INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI - 110016

NAME OF WORK	:	Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi.SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi.
ESTIMATED COST	:	**Rs. 79,98,300/- (Inclusive GST)**
EMD	:	**Rs.1,59,966/-**
N.I.T. No.	:	**9440/62/EW/IITD/2018-19**
Warrantee	:	**Comprehensive 04 years warrantee (01 year inherent + 03 years extended) from date of successful installation, testing and commissioning of the of the system.**
AMC	:	**Comprehensive 05 yearsoptional Annual Maintenance contract after completion of four years comprehensive warrantee.**
Date of Opening	:	**08/02/2019**

Name of Work: Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi.
Sub-Head:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi.

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

1	Amount of NIT	**:**	**Rs. 79,98,300/-** (Inclusive GST)
2	Earnest money	**:**	**Rs. 1,59,966/-**
3	Performance guarantee	**:**	**5% of the tendered cost**
3	Completion time	**:**	03 month
4	Last date of submission (online)	**:**	07/02/2019 upto 03:00 PM
5	Date of opening	**:**	08/02/2019 upto 03:00 PM
6	Form of NIT	**:**	IITD - 8
7	Schedule applicable	**:**	DSR/Market Rate
8	Material stipulated	**:**	As per Schedule of Work
9	Chargeable head	**:**	PLN-05
10	Estimate no.	**:**	IITD/DB/IE/266/9440
11	Work code no.	**:**	WO 3225
12	NIT No.	**:**	9440/62/EW/IITD/2018-19
13	Type of work	**:**	Supply, Installation, Testing & Commissioning of VRV/VRF Air-Conditioning works.

Certified that this NIT contains **1** to **62** pages.

NIT amounting to Rs.**79,98,300/-**is approved.

D/Man [Plg] **Sr. F.I.** **AEE[E]**

Executive Engineer [Civil & Electrical] **Institute Engineer**

C…..Nil I….. Nil O….. Nil

D'Man /J.E. A.E.E / Sr.F/I E.E.

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI – 110016
NOTICE INVITING E-TENDER
IITD/WORKS(SP-2086)/2019

Executive Engineer [Civil &Electrical], Indian Institute of Technology Delhi, HauzKhas, New Delhi – 100016 [Phone No. 011-26591762] on behalf of Board of Governors invites online **Item Rate Tender** from Specialized Firms/ Contractors of repute for the following work:

1	Name of Work	**:**	Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi. **SH**:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi.
2	NIT No.	**:**	**9440/62/EW/IITD/2018-19**
3	Estimated cost	**:**	Rs.**79,98,300/- (Inclusive GST)**
4	Earnest Money	**:**	**Rs. 1,59,966/-**
5	Period of completion	**:**	**03 month**
6	Last date & time of bid submission	**:**	**07.02.2019 up to 03:00PM**
7	Performance Bank Guarantee	**:**	**5% of the tendered amount**

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

Bidders can access Quotation / tender documents on the website (For searching in the NIC site, kindly go to Quotation Search option and type 'IIT'. Thereafter, Click on "GO" button to view all IIT Delhi Quotations). Select the appropriate Quotation / tender and fill them with all relevant information and submit the completed Quotation / tender document online on the website http://eprocure.gov.in/eprocure/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).List of Documents to be scanned and uploaded within the period of bid submission:

Treasury Challan/Demand Draft/Pay order or Banker`s Cheque /Deposit at Call Receipt/FDR/Bank Guarantee of any Scheduled Bank against EMD. II. Authorization

certificate from OEM. III. Certificate of Registration of GST. IV. Copy of receipt for deposition of original EMD issued from division office of any Executive Engineer (Including NIT issuing EE/AE)

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

Ch. Head: PLN - 05
Work code- WO3225

Copy to: -

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

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SCHEDULE

1	Name of Organisation	:	Indian Institute of Technology Delhi
2	Tender / Quotation Type [open / limited / EOI / auction / single]	:	Open
3	Tender / Quotation Category [services / goods / works]	:	Goods/Works
4	Type / Form of Contract [work / supply / auction / service / buy / empanelment / sell]	:	Work& Supply
5	Product Category [civil works / electrical works / fleet management / computer systems]	:	Supply, Installation, Testing & Commissioning of VRV/VRF Air-Conditioning works.
6	Is Multi Currency Allowed?	:	No
7	Date of issue / publishing /start	:	**18.01.2019 up to 13:00PM**
8	Document download start date	:	**18.01.2019 up to 13:00PM**
9	Document download end date	:	**07.02.2019 up to 03:00PM**
8	Last date & time of uploading of bids	:	**07.02.2019 up to 03:00PM**
9	Date & time of opening of Technical Bids	:	**08.02.2019 up to 03:00PM**
10	EMD	:	Rs.1,59,966/- [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, HauzKhas, 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)
11	No. of covers [1/2/3/4]	:	02
12	Address for communication	:	Executive Engineer [Civil &Electrical], Works Organization, HauzKhas, IIT Delhi, New Delhi – 110016
13	Contact No.	:	011- 2659 1762, 7199
14	E-mail address	:	a26790admin.iitd.ac.in, , a26318admin.iitd.ac.in,
15	EMD Exemption	:	May be granted to NSIC / MSME registered firms who are registered for this particular type of work. However, document must be enclosed with Technical bid.

INSTRUCTIONS FOR ONLINE BID SUBMISSION

As per the directives of Department of Expenditure, this Quotation / tender document has been published on the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app). The bidders are required to submit 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 userID / password and the password of the DSC / e-Token.

SEARCHING FOR QUOTATION /TENDER DOCUMENTS

1) There are various search options built in the CPP Portal, to facilitate bidders to search active Quotations / Tender by several parameters. These parameters could include Quotation ID, organization name, location, date, value, etc. There is also an option of advanced search for Quotations, 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 Quotation published on the CPP Portal.
2) Once the bidders have selected the Quotations they are interested in, they may download the required documents / Quotation schedules. These Quotations can be moved to the respective 'My Quotations' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the Quotation document.
3) The bidder should make a note of the unique Quotation ID assigned to each Quotation / 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 Quotation document before submitting their bids.
2) Please go through the Quotation / Tender advertisement and the Quotation / 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 Quotation 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 Quotation document.

