Notice Inviting Tenders (E-Procurement mode)
INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI-110016

Dated: 25/03/2019

Open Tender Notice No. IITD/ADAC (SP-2264)/2019

Indian Institute of Technology Delhi is in the process of purchasing following item(s) as per details as given as under.

Name of Work	**Services for House Keeping, Electrical & Civil maintenance of Lecture Hall Complex at IIT Delhi for the year 2019-2020. (Composite Work)**
Estimated Cost	**Rs.2,09,99,135/-**
Earnest Money Deposit to be submitted	**Rs.4,20,000/-**
Completion Period	**12 Months**
Performance security	**5% of tender amount**

Tender Documents 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'.

Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type 'IIT'. Thereafter, Click on "GO" button to view all IIT Delhi tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website http://eprocure.gov.in/eprocure/app as 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).

Chairman Purchase Committee
(Buyer Member)

INDEX

SCHEDULE

Name of Organization	Indian Institute of Technology Delhi
Tender Type (Open/Limited/EOI/Auction/Single)	Open
Tender Category (Services/Goods/works)	Services
Type/Form of Contract (Work/Supply/ Auction/ Service/ Buy/ Empanelment/ Sell)	Services
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems)	Others
Source of Fund (Institute/Project)	Budget Code : NPN-10/LHC
Is Multi Currency Allowed	No
Date of Issue/Publishing	25/03/2019 at 03:00 PM
Document Download/Sale Start Date	25/03/2019 at 03:00 PM
Document Download/Sale End Date	22/04/2019 at 03:00 PM
Date for Pre-Bid Conference	16/04/2019 at 02:30 PM
Venue of Pre-Bid Conference	Room No. LH-320, LHC Building, IIT Campus, Hauz Khas.
Last Date and Time for Uploading of Bids	22/04/2019 at 03:00 PM
Date and Time of Opening of Technical Bids	23/04/2019 at 03:00 PM
Tender Fee	Rs.1500/- (For Tender Fee) Rs.4,20,000/- (For EMD) (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-II)
EMD	
EMD	For MSME/MSEs units registered with the Government of India exemption shall be applicable as per Govt. Of India guideline, for this type of particular work only.
No. of Covers (1/2/3/4)	02
Bid Validity days (180/120/90/60/30)	90 days (From last date of opening of tender)
Address for Communication	Prof. In Charge (LHC), IIT Delhi
Contact No.	011-26591458, 26597199
Fax No.	-
Email Address	a25228@admin.iitd.ac.in, a26318@admin.iitd.ac.in

Chairman Purchase Committee

INFORMATION AND INSTRUCTIONS TO BIDDERS FOR E-TENDERING

Chairman Purchase Committee, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 100016 (Phone No. 011-26591326) on behalf of Board of Governors invites online Item Rate Tender from the specialized agencies in two bid system for the following work:

Sl. No.	N.I.T. No.	Name of work & Location	Estimated Cost	Earnest Money	Period of completion	Last date & time of submission of bid (online mode)	Time & date of opening of Technical Bid	Time & date of opening of Financial Bid
[1]	[2]	[3]		[5]	[6]	[7]	[8]	[9]
1	IITD/ADAC (SP-....) / 2019	Services for House Keeping, Electrical & Civil maintenance of Lecture Hall Complex at IIT Delhi for the year 2019-2020. (Composite Work)	Rs.2,09,99,135/-	Rs.4,20,000/-	12 Months	22/04/2019 at 03:00 PM	23/04/2019 at 03:00 PM	To be intimated after assessing technical bid

1. The successful bidders shall be required to submit a performance guarantee of 5% of the tendered amount in the form of Bank Guarantee or F.D.R. from a Nationalized / Scheduled Bank within 15 days of issue of letter of intent before award of work. In case of failure by the Contractor to submit the performance guarantee within the specified period, full earnest money will be forfeited and the tender shall be treated as null and void. The performance guarantee shall be initially valid up to the stipulated date of completion plus 60 (Sixty) days beyond that.

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

   i) Firms/Contractors should have satisfactorily completed one similar work of value not less than Rs.1,68,00,000/- or two similar works Nos. of value not less than Rs.1,26,00,000/- or three similar works Nos. of value not less than Rs.84,00,000/- during last 7 years ending on 31/03/2019.

3. Similar work would means "Facility Management Services involving Mechanized Housekeeping, Civil, Electrical and Mechanical repairs and maintenance of offices / Institutional Buildings or Residential Complex".

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

5. 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.

6. The bid can only be submitted after depositing requisite tender fee and EMD.

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

8. 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 '3' above
   b. The completed cost of the work
   c. Actual date of completion of the work

9. Attested copy of registration certificates to be submitted. Registration of firms/ Contractors must be valid on the day of submission of Tenders or extended date of submission of Tenders whichever is later.

10. Work means only work under Government/ Public Sector Undertaking / Central Autonomous bodies.

11. 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.

12. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.

13. 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.

14. 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.

15. The bid submitted shall become invalid if:
   a. The bidder is found ineligible.
   b. The bidder does not upload all the documents as stipulated in the bid document.
   c. EMD not deposited as specified

16. The firm shall be registered with EPFO & ESIC.

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

1. Annexure – I duly filled in and got signed.
2. **Copy of Valid Electrical License issued to the contractor.**
3. Copy of GST registration Certificate.
4. 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 competent authority 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)"
5. Self-attested certificate of work experience as desired.
6. EPF & ESI Registration proof.
7. Any other document as specified in the NIT.

Chairman Purchase Committee
(Buyer Member)

Instructions for Online Bid Submission

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. 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 enroll 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 Enroll". 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 username and assign a password for their accounts.

3) Bidders are advised to register their valid email address and mobile numbers 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 II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized 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 the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.

6) Bidder then logs in to 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, organization 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 organization 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. These 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 tender, 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 bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

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 and 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 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.2).
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 colored (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 and submit 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 unauthorized 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 authorized 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 the 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 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

General Instructions to the Bidders

1) The tenders will be received online through portal http://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 authorized

certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link “Information about DSC”.

