O.L. – expressed as percent of total value of work	**:**	**Z= percent**

CLAUSE 11

Specification to be followed for execution of work	**:**	CPWD General Specifications for Electrical Works (Part as applicable) as amended upto date

CLAUSE 12

12.2& 12.3	Deviation limit beyond which clauses 12.2 & 12.3 shall apply for building work	**:**	50%
12.3 A	Type of work	**:**	Maintenance works including works of up-gradation, aesthetic, special repair, addition / alteration
12.5	Deviation limit beyond which clauses 12.2 & 12.3 shall apply for foundation work	**:**	50%

CLAUSE 16

Competent authority for deciding reduced rates	**:**	Executive Engineer

CLAUSE 18

List of mandatory machinery, tools & plants to be deployed by the contractor at site					
1	**NIL**	**2**	**NIL**	**3**	**NIL**
4	**NIL**	**5**	**NIL**	**6**	**NIL**

CLAUSE 36 (i)

Requirement of Technical Representative (s) and recovery rate

Sr. No.	Minimum qualification of Technical Representative	Discipline	Designation (Principal Technical / Technical representative)	Minimum experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36 (i)	
						Figures	**Words**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Graduate or Diploma Engineer	Electrical / Mechanical	Site Engineer	2 years for Graduate & 5 years for Diploma	1	₹15000 per month	Fifteen thousand only per month

Assistant Engineers retired from Govt. / IIT Delhi services that are holding Diploma will be treated at par with Graduate Engineers.

COMMERCIAL AND ADDITIONAL CONDITIONS

1. GENERAL

1.1. A good maintenance programme is the key to long system life and ease of serviceability. Maintenance & service should only be carried out by experienced / qualified personnel as desired in the schedule of work. The maintenance and service which are done must be as per specifications and upto the satisfaction of the Engineer-in-charge.

1.2. Location: The equipments are installed at Lecture Hall Complex at IIT Delhi

1.3. The work shall be executed as per CPWD General Specifications for Electrical Works Part-I (Int.) 2013, Part-II (Ext.) 1994, Part-IV (Sub St.) 2013, Part-VI (FAS)-2018 as applicable, as amended upto date, relevant I.E. Rules, BIS/IEC and as per directions of Engineer-in-Charge. These additional specifications/conditions are to be read in conjunction with above and in case of variations; specifications given in these additional conditions shall apply. However, nothing extra shall be paid on account of these additional specification and conditions, as the same are to be read along with schedule of quantities for the work.

1.4. The tenderer should in his own interest visit the site and get familiarize with the site conditions before tendering.

1.5. No T&P shall be issued by the Department and nothing extra shall be paid on account of this.

2. COMMERCIAL CONDITIONS:

2.1. **Type of contract:** The work to be awarded by this tender shall be treated as indivisible works contract.

2.2. Submission and opening of Tenders:

2.2.1. The tender is in two parts:

2.2.1.1. Part-I -Technical cum Un-priced commercial Bid

2.2.1.2. Part-II-Price Bid

2.3. The tender shall be submitted online, duly completed as per NIT conditions within period of bid submission.

2.4. The tenderers are advised not to deviate from the technical specifications / item, commercial terms and conditions of NIT like terms of payment, guarantee, arbitration clause, escalation etc.

2.5. Technical cum un-priced commercial bid only shall be opened on the due date and time in the presence of tenderers or their authorized representative who wish to remain present.

2.6. Scrutiny/evaluation of the technical-cum-commercial bid shall be done by the department. In case, it is found that the technical-cum-commercial bid of a tenderer is not in line with NIT specifications/requirements and/or contains too many deviations, the department reserves the right to reject the technical bid of such firms(s) without making any reference to the tenderer(s).

2.7. Necessary clarifications required by the department shall have to be furnished by the tenderer within the time given by the department for the same. The tenderer will have to depute his representative to discuss with the officer(s) of the department as and when so desired. In case, in the opinion of the department a tenderer is taking undue long time in furnishing the desired clarifications, his bid will be rejected without making any reference.

2.8. After obtaining clarification from all the tenders, the department will intimate the tenders whose technical cum commercial bids are acceptable.

2.9. The price bids of only those tenderers shall be opened whose technical bids are found to be technically acceptable. The time and date of opening of price bid shall be fixed after the technical cum unpriced commercial bid is accepted and intimated to them by post/Fax/e-mail.

2.10. The department reserves the right to reject any or all the price bids and call for fresh prices/tenders as the case may be without assigning any reason.

3. TERMS OF PAYMENTS

3.1. Unless otherwise specified, in the additional conditions of the contract, the payment shall be made as per the relevant clauses of form PWD 7/8 forming a part of the tender documents.

4. SECURITY DEPOSIT

4.1. Security Deposit shall be deducted from each running bill and final bill to the extent of 5% of the gross amount payable. **The security deposit shall be released only after the work is complete in all respect i.e. Wages, EPF & ESI, Bonus etc. are fully cleared**.

5. PERFORMANCE GUARANTEE

5.1. The successful tenderer shall submit an irrevocable performance guarantee of 5% of the tendered amount in addition to other deposit mentioned elsewhere in the contract for his proper performance of the contract agreement within 15 days of issue of letter of acceptance of tender. This guarantee shall be in the form of Demand Draft/Pay order of irrevocable bank guarantee bond of any schedule bank or the State Bank of India in the specified perform a of Government Security, fixed deposit receipt pledged in favour of **Registrar, IIT Delhi** or as specified in the letter of acceptance of tender. The performance guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond. This bank guarantee shall be kept valid till the recording of completion certificate for the work by the competent authority.

5.2. Income tax, GST, labour cess & other statutory deduction etc. shall be made at source as per the prevalent laws. The deduction of Security Deposit, Income Tax, etc., shall be done after calculation for the above due payment as per clause 3 above and net payment shall reduce accordingly.

6. RATES

6.1. The rates quoted by the tenderer, shall be firm and inclusive of all taxes (including works GST & labour cess), duties, levies, etc. and all charges for packing forwarding, insurance, freight and delivery, installation, testing and commissioning etc. at site including temporary construction of storage, risks overhead charges, general liabilities/ obligations.

7. COMPLETENESS OF TENDER

7.1. All sundry equipments, fitting, unit assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections and all other items which are useful and necessary for efficient assembly and installation of equipment and components of the work shall be deemed to have been included in the tender irrespective of the fact whether such items are specially mentioned in the tender documents or not.

8. STORAGE AND CUSTODY OF MATERIAL

8.1. The agency has to make his own arrangement for storage. No separate storage accommodation shall be provided by the department Watch and ward of the storage and their safe custody shall be responsibility till the final taking over of the installation by the department.

9. CARE OF THE BUILDING

9.1. Care shall be taken by the contractor while handling and installing the various equipment and components of the work to avoid damage to the building. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste material arising out of the installation from the site of work.

10. COMPLETION PERIOD

10.1. The completion period indicated in the tender documents is for the entire work of planning, deployment of workers, payment of wages and statutory obligations, arrangement of materials & equipments, if any, etc. up to the satisfaction of the Engineer-in-charge.

11. VALIDITY

11.1. Tenders shall be valid for acceptance for a period 90 days of days from the date of opening of price bid.

12. COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS

12.1. All works shall be carried out in accordance with relevant regulation both statutory and those specified by the Indian Standards related to the works covered by this specification in particular, the equipment and installation will comply with the following:

12.1.1. Factories Act

12.1.2. Indian Electricity Rules

12.1.3. B.I.S. & other standards as applicable

12.1.4. Workmen's compensation Act

12.1.5. Statutory norms prescribed by local bodies like fire department, CEA, Power Supply Co. etc.

13. INDEMNITY

13.1. The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of operation and maintenance under the supervision of the successful tenderer. The successful tenderer shall take necessary actions in this regard. No extra payment would be made to the successful tenderer on account of the above.

14. ERECTION TOOLS

14.1. No tools and tackles either for unloading or for shifting the equipments for erection purposes would be made available by the department. The successful tender shall make his arrangement for all these facilities

15. COOPERATION WITH OTHER AGENCIES AND OCCUPANTS OF THE BUILDING

15.1. The successful tenderer shall co-ordinate with other working contractors, if any and other occupants of different offices / Labs, etc., and exchange freely all technical information so as to make the execution of this work / contract smooth. No remuneration should be claimed from the department for such technical cooperation. If any unreasonable hindrance is caused to other agencies and any completed portion of the work has to be dismantled and re-done for want or cooperation and coordination by the tenderer during the course of work, such expenditure incurred will be recovered from the successful tenderer if the restoration work to the original condition or specification of the dismantled portion of work was not under taken by the tenderer himself.

16. MOBILIZATION ADVANCE

16.1. No mobilization advance shall be paid for this work

17. INTERPRETING SPECIFICATION

17.1. In interpreting the specification, the following order of decreasing importance shall be followed in case of contradictions:

17.1.1. Schedule of quantities

17.1.2. Technical Specification

17.1.3. Drawing (if any)

17.1.4. General Specification for Electrical Works of CPWD (relevant Parts)

17.1.5. Relevant BIS or other international code in case BIS code is not available.

18. POLICY OF THE INSTITUTE

18.1. **Insti**tute has a policy against **sexual harassment** and is committed to providing an environment free from **sexual harassment of women** at the workplace. Contractor shall have to abide by the policy of the Institute with due diligence. Any violation on the part of the contractor shall be dealt with the extant rules of the Institute.

SPECIAL TERMS AND CONDITIONS

1. That it is expressly understood and agreed between the parties to this Agreement that the persons deployed by the contractor for the services mentioned above shall be the employees of the contractor for all intents and purposes and that the persons so deployed shall remain under the control and supervision of the contractor and in no case, shall a relationship of employer and employee between the said persons and the IITD shall accrue/arise implicitly or explicitly.

2. That on taking over the responsibility of providing Contractor's Worker, the contractor shall formulate the mechanism and duty assignment under intimation to the Engineer-in-charge. Subsequently, the contractor shall review work arrangement from time to time. The contractor shall further be bound by and carry out the directions/instructions given to him by the Engineer-in-charge in this respect from time to time.

3. That the Engineer-in-charge or any other person authorized by him shall be at liberty to carry out surprise check on the persons so deployed by the contractor in order to ensure that persons deployed by him are doing their duties.

4. That in case of the persons so deployed by the contractor does not come up to the mark or does not perform his/her duties properly or indulges in any unlawful activities or riots or disorderly conduct, the contractor shall immediately withdraw and take suitable action against such persons on the report of the Engineer-in-charge. Further, the contractor shall immediately replace the particular person so deployed on the demand of the Engineer-in-charge, in case of any of the aforesaid acts on the part of the said person.

5. **That the contractor shall particularly abide by the provisions of Minimum Wages Act, 1948. Minimum wages shall be paid by the Agency / Contractor at the rate fixed by Delhi Govt. from time to time. Arrears, if due as result of increase in minimum wages would be reimbursed to the contractor on submission of proof of actual payment to the worker. In case of half yearly increase in Minimum wages by the Govt. of NCT of Delhi, the contractor will submit copy of gazette notification to the Institute and the same may be considered by the Institute.** ***However, base rate for Mechanic / Operator grade Rs.689.00, for Helpergrade Rs.569.00,Graduate office clerk is Rs.751.00 & Technical Supervisor Rs. 900.00 per day has been considered in the NIT.*** The contractor shall take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct or acts of his employees so deployed.

6. **That the contractor shall deploy workers as per requirement given in the schedule in consultation with the Engineer-in-charge in such a way that they get weekly oneday rest. The working hour / leave for which the work is taken from them, do not violate relevant provisions of the Act. The contractor shall in all dealings with the persons in his employment have due regard to all recognized festivals, days of rest and religious or other customs.**

7. That the contractor shall keep the IITD indemnified against all claims whatsoever in respect of the employees deployed by the contractor. In case any employee of the contractor so deployed enters in dispute of any nature whatsoever, it will be the primarily responsibility of the contractor to contest the same. In case IITD is made party and is supposed to contest the case, IITD will be reimbursed for the actual expenses incurred towards Counsel Fee and other expenses which shall be paid in advance by the contractor to IITD on demand. Further, the contractor shall ensure that no financial or any other liability comes on IITD in this respect of any nature whatsoever and shall keep IITD indemnified in this respect.

8. The Work is to be carried out for stipulated period of time and may be extended further as desired by Engineer-in-charge.

9. Institute reserves the right to remove any person deployed by the firm, without assigning any reason/notice. This will be without prejudice to the right of the contractor to remove any of his own employees deployed in the Institute.

10. That the contractor shall submit detail of the names, parentage, residential address, age, educational qualifications, experiences, etc. of the persons deployed by him in the premises of the IIT Delhi for the purpose of proper identification & category of the employees of contractor deployed at various points/sections. He shall issue identity cards bearing their photographs / identification, etc. and such employees shall display their identity cards at the time of duty.

11. The contractor shall ensure that the persons are punctual and disciplined and remain vigilant in performance of their duty.

12. Total number of manpower is fixed. However, the Institute can increase or decrease the manpower as per requirement in case there is exigencies. **The increase / decrease in manpower would accordingly affect the billing on pro-rata basis.**

13. That the contractor shall be required to maintain **permanent attendance register in addition to Biometric Attendance** at the IITD premises which shall be open for inspection and checking by the authorized officers of the IITD.

14. **That the contractor shall make the payment of wages, etc. to persons so deployed monthly basis through Bank Transfer / electronic mode on or before 10th day of every month. Wages shall include bonus @ 8.33% of daily wage [as admissible] of the particular worker multiplied by number of days' work actually performed by the worker in a particular month, which shall also be shown separately on the wage sheet of the worker.**

15. **A consolidated wage sheet containing the names of all workers so deployed by the contractor duly signed / acknowledged by the workers after disbursal of wages to be submitted to the Engineer-in-charge every month. Proof of disbursal of wages to be submitted before claiming bill. The wage sheet shall contain mandatory fields as per following: [1] Sr. No., [2] Name of the worker, [3] Actual days of duty performed, [4] Total wages, [5] Bonus amount, [6] EPF contribution [as applicable], [7] ESI Contribution [as applicable], [8] Total deductions, [9] Net wages received / disbursed, [10] signature of the worker.**

16. **In case of delay of payment of wages beyond 10 days as specified, IIT Delhi shall arrange for payment to the workers at the risk & cost of the contractor. Decision of the Engineer-in-charge in this regard shall be full & final and binding upon the contractor.**

17. **Attendance comparative sheet shall be prepared by the contractor and to be submitted to the Engineer-in-charge after completion of every month as per duty chart, desired days of duty of a particular worker allowing weekly off and actual days of duty performed by the said worker. Summation of the two columns should tie in normal case. Falling short of days of attendance from desired days of attendance shall be got deducted from the bill of the contractor at the rate of the wages given to either operator [in case of operators] or helper [in case of helpers] plus. 250/- per operator and Rs. 150/- per Helper additionally.**

18. It would be the responsibility of contractor to arrange all permission/ approvals from all local bodies/statutory bodies & nothing extra shall be paid on account of this by the Institute.