3) Bidder has to select the payment option as "offline" to pay the Quotation fee / EMD as applicable and enter details of the instrument.

4) A standard BoQ format has been provided with the Quotation 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 Quotation documents become readable only after the Quotation 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 Quotation document and the terms and conditions contained therein should be addressed to the Quotation Inviting Authority for a Quotation or the relevant contact person indicated in the Quotation.

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 Quotations 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- 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".

Bidders are advised to follow the instructions provided in the 'Instructions to the Bidder for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at https://eprocure.gov.in/eprocure/app.

INFORMATION AND INSTRUCTIONS TO BIDDERS FOR E-TENDERING

Executive Engineer [Civil & Electrical], Indian Institute of Technology Delhi, HauzKhas, New Delhi – 100016 [Phone No. 011-26591762] on behalf of Board of Governors invites online **Item Rate Tender** from Specialized Firms/ Contractors of repute for the following work:

Sl. No.	N.I.T. No.	Name of work & Location	Estimated cost put to bid	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]	[4]	[5]	[7]	[8]	[9]	[10]
1	9440/62/EW/IITD/2018-19	Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi. SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi.	**79,98,300.00 (Inclusive GST)**	**1,59,966/-**	**03 month**	**07.02.2019 up to 03:00PM**	**08.02.2019 up to 03:00PM**	**To be Intimated after assessing Technical bid.**

1. Performance Bank Guarantee

The successful tenderer shall submit an irrevocable performance guarantee of 5% of the tendered amount in addition to other deposit mentioned elsewhere in the contract for his proper performance of the contract agreement within 15 days of issue of letter of acceptance of tender. This guarantee shall be in the form of Demand Draft/Pay order of irrevocable bank guarantee bond of any schedule bank or the State Bank of India in the specified perform a of Government Security, fixed deposit receipt pledged in favour of Executive Engineer or as specified in the letter of acceptance of tender. The performance guarantee shall be initially valid up to the stipulated date of completion (SITC works) plus 60 days beyond. This bank guarantee shall be further renewed and kept valid till the recording of completion certificate for the SITC work and thereafter during warrantee period and CAMC period on annual renewal basis by the competent authority.

1. 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 **154 HP**or two similar works each of value not less than **115 HP**or three similar works each of value not less than**77 HP**during last 7 years ending previous day of last date of submission of bids. (I HP = 0.8 TONNE).

   II) Firm with authorized letters from the OEM will be qualified for the commercial bids opening. Only OEM or their authorized dealers can quote the tender being a specialized job .

   III)**Earnest Money of Rs.1,59,966/-**to be deposited on-line as indicated in Schedule.

2. **Similar work means**S/I/T/C of VRV/VRFtype Air conditioning Works of above specifiedcapacity.

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

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. But the bid can only be submitted after depositing requisite tender fee and EMD as specified in the schedule.

7. Copy of enlistment order and certificate of work experience and other documents as specified in the Press Notice / web notice shall be scanned and up-loaded to the e-Tendering website within the period of bid submission. However, certified / original copy of all the scanned and up-loaded documents as specified in press notice web / notice shall have to be submitted by the lowest bidder only within a week physically in the office of e-tendering authority.

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

9. 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

10. 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.

11. Work means only work under Government/ Public Sector Undertaking / Central Autonomous bodies/Private sector of repute.

12. 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.

13. IITD is committed to follow the principle of transparency, equity and competitiveness in public procurement. Before submission of bid,**each bidder should sign integrity pact at respective**

places and submit the bid. If duly signed integrity pact is not submitted by bidder, such bid shall not be considered.

14. 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.

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

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

17. The bid submitted shall become invalid if:

a. The bidder is found ineligible.
b. The bidder does not upload all the documents (including GST registration and EPF & ESI along with up to date filed return), work experience as desired as stipulated in the bid document including the undertaking/ declaration.
c. EMD not deposited through RTGS/NEFT as specified.
d. OEM authorization letter specific to this Tender is not submitted for SITC of the equipment along with 4 years of comprehensive warrantee and 5 years CAMC support.

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

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

1. Annexure 1 [duly filled in preferably typed] and got signed
2. Attested certificate of work experience as desired.
3. Certificate of Registration for GSTIN.
4. Affidavit as per Notice Inviting Tender Condition 1.2.2. (To be submitted on stamp paper)
5. Acceptance to execute INTEGRITY PACT [see integrity pact]
6. EPF & ESI Registration proof.
7. IITD 7 / 8 duly signed. [at page-23]
8. MSME / NSIC Registration [If the bidder claims for EMD exemption]
9. OEM authorization letter specific to this Tender for SITC of the equipment along with 4 years of comprehensive warrantee and 5 years CAMC support.
10. Any other document as specified in the NIT.

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

IITD – 6

INDIAN INSTITUTE OF TECHNOLOGY DELHI
NOTICE INVITING E-TENDER

Executive Engineer [Civil & Electrical], Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 100016 [Phone No. 011-26591762] on behalf of Board of Governors invites online **Item Rate Tender** from Specialized Firms/ Contractors of repute for the following work:

1.1 The work is estimated to cost **Rs.79,98,300/-**This estimate, however, is given merely as a rough guide

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

For composite bid, besides indicating the combined estimated cost put to tender, should clearly indicate the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

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

Criteria of eligibility for submission of bid documents.

1.2.1 Criteria of eligibility for CPWD as well as non-CPWD contractors for specialize work.

Firms/Contractors should have satisfactorily completed one similar work of value not less than **154 HP** or two similar works each of value not less than **115 HP**or three similar works each of value not less than **77 HP** during last 7 years ending previous day of last date of submission of bids.