3) Tenderer 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.

General Terms & Conditions

S. No.	Specification
1.	**Due date**: The tender has to be submitted on-line before the due date. The offers received after the due date and time will not be considered. No manual bids will be considered.
2.	**Preparation of Bids**: The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the financial bid as per the given format. The Technical bid and the financial bid should be submitted Online.
3.	**EMD (if applicable)**: The tenderer should submit an EMD amount through RTGS/NEFT. The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted. The EMD will be refunded without any interest to the unsuccessful bidders after the award of contract. For MSME/MSEs units registered with the Government of India exemption shall be applicable as per Govt. Of India guideline, for this type of particular work only.
4.	**Refund of EMD**: The EMD will be returned to unsuccessful Tenderer only after the Tenders are finalized. In case of successful Tenderer, it will be retained till the successful completion of work or complete installation of the equipment.
5.	**Opening of the tender**: The online bid will be opened by a committee duly constituted for this purpose. Online bids (complete in all respect) received along with EMD (if any) will be opened as mentioned at "Annexure: Schedule" in presence of bidders representative if available. Only one representative will be allowed to participate in the tender opening. Bid received without EMD (if present) will be rejected straight way. The technical bid will be opened online first and it will be examined by a technical committee (as per specification and requirement). The financial offer/bid will be opened only for the offer/bid which technically meets all requirements as per the specification, and will be opened in the presence of the vendor's representatives subsequently for further evaluation. The bidders if interested may participate on the tender opening Date and Time. The bidder should produce authorization letter from their company to participate in the tender opening.
6.	**Acceptance/ Rejection of bids:** The Committee reserves the right to reject any or all offers without assigning any reason.
7.	**Pre-qualification criteria: To become an eligible bidder the contractor has to upload following documents.** 1. Annexure – I duly filled in and got signed. 2. **Copy of Valid Electrical License issued to the contractor.** 3. Copy of GST registration Certificate. 4. 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 competent authority 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)" 5. Self-attested certificate of work experience as desired. 6. EPF & ESI Registration proof. 7. Any other document as specified in the NIT.
8.	**Performance Security**: The successful bidders shall be required to submit a performance guarantee of 5% of the tendered amount in the form of Bank Guarantee or F.D.R. from a Nationalized / Scheduled Bank within 15 days of issue of letter of intent before award of work. In case of failure by the Contractor to submit the performance guarantee within the specified period, full earnest money will be forfeited and the tender shall be treated as null and void. **The performance guarantee shall be initially valid up to the stipulated date of completion plus 60 (Sixty) days beyond that**.
9.	**Force Majeure:** The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. ● For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

	• If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
10.	**Risk Purchase Clause**: In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.
11.	**Prices**: The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of taxes & duties shall be clearly indicated. The price should be quoted without custom duty and excise duty, since IIT Delhi is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand.
12.	**Resolution of Disputes**: The dispute resolution mechanism to be applied pursuant shall be as follows: • In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director, Indian Institute of Technology (IIT) Delhi and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order. • In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules. • The venue of the arbitration shall be the place from where the order is issued.
13.	**Applicable Law:** The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction. The place of jurisdiction would be New Delhi (Delhi) INDIA.
14.	**Supplier Integrity** The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.
15.	**Governing Language** The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.
16.	**Notices** • Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX or e mail and confirmed in writing to the other party's address. • A notice shall be effective when delivered or on the notice's effective date, whichever is later.
17.	**Payment**: Payment shall be made through RTGS. Agency has to be registered with IIT for online payment
18.	**Termination for Default** The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part: i. If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser; or ii If the Supplier fails to perform any other obligation(s) under the Contract. iii If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. • For the purpose of this Clause: i. "**Corrupt practice**" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. ii. "**Fraudulent practice**" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;'" • In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

PROFORMA OF SCHEDULES

[Operative Schedules to be supplied separately to Nos. intending tenderer]

SCHEDULE 'A'

Schedule of quantities (enclosed)

SCHEDULE 'B'

Schedule of materials to be issued to the contractor

S.No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of issue
	Nil			

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S.No.	Description	Hire charges per day	Place of Issue
	Nil		

SCHEDULE 'D'

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

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

SCHEDULE 'E'

Reference to General Conditions of contract [GCC]

1	Name of work	:	Services for House Keeping, Electrical & Civil maintenance of Lecture Hall Complex at IIT Delhi for the year 2019-2020. (Composite Work)
	Estimated Cost	:	Rs.2,09,99,135/-
2	Earnest Money	:	Rs. 4,20,000/-
3	Performance Guarantee	:	5 percent of tendered value
4	Security Deposit	:	5 percent of tendered value

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS : Officer inviting tender

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses12.2&12.3		:	See below
Definitions:			
2[v]	Competent Authority	:	Prof. In-Charge (LHC)
2[vi]	Accepting Authority	:	Chairman, PFC
2[x]	Percentage on cost of materials and labour to Cover all overheads and profits	:	15 percent
2[xi]	Standard Schedule of rates	:	DSR 2016 + MARKET RATES
2[xii]	Department	:	O/o Dean (Acad.), LHC Management Division
9[ii]	Standard IITD Contract Form	:	General Conditions of Contract 2010,IITD Form 7/8-2010 modified & Corrected up to date of submission of tender

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 with late fees @ 0.1% per day of performance guarantee amount beyond the period provided in (i) above	:	1 to 15 days
Clause 2:			
Authority for fixing compensation under clause 2		:	Competent Authority
Clause 2 A:			
Whether Clause 2A shall be applicable		:	No
Clause 5:			
Number of days from the date of issue of letter of award for reckoning date of start		:	10 [ten] days

Milestone(s) as per table given below:-

S.No.	Description of Milestone (Financial)	Time allowed in days (from date of stat)	Amount to be with-held in case of non-achievement of milestone
1	Nil	Nil	Nil
2	Nil	Nil	
3	Nil	Nil	
4	Nil	Nil	

Time allowed for execution of work	:	12 Months
Authority to decide:		
Extension of time	:	Competent Authority
Rescheduling of mile stones	:	Competent Authority
Clause Applicable 6 or 6A:	:	Clause 6A
Clause 7:		
Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	:	Rs. 20 Lac
Clause 10 A:		
List of testing equipment to be provided by the contractor at site lab	:	As desired by the competent authority relating to the work
Clause 10B(ii):		
Whether Clause 10 B (ii) shall be applicable	:	No

Clause 10C:		
Schedule of component of labour expressed as percent of value of work	:	75 Percent for housekeeping, Civil and Electrical Maintenance. 25 percent for Civil Work.