19. **EPF & ESI contribution in respect of the workers shall be deposited with the authority concerned in time and employer's share shall be got reimbursed to the contractor by IIT Delhi on production of proof of deposition. But before claiming bill, EPF & ESI contributions shall have to be updated and to be submitted for the preceding month else bill cannot be processed.**

20. This contract covers 12 months:

21. SPECIAL CONDITIONS&SCOPE OF WORK :-

The scope of work will include deployment of manpower for conducting preventive as well as routine maintenance and operation of the installations: -

ANNEXURE "E-1"	E & I FANS
ANNEXURE "E-2"	SUB STATION & DG SET
ANNEXURE "E-3"	LIFTS & INTERCOM SYSTEM
ANNEXURE "E-4"	FIRE FIGHTING, FIRE ALARM AND WATER PUMPING SET WORKS

Additional conditions for all E & M works in Lecture Hall cum Lab Complex at IIT Delhi

1. As the installations /equipments are in running condition the installation shall be handed over on" as is where is basis" and nothing extra shall be paid toward pre- maintenance However, if any deficiencies are brought to notice of department while taking over of installations by the contractor ,for rectification for which some parts are required, the same shall be arranged by the department and provided to the contractor free of cost but shall be replaced by the contractor for which nothing extra shall be paid.
2. After the expiry of the contract, the firm shall have to hand over complete installation to the department in proper working order. All defect and deficiencies shall have to be rectified by the firm to the entire satisfaction of Engineer-in-charge failing which the work shall be got done at the risk and cost of the firm.
3. No water charges shall be recovered from contractor bill.
4. General shift wherever mentioned shall mean 9:00 a.m to 5:00 p.m.
5. **The contractor shall depute staff with minimum qualification and experience as detailed here under: -**

a) Supervisor:- Passed Diploma in Electrical/ Mechanical or equivalent qualification in the same trade with three year experience in this line

b) Operator (E&M):- Academic/Professional Qualification: Should have passed ITI/ Diploma or equivalent in the Trade with experience in the same field of 2 years.

c) Mechanic (E&M):- Academic/Professional Qualification :Should have passed ITI /Diploma in Trade with 2 years practical experience in a workshop/Department dealing with operation and maintenance of Electrical/mechanical plants.

d) Mechanic cum Operator: -Academic/Professional Qualification: Should have passed ITI /Diploma or equivalent in the Trade with experience in same field of 2 years.

e) Helper: - Should be physically & mentally fit & must have six months experience in the line.

f) Graduate office clerk: Should have passed graduation with computer knowledge with 3 years' experience.

ANNEXURE "E-1"

Special Terms & Conditions for Internal Electrical Installations and Outdoor Lightings in Lecture Hall Cum Lab Complex at IIT Delhi.

1 All the works shall be carried out as per CPWD Specifications for electrical works, Part-I (CPWD Specifications Part-II (External) - 1995, Indian Electricity Rules- 1965 amended up toD Maintenance Manual to the entire satisfaction of Engineer-in-Charge.

2 The contractor has to depute following staff but the duty hour can be change as per discretio Charge.

Shift	Shift 1 (6:00 AM to 2:00 PM)	Shift 2 (2:00 PM to 10:00 PM)
Mechanic	1 No.	1 No.
Helper	1 No.	1 No.

3 The installations shall be maintained on all days of the month including Sundays & holidays and weekly rest to the staff shall be given by making alternative arrangement for which no extra made.

4 The Engineer-in-Charge has the right to remove/ terminate the services of any worker without assigning any reason.

5 The scope of work includes attending day-to-day complaints, repairs and comprehensive maintenance of all electrical installations & fittings provided by CPWD, rectifying defect and making functional all electrical points, fans, luminaries & circuit wiring, sub wiring, sub main wiring, switchgears, bus bars, cables etc. in the electrical installations by replacing the defective item/parts/wires, cables, Fl.-tube, CFL/GLS/HPSV/ HPMV lamps, PVC tape, SP/TP/DP MCBs/LAN points/UPS points , boards, Switch/ socket, Holder, Regulator, capacitor, Rubber insulator, Hylem sheet, call bell, plug top, heating element, thermostat, choke, tube starter, tube holder, igniter, switch gears etc, overhauling/ rewinding of fans/ exhaust fans/ fixtures, repairs/ replacement of switch gears, boards, Geyser Heat convector, compound light/ street light fitting, or any other minor/ major repair for which part of the machine, installations, is to be sent out for repair/ testing, shall be arranged by the contractor. Painting of electrical installations such as ceiling fans, Fl fitting, street light / compound light poles or other items has to be done once in two years with superior quality one/ two coats of paint as per instructions of Engineer-in-Charge. The decision of the Engineer-in-Charge shall be final and binding. Nothing extra is payable on account of the materials required to maintain the electrical installations. However dismantled materials shall be retained by contractor & credit for the same may be considered in their quoted rates. The details as below.

6 All the inventory items mentioned in Annexure-E-1 to E-4 have to be checked and submit the report accordingly to Engineer-in-charge on weekly basis.

Electrical Inventory of Applied Mechanics Lab, Mezzanine Floor, Block-C, Part-I & II

S. No.	**Description**	**Detail**	**Net Qty.**
Applied Mechanics Lab Part-I including In-charge room			
1-	LAN point	Dual face plate with dual LAN point	48 Nos.
2-	6 Module power box	6 pin x 16Amp socket with switch 2 sets	48 Nos.
3-	8 Module power box	6 pin x 16Amp socket with switch 2 sets and	48 Nos.

		5Amp socket with inbuilt switch 1 set	
4-	6 Module power point on DLP	6 pin x 16Amp socket with switch 1 No. and 5 pin x 5amp socket with switch 1 No.	22 Set
5-	Telephone point	RJ11 telephone connector on 2 module PVC box with cover plate	4 Nos.
6-	DB panel -1 with following switch gear a) Incomer- 100Amp. 25KA, 4 Pole MCCB – 1 No. b) Outgoing -25Amp. , 10 KA, TP MCB – 26 Nos. 10Amp, 10 KA, SP MCB – 30 Nos. c) 12way double door, vertical MCB DB Incomer- 160Amp, 25KA, TP MCCB – 1 No. Outgoing – SP MCB, 10 Amp, 36 Nos.		1 Set
7-	12U wall mounted cabinet lockable switcher rack complete with all active and passive equipments.		3 Sets
8-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		12 Nos.
9-	2x18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		15 Nos.
10-	Sprinkler Pendent		22 Nos.
11-	Sprinkler Upright		20 Nos.
	Applied Mechanics Lab Part-II including In-charge room		
1-	LAN point	Dual face plate with single LAN point	7 Nos.
2-	LAN point	Dual face plate with dual LAN point	8 Nos.
3-	8 Module power box	6 pin x 16Amp socket with switch 2 sets and 5Amp socket with inbuilt switch 1 set	44 Nos.
4-	6 Module power point on DLP	6 pin x 16Amp socket with switch 1 No. and 5 pin x 5amp socket with switch 1 No.	3 Set
5-	Telephone point	RJ11 telephone connector on 2 module PVC box with cover plate	2 Nos.
6-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		14 Nos.
7-	2x18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		14 Nos.
8-	Sprinkler Pendent		16 Nos.
9-	Sprinkler Upright		15 Nos.

Electrical Inventory of Bio Lab, Mezzanine Floor, Block-C

S. No.	Description	Detail	Net Qty.
Bio Lab			
1-	LAN point	Dual face plate with single LAN point	87 Nos.
2-	6 Module power box	6 pin x 16Amp socket with switch 2 sets	46 Nos.
3-	8 Module power box	6 pin x 16Amp socket with switch 2 sets and 5Amp socket with inbuilt switch 1 set	64 Nos.
4-	6 Module power box on DLP (Legrand, Model : ARTEOR)	16Amp, 6 pin socket with 16Amp switch and 6Amp. 5 pin socket with 6amp. switch on 6 module cover plate	30 Set
5-	DB-1 Power 12way double door, vertical MCB DB- 1 No. Incomer- 160Amp, 25KA, TP MCCB – 1 No. Outgoing – SP MCB, 10 Amp, 24 Nos. TP MCB 25Amp 10KA- 4 No.		1 Set
6-	DB UPS Power 12way double door, prewired MCB DB- 1 Set Incomer- 63Amp, FP Isolator – 1 No. Outgoing – SP MCB, 16 Amp, 36 Nos.		1 Set
7-	DB Raw Power 12way double door, prewired MCB DB- 1 Set Incomer- 63Amp, FP Isolator – 1 No. Outgoing – SP MCB, 16 Amp, 36 Nos.		2 Set
8-	12U wall mounted cabinet lockable switcher rack complete with all active and passive equipments and 3 module power box having 6 pin , 16amp socket with switch		1 Set
9-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		26 Nos.
10-	2x18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		8 Nos.
11-	20Amp SP industrial socket complete with MCB and all accessories		5 Nos.
12-	32Amp 4 pole industrial socket complete with MCB and all accessories		4 Nos.
13-	63Amp 4 pole industrial socket complete with MCB and all accessories		1 No.

Electrical Inventory of Physics Lab, First Floor, Block-C

S. No.	Description	Detail	Net Qty.

Physics Lab			
1-	LAN point	Dual face plate with single LAN point	29 Nos.
2-	6 Module power box	6 pin x 16Amp socket with switch 2 sets	152 Nos.
3-	8 Module power box	6 pin x 16Amp socket with switch 2 sets and 5Amp socket with inbuilt switch 1 set	29 Nos.
4-	DB Panel Incomer- 100Amp, 25KA, TP MCCB – 1 No. Outgoing – SP MCB, 10 Amp, 100 Nos. TP MCB 25Amp 10KA- 4 No.		1 Set
5-	12 way prewired TPDB (Power) Incomer – 40Amp, TPN MCB – 1 No. Outgoing – 16Amp, C-curve SP MCB – 36 No.		1 Set
6-	6 way prewired TPDB (UPS) Incomer – 40Amp, TPN MCB – 1 No. Outgoing – 16Amp, C-curve SP MCB – 18 No.		1 Set
7-	12U wall mounted cabinet lockable switcher rack complete with all active and passive equipments.		1 Set
8-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		49 Nos.
9-	2x18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		16 Nos.
	Optic Lab		
1-	6 Module power box	6 pin x 16Amp socket with switch 2 sets	68 Nos.
2-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		6 Nos.
3-	2 x 18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		3 No.

Electrical Inventory of Applied Mechanics Lab, Mezzanine Floor, Block-C, Part-I

S. No.	Description	Detail	Net Qty.
Applied Mechanics Lab Part-I			
1-	LAN point	Dual face plate with dual LAN point	48 Nos.
2-	6 Module power box	6 pin x 16Amp socket with switch 2 sets	48 Nos.
3-	8 Module power box	6 pin x 16Amp socket with switch 2 sets and 5Amp socket with inbuilt switch 1 set	48 Nos.
4-	6 Module power point on DLP	6 pin x 16Amp socket with switch 1 No. and 5 pin x 5amp socket with switch 1 No.	14 Set
5-	3 Module power point	6 pin x 16Amp socket with switch 1 No.	1 Set
6-	Telephone point	RJ11 telephone connector on 2 module PVC box with cover plate	2 Nos.
7-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		10 Nos.
8-	2x18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		09 Nos.
9-	Sprinkler Pendent		15 Nos.
10-	Sprinkler Upright		14 Nos.

Electrical Inventory of Electrical Lab, 2nd Floor, Block-C

S. No.	Description	Detail	Net Qty.
Electrical Lab Part-I			
1-	LAN point	1 No. for each table x 49 tables	49 Nos.
2-	3 Pin 5A Socket with Switch- 2 sets & 3 Pin Socket with inbuilt switch 1 No. on UPS Power	1 Set for each table x 49 tables	49 Set

3-	6 Pin 16A Socket with Switch- 2 sets control by starter on Raw Power	2 Set for each table x 49 tables	98 Set
4-	Single phase starter for Controlling of Raw Power	1 No. for each table x 49 Tables	49 Nos.
5-	DC supply Terminal	2 Terminals for each table x 49 tables	98 Nos.
6-	3 Phase AC supply Terminal	6 Terminals for each table x 49 tables	294 Nos.
7-	3 Terminal set	6 Set for each table x 49 tables	294 Nos.
8-	2 Terminal set	1 Set for each table x 49 tables	49 Nos.
9-	4 Pole MCB Box complete with 4 poles 32amp. MCB	1 Set for each table x 49 tables	49 Nos.
10-	DB panel -1 with following switch gears a) Incomer- 100Amp. 25KA, 4 Pole MCCB – 1 No. b) Outgoing -25Amp. , 10 KA, TP MCB – 26 Nos. 10Amp, 10 KA, SP MCB – 30 Nos. c) 12way double door, vertical MCB DB Incomer- 160Amp, 25KA, TP MCCB – 1 No. Outgoing – SP MCB, 10 Amp, 30 Nos. TP MCB, 32 Amp, 2 Nos.		1 Set
11-	DB panel -2 with following switch gears a) Incomer- 100Amp, 25KA, 4 Pole MCCB – 1 No. b) Outgoing -25Amp, 10 KA, TP MCB – 27 Nos. 10Amp. , 10 KA, SP MCB – 31 Nos. c) 12way double door, vertical MCB DB Incomer- 160Amp, 25KA, TP MCCB – 1 No. Outgoing – SP MCB, 10 Amp, 36 Nos.		1 Set
12-	42U free standing cabinet lockable switcher rack complete with all active and passive equipments.		1 Set
13-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		32 Nos.
14-	2x18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		12 Nos.
15-	6 Module power plug accessories	6 pin 16Amp socket with switch and 5Amp socket with switch on 6 module PVC box– 1 set	5 Set
16-	Telephone point	RJ11 Telephone connector on 2 module PVC box with cover plate	2 Set
17-	Pendent Sprinkler		48 Nos.