1.2.2 To become eligible for issue of bid, the bidders shall have to furnish an affidavit as under :-

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

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

3. The time allowed for carrying out the work will be **03 months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.

4. The site for the work is available.

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 except Standard General Conditions of Contract Form can be seen from the web Site **e-procure.gov.in.**

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

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

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

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

Interested contractors who wish to participate in the bid has also to make following payments within the period of bid submission:

(i) Copy of Enlistment Order and certificate of work experience and other documents as specified in the press notice shall be scanned and uploaded to the e-tendering website within the period of bid submission.

10. The bid submitted shall become invalid, if:

a) The bidder is found ineligible.
b) The bidder does not upload all the documents (including GSTIN/Technical bid) as stipulated in the bid document**.**
c) EMD not deposited as specified
d) OEM authorization letter specific to this Tender for SITC of the equipment along with 4 years of comprehensive warrantee and 5 years CAMC support.

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

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

13. The competent authority on behalf of the Board of Governors does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any

reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.

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

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

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

17. No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract liable to be cancelled, if, either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.

18. The bid for the works shall remain open for acceptance for a period of **ninety [90] daysfrom the date of opening of financial bids**, if any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the IIT Delhi shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the re-bidding process of the work.

19. This notice inviting bid shall form a part of the contract document. The successful bidder / contractor, on acceptance of his bid by the Accepting Authority shall **within 15 days** from the stipulated date of start of the work, sign the contract consisting of:-

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

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

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

INTEGRITY PACT

To

……..,

……..,

……..

Sub: NIT No. 9440/62/EW/IITD/2018-19 for the work of."Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi. SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi.

Dear Sir,

It is here by declared that IITD is committed to follow the principle of transparency, equity and competitiveness in public procurement.

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

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

Yours faithfully,
Executive Engineer(Civil & Electrical)

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

To

Executive Engineer (Civil &Elect.),
IIT Delhi, HauzKhas,
New Delhi – 110016

Subject: Submission of Bid for the work of "Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi. SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi".

Dear Sir,

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

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

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

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

Yours faithfully,

(Duly authorized signatory of the Bidder)

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

INTEGRITY AGREEMENT

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

BETWEEN

The Board of Governors, IIT Delhi, HauzKhas, New Delhi - 16 represented through **Executive Engineer (Civil &Elect.)**, IIT Delhi

....., (Hereinafter referred as the '**Principal/Owner**',
(Address of Division)
'**Principal/Owner**', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

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

Preamble

WHEREAS the Principal / Owner has floated the Tender (NIT No. **9440/62/EW/IITD/2018-19**) (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for **"**Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi. SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi".

(Name of work) hereinafter referred to as the "**Contract**".

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

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

Article 1: Commitment of the Principal / Owner

1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

No employee of the Principal / Owner, personally or through any of his / her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(a) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

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

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

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

Article 2: Commitment of the Bidder(s) / Contractor(s)

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

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

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

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

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

d) The Bidder(s) / Contractor(s) of foreign origin shall disclose the names and addresses of agents / representatives in India, if any. Similarly Bidder(s) / Contractor(s) of Indian Nationality shall disclose names

and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

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

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

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

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

Article 3: Consequences of Breach

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

1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by the Principal/Owner**.

2) **Forfeiture of EMD/Performance Guarantee/Security Deposit**: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

3) **Criminal Liability**: If the Principal/Owner obtains knowledge of conduct a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal / Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by

the Principal/ Owner.

3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.

2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6: Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 6 months after the completion of SITC work under the contractor till the continuation of defect liability period (Total Nine years), whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority of IITD.

Article 7: Other Provisions

1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Head Quarters of the Division of the Principal/Owner, who has floated the Tender.

2) Changes and supplements need to be made in writing. Side agreements have not been made.

3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative
duly authorized by Board Resolution.

4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 8: LEGAL AND PRIOR RIGHTS

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

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

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

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

WITNESSES:

1. .....

(signature, name and address)

2. .....
(signature, name and address)

Place:

Dated :

IITD - 7/8

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI - 110016
Percentage Rate Tender / Item Rate Tender & Contract for Works

Tender for the work of "Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi.SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi."

(A) (I) To be submitted online by **07.02.2019upto 03:00 PM**

(II) To be opened on **08.02.2019at03:00 PM**online

e-TENDER

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

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

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

A sum of **Rs 1,59,966/-** is hereby deposited in IIT Delhi Revenue Account No. 10773572622as earnest money. If I / We, fail to furnish the prescribed performance guarantee within prescribed period I / We agree that the said The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I / We fail to commence the work as specified, I / We agree that The Board of Governors, IIT Delhi, HauzKhas, New Delhi - 16 or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form. Further, I / We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid I / We shall be debarred for participation in the re-tendering process of the work.

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

I / We hereby declare that I / We shall treat the tender documents drawings and other records connected withthe work as secret/confidential documents and shall not communicate information/derived there from to any person

other than a person to whom I / We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated:

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

ACCEPTANCE

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

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

(a)

(b)

(c)

For & on behalf of Board of Governors, IIT Delhi

Signature ……..

Dated:

Designation …….

C…..Nil I….. Nil O….. Nil

D'Man /J.E. A.E.E / Sr.F/I E.E.

PROFORMA OF SCHEDULES

[Operative Schedules to be supplied separately to each 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	:	Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi. SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi.

2	Estimated cost of work	:	**Rs.79,98,300/-**
3	Earnest Money	:	**Rs.1,59,966/-**
4	Performance Guarantee	:	5 percent of tendered value
5	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 wh rates are to be determined in accordance with Clauses12.2&12.3		:	See below
Definitions:			
2[v]	Engineer – in - charge	:	Executive Engineer (Civil& Electrical)
2[vi]	Accepting Authority	:	Institute Engineer
2[x]	Percentage on cost of materials and labour to Cover all overheads and profits	:	15 percent
2[xi]	Standard schedule of rates	:	Market Rate
2[xii]	Department	:	E & W, IIT Delhi
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		:	**Institute Engineer**
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:-

Sl. No.	Description of Milestone (Financial)	Time allowed in days (from date of start)	Amount to be with-held in case of non-achievement of mile stone
	N O T A P P L I C A B L E		

C…..Nil I….. Nil O….. Nil

D'Man /J.E. A.E.E / Sr.F/I E.E.