Clause 10CA:

S.No.	Material covered under this clause	Nearest Materials (other than cement, reinforcement bars and the structural steel) for which All India Wholesale Price Index to be followed	Base Price of all Materials covered under clause 10 CA*
1	NIL	NIL	NIL
2	NIL	NIL	NIL
3	NIL	NIL	NIL
4	NIL	NIL	NIL

Clause 10CC

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column	:	12 Months
Schedule of component of other Materials, Labour, POL etc. for price escalation		
Component of civil (except materials covered under clause 10CA)/ Electrical construction Materials expressed as percent of total value of work	:	Nil.
Component of Labour expressed as percent of total value of work	:	Y : 25 percent
Component of P.O.L. expressed as percent of total value of work	:	Not Applicable

Clause 11

Specifications to be followed for execution of work	:	CPWD specifications 2009 (Vol-1 & II with up to date correction slips.

Clause 12

Type of work	:	House Keeping, Electrical & Civil Maintenance.
Clause 12.2. & 12.3		
Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work	:	30 percent
Clause 12.5		
Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work	:	100 percent

Clause 16

Competent Authority for deciding reduced rates	:	Competent Authority

Clause 18

List of mandatory machinery, tools & plants to be deployed by the contractor at site	:	As Per List Enclosed

Clause 36 (i)
Requirement of Technical Representative(s) and recovery Rate

S.No.	Minimum Qualification of Technical	Discipline	Designation (Principal Technical / Technical	Minimum Experience (Years)	Number	Rate at which recovery shall be made from the contractor in the event of

	Representative		Representative)			not fulfilling provision of clause 36(i)
1	Graduate Engineer	Civil	Principal Technical Representative	05 years	1	Rs.25000/- p.m. (Rupees Twenty Five Thousand Per Month)
2	Graduate Engineer OR Diploma Holder	Electrical/ Mechanical	Project planning / site / Billing Engineer	02 years OR 05 years	1 1	Rs.15000/- p.m. (Rupees Fifteen Thousand Per Month)

Assistant Engineer retired from Government services that are holding Diploma will be treated at par with Graduate Engineer.

Diploma holder with minimum 10 year relevant experience with a reputed construction co. can be treated at par with graduate engineers for the purpose of such deployment subject to the condition that such diploma holder should not exceed 50% of requirement of degree engineers.

Site Description

- The site of work is Lecture Theatre Complex at IIT Delhi Campus, Hauz Khas, NewDelhi-110016.
- Type of works included in the estimate:
  Services for House Keeping, Electrical & Civil maintenance of Lecture Hall Complex at IIT Delhi for the year 2019-2020. (Composite Work).
- General layout of area covered under the work is enclosed and jurisdiction area wise as under:
  (A) Lecture Theatre complex at IIT campus:

S.No.	Description	Area in sqm.	Height in metre
1.	Basement	10007.22	4.20
2.	Ground Floor	7828.33	3.30
3.	First Floor	4637.55	3.10
4.	Mezzanine Floor	7675.38	4.65
5.	Second Floor	5852.57	4.65
6.	Third Floor	6166.37	6.00
7.	Fourth Floor	3593.39	4.20

(B) Sub Station:

S.No.	Description	Area in sqm.	Height in metre
1.	Ground Floor	185.00	4.65
2.	First Floor	185.00	4.65

- All water supply pipe line from pump house, all sewer lines manholes gully traps, floor traps all types of rain water drain.
- The common and general specifications for building mentioned below are for guidance only.

Structure	Composite RCC & Steel
Masonry	Brickwork in cement mortar
External Finish	Cement plaster, Dry stone cladding with Dholpur stone and Glazing
Internal Finishing	Wooden acoustical panelling in Auditorium & Lecture halls, Plastic emulsion paint in classes, rooms, Labs and OBD in corridors
Doors	Wooden/glazed fired doors, Aluminium glass door, glass, Flush door, steel, PVC doors
Windows	Aluminium & Steel
Flooring	Kota stone, marble stone, granite stone and tiles

- Following type of works included in the contract.
  - Housekeeping and maintenance work – It shall consist of the following operations:-
    i. Receiving, recording, distributing & updating the day to day complaints at Service Centre through manual complaints received at service center.
    ii. Attending the daily complaints with required labour & material etc.
    iii. Monitoring of receipt of complaints, distribution, attending the complaints as required fulfilling the directions of AEE/JE.
    iv. Monitoring of receipt of complaints, distribution, attending the complaints as required fulfilling the direction of Engineer-in-charge.
    v. Running and maintenance of Service Centre.
    vi. Work as per schedule of quantity.