Electrical Inventory of Electrical Lab, 2nd Floor, Block-C

Electrical Lab Part-II			
1-	LAN point	1 No. for each table x 66 tables + 7 Nos. on wall	73 Nos.
2-	6 Pin 15A Socket with Switch- 2 sets & 3 Pin 5A Socket with inbuilt switch 1 No. on UPS Power	1 No. for each table x 66 tables	66 Nos.
3-	**a) 12way double door, vertical MCB DB** **Incomer-** 160Amp. 25KA, TP MCCB – 1 No. Outgoing – SP MCB, 10 Amp, 36 Nos.		1 Set
4-	4 x 14 watt, T-5 mirror optic recessed type fitting (Make: Wipro, Model: WVF22414SGA)		20 Nos.
5-	2x18Watt CFL recessed down lighter (Make: Wipro, Model: WCP39218SWG)		9 Nos.
6-	6 Module power plug accessories	6 pin 16Amp socket with switch and 5Amp socket with switch on 6 module PVC box– 1 set	5 Set
7-	Telephone point	RJ11 Telephone connector on 2 module PVC box with cover plate	1 Set
8-	Pendent Sprinkler		48 Nos.

9-	3 Module power plug accessories	6 pin 16Amp socket with switch on GI box	3 Set
10-	3 Module light plug accessories	3 pin 5Amp socket with switch on GI box	1 Set

List of Electrical Inventory for handover – LT cum Lab complex at IIT Delhi
Area- B3 Hall (300 Seater – Ground floor)

S. No.	Description	Qty.	Unit
1-	8 module power box having 1 No. 15A socket & 2 Nos 5A socket.	54	No.
2-	Down lighter (LED) 33 W – OSRAM	39	No.
3-	2x2 light fitting (T-5) 3x14 W – Trilux	42	No.
4-	3 module light/power box have 1 No. 6A/16A socket with switch	8	No.
5-	Pendent Sprinkler	55	No.
6-	Upright Sprinkler	88	No.
7-	FHC having 1 No. double headed landing valve complete with all accessories and hose reel drum with 20mm dia x 36 mtr long water hose pipe, 25mm dia gun metal globe valve and nozzle, 40mm dia GM stop valve etc.	1	Set

List of electrical Inventory for handover – LT cum Lab complex at IIT Delhi
Area- B1 Hall (300 Seater – Ground floor)

S. No.	Description	Qty.	Unit
1-	8 module power box having 1 No. 15A socket & 2 Nos 5A socket.	59	No.
2-	Down lighter (LED) 33 W – OSRAM	39	No.
3-	2x2 light fitting (T-5) 3x14 W – Trilux	42	No.
4-	3 module light/power box have 1 No. 6A/16A socket with switch	5	No.
5-	Pendent Sprinkler	61	No.
6-	Upright Sprinkler	90	No.
7-	FHC having 1 No. double headed landing valve complete with all accessories and hose reel drum with 20mm dia x 36 mtr long water hose pipe, 25mm dia gun metal globe valve and nozzle, 40mm dia GM stop valve etc.	1	Set

List of electrical Inventory for handover – LT cum Lab complex at IIT Delhi
Area- B2 Hall (300 Seater – Ground floor)

S. No.	Description	Qty.	Unit
1-	8 module power box having 1 No. 15A socket & 2 Nos 5A socket.	51	No.
2-	Down lighter (LED) 33 W – OSRAM	39	No.
3-	2x2 light fitting (T-5) 3x14 W – Trilux	42	No.
4-	3 module light/power box have 1 No. 6A/16A socket with switch	3	No.
5-	Pendent Sprinkler	61	No.
6-	Upright Sprinkler	87	No.
7-	FHC having 1 No. double headed landing valve complete with all accessories and hose reel drum with 20mm dia x 36 mtr long water hose pipe, 25mm dia gun metal globe valve and nozzle, 40mm dia GM stop valve etc.	1	Set

List of electrical Inventory for handover – LT cum Lab complex at IIT Delhi
Area- Block 'D' (500 Seater – Ground floor, LH 121)

S. No.	Description	Qty.	Unit
1-	8 module power box having 1 No. 15A socket & 2 Nos 5A socket.	36	No.
2-	Down lighter (LED) 33 W – OSRAM	44	No.
3-	2x2 light fitting (T-5) 3x14 W – Trilux	48	No.
4-	3 module light/power box have 1 No. 6A/16A socket with switch	25	No.

5-	Pendent Sprinkler	52	No.
6-	Upright Sprinkler	56	No.
7-	2x28 Watt T-5 CFL fitting	8	No.
8-	FHC having 1 No. double headed landing valve complete with all accessories and hose reel drum with 20mm dia x 36 mtr long water hose pipe, 25mm dia gun metal globe valve and nozzle, 40mm dia GM stop valve etc.	2	Set

List of electrical Inventory for handover – LT cum Lab complex at IIT Delhi Area- Block 'D' (500 seater – First floor, LH 325)

S. No.	Description	Qty.	Unit
1-	8 module power box having 1 No. 15A socket & 2 Nos 5A socket.	38	No.
2-	Down lighter (LED) 33 W – OSRAM	44	No.
3-	2x2 light fitting (T-5) 3x14 W – Trilux	60	No.
4-	Pendent Sprinkler	69	No.
5-	Upright Sprinkler	70	No.
6-	FHC having 1 No. double headed landing valve complete with all accessories and hose reel drum with 20mm dia x 36 mtr long water hose pipe, 25mm dia gun metal globe valve and nozzle, 40mm dia GM stop valve etc.	2	Set
	Faculty Lounge		
1-	2x2 light fitting (T-5) 3x14 W – Trilux	13	No.
2-	Pendent Sprinkler	22	No.
3-	Upright Sprinkler	28	No.
4-	3 module light/power box have 1 No. 6A/16A socket with switch	4	No.

E &M Inventory for 150 Seater Lecture Hall

Sr. No.	Location	14WLEDDownlighter	3x14WT-5Fitting	1200mmSweepceilingfanwithregulator	ving 1 No. 15Asocket&2Nos5Asocket.	3Modulepowerboxhaving 1 No. 15Asocket&Switch	PendentSprinkler	UprightSprinkler	valvecompletewithallaccessoriesandhosereeldrumwithgunmetalglobevalveandnozzle,40mmdiaGMstopvalveetc.
	First Floor (Block-B)								
1	150 Seater Lecture Hall - 1	20	15		22	4	29	32	
2	150 Seater Lecture Hall - 2	20	15		22	4	21	25	1
3	150 Seater Lecture Hall - 3	20	15		26	6	22	24	1
4	150 Seater Lecture Hall - 4	20	15		26	4	20	22	
5	Student Lounge		47	23	28		82		1
	Second Floor (Block-B)								
1	150 Seater Lecture Hall - 1	20	15		22	4	30	30	
2	150 Seater Lecture Hall - 2	20	15		22	4	29	30	1
3	150 Seater Lecture	20	15		22	4			1

	Hall - 3									
4	150 Seater Lecture Hall - 4	20	15		22	4	33	30		
5	Student Lounge		48	23	28		87			1
	Third Floor (Block-B)									
1	150 Seater Lecture Hall - 1	19	15		24	4	35	29		
2	150 Seater Lecture Hall - 2	20	15		22	6	32	29		1
3	150 Seater Lecture Hall - 3	22	15		24	4	34	30		1
4	150 Seater Lecture Hall - 4	22	15		22	6	35	30		
	Total	243	275	46	332	54	489	311		8

E & M Inventory of 60/30 seater Lecture Hall

Sr. No.	Location	14WLEDDownlighter	3x14WT-5Fitting 8ModulePowerplugaccessoriesshaving6pin,	3 3ModulePowerplugaccessoriesshaving6pin, 16Amp.Socket-1	PendentSprinkler	UprightSprinkler
A	Mezzanine Floor (Block-D)					
1	60 Seater Conference room LH-212		12	2	12	8
2	60 Seater Conference room LH-213		12	2	12	8
	Second Floor (Block-D)					
1	60 Seater Class Room LH-421		16	6	12	8
2	60 Seater Class Room LH-422		12	8	12	8
B	Third Floor (Block-B2)					
1	60 Seater Class Room LH-517	12	9	12	12	12
2	60 Seater Class Room LH-519	12	9	16	13	12
3	60 Seater Class Room LH-521	12	9	12	13	12
4	Corridor	12			9	8
5	30 Seater Class Room LH-518	8	4	9	7	6
6	30 Seater Class Room LH-520	8	4	9	9	8

1	60 Seater Class Room LH-602	12	9	12		12	11
2	60 Seater Class Room LH-604	12	9	16		13	12
3	60 Seater Class Room LH-606	12	9	12		13	12
4	Corridor	14				13	10
5	30 Seater Class Room LH-627	8	4	9		6	5
6	30 Seater Class Room LH-605	8	4	9		9	8
D	Fourth Floor (Block-B2)						
1	60 Seater Class Room LH-611	12	9	12		13	12
2	60 Seater Class Room LH-613	12	9	16		13	12
3	60 Seater Class Room LH-615	12	9	12		13	12
4	Corridor	15				13	10
5	30 Seater Class Room LH-612	8	4	9		6	5
6	30 Seater Class Room LH-614	8	4	9		6	5
E	Fourth Floor (Block-B3)						
1	60 Seater Class Room LH-620	12	9	12		13	12
2	60 Seater Class Room LH-622	12	9	16		12	11
3	60 Seater Class Room LH-624	12	9	12		13	12
4	Corridor	15				11	10
5	30 Seater Class Room LH-621	8	4	9		6	5
6	30 Seater Class Room LH-623	8	4	9		6	5
	Total	264	192	236	14	302	259

E & M Inventory of Toilet Blocks in LT Complex

S. No.	Location		2x18W CFL Down lighter	2x13W CFL Down lighter	14W down lighter	3 Module Power plug accessories
A	GROUND FLOOR					
1	BLOCK-C LH 105	Handicapped	1			1
2	BLOCK-C LH 106	Boys	6			1
3	BLOCK-C LH 107	Girls	6			1
4	BLOCK-B LH 109	Boys		8		1
5	BLOCK-B LH 110	Girls		8		1
6	BLOCK-B LH 112	Girls		8		1
	BLOCK-B LH 113	Boys		8		1
7	BLOCK-D LH 116	Girls		9		1

8	BLOCK-D LH 117	Handicapped		1		1
9	BLOCK-D LH 118	Boys		8		1
B	MEZZ. FLOOR					
1	BLOCK-C LH 205	Handicapped	1			1
2	BLOCK-C LH 206	Boys	6			1
3	BLOCK-C LH 207	Girls	6			1
4	BLOCK-D LH 215	Girls		9		1
5	BLOCK-D LH 216	Handicapped		1		1
6	BLOCK-D LH 217	Boys		8		1
C	FIRST FLOOR					
1	BLOCK-C LH 304	Handicapped	1			1
2	BLOCK-C LH 305	Boys	6			1
3	BLOCK-C LH 306	Girl	6			1
4	BLOCK-B LH 311	Boys		8		1
5	BLOCK-B LH 312	Girls		8		1
6	BLOCK-B LH 314	Girl		8		1
7	BLOCK-B LH 315	Boys		8		1
8	BLOCK-D LH 321	Girls		9		1
9	BLOCK-D LH 322	Handicapped		1		1
10	BLOCK-D LH 323	Boys		8		1
D	SECOND FLOOR					
1	BLOCK-C LH 404	Handicapped	1			1
2	BLOCK-C LH 405	Boys	6			1
3	BLOCK-C LH 406	Girl	6			1
4	BLOCK-B LH 411	Boys		8		1
5	BLOCK-B LH 412	Girls		8		1
6	BLOCK-B LH 414	Girls		8		1
7	BLOCK-B LH 415	Boys		8		1
8	BLOCK-D LH 424	Girls			9	1
9	BLOCK-D LH 425	Handicapped			1	1
10	BLOCK-D LH 426	Boys			8	1
E	THIRD FLOOR					
1	BLOCK-C LH 507	Handicapped	1			1
2	BLOCK-C LH 508	Boys	6			1
3	BLOCK-C LH 509	Girl	6			1
4	BLOCK-B LH 514	Boys		8		1
5	BLOCK-B LH 515	Girls		8		1
6	BLOCK-B LH 523	Girls		8		1
7	BLOCK-B LH 524	Boys		8		1
8	BLOCK-D LH 530	Girls			9	1
9	BLOCK-D LH 531	Handicapped			1	1
10	BLOCK-D LH 532	Boys			8	1
F	FOURTH FLOOR					
1	BLOCK-B LH 608	Boys		8		1
2	BLOCK-B LH 609	Girls		8		1
3	BLOCK-B LH 617	Girls		8		1
4	BLOCK-B LH 618	Boys		8		1
	Total		65	214	36	50

E & M Inventory of Computer Lab at 3rd Floor, Block-C

Sr. No.	Location	Dualfaceplatewithdouble LAN point	Dualfaceplatewithsingle LAN point	2x18Wdownlighter	4x14WT-5Fitting	Shaving 6pin, 16Amp.Socket-2No.and3pin,5Amp.Socketwithinbuiltswitch –1No.	PendentSprinkler	UprightSprinkler	Switcher rack completewithallactiveandpassive equipments	...aving6 pin 16Amp socketwithswitchand5Ampsocketwithswitchon6modulePVCbox–1set	Telephonepointhaving RJ11 telephone connector on 2modulePVCboxwithcoverplate	3modulepowerplugaccessorieshaving6 pin 16Amp socketwithswitchonGIbox	3modulelightingplugaccessorieshaving3 pin 5Amp socketwithswitchonGIbox
1	Server Room LH-501				2	4	2	2	5	9	1		
2	Computer Lab LH-502	20	24	10	8	44	14	13			1		
3	Computer Lab LH-527	41	48	8	16	79	20	18			1		
4	Computer Lab LH-504	41	48	8	16	89	20	18			1		
5	Computer Lab LH-505	12	15	8	9	27	15	12			1		
	TOTAL	114	135	34	51	243	71	63	5	9	5	0	0
6	DB Panel Incomer – 100Amp, 25KA, TP MCCB – 1 No. Outgoing – SP MCB, 10 Amp, 100 Nos. TP MCB 25Amp 10KA – 4 No.								2 Set				