Time allowed for execution of work	:	03 months
Authority to decide:		
Extension of time	:	**Institute Engineer**
Rescheduling of mile stones	:	Institute Engineer
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	:	Not Applicable
Clause 10 A:		
List of testing equipment to be provided by the contractor at site lab	:	As desired by the Engineer-in-charge relating to the work
Clause 10B(ii):		
Whether Clause 10 B (ii) shall be applicable	:	No
Clause 10C:		
Component of labour expressed as percent of value of work	:	**15 percent**

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			
2			
3			
4			

Nil

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

Clause 10CC

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column	:	18 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	:	X_m : 75 percent
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 General specification for Electrical work Part I (INTERNAL) Part-II (EXTERNAL) and HVAC with up to date correction.

Clause 12

Type of work	:	Maintenance works including works of up-gradation, aesthetic, special repair, addition/ alteration
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	:	**Institute Engineer**

Clause 18

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

1.....	2.....	3.....
4.....	5.....	6.....
7.....	8.....	9.....

Nil

Clause 36 (i)

Requirement of Technical Representative(s) and recovery Rate

Sr. No.	Minimum Qualification of Technical Representative.	Discipline	Designation (Principal Technical/ Technical Representative)	Minimum Experience (Years)	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(I)	
						Figures	Words

Nil

Assistant Engineers retired from Government services that are holding diploma will be treated at par with Graduate Engineers

COMMERCIAL AND ADDITIONAL CONDITIONS

1.0 General

1.1 This specification covers manufacturing, testing as may be necessary before dispatch, delivery at site, all preparatory work assembly and installation, testing and commissioning VRV/VRF system and putting into operation .

1.2 Location:Student lounge at 3rd& 4th floor of LHC IIT Delhi.

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

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

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

2.0 Commercial Conditions:

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

2.2 Submission and opening of Tenders:

The tender is in two parts:

(a) Part-I -Technical cum Un-priced commercial Bid

(b} Part-II-Price Bid

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

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

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

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

2.2.5 Necessary clarifications required by the department shall have to be furnished by the tenderer within the time given by the department for the same. The tenderer will have to depute his representative to

discuss with the officer(s) of the department as and when so desired. In case, in the opinion of the department a tenderer is taking undue long time in furnishing the desired clarifications, his bid will be rejected without making any reference.

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

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

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

3.0 Terms of Payments

The following percentage of contract rates for the various items included in the contact shall be payable against the stage of work shown herein.

3.1 60% after initial inspection and delivery at site in good condition on pro-rata basis.

3.2 30% after completion of installation in all respects.

3.3 Balance 10% will be paid after testing, commissioning and handing over to the department for beneficial use.

3.4 Security Deposit

Security Deposit shall be deducted from each running bill and final bill to the extent of 5 % of the gross amount payable. The security deposit shall be released after 6 months of successful instantiation, commissioning and testing of the system.

3.5 Performance Bank Guarantee

The successful tenderer shall submit an irrevocable performance guarantee of 5% of the tendered amount in addition to other deposit mentioned elsewhere in the contract for his proper performance of the contract agreement within 15 days of issue of letter of acceptance of tender. This guarantee shall be in the form of Demand Draft/Pay order of irrevocable bank guarantee bond of any schedule bank or the State Bank of India in the specified perform a of Government Security, fixed deposit receipt pledged in favour of Executive Engineer or as specified in the letter of acceptance of tender. The performance guarantee shall be initially valid up to the stipulated date of completion (SITC works) plus 60 days beyond. This bank guarantee shall be further renewed and kept valid till the recording of completion certificate for the SITC work and thereafter during warrantee period and CAMC period on annual renewal basis by the competent authority.

3.6 Income tax, GST, Labour Cess & other statutory deduction etc. shall be made at source as per the prevalent laws. The deduction of Security Deposit, Income Tax, etc., shall be done after calculation for the above due payment as per clauses 3.1to 3.3 and net payment shall reduce accordingly.

4.0 Rates

4.1 The rates quoted by the tenderer, shall be firm and inclusive of all taxes (including works GST &labourcess), duties, levies, etc. and all charges for packing forwarding, insurance, freight and delivery, installation, testing and commissioning etc. at site including temporary construction of storage, risks over head charges, general liabilities/ obligations and clearance from CFO. However, the fee if any, for the CDO inspections shall be borne by the Department.

4.2 The contractor has to carry out maintenance as per manufacturer's standards for a period of 09 years (04 years comprehensive warranty + 05 years comprehensive annual maintenance contract from the date of successful installation, commissioning & testing of the system.

5.0 Completeness of tender

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

6.0 Storage and Custody of Material

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

7.0 Care of the Building

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

8.0 Completion Period

The completion period indicated in the tender documents is for the entire work of planning, designing, approval of drawings etc, arrangement of materials &equipments, delivery at site including transportation, installation, testing, commissioning and handing over of the entire system to the satisfaction of the Engineer-in-charge.

9.0 Guarantee/warrantee:

9.1 All equipments shall be warranted for a period of 04 years from the date of taking over the installation by the department against unsatisfactory performance and/ or breakdown due to defective design, workmanship or material. The equipment or component, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost to the satisfaction of the Engineer-in- Charge. In case it is felt by the department that undue delay is being caused by the contactor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of Engineer-in-Charge in this regard shall be final & binding on the contractor.

9.2 The tenderer shall guarantee among other things, the following:

(a) Quality, strength and performance of the material used as per manufacturer's standards.

(b) Safe mechanical and electrical stress on all part under all specified conditions of operation.

(c) Satisfactory operation during the maintenance period.

10.0 Water supply / Power Supply

Water & power supply shall be made available by the department at one point in campus free of cost. Further, the arrangement for tapping power / water supply from this point shall be made by the contractor.

11.0 Acceptable makes of various equipments

The acceptable makes of various equipments/ components / accessories have been indicated in "Acceptable Makes" indicated in the list attached. The tenderer shall work out the cost of the offer on this basis. Alternate makes are not acceptable.