SPECIAL & ADDITIONAL CONDITIONS

1. The Work has to be completed within the stipulated time.
2. In case it is noticed that the firm is intentionally delaying the work for one reason or the other, the firm could be debarred for future works i/c forfeiture of the EMD.
3. In case of any extra item, the contractor shall seek prior permission in writing from the competent authority and submit analysis of rates.
4. In case of slow progress/intentional delay by the contractor the work can be withdrawn/rescinded in whole or part thereof and executed at the risk & cost of the defaulting contractor.
5. In case of any dispute, the arbitrator shall be appointed by the Director, IIT Delhi and his decision shall be Final as well as binding on both the parties.
6. Hindrance register shall be maintained by AE (E) / JE (E) at site.
7. Instructions given in Site Order Book would be followed immediately by the contractor.
8. No T & P would be supplied by the institute and contractor will have to make own arrangement.
9. The contractors are advised to get acquitted with the proposed work including specifications & its and additional conditions carefully before quoting. No claim of any sort shall be entertained or account of any site conditions ignorance of specification & additional conditions. The work shall be carried out as per the availability of site
10. The work shall be carried out as per CPWD specifications 2009 volume I & II with up – to date correction slips unless otherwise specified in the nomenclature of individual item or in the specification, additional conditions where specifications are silent, the decision of competent authority shall be final and binding on contractor.
11. **The quoted rates of all items shall be inclusive of all taxes including Goods and Service Tax, Labour Cess etc. and nothing extra shall be payable on this account.**
12. The rates for different items of work shall apply for Heights & Depths, Leads & Lifts unless otherwise specified in the agreement or specifications applicable in the agreement.
13. Any damage done by the contractor to any existing item / any part of the building during the course of execution of work shall be made good by at his own cost.
14. Articles manufactured by the reputed firms and approved by competent authority shall only be used. Only articles classified as “First quality” by the manufacturer shall be used unless otherwise specified.
15. The sample of material required in the work brought at site shall be got approved from competent authority before use in execution of work.
16. The sample of material required for Testing shall be provided at free of cost by the contractor. Testing charges if any shall be borne by the Department in case the test results are satisfactory and if test results fail testing charges shall be deducted from the bills of the contractor. All other expenditure to be incurred for taking sample, conveyance, packing etc. shall be borne by the contractor. Testing shall be done at NABL approved lab.
17. The competent authority can modify the programme and the contractors have to work accordingly. In case work does not start within 7 days the same is liable to be rescinded. In case of delay liquidated damages to be imposed on Contractors. Extension of time in work shall be dealt as per latest form 7/8 of IITD.
18. Some restrictions may be imposed by the security staff of IIT Delhi etc. on the working and or movement of labour camp/ huts shall be allowed in IIT Campus. The Contractor shall make his own arrangement for labour huts outside the campus. The contractor shall be bound to follow all such restrictions/ instructions and nothing shall be payable on this account.
19. The contractor shall be fully responsible for the safe custody of the material issued or brought at site by him for doing work.
20. The Malba /Garbage generated at site due to construction activities shall be removed from the site immediately & shall be disposed off by the contractor to the approved dumping site of MCD. The garbage generated from day to day housekeeping work shall have to be disposed off by the housekeeping staff at specified place within the IITD campus as per directions of competent authority. Nothing extra shall be paid on this account.
21. Contractor has to quote against the item of schedule of credit of material. The contractor cannot quote either minus rate or Zero rate for these items. The amount against these items will be subtracted in calculating lowest agency.
22. 1% labour cess or as applicable will be deducted from the bills of contractor.
23. Necessary electricity and water for running of various works required for housekeeping, civil and electrical maintenance shall be provided by department free of cost.
24. Water charges @ 1% on items under sub head Civil Work shall be deducted from bills.
25. Electricity charges @ 0.50% on items under sub head Civil Work shall be deducted from bills.
26. The Clause of extension of time is also applicable as per CPWD manual.
27. **ESI & EPF shall be reimbursed as per norms on production of original receipt of ESI & EPF from contractor specific to this work.**

28. No residential accommodation shall be provided to any of the staff engaged by the contractor. The contractor shall also not be allowed to erect any temporary set up for staff in the campus.

29. The Engineers who are employed by the contractor under clause-36 of the agreement shall be present regularly at the site and report AEE / JE and shall carry mobile telephone(s) to enable the AEE / JE to have easy and quick communication. Nothing extra shall be paid to the contractor on this account and his quoted rates for various items under this contract shall be inclusive of this obligation.
30. All T&P including ladder's, wire drawing equipment, chase cutting equipment, drilling machine megger insulation , earth resistance testing equipment etc. as mentioned and required for the work shall have to be arranged by the contractor. No T&P shall be issued by the Department and nothing extra shall be paid on this account.
31. The contractor shall have to carry out the work other than day to day maintenance according to program me given by the JE/AEE or their representative. The contractor shall not carry out any work in any building without permission of competent authority. The contractor shall adhere to the programme failing which he shall be wholly responsible for default. No claim for idle labour on any account shall be entertained. The contractor shall depute his representative daily to the site of work.
32. An authorized representative of the contractor shall be available at the Service office and note down the instructions in the register.
33. Service office will operate from 24x7 on all working days except Sundays and Gazette Holidays. Only skeleton staff (shall be reorganized within the requested staff) will be required on Sundays and Gazette Holidays.
34. **Depending upon the number of complaints, the contractor shall employ more number of workers to attend the complaint within prescribed time for which no extra payment will be admissible. However, minimum number of work men/staff to be deployed shall be as follows:-**

S.No.	Category	Manpower Required
1.	Admin Staff / Site Manager	1 No.
2.	Office Assistant / Computer Operator	1 No.
3.	Mechanic (E&M) / Wireman	12 Nos.
4.	Plumber / Fitter	1 No.
5.	Carpenter	1 No.
6.	Mason	1 No.
7.	Sewer Men	1 No.
8.	Helper / Khallasi	05 Nos.
May & June		
1.	Housekeeping Supervisor	2 Nos.
2.	Housekeeping Staff for sweeping/moping/cleaning (more than 40% staff are to be trained in the usage of sweeping Machine, water jet and vacuum cleaner)	14 Nos.
July to April		
1.	Housekeeping Supervisor	3 Nos.
2.	Housekeeping Staff for sweeping/moping/cleaning (more than 40% staff are to be trained in the usage of sweeping Machine, water jet and vacuum cleaner)	28 Nos.

35. In case any of above staff/worker is absent on any day, a substitute shall invariably be provided by the contractor. Otherwise compensation shall be levied from the contractor from the payment due to him or his Security Deposit as per details below:

    - Skilled staff @ Rs.750/- per day
    - Semi-Skilled staff @ Rs.700/- per day
    - Unskilled Staff @ Rs.620/- per day

36. In case of failure of deployment of machines and tools for mechanized housekeeping as per list attached necessary recovery may be levied accordingly.