E & M Inventory of LH-301 Cafeteria, Block-A, 1st Floor

Sr. No.	Location	Ceiling Fan 1200mm sweep	Electronic Fan regulator	14W LED down lighter	3x14W T-5 Fitting	3 Module power plug accessories having 6 pin, 16Amp. Socket	Pendent Sprinkler	Upright Sprinkler
1	Cafeteria LH-301	24	23	34	22	33	22	20
	TOTAL	24	23	34	22	33	22	20

Detail Electrical Inventory at AHU/Utility Rooms in Lecture Hall

S. No.	Location	3x14WT5M/Ofitting	1x28WT5fitting IP 65	1x28WT5fitting	2x28WT5fitting	14Wdownlighter	12Ummceilingfan	12mmfanStepregulator	30Ummexhaustfan	45Ummexhaustfan	rplugaccessories	rplugaccessories	111Moduletelephone
A	Ground Floor												
1-	Block A LH 101- Security room	2					1	1			1		1
2-	Block A LH 102 BMB	2					1	1			1		1
3-	Block C LH 104 Store		4				1	1			2		
4-	Block D LH 115 Electrical room		6				2				2		
5-	Block D LH 119 Changing room Girls					2							
6-	Block D LH 120 Changing room Boys	4				5							
7-	Block D LH 122	6					1	1			2		
8-	Block A LH 123 Fire Control Room	2					1	1			1		1
9-	Block A LH 124 Reception	2					1	1			1		1
B	Mezzanine Floor												
1-	Block C LH 201 AHU				4						2		
2-	Block C LH 204 AHU				4						2		1
3-	Block B LH 208 AHU				4						2		1
4-	Block B LH 209 AHU				4						2		1
5-	Block B LH 210 AHU				4						2		1
6-	Block B LH 211 AHU				4						2		1
7-	Block D LH 214 AHU				3						1		
8-	Block D LH 214-II AHU				2						1		
9-	Block D LH 218 AHU				4						2		
10-	Block D LH 219 Projector cabin												
11-	Block D LH 220 UPS room	7									2		
12-	Block D LH 221 AHU				4						2		1
C	First Floor												
1-	Block C LH 327 AHU				4						2		1
2-	Block B LH 307 AHU				4						2		1
3-	Block B LH 309 AHU				4						2		1
4-	Block B LH 315 AHU				4						2		1
5-	Block B LH 319 AHU				4						2		1
6-	Block D LH 320 Meeting room												
7-	Block D LH 324	9					4	4			1	1	1
8-	Block D LH 326 Faculty Lounge	13									4		1
9-	Block D LH 327 Faculty Lounge	6					2	2			2		1
D	Second Floor												
	Block C LH 427 AHU				4						2		1
2-	Block B LH 407 AHU				4						2		1
3-	Block B LH 409 AHU				4						2		1
4-	Block B LH 417 AHU				4						2		1
5-	Block B LH 419 AHU				4						2		1
6-	Block D LH 423 AHU				4						2		
7-	Block D LH 423 II AHU				4						1		1
8-	Block D LH 427 AHU				4						2		1

9-	Block D LH 428 AHU				4						2		1
E	Third Floor												
10-	Block C LH 506 AHU				4						2		1
11-	Block B LH 511 AHU				3						2		1
12-	Block B LH 513 AHU				3						2		1
13-	Block B LH 516 AHU				3						2		1
14-	Block B LH 522 AHU				3						2		1
15-	Block B LH 527 AHU				3						2		1
16-	Block B LH 528 AHU				4						2		1
17-	Block D LH 533 AHU				3						2		1
18-	Block D LH 539 AHU				3						2		1
F	Fourth Floor												
1-	Block B LH 601 AHU				3						2		
2-	Block B LH 607 AHU				4						2		
3-	Block B LH 610 AHU				4						2		
4-	Block B LH 616 AHU				4						2		
5-	Block B LH 624 AHU												
6-	Block B LH 625 AHU				4						2		
G	Terrace Floor												
1-	Lift Machine Room Block C			4			2	2		2	2		
2-	AHU Room Block C				4						2		
3-	In-charge room Block C		6								2		
4-	Lift Machine Room Block B1		4				2	2		2	2		
5-	Lift Machine Room Block B3		4				2	2		2	2		
6-	Lift Machine Room Block D		5				2	2	2				
	TOTAL	49	25	4	145	7	19	17	2	6	98	1	33

Detail Electrical Inventory of Graphics and Language Lab
D Block, 3rd Floor

S.No.	Location	3x14W T5 M/O fitting	14W down lighter	16W square LED panel	6 Module Power plug accessories	8 Module Power plugaccessories	Pendent Sprinkler	Upright Sprinkler	4 Pole MCB enclosure	63A DP MCB
1.	LH 534	9	8			6	7	6	1	1
2.	LH 535	5	3			6	6	4		
3.	LH 536	2				6				
4.	Language Lab LH 537									
5.	Hall No. 1	20	15			18	24	20	1	1
6.	Hall No. 2	12	15			20	21	20	1	1
7.	Graphics Lab LH 538									
8.	Hall No. 1	27	6	66		8	70	78	1	1
9.	Hall No. 2	6	10			6	8	8		
10.	Server room	3			6					
11.	Total	84	57	66	6	70	136	136	4	4

Detail Electrical Inventory in The Basement

S.No.	Location	1x28W T-5 Fitting	2x28W T-5 Fitting	2x13W CFL down lighter	3 Module Power plug accessories	1x14W T-5 fitting	9W Bulk Head fitting	10W LED IP 65 opalhousingfitting	36W LED IP 65 low bay
A	A Block								
1-	Basement area	46							
2-	Fan room D Block side	5			2				
3-	Fan room C Block side	4			2				
B	B Block								
1-	Basement area	198							
2-	Fan room B1	2			1				
3-	Fan room B2-B1	4			2				
4-	Fan room B3-B2	4			2				
5-	Fan room B3	4			2				
6-	Lift Lobby B1			6					
7-	Lift Shaft No. 1- B1						7		
8-	Lift Shaft No. 2- B1						7		
9-	Lift Lobby B3			6					
10-	Lift Shaft No. 1- B3						7		
11-	Lift Shaft No. 2- B3						7		
12-	Electrical shaft No. 3				1	2			
13-	Electrical shaft No. 4				1	2			
C	C Block								
1-	Basement area	134							
2-	Fan room	3							
3-	UPS room	4			1				
4-	Lift Lobby			3					
5-	Lift Shaft No. 1						7		
6-	Lift Shaft No. 2						7		
7-	Electrical shaft No. 5				1	1			
8-	Electrical shaft No. 6				1	2			
D	Block-D								
9-	Basement area	124							
10-	Fan room	1			2				
11-	Store	1							
12-	Pump House		9						
13-	AC plant room		28						
14-	Electrical shaft No. 2				1	2			
15-	Lift Lobby			6					
16-	Lift Shaft No. 1						7		
17-	Lift Shaft No. 2						7		
18-	Lift Shaft No. 3						7		
19-	Exit ramp out to basement							20	7
20-	Entrance ramp into basement							20	7
	TOTAL	534	37	21	19	9	63	40	14

Electrical Inventory in Corridors and Lift Lobby

Sr. No.	Location	wnlight er	ter	ng	e r	ter	tin g	ori es	ori es	ori es	g	Dft ting
	GROUND FLOOR											
	Block-A Corridor				97			14				
	Block-A Entrance porch											7
	Block-C Corridor					36		1	6			
	Block-C Entrance porch										14	
	Block-C Lift Lobby	8										
	Block-B Corridor					82		4				
	Block-B1 Lift Lobby	6										
	Block-B3 Lift Lobby	6										
	Bock-D Corridor					71	8	2				
	Block-D Entrance porch										8	
	Block-D Lift Lobby	6										
	MEZZALINE FLOOR											
	Block-A Corridor					8						
	Block-C Corridor					35		1	6			
	Block-C Lift Lobby	8										
	Block-B Corridor					94		2				
	Block-B1 Lift Lobby	6										
	Block-B3 Lift Lobby	6										
	Bock-D Corridor					58		4				
	Block-D Lift Lobby	6										
	FIRST FLOOR											
	Block-C Corridor					35		1	6			
	Block-C Lift Lobby	8										
	Block-B Corridor					89		7				
	Block-B1 Lift Lobby	6										
	Block-B3 Lift Lobby	6										
	Bock-D Corridor					68	16	6				
	Block-D Lift Lobby	6										
	SECOND FLOOR											
	Block-C Corridor			4		27		1	3			

	Block-C Lift Lobby	8										
	Block-B Corridor					84		4				
	Block-B1 Lift Lobby	6										
	Block-B3 Lift Lobby	6										
	Bock-D Corridor					70		2				
	Block-D Lift Lobby	6										
	THIRD FLOOR											
	Block-C Corridor					35		1				
	Block-C Lift Lobby	8										
	Block-B Corridor					81		4				
	Block-B Inner Corridor					14						
	Block-B1 Lift Lobby	6										
	Block-B3 Lift Lobby	6										
	Bock-D Corridor					48		2				
	Block-D Lift Lobby	6										
	FOURTH FLOOR					68		5				
	Block-B Corridor											
	Block-B1 Inner Corridor					15						
	Block-B2 Inner Corridor					15						
	Block-B3 Inner Corridor					15						
	Block-B1 Lift Lobby	6										
	Block-B3 Lift Lobby	6										
	BASEMENT											
	Block-C Lift Lobby		3									
	Block-B1 Lift Lobby		6									
	Block-B3 Lift Lobby		6									
	Block-D Lift Lobby		6									
	TOTAL	142	21	4	97	1048	24	61	21	0	22	7

Electrical Inventory in Sub Station Building

Sr. No.	Location	Ceiling Fan 1200mm sweep	Exhaust Fan 420mm sweep	T-5 Tube Light fitting 1x28W	T-5 Tube Light fitting 1x14W	12way TP DB complete with 1 no. 63A TPN incomer & 36 Nos. SP MCB
1-	HT room	1	2	2		
2-	Transformer Room No. 1	1	1	2		
3-	Transformer Room No. 2	1	1	2		
4-	Transformer Room No. 3	1	1	2		
5-	BSES metering room	1	2	2		
6-	Toilet				2	
7-	Stairs			5		1
8-	LT room	4	6	10		
	Total	9	13	25	2	1

External flood light luminary IP 65 LED 80watt installed - 11 No.
on Terrace of the substation building and shade of DG set

Earthing Set -27 Set

ANNEXURE "E-2"

Special Conditions for Substation and D. G. Sets

Scope of work:

The Scope of work includes operation and maintenance of Substation and D.G. Sets installation at Lecture Hall Complex at IIT Delhi.

1. All the works shall be carried out as per CPWD Specifications for electrical works, Part-I (Internal)-2013. CPWD Specifications Part-II (External) - 1995, Part-III Lift-2027, Part –IV substation -2013, Part-VII- DG set-2013 and Indian Electricity Rules- 1965 amended up to Date and CPWD Maintenance Manual to the entire satisfaction of Engineer-in-Charge.

2. The contractor has to depute following staff for substation equipments and DG sets as per inventory given below. But the duty hour can be change as per discretion of engineer-in-charge

Shift	Shift 1 (6:00 AM to 2:00 PM)	Shift 2 (2:00 PM to 10:00 PM)	Shift 3 (10:00 PM to 6:00 AM)
Mechanic cum Operator	1 No.	1 No.	1 No.
Helper	1 No.	1 No.	1 No.

3. The following activities are intended to be covered under this contract:

(a) Operation and maintenance of D.G. Sets as specified in B.O.Q, or as directed by the Engineer-in-charge or his authorized representatives.

(b) Watch and ward of all the installations.

(c) Taking preventive measures to avoid complaints.

(d) Maintenance activities carried out as per schedule should be noted in the maintenance register. When test are carried out, the test result should be recorded.

(e) Performing the daily/weekly/monthly/quarterly /six monthly/annually checks as detailed below and taking remedial action for proper maintenance.

Daily routine checks:

(i) Keep the DG set Room clean; wipe out dirt from external surface of engine, generator and control panels.

(ii) Check the levels of diesel in daily services tank, lubricant oil, in engine crankcase, and water in radiator. Fill / top up as necessary.

(iii) Inspect the engine for leakage of diesel oil, engine (lub.) oil, and coolant in the respective systems.

(iv) Check that the selector in control panel is in AUTO mode.

(v) Record the reading of voltage of supply, and engine battery voltage.

(vi) Run each DG Sets for a period of 5-10 minutes daily for testing and entries of these tests shall be recorded in log books of each DG Sets.

Weekly checks:

(i) Check the automatic starting of engine by switching of the main supply to the AMF panel. Run the set on load for 15 minutes. Observe for any abnormality of noise, Vibration, bearing surface heating (whether warm), engine pick up, voltage level and frequency.

(ii) Check the level of electrolyte in the battery of the engine. Top up with distilled water as necessary. If the battery needs charging (as can be judged by the cell voltage), arrange for its charging early and also examine whether trickle changer is defective.

(iii) Check whether all panel lamps, fuses & instruments are healthy in the control panel.

Monthly checks:

(i) Check engine radiator for air restriction if any. Clean up. Check the conditions of drive belts, hose and radiator cap.

(ii) The battery terminals and apply grease to prevent corrosion. Check specific gravity of the electrolyte.

(iii) Check the exhaust system for leakage, corrosion and vibration. See whether the exhaust smoke is not very dark.

(iv) Check that there is no restriction to air flow in air cleaner.

(v) Check that oil heater is functional.

(vi) Check coupling with alternator for any sign of fatigue.

Six monthly checks:

(i) Inspect the electrical control panel and starters to see that all power/control contacts are clean, all termination terminations, including control cables. Tighten as required.

(ii) Inspect all cable end terminators, including control cables. Tighten connection where ever required.