12.0 Data Manual and Drawing to be furnished by the tenderer:

12.1 With tender: The tenderer shall furnish along with the tender, detailed technical literature, pamphlets and performance date for appraisal and evaluation of the offer.

12.2 After award of work: The successful tenderer be required to submit the following drawings within 15 days of award of work of approval before commencement of installation.

(a) General arrangement drawing of the equipments like Detectors, R.I., C&I Panel etc. in the building with complete dimensions.

(b) Any other drawing necessary for the job.

13.0 The successful tender should furnish well in advance three copies of detailed instruction and manuals of manufacturer's for all items of equipments regarding installation , adjustment operation and maintenance including preventative maintenance and troubleshooting together with all the relevant date sheets, spare parts catalogue etc. all in triplicate.

14.0 Extent of Work

14.1 The work shall comprises of entire labour including supervision and all material necessary to make a complete installation and such tests and adjustment and commissioning as may be required by the department. The term complete installation shall not only mean major items of the plant and equipments covered by the specification but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in details in the tender documents in connection with this contract as this is a turnkey job.

14.2 In addition to supply, installation, testing and commissioning of FAS/ AFAS including intelligent addressable FAS equipments, following works shall be deemed to be included with the scope of work to be executed by the tenderer as this is a turnkey job-

(a) Minor building works necessary for installation of equipments, foundation making of opening in walls or in floors and restoring them to their originalcondition I finish and necessary grouting etc. as required.

(b) All supports for cable and MS Channel for erection as are necessary.

(c) Getting CFO inspection done and obtaining clearance. However, necessary fees for inspection shall be borne by the department.

15.0 Exclusion and work to be done by other agencies:

The following shall be excluded from the scope of work:

(a) Major dismantling of any existing building work.

16.0 Inspection and Testing

16.1 The material and equipments shall be offered for initial inspection at manufacturer's works. The contactor will intimate the date of testing of equipments at the manufacturer's work before dispatch. The successful tenderer shall give advance notice of minimum two weeks regarding the dates proposed for such test to the department representative to facilitate his presence during testing. The Engineer- in-charge may witness such testing. The cost of the Engineer visit to the factory will be borne by the Department. Equipments will be inspected at the manufacturer/ Authorized Dealers premises before dispatch to the site by the contractor. Nothing extra shall be paid for initial inspection/testing at Manufacture Works.

16.2 Copies of all documents of routine and type test certificates of the equipment carried out at the manufactures premises shall be furnished to the Engineer-in- charge and consignee.

17.0 VALIDITY

Tenders shall be valid for acceptance for a period of**ninety days** from the date of opening.

18.0 COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS:

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

(i) Factories Act.

(ii) Indian Electricity Rules

(iii) B.I.S.& other standards as applicable

(iv) Workmen's compensation Act.

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

18.2 After completion of the installation the same shall be offered for inspection by the representatives of the C.F.O. The contractor will extend all help including test facilities to the representatives of CFO. The observation of CFO will be attended by the contractor.

18.3 Nothing in this specification shall be construed to relieve the successful tender of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

18.4 Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirements would make the tenderer liable for penalty of Rs.500/-

foreach default. In addition, the department will be at liberty to make arrangement for safety requirements at the cost of tenderer and recover the cost thereof from him.

19.0 INDEMNITY

The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipments and ancillary equipment under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.

20.0 Erection Tools:

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

21.0 Cooperation with Other Agencies:

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

22.0 Mobilization Advance:

No mobilization advance shall be paid for this work.

23.0 Insurance and Storage:

All consignments are to be duly insured upto the destination from warehouse at the cost of the contractor. The insurance covers shall be valid till the equipment is handed over duly installed, tested and commissioned.

24.0 Verification of Correctness of equipments at destination:

The contractor shall have to produce all the relevant records to certify that the genuine equipments from the manufacturers has been supplied and erected.

25.0 Painting

This shall include cost of painting of the entire installation. The major equipments like C&I Panel, cable trays etc. shall be factory final finish painted. The agency shall be required to do only touching to the damages caused to the painting during transportation, handling & installation at site, if there is no major damage to the painting. However hangers, supports etc. of cable tray etc. shall be painted with required shade including painting with two coats of anti corrosive primer paint at site.

26.0 Training :

The scope of work includes the on job technical training of two persons of department at site. Nothing extra shall be payable on this account.

27.0 Maintenance:

Sufficient trained and experienced staff shall be made available to meet any exigency of work during the Warrantee/CAMC period of Nine years from the handing over of the installation.

28.0 Interpreting Specification:

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

(a) Schedule of quantities

(b) Technical Specification

(c) Drawing (if any)

(d) General Specification

(e) Relevant BIS or other international code in case BIS code is not available.

29.0	**Applicable Law:** The place of jurisdiction would be New Delhi (Delhi) INDIA.
30.0	**Right to Use Defective Goods** If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Institute shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.
31.0	**Warranty**: (i) Warranty period shall be (as stated at page #2 of this tender) from date of installation of Goods at the IITD site of installation. The Contractor shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Contractor, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. The warranty should be comprehensive on site. (ii) The Institute shall promptly notify the Contractor in writing of any claims arising under this warranty. Upon receipt of such notice, the Contractor shall immediately within in 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Contractor shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Institute for the replaced parts/goods thereafter. The period for correction of defects in the warranty period is 02 days. If the Contractor having been notified fails to remedy the defects within 02 days, the Institute may proceed to take such remedial action as may be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the purchase/Institute may have against the Contractor under the contract. (iii) The warranty period should be clearly mentioned. The maintenance charges (AMC) under different schemes after the expiry of the warranty should also be mentioned. The comprehensive warranty will commence from the date of the satisfactory installation/commissioning of the equipment against the defect of any manufacturing,

	workmanship and poor quality of the components. (iv) Following items are covered during warrantee period under the scope of Comprehensive maintenance, Break down maintenance, Preventive maintenance i/c monthly, quarterly and yearly maintenance of installation as per details furnished in the Tender document, shall be carried out. Comprehensive maintenance also includes supply/ replacement and repair of Units spares as required. No extra payment will be made for supply/ repair/ replacement of spare units/ components.
32.0	After the warranty period is over, Comprehensive Annual Maintenance Contract up to next Five years should be started. The CAMC charges will not be included in computing the total cost of the equipment.
33.0	Terms of payments of AMC : The payments of Annual Maintenance Contract will be made on quarterly basis after satisfactory completion of each quarter.
34.0	**User list:** Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided.
35.0	**Defective Equipment**: If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, IIT Delhi may consider "Banning" the supplier.
36.0	**Downtime:** During the warranty period and CAMC period not more than 5% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 5% FOB value will be imposed. Downtime will be counted from the date and time of the filing of complaint with in the business hours.
37.0	**Disputes and Jurisdiction**: Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within New Delhi.
38.0	**Compliancy certificate**: This certificate must be provided indicating conformity to the technical specifications.