- Ride on Scrubber machine @ Rs.1000/- per day per number
- Vacuum Cleaner & High pressure jet @ Rs.50/- per day per number
- Single Disc & Scrubby machine @ Rs.400/- per day per number
- Wringers trolley, Housekeeping service car, Kentucky MOP, Washroom cleaning kit @ Rs.50/- per day per number.

37. The contractor shall take immediate action to attend to any complaint assigned to him through site order book/verbal instructions from competent authority or on telephones/Internet/from occupants. In all cases he shall attend the complaint in the specified duration as mentioned below:-
    - No delay complaints – Complaints of emergent nature such as plumbing or sewerage systems not working etc. are to be attended to immediately or at least within 6 hours of receipt of the complaints.
    - Minor Complaints – Complaints relating to the trades of mason and carpenter are to be attended within 24 hours.
    - Major Complaints – Such complaints are to be attended with in shortest reasonable time in consultation with.

38. Necessary registers/complaint- attendance books shall be maintained by the contractor in respect of complaints received and shall be got signed from the occupant/user after compliance.

39. The following facilities shall be made available by the agency at the Service Center (if not already available).
    - Table for the receptionist to sit and receive complaints.
    - All furniture required for contractor's staff shall be arranged by the contractor on his own the agency on his cost.

40. Stores and bins shall be arranged by the contractor at his own cost for storing the materials and labour.

41. The contractor shall provide uniform along with Badge and shoes wearing approved logo. Contractor will provide neat & clean uniform to all workers. Colour & pattern of uniform shall be as per decision of competent authority.

42. The labour deployed for attending complaints should carry necessary tool kit, container (Tasla), required for mixing any cement sand or other material and should carry with them water bottle and waste bag for collection of minor rubbish material if received during attending the complaints, so that the site of work shall remain neat and clean.

43. The contractor will arrange & store all the materials at Enquiry office, required for attending day to day maintenance complaints and housekeeping on monthly basis as per list or as decided by competent authority, throughout agreement period. Material at site (MAS a/c.) shall be maintained by the contractor for materials brought at site & used in day-to-day maintenance work. This MAS shall be the property of IITD after the completion of work.

44. The contractor will maintain attendance records of the staff through biometric attendance machine / attendance register which can be checked by the JE/AEE and higher officers as & when required.

45. That the contractor shall make the payment of wages [not less than minimum wages as & when declared by the Govt. Of NCT Delhi], etc. to persons so deployed monthly basis through Bank Transfer / electronic mode on or before 10th day of every month.

46. List of Machines & Tools Required for Mechanized Housekeeping

S.No.	Description	Quantity Required
1.	Ride on Scrubber Machine	2 Nos.
2.	Trolley Mounted Vacuum Cleaner (Wet & Dry Type)	2 Nos.
3.	High Pressure Jet Machine	1 No.
4.	Single Disc Scrubbing Machine	2 No.
5.	Double Bucket Wringers Trolley (Capacity - 50 Ltrs.)	10 Nos.
6.	Hand Scrubber with buffing Kit	2 Nos.
7.	Housekeeping Signage Panel	12 Nos.
8.	Window Squeegee Wiper of all sizes	4 Nos.
9.	Cobweb Brush of all sizes	4 Nos.
10.	Kentucky Mop	10 Nos.
11.	Wiper (Large)	10 Nos.
12.	Wiper (Small)	10 Nos.
13.	Double Sided Toilet Cleaning Brush	15 Nos.
14.	Plastic Mug (1 ltr Capacity)	30 Nos.
15.	Plastic Bucket (15-20 ltr capacity)	10 Nos.

47. List of Consumable items required for One Month for Housekeeping:

S.No.	Description	Quantity Required
1.	All-Purpose cleaning agent (R-2)	50 Ltrs.
2.	Glass Cleaner (R-3) along with spray pump	15 Ltrs
3.	Wood Cleaner (R-4)	5 Ltrs.
4.	Toilet Bowl Cleaner (R-6)	25 Ltrs.
5.	Naphthalene Balls	15 Kg
6.	All Out / Baygon / HIT Aerosol Spray (Black or Red), 400ml Packing	20 Nos.
7.	Toilet Air Freshener (cube type) (Odonil / Godrej)	100 Pkt.
8.	Sanitary Cubes Metropol	10 Kg
9.	White Duster Full Size	5 Dozen
10.	Yellow Duster Full Size	5 Dozen
11.	Cleaning Powder	5 Kg
12.	Liquid Phenly	10 Ltr.
13.	Floor Cleaning Mop	4 Dozen
14.	Scrubber (large)	2 Dozen
15.	Urinal Pad Screen with Fragrance	8 Dozen
16.	Plastic Juna (large)	3 Dozen

17.	Toilet Paper Roll	6 Dozen
18.	Rubber Gloves	24 Pairs
19.	Hand Wash	30 Ltr.
20.	Garbage bag of all sizes as required	50 Kg
21.	Kentucky Mop Refil	10 Nos.
22.	Old Dhoti	20 Nos.
23.	Room Air Freshener (Aerosol Type)	3 Dozen
24.	Soft Broom	10 Nos.
25.	Hard Broom	20 Nos.
26.	Face Mask	4 Dozen