(iii) Check all safety control and alarms in the set supply system.

(iv) Check and change filters of diesel oil, engine (lub.) oil, coolant and air cleaner element of the engine after checking total hours of operation and manufacturer's recommendation. Drain and change the cooling water.

(v) Check the belt tension, tighten if required.

Annual checks:

(i) Inspect the fuel tank for any sedimentation. Clean up.

(ii) Replace the engine oil as per hours of operation and recommendation of the manufacturer, oil will be provided by deptt. "free of cost" at site.

(iii) Check shaft alignment and condition of anti-vibration mountings, in case any abnormal noise or vibration is observed.

(iv) Blow through radiator core in a direction opposite to the normal flow of air (Reserve flushing)

(v) Conduct megger test on all cabling, mains and control wiring motors, and earth test. (Earth test is to be done in summer and megger test during monsoon).

5. All the cleaning material i.e. soap, duster etc. shall be arranged by the contractor at his own cost. If cleaning of installation is found unsatisfactory at any time, a recovery of Rs.200/-(Rupees two hundred) per occasion shall be made.

6. The following consumable materials & tool items for maintaining the DG set shall be arranged by the firm at their own cost and shall keep ready at site in sufficient quantity under the scope of work for which nothing extra shall be paid.

a) Battery acid, distilled water, battery thimbles clamp, grease, copper cond. PVC insulated wire & control cables, connectors, testing lamps, PVC insulation tapes, old dhoti, duster, vim, brooms, C.T.C. cleaning detergent, torch, cells, tester, panel knobs, welding rod, petroleum jelly, log book and lub oil for topping up etc.

b) Tool & plant required to operate, repair servicing and maintain the DG Sets like spanners, goti sets, screwdriver, crow bars, megger, multimeter, blower, crimping tool, torch hand lamp bucket, container, table, chair, almirah & other unforeseen T&P.

7. Spare parts & accessories of DG sets and panels (which are not included for supply under the firm's scope of work) required for replacement if made available to the firm by the department shall be replaced by the firm free of cost and nothing extra will be paid. All dismantled material shall be deposited to the department in charge at his site store

8. The diesel oil for running the DG Sets, shall be arranged and supplied by the department in 200 litres barrels at site store free of cost, which will be filled in service tank by the agency free of charge.

9. Remarks and observations regarding maintenance / malfunctioning of DG Sets panels and accessories recorded in the log book / conveyed through message / letter shall be complied within 24 hours on all days i/c Sundays and holidays failing which same shall be got rectified by the department at the risk and cost of the firm without entering in to any correspondence and necessary recovery shall be made from the bill of the contractor.

Substation Equipments

Following Sub-Station Equipments installed at Substation Building for LT complex

2000KVA 11/0.433KV, 3 Phase, 50Hz capacity, Dyn 11, Indoor ONAN copper wound off load tap changing, oil filled transformer of Kirloskar Make : Transformer No. 1 Sr. No. 12POD064/1 Transformer No. 2 Sr. No. 12POD064/2

HT Panel of 11KV VCB panel including inbuilt power pack with following VCBs totally enclose fully interlocked, horizontal draw out/vertical isolation type breaker as per IS 13118, single phase, trip free

mechanism motorized and manually charges and manually closing breaker with short circuit fault breaking level of 350MVA complete with self contained, fully interlocked, rack in and rack out mechanism, air insulated but encapsulated copper bus bar of 630 Amps capacity breaker featured with mechanical ON/OFF indicator with hand trip device, spring release coil, shunt trip coil, auxiliary switch of minimum 4 ON 4 NC and equipped with following switch gear and accessories.(Crompton Greaves make)

A

(a) Incomer -1 (630Amp. VCB Sr. No. Sr. No. 59262VG)

(b) 1 No. - 11 KV / 110 Volts PT class 0.5 accuracy and 200 VA burden for HT metering upto 12 KV on incomer and charging of power pack. with 1 No Voltmeter (0-15 KV) analog / digital type, selector switch for voltmeter and protection fuses / MCB.

(c) 1No. (0-200/100A) dual scale Ammeter, digital type, selector switches for ammeters.

(d) 1 No. - Micros coprocessor based numerical relay with O/L, E/F and S/C protection.

(e) 1 Set of dual core dual ratio 3 CTs 200/100/5/5 of 15 VA burden and accurac class - 0.5 for metering and class 5P10 for protection.

(f) Digital trivector meter - 1 No.

B Incomer -2 (630Amp. VCB Sr. No. Sr. No. 61273VG)

(a) 1 No. - 11 KV / 110 Volts PT class 0.5 accuracy and 200 VA burden for HT metering upto 12 KV on incomer and charging of power pack. with 1 No Voltmeter (0-15 KV) analog / digital type, selector switch for voltmeter and protection fuses / MCB.

(b) 1No. (0-200/100A) dual scale Ammeter, digital type, selector switches for ammeters.

(c) 1 No. – Micros coprocessor based numerical relay with O/L, E/F and S/C protection.

(d) 1 Set of dual core dual ratio 3 CTs 200/100/5/5 of 15 VA burden and accurac class - 0.5 for metering and class 5P10 for protection.

(e) Digital trivector meter - 1 No.

(f) 1 Set of dual core dual ratio 3 CTs 200/100/5/5 of 15 VA burden and accuracy class - 0.5 for metering and class 5P10 for protection.

C Outgoing 3 Nos. 630Amp. VCB (VCB No. 1 Sr. No. 59263VG), VCB No. 2 Sr. No. 59264VG), VCB No. 3 Sr. No. 59265VG)

(a) 3 Nos. (0-100Amp) Ammeter, dual scale analog/digital type & selector switch for Ammeter.

(b) 3 Nos. - Microprocessor based numerical relay with O/L, E/F and S/C protection.

(c) 3 Set of dual core dual ratio 3 CTs 100/50/5/5A of 15 VA burden and accuracy class - 0.5 for metering and class 5P10 for protection, 11KV Panel Board Complete as above.

Main LT Panel complete with suitable relays, timers, set of CTs for metering & protection and energy analyzer to indicate currents, phase, line voltages, frequency, power factor & KWH, having 3000A capacity extensible type TPN Aluminium Alloy bus bars of high conductivity, with short circuit with stand capacity of 31 MVA for 1 Sec. i/c providing following switchgears and controls (Schneider Make)

(A) Incomers: 2 Nos. - 3000. Amps three pole and solid neutral (TPN) horizontal drawout, motorized operation (EDO) type air circuit breaker of fault breaking capacity 50 KA (Ics=Icu upto 433V), fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/ isolated position indicators and frame earthing contact, complete with following accessories for each ACB (Incoming supply from transformer No. 1 & 2 through 3000Amp Bus Duct)

(a) Independent manual spring closing mechanism - 1 No.

(b) Microprocessor release for over current, earth fault & short circuit protection - 1 Set.

(c) Digital 96 sq mm flush pattern type multifunction meter of range 0-3000 Amp, with communication (RS-485) port, Modbus RTU for integration with energy management systems & 3 Nos. CT's of ratio 3000/5A Class I accuracy and 15 VA burden, 2A protection MCBs - 1 Set.

(d) 3 Nos. phase indication LED lamps with 2 Amps back up MCBs, breaker 'ON' indication light with 2A MCB, test terminal block set, auxiliary contacts for positive interlocking and minimum 4 NO+4 NC spare for status monitoring through IBMS of the breakers.

(e) Shunt trip coil 220 V AC.

(B) Bus Coupler

1 No. 3000. Amps three pole and solid neutral (TPN) horizontal drawout, motorized operation (EDO) type air circuit breaker of fault breaking capacity 50 KA (Ics=Icu upto 433V), fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/ isolated position indicators and frame earthing contact, complete with following accessories for each ACB.

(a) Independent manual spring closing mechanism - 1 No.

(b) Breaker 'ON' indicating light with back up 2A MCB test terminal block, auxiliary contacts, contactors for positive electrical interlocking and minimum 4 NO+ 4NC spare for status monitoring through IBMS of breakers. – 1 set.

(c) Shunt trip coil 220 V AC.

(C) Bus Bars

TPN aluminum bus bars of minimum of 3000 Amps capacity with heat shrinkable coloured sleeves and i/c DMC /SMC bus bars supports for withstanding fault level of 31 MVA for 1 sec.

(D) Interlocking:

Electrical through advance contacts and mechanical (castle key) in ACB's-Between these Incomers & Bus couplers.

(E) Outgoing

2 Nos. - 1250. Amps each three pole and solid neutral (TPN) horizontal drawout, motorized operation (EDO) type air circuit breaker of fault breaking capacity 50 KA (Ics=Icu upto 433V), fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/ isolated position indicators and frame earthing contact, complete with following accessories for each ACB each with 3nos.1250/5 Amps Metering CT's, 1 no. Digital type ammeter (0-800 Amps) with communication(RS-485) port, Modbus RTU for integration with energy management systems, selector switch, (Outgoing Supply for Emergency Panel No. 1 & 2)

(i) 5 Nos. - 800. Amps each three pole and solid neutral (TPN) horizontal drawout, motorized operation (EDO) type air circuit breaker of fault breaking capacity 50 KA (Ics=Icu upto 433V), fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/ isolated position indicators and frame earthing contact, complete with following accessories for each ACB each with 3nos.800/5 Amps Metering CT's, 1 no. Digital type ammeter (0-800 Amps) with communication (RS-485) port, Modbus RTU for integration with energy management systems, selector switch, (3 Nos. Outgoing for AC Chiller Plant No. 1, 2 & 3, 1 No. outgoing for Fire Panel and 1 No. Spare).

(ii) 2 Nos.- 630 Amp TP MCCBs (Ics=Icu=50 KA upto 433V) with solid neutral (TPN) with microprocessor based protection, each with 3nos.630/5 Amps Metering CT's, Digital type ammeter (0-630 Amps) with communication(RS-485) port, Modbus RTU for integration with

(iii) 6 Nos.- 400 Amp TP MCCBs (Ics=Icu=50 KA upto 433V) with solid neutral with (TPN) microprocessor based protection, each with 3nos.400/5 Amps Metering CT's, 1 no. Digital type ammeter (0-400 Amps) with communication (RS-485) port, Modbus RTU for integration with energy management systems, selector switch, (1 No. Outgoing for Normal Panel and 5 Nos. Spare).

Main Emergency Panel

Automatic Mains Failure Control- cum- Essential Power Supply Distribution Panel suitable for 2 X 750 KVA silent type DG Set complete with suitable relays, timers, set of CTs for metering & protection and energy analyzer to indicate currents, phase, line voltages, frequency, power factor & KWH, battery charger, Control cabling for overload, short circuit, restricted earth fault, under frequency from AMF panel to diesel engine all complete and interlocking including having 1250 A capacity extensible (on both sides), type TPN Aluminum Alloy bus bars of high conductivity, DMC/ SMC bus bar supports, with short circuit with stand capacity of 31 MVA for 1 Sec., transportable section, entire panel shall have a

common GI earth bar of size 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of Aluminium bus bars, and control wiring with 2.5 mm2 PVC insulated copper conductor cable, cable alleys, cable gland plates in two half, i/c providing following switchgears and controls/ indications-

(a) AMF Controls/ indications.
(b) Impulse counter with locking and reset facility.
(c) Audio/Video annunciation for
(i) High water temperature
(ii) Low lubricating oil pressure
(iii) Engine over speed
(iv) Engine fails to start
(v) Full load/maximum load warning
(d) Mains, DG set supply monitoring, restoration timer control unit with three attempt starts etc.
(e) Manual start /stop push button and indications
(f) Battery charger complete with transformer, rectifier, DC volt meter and ammeter, selector switch for trickle and boost charging
(g) Auto/Manual/Test/OFF selector switch.
(h) Indication Lamps for Load on Mains or DG Set

(B) Incomers:

4 Nos. - 1250. Amps each four pole horizontal drawout, motorized operation (EDO) type air circuit breaker of fault breaking capacity 50 KA (Ics=Icu upto 433V), fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/test/isolated position indicators and frame earthing contact, complete with following accessories for each ACB. (2 Nos. Incoming from 750 KVA DG set Through Bust Duct and 2 Nos. Incoming from Main LT Panel Through Bus Duct)

a) Independent manual spring closing mechanism - 1 No.
b) Microprocessor release (EMI & EMC certified) for over current, earth fault & short circuit protection - 1 Set.
c) Digital 96 sq mm flush pattern type multifunction meter of range 0-1250 Amp, with communication (RS-485) port, Modbus RTU for integration with energy management systems & 3 Nos. CT's of ratio 1250/5A Class I accuracy and 15 VA burden, 2A protection MCBs - 1 Set.
d) 4 Nos. phase indication LED lamps with 2 Amps back up MCBs, breaker 'ON' indication light with 2A MCB, test terminal block set auxiliary contacts for positive interlocking and status monitoring through IBMS of the breakers.
e) Shunt trip coil 220 V AC
f) Reverse power Relay- 1No, Over Voltage Relay-1 No.

(C) Bus Couplers:

1 Nos. - 1250. Amps each four pole horizontal drawout, motorized operation (EDO) type air circuit breaker of fault breaking capacity 50 KA (Ics=Icu upto 433V), fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/test/isolated position indicators and frame earthing contact, complete with following accessories for each ACB.

a) Independent manual spring closing mechanism - 1 No.
b) Breaker 'ON' indicating light with back up 2A MCB test terminal block, auxiliary contacts, contactors for positive electrical interlocking of breakers, etc. as required - 1 Set.
c) Shunt trip coil 220 V AC

(D) Bus Bars:

TPN aluminium bus bars of minimum of 1250 Amps capacity with heat shrinkable coloured sleeves and I/c DMC /SMC bus bars supports of withstanding fault level of 31 MVA for 1 sec.

(E) Interlocking:

Electrical through advance contacts in ACB's-Between Incomers from DG Set and Transformer in each section of bus and between these Incomers & Bus couplers.