Additional Conditions on CAMC

COMPREHENSIVE MAINTENANCE OF VRF/VRV type Air-Conditioning system.

After completion of Warrantee period, a Supplementary Agreement will be drawn as perprovision in CPWD works manual 2014 at para 23.6 between the successful contractor andIITD. The terms and conditions of the Supplementary Agreement will be as follows:

SCOPE OF WORK

Following items are covered under the scope of Comprehensive maintenance, Break down maintenance, Preventive maintenance i/c monthly, quarterly and yearly maintenance of installation as per details furnished here under, shall be carried out.Comprehensive maintenance also includes supply/ replacement and repair of Units sparesas required. No extra payment will be made for supply/ repair/ replacement of spareunits/ components. In the years of warranty period, the cost of comprehensivemaintenance is deemed to have been included for which no extra payment shall be made.Bidder has to quote the rates for comprehensive maintenance for the subsequent year'sie.5th year to 9th year inclusive of spare parts equipments as stated above during thewarrantee period, No extra payment will be made for supply/ repair/ replacement ofspare units/ components, supply & filing of refrigerant, if a system or part of the systemremains unattended, necessary recovery will be made from his bill/deposit.

i) Comprehensive maintenance of complete air conditioning system so that performance of the plant generally remains within theparameters as recorded during the final testing of the plant with tolerances, whichare required to be furnished during the design stage.

ii) Various type/ size of indoor units complete with associated display, electronic cardsand cordless/ corded remote controller & associated internal control/ powerwiring/ regular cleaning of filters, fan motor & any other associated work for proper& specified functioning of indoor units.

iii) Various capacity outdoor units with associated compressor, supply/ filling ofcompressor oil etc., inverters/ D.C Twin Rotary / Scroll System electronic cards,IGBT, control/ power wiring, oil recovery system, heat exchanger, condenser motorfan, internal refrigeration circuit & any other associated work for proper & specifiedfunctioning of outdoor units.

iv) Refrigerant piping along with all joints etc. i/c detection/ repairing of leakage,pressure testing with nitrogen gas, vacuum purging, gas recharging/ topping i/csupply of refrigerant. The repair work shall be carried out in professional manner.This shall also include restoration of insulation after repair. Any other associatedwork for proper & specified functioning air conditioning system. The scope alsoincludes supply & charging of refrigerant due to any unforeseen circumstances.

v) Condensate drains water pipe cleaning, detection/ repairing of pipes for any leakageetc. Any other associated work for proper functioning of drain water disposalsystem.

vi) All control & power wiring between indoor & outdoor units. Any other associatedwork for proper& specified functioning of air conditioning system.

vii) Any other item/ activities associated with proper functioning of comprehensivemaintenance complete air conditioning system deemed to have been included in thescope of work.

viii) The maintenance work shall be got carried through the manufacturer/OEMappointed personnel only.

NOISE AND VIBRATION CONTROLS

1.0 The air conditioning contractor must take all necessary precautions to haveminimum noise generation and its transmission. Minimum vibration aspermitted by IS relevant code shall be ensured. A few points for guidance onlyare given below:

2.0 a) Double fire retardant flexible connections shall be provided from airdischarge to outlet of air-handler to the duct.

b) Vibration isolation pads of suitable thickness commensurate to loadingfor isolation of vibration shall be provided under all VRV systems. Inconsultation with manufacturer for proper selection of vibration isolators

c) Flexible conduit connections of minimum diameter of 50mm to motorsshall be provided. All loops should be large enough to allow connectionsto remain flexible.

d) All conduit connection where conduits are 60mm or larger shall be madeof 1.2 meters minimum length conduit installed in the shape of U and grossly slack to provide maximum vibration isolation.

e) Operating clearance of 40mm shall be kept between the base and theinertia base.

f) All items suspended from false ceiling shall be isolated on separatehangers.

g) In case of ducts, conduits, pipes & tubes the annular space between construction and penetrating element shall be sealed with sand cementplaster.

h) The air-conditioning contractor shall take all other precautions or shallmake his own arrangements even if not specified in the tender documentsfor eliminating high noise levels & shall minimize vibrations in allmechanical equipments without any additional cost.

LIST OF ACCEPTABLE MAKE OF MATERIALS / EQUIPMENT		
1	VRV /Cassettes	Mitsubhishi Electric/Toshiba/Daikin/O-General
2	Refrigerant Piping	Mettube/Rajco/Totaline/Mandev/Maxflow
3	Refrigerant Piping Insulation	Trocellen/Supreme/Armaflex/Armacell/Superlone/Paramount
4	Condensate Drain Pipe	Polycab/Supreme/Prince/Finolex/Polypack
5	MCB/MCCB/TPDB/Isolator	Hager/ Legrand/ C&S/L&T/Simens
6	Cables	Havells/Polycab/finolex
7	Exhaust fan	Crompton/ bajaj/ Havells

VRV/VRF SYSTEM

TECHNICAL SPECIFICATION

General

1. The scope of this section comprises the design, supply, erection, testing and commissioning of Air Cooled 100% Inverter based Variable Refrigerant Flow volume of D.C Twin Rotary / Scroll modular type air-conditioning system conforming to these specification/ Explanatory Note and in accordance with the requirements of Drawing and Schedule of Quantities. The prices quoted shall include all the equipment ancillary material as specified and all such items whatsoever and which may be required to fulfill the intent and purpose as laid down in the specification and the approved drawings. The contractor shall calculate equipment capacity based upon design parameters specified for the system design & verify all the quantities and sizes of refrigerant pipe, fitting, cables, control cable, pipes, insulation, indoor units, and outdoor units etc. before installation to avoid any shortfall or surplus. The tenderer shall also include all necessary civil work MS frame work for installation of outdoor and indoor units in VRF based air condition system. The cost quoted by tenderer shall also include the refrigerant gas R-410A & its charging for proper & specified functioning of air conditioning system. VRV and compressor OEM shall be same.