48. Frequency of Mechanized Housekeeping Services

A. Inside Office Buildings:-

S.No.	ACTIVITY	METHOD	FREQUENCY	MACHINE TO BE DEPLOYED
1	Parking and outside paved area	Sweeping	Daily	Manually
		Pressure Washing	Weekly	High Pressure Jet Water
2	Entrance lobby & Corridors floor Cleaning	Scrubbing and drying with Ride-on-Scrubber Drier.	2 times a day (1ST cleaning shall be done daily before 7.30 A.M)	Scrubber with Ride on Scrubber drier.
3	Lecture Theaters	Wall :- Dry Vacuum cleaning	Once in a week	Dry Vacuum cleaner
		Floors :- Wet & dry cleaning	Once in a day	Manually (Mopping Trolley with double bucket system)
4	Stair Case cleaning	Sweeping and mopping	2 times a day	Manually (Mopping Trolley with double bucket system)
5	Door & door handles cleaning	Wet & Dry wiping	Once a day	Manually
6	Drinking water area cleaning	Wet & Dry wiping	2 times a day	Manually (Mopping Trolley with double bucket system)
7	Cleaning of lifts (all components)	Wet & Dry wiping	Once in a week	Manually
8	Removal of Garbage i/c collection from dust bins & disposal at dumping place	At Garbage Dump pit	Daily	Manually
9	Glass and Glass Partition cleaning	Wet & Dry wiping	Weekly	Manually
10	Cleaning of fire-fighting equipment's, CCTV and public address systems,	Dry wiping	Once a week	Manually

	etc.			
11	All type of Furniture	Dusting	Twice in a week	Manually
12	Name Plates	Dry wiping	Weekly	Manually
13	Cob webs, behieves & doormats	Removal of cob webs, behives & cleaning of door mats	Weekly	Dry vacuum cleaner
14	Electric Switches	Dry wiping	Weekly	Manually
15	Terrace Cleaning	Pressure Washing	Monthly	High Pressure Jet Water
All the above operations may be carried out as and when required and on complaint basis.				

B. Toilets:-

S.No.	ACTIVITY	METHOD	FREQUENCY
1	Toilet Cleaning	Sweeping & Mopping	Every 4 hours
2	Sterilization of toilets	High Pressure Machine and Scrubbing of floor with Single Disc Machine.	Every Week
3	Sanitation of washrooms	Sanitation spray, rinse and wash	Twice a day
4	Floor Cleaning	Scrubbing & Drying with single disc machine	Every 4 hours
5	Side wall cleaning	Scrubbing & wiping	Once a day
6	Door & Door handles cleaning	Wet & dry wiping	Every 2 hours
7	Wash basin and surrounding area cleaning	Wiping	Every 2 hours
8	External tap cleaning	Dry wiping	Every 2 hours
9	Mirror cleaning	Damp wiping	Every 4 hours
10	Commodes cleaning	Wiping	Every 4 hours
11	Urinal cleaning	Wet/ Dry cleaning	Every 4 hours
12	Dustbin clearance & cleaning	Collection and wiping	Every 4 hours
13	Hand drier machine cleaning if any	Wiping	Every 4 hours
14	Exhaust fan cleaning	Wiping	Fortnightly
15	Tube light cleaning	Dry Wiping	Fortnightly
16	Electric board & Switches cleaning	Dry Dusting	Fortnightly
17	Spray of Air Freshener	Manual	Daily
*All the above operations may be carried out as and when required and on complaint basis also.			
*All 1st cleaning shall be done before 7.30 A.M)			

- The above frequencies for cleaning are minimum required.

- All consumables such as freshener, dusters, brooms, cleaners, mops and other accessories and attachment etc. (as per list attached). required to be provided by Agency of approved quality as per the directions of JE/AEE.
- All machines proposed to be provided by agency exclusively for Lecture Theater Complex at IIT New Delhi.

LIST OF APPROVED MAKES

ACCEPTABLE MAKE OF EQUIPMENTS AND MATERIALS		
S. No.	**Description**	**Approved Makes**
1.	Cement (Grey) OPC/ PPC Grade-43.	ACC / L & T/ J.K. / BIRLA/ UTRA TECH/ VIKRAM
2.	Cement (White)	J.K. / BIRLA
3.	Reinforcement Steel	PRIMARY MANUFACTURERS APPROVED BY MINISTRY OF STEEL / SECONDARY MANUFACTURERS HAVING VALID BIS LICENSE (to be as per latest BIS provisions)
4.	Structural Steel	PRIMARY MANUFACTURERS APPROVED BY MINISTRY OF STEEL / SECONDARY MANUFACTURERS HAVING VALID BIS LICENSE (to be as per latest BIS provisions)
5.	Stainless steel (Grade 304)	JINDAL / SAIL / Salem
6.	Bricks	COMMERCIALLY AVAILABLE OR REQUIRED STRENGTH
7.	Aluminium Sections	HINDALCO / JINDAL / MAHAVIR
8.	Flush doors	CENTURY / MERINO / DURO BOARD /GREEN
9.	Laminates	GREENLAM / DURO / ARCHID / MERINO /DECOLAM / CENTURY
10.	Glass / Mirror	SAINT GOBAIN / MODI FLOAT / ASAHI FLOAT
11.	Ceramic Glazed tiles/Border tiles	1ST QUALITY KAJARIA / NITCO / JOHNSON / ORIENT / SOMANY
12.	Vitrified Tiles	NAVEEN / NITCO / JOHNSON / KAJARIA
13.	Interlocking Precast pavers blocks / Kerb Stone	HINDUSTAN TILES / SWASTIK/DALAL
14.	Stainless Steel Hinges	JOLLY / GARG /AMIT / ASI SUPREME
15.	Stainless Steel Nuts Bolts / Screws	KUNDAN / PUJA / ATUL / GKW
16.	Paint / primer / oil bound distemper /Acrylic paint/plastic paint	1st QUALITY PAINTS OF ASIAN / BERGER / NEROLAC / AKZONOBAL INDIA / SHALIMAR
17.	Water Proof. Cement Paint/ Exterior paint	1st QUALITY PAINTS OF ASIAN PAINTS / BERGER / NEROLAC / AKZONOBAL / SHALIMAR
18.	Sanitary ware (Vitreous China) (European Seats, Urinals, Wash Basins, etc.)	HINDWARE / PARRYWARE/ CERA
19.	Seat Covers	HINDWARE / PARRYWARE/ CERA
20.	C.P. brass Fittings / Accessories	JAQUAR / MARC / KOHLAR
21.	G.I. Pipes	TATA / JINDAL (HISSAR)
22.	G.I. Fittings	UNIK / ZOLOTO / AM
23.	Stainless Steel Sink	NEELKANTH / JAINA / KINGSTON (COBRA)
24.	Commercial Board / PLY	MERINO / DURO /GREEN/ CENTURY
25.	CI Pipes / Fittings & Manhole covers	RIF / NECO / BENGAL IRON WORKS / BC / SKF
26.	CI Pipes “Class LA”	NICO / KESORAM / ELECTRO STEEL / KAPILANSH
27.	Floor Spring	DOORKING / EVERITE
28.	Door Closer	EVERITE / SANDHU/ HARDWIN
29.	MIRROR	ATUL,MODIGUARD,SAINT GOBAIN
30.	Vertical Blinds	VISTA / MAC
31.	False Ceiling	ARMSTRONG/ SANIT GOBAIN/ META WORTH
32.	Water proofing compound	CICO / FOSROC / PIDILITE
33.	Polymer Compound	CICO / PIDILITE / FOSROC
34.	Particle Board	NOVA PAN / BHUTAN BOARD/ ECO BOARD
35.	Rust Remover / Anticorrosive	FOSROC / CICO / PIDILITE
36.	Adhesive	FEVICOL / VAMICOL/DUNLOP/VAM ORGANIC
37.	Tile Adhesive	PIDILITE / FERROUSCRETE/BALLNDURA/CICO
38.	Wall Putty	BIRLA / JK / SARA