(F) Outgoing:

(i) 11 Nos.- 400 Amp TP MCCBs (Ics=Icu=35 KA upto 433V) and solid neutral (TPN) with microprocessor based protection, each with 3nos. 400/5 Amps Metering CT's, 1 no. Digital type ammeter (0-400 Amps) with communication (RS-485) port, Modbus RTU for integration with energy

management systems, selector switch, (2 Nos. Outgoing for Ventilation Panel 1 and 2, 2 Nos. Outgoing for AHU Panel 1 & 2, 2 Nos. Outgoing for Emergency Panel 1 and 2, 3 Nos. Outgoing for Ventilation Panel 3, 4 & 5 on Terrace, 1 No. Outgoing for UPS Panel , Spare 1)

(ii) 3 Nos. - 250 Amp TP MCCBs (Ics=Icu=25 KA upto 433V) and solid neutral (TPN) with thermal magnetic release, each with 3nos 250/5 Amps Metering CT's, 1 no. Digital type ammeter (0-250 Amps) with communication (RS-485) port, Modbus RTU for integration with energy management systems, selector switch.

(1No. Outgoing for Lift Pressurization Panel 1 in D block, 1 No. Outgoing for Lift Pressurization Panel 2 in Block B2, 1 No. Outgoing for Lift Pressurization Panel in Block-B3)

APFC PANEL

Automatic power factor correction panel 400 KVAR capacity suitable for 440V, 3-phase, 50 Hz- A.C supply and having MPPH type, self fusing, low loss, self healing, resin bonded without oil, 3 phase delta connected capacitors, metal enclosure with digital display and relay capable to select the required rating of capacitors in steps of 5KVAR for improvement of targeted P.F. of the system, with thyristor controlled switching of the capacitors, housed in metal enclosure with digital display and relay capable to select the required rating of capacitors in steps of 5KVAR for improvement of targeted P.F. of the system, with thyristor controlled switching of the capacitors. – 2 Sets.

DG Sets – 2 Nos. x 750 KVA

Silent Type Diesel Generating set having Prime Power Rating of 750/725 KVA at NTP, 415 volts at 1500 RPM, 0.8 lagging power factor at 415 volts suitable for 50 Hz, 3 phase system and consisting of the followings:

(a) Diesel Engine 4 stroke water cooled, electric start of 750 KVA alternator suitable BHP at 1500 rpm suitable for above output of alternator fitted with class A1 electronic governor. (Engine No. 1 Comines Make Model no. KTA 38 G2 – S. No. 25384018 & Engine No. 2 Comines Make Model no. KTA 38 G2 – S. No. 25384398)

(b)Engine mounted instrument panel fitted with and having digital/Analog display for following:-

(i) Start-stop switch
(ii) Water temperature indication
(iii) Lubrication oil pressure indication
(iv) Battery charging indication
(v) RPM indication
(vi) Over speed trip indication
(vii) Low lub oil Pressure trip indication
(viii) Engine Hours indication

(c) Alternator:-

Synchronous alternator rated at 750/725 KVA, 415 volts at 1500 RPM, 3 phase, 50 Hz, AC supply with 0.8 lagging power factor. The alternator having SPDP enclosure, brushless, continuous duty, self-excited and self-regulated through AVR with class-F/H insulation. (Alternator 1 & 2, Stamford make S. No. N121372880 & S. No. N12G289905)

(d) Fuel Tank:

Daily service Fuel Tank of 990 liters capacity i/c fuel piping between fuel tank and diesel engine with valve- 2 Sets.

(e) Exhaust system:

Dry exhaust manifold residential type silencer of 4.85 mm thick MS pipe duly insulated with 50mm thick rock wool and 0.6 mm thick aluminum cladding for 2 sets for DG sets.

(f) Starting system:

24V DC starting system comprising of starter motors: complete with batteries.

(g) Acoustic and weather proof enclosure suitable for 750/725 KVA DG Set with arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air into the atmosphere. – 2 Sets.

Earthing

1- Neutral Earthling with copper earth plate 600mmx600mmx3mm thick – 4 Nos. for Transformer No. 1 & 2, 4 Nos. for DG sets No. 1 & 2.

2- Body Earthling with GI earth plate 600mmx600mmx6mm thick – 2 Nos. for Transformer No. 1 & 2, 2 Nos. for DG sets No. 1 & 2.

Safety Equipments

(a) Fire Extinguisher CO2 type 4.5 KG – LT room-2 Nos., Transformer Room 1 & 2 – 4 Nos., HT room- 2 Nos., BSES metering room – 2 Nos.
(b) Fire Extinguisher portable type 9 liters capacity – Transformer 1 & 2 – 2 Nos., HT room – 1 No.
(c) A set of 4 Nos. x 9.5 liters capacity GI Backet mounted on MS angle iron frame work. – 1 No.
(d) Insulation mat class A Size 2.5mm thick 1m wide – 1 Lot.
(e) Insulation mat class A size 2mm thick 1m wide – 3 Lot.

ANNEXURE "E-3"

Special Conditions for Lifts Works

Scope of work

1.1 There are 4 Blocks named as Blocks A, B, C, D. The detail of lift Johnson make 20 passenger lift installed block wise is as under In. Accordingly it is proposed to have Lift Operator as mentioned in Schedule of work:-

a) Block-B1 = 2 Nos.
b) Block-B3 = 2 Nos
c) Block-C = 2 Nos.
d) Block-D = 3 Nos.

1.2 The following activities are intended to be covered under this contract:

a) Operation of Lifts as specified in B.O.Q. or as directed by the Engineer-in-charge or his authorized representatives.
b) Maintenance of log book for each lift
c) Switching of the lights of break down lift from lift machine room and placement of OUT OF ORDER board/placed at the entrance of lift.
d) Lodging of break down complaint (telephonically) with the lift comprehensive maintenance agency and recording the complaint no. and time of complaint in the log book.
e) Recording of time of repair of break down lift and getting the certificate from the Mechanic/Engineer of company that the lift is fit for operation.
f) Daily cleaning of lift cars, lift facia and machine rooms- Lift Pits.
g) Up-keeping of locks and keys of lift machine rooms, keys of lifts landing doors.
h) Restricting the transportation of inflammable materials like gas cylinders etc. in lifts.
i) Performing the daily checks on functioning of emergency stop button, alarm bell, car lights,
j) Performing the daily checks on functioning of intercom system and reporting to maintenance agency any malfunctioning

Check the functioning of Landing locks / Car door safeties

1.3 Staff deployment and their qualifications. Minimum staff shall be deployed as below:-

Staff	Block-C (2 Lifts)	Block-B1 (2 Lifts)	Block-B3 (2 Lifts)	Block-D (3 Lifts)
	7:00 AM to 7:00 PM	6:00 AM to 2:00 PM & 2:00 PM to 10:00 PM	7:00 AM to 7:00 PM	9:30 AM to 5:30 PM
Mechanic cum Operator	1.5**No.**	2 No.	1 .5 No.	1 No.

Lift Operator (E & M):- As per B.O.Q. The lift operators before leaving duty at 7:00 PM at night shall intimate the lift operators in control room after checking lift intercom system and alarm operation.

All the cleaning material i.e. soap, duster etc. shall be arranged by the contractor at his own cost. If cleaning of installation is found unsatisfactory at any time, a recovery of Rs.200/- (Rupees two hundred) per occasion shall be made.

Special Conditions for Inbuilt Intercom System of Lifts

1. The following list of equipments is to be maintained within the scope of work. Any additional instrument added shall also be maintained within the scope of work.

a) EPABX System 32 lines b) EPABX
b) System 308 lines
c) EPABX System 4 x 4 x 8 lines 1 No.
c) Hand free Lift car intercom Sets 22 Nos.
e) Key Telephone Set1 No.
f) Push Button Telephone 6 Nos.

2. Any damage to the Lifts or other installations due to negligence or inefficiency of the staff em contractor during the work shall be responsibility of the contractor & shall be set right by him free of
3. The scope of work covers all components of intercom system.

Special Conditions for Fire Fighting, Fire Alarm and Water Pumping Set Works

Scope of work

1. All the works shall be carried out as per CPWD Specifications for electrical works, Part-I (Internal)-2013. CPWD Specifications Part-IV (Fire Fighting) - 1995, Indian Electricity Rules- 1965 amended up to Date and CPWD Maintenance Manual to the entire satisfaction of Engineer-in-Charge.

2. The contractor has to depute following staff but the duty hour can be change as per discretion of engineer-in-charge

Shift	Shift 1 (6:00 AM to 2:00 PM)	Shift 2 (2:00 PM to 10:00 PM)	Shift 3 (10:00 PM to 6:00 AM)
Mechanic cum Pump Operator for Fire Fighting and Water supply	1 No.	1 No.	1 No.
Fire Helper	1 No.	1 No.	1 No.

There are 4 Blocks named as Blocks A, B, C and D. In each block there is Wet Riser and sprinkler system, PA system and Fire Alarm System.

A. The inventory of Wet Riser and sprinkler system, PA system and Fire Alarm System each block is as under:-

Inventory of Fire Fighting Pumps and Equipment

FIRE PUMP

1- Electric Driven Main Fire Pump of cast iron body, bronze Impeller with SS shaft and 75 HP squirrel cage induction motor TEFC 1500 RPM 3 phase 50 Hz IP 55 protection, foot mountain type with class F insulation:
   a) For Wet Riser - 1 No.
   b) For Sprinkler Riser - 1 No.

2- Diesel Engine Driven Main Fire Pump of cast iron body, bronze Impeller with SS shaft and 72 BHP, 1500 RMP, 4 stroke, cold starting type Diesel Engine with Heat Exchanger completed with all required accessories, 2 Nos. starting batteries of 180 capacity, Engine Starting Panel having all the control Panel, Gauges, Tachometer, hour meters, starting switch with key for

manual starting, auto starting mechanism, 24 Volts electric starting equipment, Diesel Tank of 200 Liters capacity including exhaust pipe with Exhaust residential silencer, Stop solonoild for auto stop in the event of fault with audio indication - 1 No.

3- Electric driven pressurization pump (Jokey Pump) of Cast iron body, bronze impeller with SS shaft and 15 HP squirrel cage induction motor TEFC 2900 RPM 3 phase 50 Hz IP 55 protection, foot mountain type with class F insulation:

a) For Wet Riser - 1 No.
b) For Sprinkler Riser - 1 No.

4- Floor mountain Electrical Motor Control Panel operation on 415 Volt, 3 phase, 50hz, AC supply with 500 Amp. Aluminum Bus Bar and following switch gear.

Incoming

a) 400Amp., 35KA, 4 Pole MCCB – 1 No.
b) Digital Ammeter. (0-400Amp.), CT operated with selector switch i/c 3 Nos. CTs of ratio 400/5A, 10 VA, bourden and accuracy of class-I - 1 Set
c) Digital Voltmeter (0-500Volt) with selector switch and HRC control fuses - 1 Set
d) Phase indicating coloured LED with control fuses – 1 Set

Outgoing for Main Fire Pump and Sprinkler Pump

a) 200Amp., 35KA, 3 Pole MCCB with CT operated Digital Ammeter. (0-200Amp.) i/c 3 Nos. CTs of ratio 200/5A, 10 VA, bourden and accuracy of class-I and coloured LED for ON/OFF indication - 2 Set
b) Fully automatic Star Delta starter suitable for main fire pump and main sprinkler pump of 75 HP capacity completed with over load protection, current censing type single phase preventer- 2 sets
c) Selector switch for auto/manual operation, Local/Remote/OFF and ON/ OFF and Trip indication – 2 Set

Outing for Pressurization Pump

a) 63mp., 35KA, 3 Pole MCCB with CT operated Digital Ammeter. (0-60Amp.) i/c 3 Nos. CTs of ratio 60/5A, 10 VA, bourden and accuracy of class-I and coloured LED for ON/OFF indication - 2 Set

Fully automatic Star Delta starter suitable for Pressurization Pump for 15 HP capacity completed with over load protection, current sensing type single phase preventer – 2 Set

b) MCB Double Pole, 16 Amp., 10 KA – 2 Nos.
c) Selector switch for auto/manual operation, Local/Remote/OFF and ON/ OFF and Trip indication – 2 Set

Outgoing for Diesel Engine Control

a) Auto/Manual selector switch and 3 attempt starting device, Electronic timer, relays, auxiliary switches, rotary switches, Tripping relays, contractor, push button for manual start/stop. – 1 Set
b) Battery charging unit suitable for 24 Volt DC with boost and trickle charger, selector switch, with suitable rating transformer, rectifier, RC filter network, fuses on AC and DC protection, 0-30 Volt DC Digital Volt meter, 0-20 A DC Digital Ammeter – 1 Set.
c) Suitable rating and type standard relays, contactors and other accessories for automatic operation of diesel engine. – 1 Set

d) Indication LED's for high/low lub, oil pressure, water temperature, engine on indicator, with suitable alarm, acknowledgement button – 1 Set

System Controller

System Controller to control operation of Main Electric Fire pump, Diesel Engine pump, Main sprinkler fire pump, pressurization pump, Terrance pump in sequence, consisting of relays, timers, sensors, annunciation window for fault indication – 1 Set

FIRE FIGHTING INVENTORY-1

Sr. No.	Location	SitVessel(1.2mhigh & 250mmdia)	mhigh &450mmdia)	4way63mm FBIC	DoubleHeadedinternalHydrantvalve	xcanvasFireHose63mm dia	SSBranchPipe63mm dia	HoseRealDrum	WeatherproofMSHoseCabinet	dedexternalYardHydrantValve	Sluicevalves250mm dia	Sluicevalves200mm dia	Sluicevalves150mm dia	Sluicevalves65mm dia	Sluicevalves50mm dia
A	Block - C														
1	Basement Floor				2	4	2	2							
2	Ground Floor				2	4	2	2							
3	Mezzanine Floor				2	4	2	2							
4	First Floor				2	4	2	2							
5	Second Floor				2	4	2	2							
6	Third Floor				2	4	2	2							
B	Block -B														
1	Basement Floor				6	12	6	6							
2	Ground Floor				6	12	6	6							
3	Mezzanine Floor				6	12	6	6							

4	First Floor	8	16	8	8
5	Second Floor	8	16	8	8
6	Third Floor	8	16	8	8
7	Fourth	8	16	8	8
					91

	Floor														
C	Block - D														
1	Basement Floor				3	6	3	3							
2	Ground Floor				5	10	5	5							
3	Mezzanine Floor				4	8	4	4							
4	First Floor				5	10	5	5							
5	Second Floor				3	6	3	3							
6	Third Floor				5	10	5	5							
7	Basement pump house		2								1	1	5	2	2
8	Chamber No.2												11		
D	External			11		22	11		22	22					
E	Terrace	15				22	11		11				2		
	UPTO DATE QTY.	15	2	11	87	218	109	87	33	22	1	1	18	2	2