   Civil work/ MS frame work for indoor and outdoor units related to VRF equipments, all cuttings should be properly finished as existing surrounding. The installation of outdoor unit on the terrace of building should be checked up structurally & their mounting should be structurally safe for the outdoor unit to ensure in such a way that after installation.

   i. Cutting of walls and floors/ ceiling.
   ii. Making holes.
   iii. Sleeves.
   iv. Foundation

2. The scope in the tender schedule also covers detailed designing of complete air-conditioning system based on inverter technology based Scroll VRV/VRF air conditioner with air cooled outdoor units system capable of cooling and heating (reverse cycle) as per individual or season requirement suitable for operation on 415 V, 3 Phase, 50 Hz AC electric supply.

   The outdoor units shall have both cooling & heat pump mode, consisting of one/ multiple outdoor unit with single circuit of refrigerant piping and multiple in door units of various types. Each indoor unit should have capability to cool or heat as per seasonal weather changes. This shall also include complete capacity calculation for indoor and outdoor units complete with CAD drawing, designing & layout of following.

   i. Outdoor units.
   ii. Indoor units.
   iii. Refrigerant piping
   iv. Condensate water piping & disposal.
   v. Power & Control Cables between Outdoor units & Indoor units.

While designing the system care should be taken to select outdoor units of suitable capacity based on design data provided below & to economize on available floor area for installation of outdoor units as well as optimum utilization of outdoor units and type of indoor unit taken into considerations. The indoor units should be designed based upon the heat load calculations for individual rooms/ areas to be air-conditioned and over capacities should be avoided. The design should also specifically take care of disposal of condensate drain water so that there is no leakage of condensate water inside the room as well in the route of condensate water pipe line. The layout of refrigerant piping is to be designed in such a way so that it should not disturb the aesthetic of the building/ room, inadvertent damage in the route of pipe should not occur in future & optimum length of pipe line for efficient air conditioning. After completion of the work four sets of 'as erected/ commissioned drawing' of activities listed above shall be submitted.

Design Data

The work of air-conditioning outdoor and indoor units as specified in schedule of work is required to be carried out at IIT Campus New Delhi. The specified design parameters are only tentative in nature, however, all efforts shall be made to achieve the following specified design parameters and if at any design stage need for higher capacity outdoor HP is required, necessary approval shall be accorded based on design analysis and discussions on the subject. In case of any deviation from the parameters specified below, the technical issues involved shall be brought to the notice of Engineer-in-charge for seeking necessary approvals to achieve these parameters. Engineer-in-charge, however, reserves the right to permit any deviations from the parameters as specified.

Outside	Summer condition	:46° CDB; 23.9° CWB
	Monsoon	:35.0° CDB' 28.3° CWB
	Winter	:7.2° CDB' 5.0° CWB
Inside conditions	summer	:25.0°C ± 1°C
(Desired)	&Winter	:22°C ± 1°C

Note: 1 HP unit = 0.8 TR (Approximately)

3. The project of air-conditioning of at Office building for IIT , New Delhi is required to be executed in time bound and professional manner. The equipments involved in air-conditioning are complex in nature comprising of instrumentation, control and central management system. The job, therefore calls for highest order of technical expertise and also requirement of experience of air-conditioning installation with proven performance. The tenderer, shall, therefore obtain, before quoting/ the consent of OEM and furnish the same alongwith the bid document. This consent shall also covers aspects of desired assistance in the field of design, development, testing, execution, completion & maintenance/ maintenance spares of the air-conditioning system.

4. Notwithstanding the technical details as specified in the tender, the manufacturers may offer/ indicate systems and necessary design & features applicable for the offered products at the tendering stage.

   At IIT, New Delhi, it is proposed to install outdoor unit at the top of the building or in open court yard depending availability of site.

5. OUTDOOR UNIT

i. The outdoor unit shall be factory assembled, weather proof casing (Material of construction of casing shall be vendor's standard design), constructed from heavy gauge GI sheets steel panels and coated with baked enamel finish. The outdoor unit shall be completely factory wired, tested with all necessary controls & filled with first charge of refrigerant before delivering at site.

ii. The inverter technology based D.C Twin Rotary / Scroll modular type VRF equipment should be capable so that refrigerant piping between indoor units and outdoor unit shall be extendable upto 165m of equivalent length with maximum height difference between outdoor & indoor unit of 90m & level difference between two indoor units shall be maximum upto30m. All the outdoor unitsshould have all inverter type compressor in each module.

iii. Selected modules should have minimum cooling COP of7.1 at 50% load, and each refrigerant circuit should have at least two inverter compressors.

   All the details pertaining to power consumption as per ARI standards should be duly filled and furnished as per the sheet enclosed.