ACCEPTABLE MAKE OF EQUIPMENTS AND MATERIALS		
S. No.	**Description**	**Approved Makes**
39	Epoxy Grout	Ballendura / Kerakoll / Ferrouscrete
40	PVC Water storage tank (ISI marked)	Sintex / Uni Plast / Polywell
41.	PVC insulated Water storage tank Heavy duty 4/5 layer	Sintex / Uni Plast / Polywell /Euro.
42.	Brass Ball Valve/ Gate Valve / Float Valve	Zoloto / AM / Leader / Sant
43.	Aluminium Door fittings	Classic/ Everrest/Argent
44.	Brass Bib / Stop cock	AGI / ELITE / Shakti / Sant / Leader
45.	Thermoplastic paint	CBM, CMS, S.N. Industries.
46.	Plaster of Paris Putty	ADHARSHREE/ SHREE RAM/ J.K
47.	RCC Pipe	LAKSHMI/SOOD&SOOD/JAIN &Co. /Diwan spun pipes.
48.	PVC Pipe	Prakash /Prince/Supreme
49.	Glass Pans	SAINT GOBAIN,ASAHI INDIA,MODI GUARD
50.	Chemicals of housekeeping	Eureka Forbes / Diversey / Ecolab Oasis / Taski

N.B.: For any item not covered in the above list, the contractor shall require to get the samples approved from the competent authority before the supply is made.

ANNEXURE-1

<< Organization Letter Head >>
DECLARATION SHEET

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	GSTIN number		
7	PAN number		
		Tender Fee	EMD
8	UTR No. with date		
9	Bank name		
10	Branch address		
11	Branch telephone no.		
12	MICR Code of the bank		
13	IFSC code		
14	Bank Account no.		
15	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 of the bidder]

Name:

Seal of the bidder

Bid Submission Check List

ONLINE BID SUBMISSION:

The Online bids (Complete in all respect) must be uploaded online in two envelops as explained below.

Envelope – 1			
S. No.	**Documents**	**Content**	**File Types**
1.	Technical Bid	Annexure – 1 duly filled and got signed.	.pdf
2.		Copy of Valid Electrical License issued to the contractor.	.pdf
3.		Copy of GST registration Certificate.	.pdf
4.		Affidavit as per point no. 5 of list of documents to be uploaded on Rs.10/- stamp paper.	.pdf
5.		Self-attested certificates of work experience as desired	.pdf
6.		EPFO & ESIC Registration proof	.pdf
7.		Any other document as specified in the NIT	.pdf
Envelope – 2			
S. No.	**Documents**	**Content**	**File Types**
1.	Financial Bid	Price bid should be submitted in BOQ format.	.xls

PART-B

Electrical & Mechanical Works

Additional conditions for all Electrical & Mechanical Works

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. General shift wherever mentioned shall mean 9:00 A.M. to 5:00 P.M.
4. 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 five year experience in this line.

    b) Wireman: - Academic Qualification: Should have passed ITI /Diploma or equivalent qualification in trade.

    Professional Qualification: Electrical wireman permit/ workman's competency certificates, electrical workman's/ line man license (certificate of competency class-II) or any other equivalent certificate with at least five years experiences in the line.

    c) Operator (E&M):- Academic/Professional Qualification: Should have passed ITI/ Diploma or equivalent in the Trade or experience in same field of 5years.

    d) Mechanic(E&M):- Academic/Professional Qualification :Should have passed ITI /Diploma in Trade or 3 years practical experience in a workshop/Department dealing with operation and maintenance of mechanical plants.

    e) Fire Technician cum Operator:-Academic/Professional Qualification: Should have passed ITI /Diploma or equivalent in the Trade or experience in same field of 5 years.

    f) Khallasi :- Should be physically & mentally fit & must have six months experience in the line
5. All the works shall be carried out as per CPWD Specifications for electrical works, Part-I (Internal) -2013. CPWD Specifications Part-II (External) - 1995, Indian Electricity Rules- 1965 amended up to Date and CPWD Maintenance Manual to the entire satisfaction of Engineer-in-Charge.
6. 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 payment shall be made.
7. Emergency complaints such as no current, leakage of current, sparking, short circuiting, fire hazards of any nature etc. shall be attended within one hour, otherwise a recovery of Rs. 500/- per Emergency complaint shall be made from the contractor's bill.
8. Normal complaints shall be attended within three hours otherwise a recovery of Rs. 500/- per complaint shall be made.
9. The Engineer-in-Charge has the right to remove/ terminate the services of any worker without assigning any reason.
10. 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.
11. 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.