FIRE FIGHTING INVENTORY-2

Sr. No.	Location val ve 15 0 m	m dia	mmd ia e80	mmd ia e50	mmd ia valve	250m mdia valve	150m mdia ve50	mmdi a lvalve4	0mmdi a	Orifice Plate Press	ureSwi tches Press	ureGa uge Strain	er150 mmdia Strain	er65m mdia	FireMa n'saxe Flow	switc h	expan sionjoi nt	motor alarm ,	oint65 mmdi a	Rubberexpansionjoint150mmdia
A	Block - C																			
1	Basement Floor	3	2						2	2					2	2		1		
2	Ground Floor	1							1	2					2	1				
3	Mezzanine Floor	1							1	2					2	1				
4	First Floor	1							1	2					2	1				
5	Second Floor	1			2				1	2					2	1				
6	Third Floor	1							1	2					2	1				
B	Block -B																			
1	Basement Floor	4	6		3				2	6					6	5		2		
2	Ground Floor	2							2	6					6	2				
3	Mezzanine Floor	3							2	6					6	2				
4	First Floor	2			1				2	8					8	2				
5	Second Floor	2			1				2	8					8	2				
6	Third Floor	2			1				2	8					8	2				
7	Fourth	2							2	8					8	2				

	Floor																			
C	Block - D																			
1	Basement Floor	3	2	1	2				1	3					3	4		3		
2	Ground Floor	1							1	5					5	1				
3	Mezzanine Floor	1							1	4					4	1				
4	First Floor	1		1	1				1	5					5	1				
5	Second Floor	1							1	4					3	1				
6	Third Floor	1							1	5					5	1				
7	Basement pump house	2				1	3	2	2		5	5	3	2			3		2	2
8	Basement in gong bell	6																		
9	Chamber No.2	11					11													
D	External			11						11										
E	Terrace			11			2			11										
	TOTAL	52	10	24	11	1	16	2	29	110	5	5	3	2	87	33	3	6	2	2

The Inventory of Fire Alarm System and PA system is as per Annexure E-7.A.

1- The following activities are intended to be covered under this contract:

a) Operational and maintenance of installations of B.O.Q. as directed by the Engineer In-charge or his authorized representatives.

b) Watch and ward of all the installations.

c) Taking preventive measures to avoid complaints.

d) FIRE ALARM AND PA SYSTEM shall be maintained as per BS5839:Part I:2002. The following works, i.e. tests/checks are to be carried out as per the demand of the installations, and/or as per direction of the Engineer-in-charge, and proper log book should be maintained and got test checked by the Engineer-in-charge, OR, his authorized representative.

Daily

i) Check the power supply of all the panels in buildings/floors.

ii) Check the healthiness of battery adds battery water/acid as reqd.

iii) Check the fault indication of the panel, and rectify the same.

iv) Check operational readiness of the system during mains failure

v) Check whether signals of fire and fault condition is transmitted from detector/devices main control panel

Weekly

i) Operate a call point & detector to test the system. Each week choose a different detector/device so that all detector are tested.

ii) Check the fault circuit of each loop/zone from the panel

iii) Check the talk back units/PA system circuits and remove faults, if any.

Monthly

i) Check & test the performance of all the hooters/alarms/speakers/talk back unit.

ii) Check the performance of the manual call points, check its glasses

iii) For DOWN COMER SYSTEM, The following works i.e. tests/checks are to be carried out as per the demand of the installation, and/or, as per direction of the Engineer-in-charge and proper logbook should be maintained and got test checked by the Engineer-in-charge or his authorized representative.

Weekly

i) Check the water level in the fire tank/terrace tank, and fill-up the tank.

ii) Check the all glands/valves at the terrace and prevent leakages, if any.

iii) Check healthiness of the power supply of the main control/starter panel, voltages, fuses, remote starters, contractors, power, connection etc.

iv) Check the status of hose pipes, nozzles etc.

v) Check the working condition of the pump-motor set.

Monthly

i) Test check auto-manual function of the pressure switch of the down-commer system

ii) Check and clean the Y-strainer/stop valves flange gaskets as required.

e) Conducting of fire drills.

For making the users familiar with the system, fire drill shall be carried out once in a month under intimation to Engineer in charge, RWA's of the building, local fire service Operation of the system shall be demonstrated so that all users are confident of the system and aware of their duties and responsibilities during fire.

f) Healthiness of system.

The healthiness of the system shall be checked through fortnightly testing. During the fortnightly testing a particular block shall be taken up and all internal hydrants and adjoining yard hydrants of the building shall be operated and checked.
During the subsequent fortnightly different blocks shall be selected so as to ensure that all the internal hydrants and yard hydrants of all the blocks is checked once in six months.
The details of such fortnightly testing shall be conducted in presence of JE(E) and AE(E) in-charge to the extent feasible and shall be recorded in register along with date, timing and findings.

1. Spare parts & accessories of dry riser, yard hydrant, fire fighting pump, fire alarm system and PA System, panels etc. (other than detailed in para 5.0. (below) if required, shall be made available to the firm by the department 'free of cost' and the firm shall replace the same and no extra payment shall be made to the firm.

2. The following consumable materials & tool items for maintaining the down comer system, PA system and fire alarm system shall be arranged by the firm at their own cost and shall be kept ready at site in sufficient quantity under the scope of work for which nothing extra shall be paid.
   i) All materials/spares LEDs, Battery acid, distilled water, battery thimbles clamp, grease, copper cond. PVC insulated wire & control cables, thimbles & ferrules of all sizes indicating lamps, lamp holder, connectors, 6/16 amps control fuse, control fuse, Kit Kat assbly, push buttons, testing lamps, PVC insulation tapes indicating plates, nuts bolts, screws, washer, old dhoti, duster, vim, brooms, C.T.C. cleaning detergent, torch, cells, tester, panel knobs, petroleum jelly, log book and lub oil etc.
   ii) Any other consumable required to keep the installation in healthy operational condition all the times shall be arranged by the contractor.
   iii) Tool & plant required to operate, repair servicing and maintain the wet riser, yard hydrant, sprinkler, fire fighting pump, like spanners, goti sets, screwdriver, crow bars, multimeter, blower, crimping tool, torch hand lamp bucket, container, table, chair, almirah & other unforeseen T & P.
3. Comprehensive maintenance of fire alarm system to be carried out the manufacturer/authorized dealer of ATEIS make.

All the defects/fault condition should be removed and the system should be brought to working order within 24 Hrs. otherwise recovery at the rate of Rs.500 (Rupees five hundred) /-per day shall be recovered from the bill of the contractor.

ANNEXURE E-7.A

Inventory of Fire Alarm & PA System

Sr. No.	Description	SH-I, Item No. 1	SH-I, Item No. 2	SH-I, Item No. 3		SH-I, Item No. 5	SH-I, Item No. 6		SH-I, Item No. 7	SH-I, Item No. 8	SH-I, Item No. 9	SH-I, Item No. 10
		Fire Alarm System panel 40 Loop	Operator work pc to DU Ports RS232	Photo Electric Type Detector			Laser Type Detector		Fault Isolator	Heat Detector	Beam Detector	Fire signages
				Below Ceiling	Above Ceiling	Carbon Monoxide Sensor	Below Ceiling	Above Ceiling				
A	BASEMENT											44
	PARKING								42	719		
	LIFT LOBBY			7	7				1			
	SERVICES											
	STAIRCASE											
	FAN ROOM				14				2			
	AC PLANT ROOM				6				1			
	AHU											
	PASSAGE AREA											
	TOTAL			7	27		0	0	46	719	0	44

B	GROUND FLOOR											44
	CHEMISTRY LAB			21	21				1			
	LIFT LOBBY			8	9							
	AHU			5								
	FIRE CONTROL ROOM						1		1			
	SEQUERITY ROOM			2	3		1					
	ELECTRICAL ROOM							1				
	CORRIDOR			48	133				12			
	STAIRCASE											
	FHC Sprinkler(Flow switch)											

	Fire Alarm Panel Room	1	1									
	TOTAL	1	1	84	166		2	1	14	0	0	44
C	MEZANINE FLOOR											44
	PHYSICS LAB			21	21				1			
	CLASS ROOM-1			2								
	CLASS ROOM-2			2								
	AHU			8								
	LT (300 SEATER) (3NOS)			39	264				17			
	LECTURE HALL			24	149				9			
	CONTROL ROOM (3NOS)						2					
	PROJECTION ROOM						2	2				
	SERVER ROOM											
	SERVICE ROOM (4 NOS)			4								
	MULTIPURPOSE ROOM			8								
	LIFT LOBBY (4NOS)			8	9							
	ENTERENCE			27					5			
	CORRIDOR			35	137				13			
	STAIRCASE											
	FHC											
	Auditorium area					5						
	TOTAL			178	580	5	4	2	45	0	0	44
D	FIRST FLOOR											44
	ELECTRICAL ENGG. LAB			21	21				1			
	CLASS ROOM-1				4							
	CLASS ROOM-2				4							
	AHU ROOM(9 NOS)			5	20							
	LT (150 SEATER) (4NOS)			28	162				12			

	STUDENT LOUNGE				88				7			
	FOYER			3	24							
	LIFT LOBBY (4NOS)			7	6				2			
	ATRIUM										2	
	CORRIDOR			47	105				9			
	STAIRCASE											
	ROOMS.											
	FHC											
	TOTAL			111	434		0	0	31	0	2	44
E	SECOND FLOOR											44
	BIOLOGY LAB			21	21				2			
	CLASS ROOM-1			2	4							
	CLASS ROOM-2			2	4							
	CLASS ROOM-3			3	6				1			
	CLASS ROOM-4			3	6							
	AHU ROOM (9 NOS)											
	LECTURE HALL			24	149				10			
	LT (150 SEATER) (4NOS)			28	180				13			
	STUDENT LOUNGE			89					6			
	PROJECTOR ROOM											
	LIFT LOBBY (4NOS)			8	9							
	CORRIDOR			43	113				7			
	STAIRCASE											
	FHC											
	TOTAL			223	492		0	0	39	0	0	44
F	THIRD FLOOR											44
	COMPUTATIONAL LAB-1			11	11		15		1			
	COMPUTATIONAL LAB-2			10	10							
	AHU ROOM (6 NOS)			9								
	CLASS ROOM-1			6	6							

	CLASS ROOM-2				4							
	CLASS ROOM-3			4	21				3			
	CLASS ROOM-4			4	21				1			
	CLASS ROOM-5			4	21				1			
	STUDENT LOUNGE			23	91				11			
	GRAPHICS LAB				55							
	HUSS LAB											
	PREPRATORY LAB											
	MP ROOM-1			1								
	MP ROOM-2			1								
	LT (150 SEATER) (4NOS)			28	178				14			
	LIFT LOBBY (4NOS)			7	9				2			
	CORRIDOR			38	146				13			
	STAIRCASE											
	FHC											
	TOTAL			146	573		15	0	46	0	0	44
G	FOURTH FLOOR											23
	HALL-1			84					6			
	HALL-2			87					6			
	HALL-3			86					6			
	CAFETERIA											
	AHU (2 Nos)			4								
	LIFT LOBBY (2NOS)			2	4							
	CORRIDOR			17	91				7			
	STAIRCASE											
	SERVICE ROOM			2								
	FHC											
	TOTAL			282	95		0	0	25	0	0	23
	TOTAL(A+B+C+D+E+F+G)	1	1	1271	2367	5	21	3	246	719	2	287

TERMS AND CONDITION (RUNNING OPERATION OF PUMP SET)

1. The contractor's staff shall be well conversant with the running of pump set. The staff shall be responsible to clean their equipments and environments.

2. Logbook for pump set shall be maintained in proper form and shall be kept up to date. It should be duly signed by the contractor's staff in order to keep proper monitoring. The instruction of the Engineer-In-Charge or his superior officer shall be recorded in the logbook.

3. To extend coordination with NDMC/DJB/IIT regarding supply of electricity/ water, so that the water supply is not adversely affected.

4. Any damage caused to the pump set, L.T. Panels / control panel or its accessories due to carelessness of the contractor's staff or any shall have to be made good by the contractor at their own cost and nothing extra shall be paid on this account.

5. **The cost of Sundry material like Soap, duster, dhoti, cotton, waste and log book, has to be born by contractor.**

6. Nothing extra towards T&P will be paid.

7. The duty hours/shift duty can be changed as per discretion of the Engineer-in-charge.

Inventory of water supply and drainage system Drinking water monoblock

a) Drinking Water Monoblock pump of CI Impeller delivering 3.3 LPS at head of 44 meters with 5 HP inductions motor, suitable for operation on 415 Volt, 3 phases, 50 Hz AC supply – 3 Nos.
b) Raw Water Monoblock pump of CI Impeller delivering 6.8 LPS at head of 44 meters with 7.5 HP inductions motor, suitable for operation on 415 Volt, 3 phases, 50 Hz AC supply – 3 Nos.

CONTROL PANEL

Wall cum floor mounted cubical control panel 200 Amp. Aluminum Bus Bar with following switch gears:

Incomer for Drinking Water Pump

a) 63 Amp. 16KA, TP MCCB - 1 No.
b) Voltmeter (0-500Volt) with selector switch and control MCB of 2 Amp. And LED indication Lamps - 1 Set
c) Ammeter (0-63) with selector switch and 3 Nos. CT of ratio 63/5 – 1 Set

Outgoing

a) 25 A TP MCCB, 10 KA – 4 Nos.
b) 25 Amp., DP MCB, 10 KA- 4 Nos.
c) Overload relay 7.5 – 12.5 Amp. – 3 Nos.
d) TP contactor, 32 Amp. – 6 Nos.
e) Variable frequency drive of 5 KW- 1 No.

a) 100 Amp. 16KA, TP MCCB - 1 No.
b) Voltmeter (0-500Volt) with selector switch and control MCB of 2 Amp. And LED indication Lamps - 1 Set
c) Ammeter (0-100) with selector switch and 3 Nos. CT of ratio 100/5 – 1 Set

Outgoing

a) 25 A TP MCCB, 10 KA – 4 Nos.
b) 25 Amp., DP MCB, 10 KA- 4 Nos.
c) Overload relay 12.5 – 20 Amp. – 3 Nos.
d) TP contactor, 32 Amp. – 6 Nos.
e) Variable frequency drive of 7.5 KW- 1 No.