Inventory Details

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 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.	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 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, 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 Theatre Hall

Sr. No.	Location	14WLEDDownlighter	3x14WT-5Fitting	1200mmSweepceilingfanwithregulator	8Modulepowerboxhaving 1 No. 15Asocket&2Nos5Asocket.	3Modulepowerboxhaving 1 No. 15Asocket&Switch	PendentSprinkler	UprightSprinkler	FHChaving1No.doubleheadedlandingvalvecompletewithallaccessoriesandhosereeldrumwith 20mmdiax36mtrlongwater hosepipe,25mmdiagunmetalglobevalveandnozzle,40mmdiaGMstopvalveetc.
	First Floor (Block-B)								
1	150 Seater Lecture Theatre - 1	20	15		22	4	29	32	
2	150 Seater Lecture Theatre - 2	20	15		22	4	21	25	1
3	150 Seater Lecture Theatre - 3	20	15		26	6	22	24	1
4	150 Seater Lecture Theatre - 4	20	15		26	4	20	22	
5	Student Lounge		47	23	28		82		1
	Second Floor (Block-B)								
1	150 Seater Lecture Theatre - 1	20	15		22	4	30	30	
2	150 Seater Lecture Theatre - 2	20	15		22	4	29	30	1
3	150 Seater Lecture	20	15		22	4			1

	Theatre - 3								
4	150 Seater Lecture Theatre - 4	20	15		22	4	33	30	
5	Student Lounge		48	23	28		87		1
	Third Floor (Block-B)								
1	150 Seater Lecture Theatre - 1	19	15		24	4	35	29	
2	150 Seater Lecture Theatre - 2	20	15		22	6	32	29	1
3	150 Seater Lecture Theatre - 3	22	15		24	4	34	30	1
4	150 Seater Lecture Theatre - 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	8ModulePowerplugaccessorieshaving6pin, 16Amp.Socket-1No.andpin,5Amp.Socket-2 3	3ModulePowerplugaccessorieshaving6pin, 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
C	Fourth Floor (Block-B1)						

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-603	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	8ModulePowerplugaccessorieshaving 6pin, 16Amp.Socket-2No.and3pin,5Amp.Socketwithinbuiltswitch –1No.	PendentSprinkler	UprightSprinkler	42Ufloormountedcabinetlockableswitcher rack completewithallactiveandpassiveequipments	6Modulepowerplugaccessorieshaving6 pin 16Amp socketwithswitchand5Ampsocketwithswitchon6modulePVCbox–1set	TelephonepointhavingRJ11Telephone connector on 2modulePVCboxwithcoverplate	3Modulepowerplugaccessorieshaving6 pin 16Amp socketwithswitchonGIbox	3Modulelightplugaccessorieshaving3 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-503	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 Theatre Hall

S. No.	Location	3x14WT5M/Ofitting	1x28WT5fittingIP 65	1x28WT5fitting	2x28WT5fitting	14Wdownlighter	1200mmceilingfan	12mmfanStepregulator	300mmexhaustfan	450mmexhaustfan	3ModulePowerplugaccessories	8ModulePowerplugaccessories	RJ-11Modultelephone
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 303 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												

1-	Block C LH 403 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											
	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 Theatre cum 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-2003, 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)
Wireman cum Operator	1 No.	1 No.	1 No.
Khallasi	1 No.	1 No.	1 No.

3. In case of absence of any staff from duty, the following recoveries shall be made from the contractor and the contractor will have no claim from the department :-

   Wireman cum Operator @ Rs. 600/- per day
   Khallasi @Rs. 400/- per day

4. 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 energy management systems, selector switch, (Outgoing for APFC Panel No. 1 and 2)

(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, Stampford 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 mainfold residential type silencer of 4.85 mm thick MS pipe duly insulated with 50mm thick rock wool and 0.6 mm thick aluminium 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 Earthing with copper earth plate 600mmx600mmx3mm thick – 4 Nos. for Transformer No.

1 & 2, 4 Nos. for DG sets No. 1 & 2.

2- Body Earthing 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
k) Check the functioning of Landing locks / Car door safeties

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

1	Operator	04 Nos.	Block-C (2Lifts) Block-B1 (2Lifts) Block-B3 (2Lifts) Block-D (3Lifts)	6:00 AM to 2:00 PM & 2:00 PM to 10:00 PM
	TOTAL		09 Nos. LIFTS	.

1.4 In case of absence of any staff from duty, the following recoveries shall be made from the contractor and the contractor will have no claim from the department :-

Operator @ Rs. 600/- per day

a) 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 1 No.
b) EPABX System 308 lines 1 No.

EPABX System 4 x 4 x 8 lines 1 No.

c) Hand free Lift car intercom Sets 22 Nos.

e) Key Telephone Set 1 No.

f) Push Button Telephone 6 Nos.

2. Any damage to the Lifts or other installations due to negligence or inefficiency of the staff employed by the contractor during the work shall be responsibility of the contractor & shall be set right by him free of cost.

3. The scope of work covers all components of intercom system.

4. The contractor shall keep the system in working order and any malfunctiong reported by lift operator/any other user/officer to the service centre shall be attended within 24 hours, failing which recovery @ Rs 500/-(Rupees five hundred) per day shall be made from bill payable to the contractor.

5. The following staff shall inspect the equipment during the AMC period.

(i) Technician 1 No. once a week in addition to as & when required

(ii) Khallasi 1 No. once a week in addition to as & when required

Special Conditions for Fire Fighting, Fire Alarm & 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-II (External) - 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)
TECNICIAN	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 soleenold 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 Set
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	250mmdia)	AirVessel(2mhigh &450mmdia)	4way63mmFBIC	DoubleHeadedinternalHydrantvalve	SyntheticflaxcanvasFireHose63mmdia	SSBranchPipe63mm dia	HoseRealDrum	WeatherproofMSHoseCabinet	SingleHeadedexternalYardHydrantValve	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																			
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 Floor	2							2	8					8	2					
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 THEATRE			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 THEATRE			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	1031	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 operator must possess minimum qualifications as per CPWD manual. The contractor has to submit the proper experience certificate, contractor shall be fully responsible for safety of their staff employed at site.

6. The cost of Sundry material like Soap, duster, dhoti, cotton, waste and log book, uniform and shoes & badges has to be born by contractor.

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

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

9. In case of absence of any staff from duty, the following recoveries shall be made from the contractor and the contractor will have no claim from the department :-

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.

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.