GM Gate valve with CI wheel

a) 50mm dia – 6 Nos.
b) 65mm dia – 6 Nos.

GM Vertical Check Valve

a) 50mm dia – 3 Nos.
b) 65mm dia – 3 Nos.

CI body flange type Y Strainer

a)80mm dia - 2 Nos.

Butterfly Valve

a) 80mm dia – 2 Nos.

100 mm dia bourden type SS dial pressure gauge i/c brass isolation valve and siphone pipe – 8 Nos.

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Submersible Drainage Pump

a) 1 HP submersible Kirlosker make, Model: 750S drainage pump operation on single phase 230 Volt 50 HZ AC supply – 8 Nos.
b) 40mm dia GM Gate valve – 8 Nos.
c) 50mm dia GM Vertical check valve – 8 Nos.
d) DP sheet enclosure with 25 Amp. C curve DP MCB – 8 Nos.
e) 2+12 way single door sheet steel enclosure MCB DB complete with 63 Amp. 1 No. DP MCB and Single pole 12 Nos. SP MCB. – 1 Set

TOOLS AND MATERIALS TO BE SUPPLIED BY THE CONTRACTOR TO THE WORKERS

1. BOX-SPANNER- (09 PCS)
2. PLIER 12”
3. VACUUM CLEANER
4. SCREW DRIVERS (DIFFERENT SIZE)
5. AIR BLOWER
6. DRILL MACHINE (HAMMERING)
6. PIPE WRENTCH 12”
7. PIPE WRENTCH 6”
8. MULTIMETER
9. OIL CANE
10. TORCH (THREE CELLS)
11. LINE TESTER
12. BROOMS
13. LIQUID SOAP
14. HYDRANT WASHERS
16. GLAND FOR PUMPS
17. CHAIN PULLY WITH TRIPOT
18. WELDING MACHINE & RODS
19. SHOWELS
20. MUTTUCK
21. CROW BAR
22. HAMMER
23. CHEESLE
24. LADDERS
25. EXTENTION LADDERS AS REQUIRED
26. OLD CLOTHES FOR CLEANING AS REQUIRED.

C … Nil I ….. Nil O …… Nil

ANNEXURE - 1

<< Organization Letter Head >>

DECLARATION

I / We, _____ hereby declare that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I / we have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

1	Name & Address of the bidder	**:**	
2	Phone	**:**	
3	E-mail	**:**	
4	Contact person name	**:**	
5	Mobile number	**:**	
6	TIN number	**:**	
7	PAN number	**:**	
8	UTR no. [for payment of EMD]	**:**	
	BANK DETAILS		
10	Bank name	**:**	
11	Branch address	**:**	
12	Branch telephone no.	**:**	
13	MICR Code of the bank	**:**	
14	IFSC code	**:**	
15	Bank Account no.	**:**	
16	Type of account	**:**	

We further declare that our organization has not been blacklisted / delisted or put to any holiday by any Institutional agency / Govt. Department / Public Sector Undertaking in the last three years.

(Signature& name of the bidder)
Seal of the bidder

C … Nil I ….. Nil O …… Nil

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IITD - 2010 CORRECTION SLIPS

In General condition of contract for IIT Delhi works department 2010 –

Reference	Existing	Modified
Clause 10B (ii), Para-2	Before any instalment of advance is released, the contractor shall execute a Bank Guarantee Bond from Scheduled Bank **for the amount of advance &**valid for the contract period. This shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery, **together with interest.**	Before any instalment of advance is released, the contractor shall execute a Bank Guarantee Bond from Scheduled Bank **for the amount equal to 110% of the amount of advance and** valid for the contract period. This **(Bank Guarantee from Scheduled Bank for the amount equal to 110% of the balance amount of advance)** shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.
Clause 3 (vii)	If the contractor shall obtain a contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering.	If the contractor had secured the contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering **or commits breach of Integrity Agreement.**

Reference	Existing Provision	Modified Provision
Page 5, IITD 2010	Page 5, IITD 2010 4A. Applicable for Percentage Rate Tender only (IITD-7) In case of Percentage Rate Tenders,a tenderer shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule-A, he will be willing to execute the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort	Page 5, IITD 2010 4A. Applicable for Percentage Rate Tender only (IITD-7) In case of Percentage Rate Tenders, **contractor** shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule-A, he will be willing to execute the work. **The tender submitted shall be treated as invalid if :-** **1. The contractor does not quote percentage above/below on the total amount of tender or any section/sub head of the tender.**

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	including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.	**2. The percentage above/below is not quoted in figures & words both on the total amount of tender or any section/sub head of the tender.** **3. The percentage quoted above/below is different in figures & words on the total amount of tender or any section/sub head of the tender:** Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes. **New Para 4B is added as below:** **4B: In case the lowest tendered amount (estimated cost + amount worked on the basis of percentage above/ below) of two or more contractors is same, such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/below on estimated cost of tender including all sub sections/sub heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.** **In case any of such contractor refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50% of earnest money shall be forfeited.** **If the revised tendered amount of two**

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		more contractors received in revised offer is again found to be equal , the lowest tender, among such contractors, shall be decided by draw of lots in the presence of SE of the circle, EE(s) in-charge of major & minor component(s) (also DDH in case Horticulture work is also included in the tender), EE(P) or EE(HQ) of the circle & the lowest contractors those have quoted equal amount of their tenders. **In case all the lowest contractors those have quoted same tendered amount, refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each contractor.** **Contractor(s), whose earnest money is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the work.**
Reference	**Existing Provision**	**Modified Provision**
10A (page 6-7)	In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. **However, if the contractor has worked out the amount of the tender and if any discrepancy is found in the percentage quoted in words and figures, the percentage which corresponds with the amount worked out by the contractor shall, unless otherwise proved, be taken as correct. If the amount of the tender is not worked out by the contractor or it does not correspond with the percentage written either in figures or in words, then the percentage quoted by the contractor in words shall be**	In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. **(Remaining part deleted)**

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	taken as correct. Where the percentage quoted by the contractor in figures and in words tally but the amount is not worked out correctly, the percentage quoted by the contractor will, unless otherwise proved, be taken as correct and not the amount.	
Reference	**Existing Provisions**	**Modified Provisions**
Deviations/ Variations Extent and Pricing	**CLAUSE 12** The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main works except as hereafter provided.	**CLAUSE 12** The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main works except as hereafter provided. **The completion cost of any agreement for Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration shall not exceed 1.50 times**

		of Tendered amount.
Deviations, Extra Items, Pricing	12.2 In the case of extra items (items that are completely new and are in addition to the items contained in the contract), the contractor may within 90 days of receipt of order or occurrence of the item(s) claim rate, supported by proper analysis, for the work and the Engineer-in-charge shall within one month of the receipt of the claims supported by analysis after giving considerations to the analysis of the rates submitted by the contractor, determined the rates on basis of market rates and the contractor shall be paid in accordance with the rates so determined.	12.2 **A. For Project and original works:** In the case of extra items (items that are completely new and are in addition to the items contained in the contract), the contractor may within 90 days of receipt of order or occurrence of the item(s) claim rate, supported by proper analysis, for the work and the Engineer-in-charge shall within one month of the receipt of the claims supported by analysis after giving considerations to the analysis of the rates submitted by the contractor, determined the rates on basis of market rates and the contractor shall be paid in accordance with the rates so determined. **B. For Maintenance including works of upgradation, aesthetic, special repair, addition/ alteration:** **In the case of Extra Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plush cost index (at the time of tender) plus/minus percentage above below quoted contract amount.** **Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.**
Deviation, Substituted Items, Pricing	In the case of substituted items (items that are taken up with partial substitution or lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall	**A. For Project and original works:** In the case of substituted items (items that are taken up with partial substitution or lieu of items of work in the contract), the rate for the

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	also be determined in the manner as mentioned in the following Para. (a) If The market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted). (b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted)	agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following Para. (a) If The market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted). **(b)** If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted)**. For Maintenance including works of up-gradation, aesthetic, special repair, addition/ alteration:** **In the case of Substitute Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plush cost index (at the time of tender) plus/minus percentage above below quoted contract amount.** **Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the**

		prevailing market rate.
Deviation, Deviated Quantities, Pricing	In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.	**A. For Project and original works:** In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. **B. For Maintenance including works of up-gradation, aesthetic, special repair, addition/ alteration:** **In the case of contract items, which exceed the limit laid down in schedule F, the contractor shall be paid rates specified in the schedule of quantities.**
	12.3 The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received	12.3 **A. For Project and original works:** The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the contractor within one month of

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	from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.	occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates. **B. For Maintenance including works of upgradation, aesthetic, special repair, addition/ alteration:** In the case of decrease in the rates **Prevailing in the market** of items for the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.
Schedule F	Clause 12 No provision.	**Clause 12** **Type of work ***_____** ***** To be filled by NIT approving authority either Project and original work or Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration.**

C … Nil I ….. Nil O …… Nil

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BID SUBMISSION

ONLINE BID SUBMISSION:

The Online bids (complete in all respect) must be uploaded online in **two** Envelops as explained below:-

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	**Documents**	**Content**	**File Types**
1	**Technical Bid**	Organization Declaration Sheet as per Annexure - I	.PDF
2		Attested Certificate of work experience as desired	.PDF
3		Certificate of registration for GSTIN	.PDF
4		Affidavit as per NIT condition 1.2.2 on stamp paper	.PDF
5		Acceptance to execute integrity pact	.PDF
6		IITD 7/8 duly signed by the bidder	.PDF
7		EPF & ESI Registration proof with upto date challan.	.PDF
8		Valid Electrical License.	
9		Enlistment order of the contractor (should be valid on the last date of submission of bid).	.PDF
10		Attested certificate of Engineer along with experience certificate to be deployed for the work as per clause 36(i) Schedule 'F'.	.PDF
11		Any other document as specified in the NIT	.PDF
Envelope – 2			
Sl. No.	TYPES	Content	
1.	**Financial Bid**	Price bid should be submitted in BOQ format.	.EXL

C … Nil I ….. Nil O …… Nil

D'Man AEE / AE EE

SCHEDULE OF QUANTITY

Name of work: - Maintenance & operation of electrical, mechanical, fire for Lecture Hall Complex at IIT Delhi.

Sl. No	Description of Work	Unit	Qty.	Rate	Amount in Rs.
1.	Providing day to day operation, routine checkup and upkeep of all electrical installations in the subject building as per given below details for all days in a month excluding holidays and Sunday (but may be called as and when required) as per specifications and directions of engineer in charge by providing the below given staff.				
1.01	7000 light points and power points -detailed inventory attached				
1.02	160 DBs/ vertical DB i/c MCCB, MCB - detailed inventory attached				
1.27	Power points and other sockets of 8 nos. labs in Block - C and D				
1.04	3000 LED/CFL down lighters and 1000 2 X 2 T-5 fittings - detailed inventor attached				
1.05	40 nos. Outdoor and terrace LED fittings				
1.06	Rising main 9 nos. and panels in building				
1.07	200 nos. fans				
	(i) **Mechanic- 2 Nos**.(in each shifts 6:00 AM to 2:00 PM and 2:00 PM to 10:00 PM) (ii) **Helper- 2 Nos**. (in each shifts 6:00 AM to 2:00 PM and 2:00 PM to 10:00 PM) Deployed on above mentioned location.				
2.	Providing routine maintenance and operation i/c monitoring of following **DG set and substation equipment's** round the clock on all days of week i/c Sunday and holidays as per terms & conditions and details inventory attached and directions of engineer in charge by providing the below given staff.				
2.01	2 x 2000 kVA transformer				
2.02	2 x 750 kVA DG set with AMF panel/ Emergency panel				
2.27	HT panel, LT panel, Capacitor panel etc. as per inventory attached				
2.04	Rising mains - 9 nos. with cabling etc. as per inventory attached				
	Mechanic cum DG set operator round the clock (total no. - **3 Nos**.) Helper round the clock (total **3 Nos**.) Deployed on above mentioned location.				
3	Providing service of Operation and monitoring of 9 nos. Johnson make 20 passengers lifts as per specifications attached for all days in a month excluding holidays and Sundays (but may be called as and when required) by providing the following staff and cleaning material etc.				
	6 Nos. Mechanic cum operators as per terms & conditions. Deployed on above mentioned location.				
4	Providing routine operation i/c monitoring of following fire related essential service round the clock on all days of week i/c Sunday and holiday as per terms & conditions and details inventory attached and directions of engineer in charge by providing the below given staff.				

C … Nil I ….. Nil O …… Nil

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4.01	Automatic fire alarm and public address system consisting of 3200 detectors – as per inventory.				
4.02	Sprinkler system in complete building i/c basement consisting of 7500 sprinklers and 4 nos. sprinkler riser - as per inventory.				
4.03	Wet riser system with 9 nos. fire riser and 45 FHC - as per inventory				
4.04	External fire ring main with 11 nos. Yard hydrant, etc				
4.05	CO2 type and Water CO2 type fire cyl – 250nos				
4.06	Water supply and sump pump - as per inventory attached				
5 .	Fire alarm operator/Fire Fighting cum Pump Operator required for maintaining and up keeping the automatic fire alarm and public address system in working condition i/c Fire Fighting pumps and Water supply pumps, checking the monitor modules control modules and who is having technical knowledge of programming of detectors, monitor, module, control module etc.				
	Mechanic cum Pump operator round the clock (total no. - **3 Nos.**) **Helper** round the clock (total no.- **03 Nos**) Deployed on above mentioned location.				
	Rates are quoted by contractor 14 Nos Mechanic, 08 Nos Helper, 01 No. Graduate office clerk and 01 No Technical Supervisor. Note: - One job means carrying out as one work for a month as per specification terms and conditions of the tender.	Job	12.00		
				Total Amount Rs.	

N.B.: Bidder shall not quote rates here under any circumstances.

EE[E] **AE.E,SS** **Sr. F.I**

C … Nil I ….. Nil O …… Nil

D'Man AEE / AE EE