   The above COP values as indicated are required to be furnished in Original by the tenderer directly from the original equipment Manufacturer (OEM) with OEM's seal and signature on all documents.

iv. The outdoor unit shall be filled with first charge of refrigerant R-410A before delivering at site.

v. It should also be provided with duty cycling for D.C inverter Twin Rotary/ Scroll compressors capable of changing the rotating speed of compressor by inverter controller to follow variation in cooling & heating loads & switching starting sequence for better stability and prolonging equipment life or similar features if available in D.C Twin Rotary / Scroll will also be accepted.

vi. The unit shall be provided with its own microprocessor control panel with provision for integration with the building management system for Air-conditioning system.

vii. The machine must have a sub cool feature to use coil surface more effectively through proper circuit/ bridge so that it prevents the flushing of refrigerant from long piping due to this effect thereby achieving energy savings.

viii. The outdoor unit should be fitted with low noise level and should not be more than 67 db (A) at normal operation when measured at a point 1 mtr. In front of the unit at a height of 1.5 mtrs.

ix. The outdoor unit should be fitted with low noise aero spiral design fan with aero fitting grill for spiral discharge airflow to reduce pressure loss and should be fixed with DC/AC fan motor for better efficiency.

x. In case of trouble occurs in an indoor units (s), the continuous operation of system should be possible after taking corrective bypass action.

xi. The unit shall be designed in such as way that cleaning of drain Pan should be easy & inspection/ replacement of compressor should be easy.

xii. The condensing unit shall be designed to operate safely when connected to multiple fan coil units.

xiii. The outdoor unit shall have refrigerant cool PCB chamber for better operation at high ambient temperature.

xiv. The outdoor unit shall have feature to automatically modulate the evaporative temperature between 6Deg C to 11 Deg C with respect to load for better comfort and energy efficiency.

7.1 **Compressor**

i. The compressor in inverter based Scroll System shall be highly efficient. The system should response efficiently in accordance to the variation in cooling or heating load requirement.

ii. All outdoor units shall have multiple steps of capacity control to meet load fluctuation and indoor unit individual control. All parts of compressor shall be sufficiently lubricated stock. Forced lubrication may also be employed.

iii. Oil heaters shall be provided in the compressor casing or as per manufacturer standard equipments.

7.2 **Oil Recovery system**

i. Unit shall be equipped with an oil recovery system to ensure stable operation with long refrigeration piping lengths.The system shall have oil recovery cycle of 8 or more hours.

ii. The system must be provided with oil balancing circuit to avoid poor lubrication.

7.3 **Refrigerant Circuit**

i. The refrigerant circuit shall include liquid and gas shut-off valves and a solenoid valves at condenser end.

ii. The equipment must have inbuilt refrigerant stabilization control for proper refrigerant distribution.

iii. All necessary safety devices shall be provided to ensure the safe operation of the system.

7.4 **Heat Exchange**

i. The heat exchanger shall be constructed with copper tubes mechanically bonded to aluminum fins to form a cross fin coil.

ii. The aluminum fins shall be covered by anti-corrosion resin film.

iii. The unit shall be provided with necessary number of direct driven low noise level propeller type fans arranged for vertical discharge. Each fan shall have a safety guard.

7.5 **Safety Devices**

i. All necessary safety devices shall be provided to ensure safe operation of the system.

ii. Whatever safety devices are required shall be part of outdoor unit:- high pressure switch, fuse, fan drive overload protector, fusible plug, crankcase heater, over load relay, overload protection for inverter based technology.

7.6 The outdoor roof mounted units shall be provided in such a fashion that these do not affect the overall aesthetics and ambience of the building. If required these units shall be suitably camouflaged to give good aesthetic look. These provisions, however, shall be discussed, if required, at a later date and the prices for the same shall be worked out separately as extra item.

7.7 Noise levels for outdoor units shall not be more than 67 db (measured at a point 1 meter in front of the unit at a height of 1.5 meters.

8 **INDOOR UNITS**

All indoor units as specified shall have; in general, noise levels less than 46 db. For critical applications noise levels below these limits may, however, be specified during design stage.

i. Each unit shall have electronic control valve to control refrigerant flow rate respond to load variation of the room.
ii. The address of the indoor unit shall be set automatically or through central controller in case of individual and group control.
iii. The fan shall be dual suction, aerodynamically designed, Turbo, multi blade type, statically & dynamically balanced to ensure low noise and vibration free operation of the system. The fan shall be direct driven type, mounted directly on motor shaft having support from housing.
iv. The cooling coil shall be made out of seamless copper tubes and having continuous aluminum fins. The fins shall be spaced by collars forming an integral part. The tubes shall be staggered in the direction of airflow. The tubes shall be hydraulically/ mechanically expanded for minimum thermal contact resistance with fins. Each coil shall be factory tested at 21 kg/sq.m air pressure under water.

v. Indoor unit shall have cleanable type filter fixed to an integrally moduled / moduled plastic frame. The filter shall be slide in and neatly insert able type. It shall be possible to clean the filters either with compressed air or water.
vi. Each indoor high wall unit shall be with corded/ cordless remote controller as standard features. The controller shall be able to change fan speed and angle of swing flap (for high wall) individually as per requirement.

9. **Ceiling mounted cassette Type Unit**

The unit shall be ceiling mounted cassette type. The unit shall include pre-filters, fan section and DX-coil section. The plastic body shall be light in weight and shall be able to suspend.

The fan shall be aerodynamically designed diffuser turbo fan type. Unit shall have an external attractive panel for supply and return air. The cassettes units shall have the capability to individually control all four flaps to improve air distribution which can be set as per the requirement. The unit shall have forced stop function connecting points for integration with Fire alarm, etc.

10. Refnet Joints/ Header Joints

Supply & installation of the Y-Joint/Ref-net separation refrigeration pipe joints and header in the appropriate orientation to enable correct distribution of refrigerant. The Distribution Joints should be factory insulated with close cell nitrile rubber tubular sections of class O fire ratting.

11. Refrigerant Piping

i. Refrigerant piping for the air-conditioning system shall be upto 19.1 mm dia of soft seamless copper tubes & for above 19.1 mm dia the pipe material shall be of hard seamless copper tubes with pipes material being hard drawn copper pipe. Forged copper fittings shall be used for the refrigerant piping. The refrigerant piping arrangements shall be in accordance with good engineering practices as applicable to the air-conditioning industry, and shall include charging connections, suction line insulation and all other items normally forming part of proper refrigerant circuits except Y joint/separation tubes.

ii. Before jointing any copper pipe or fittings, its internals shall be thoroughly cleaned by passing a clean cloth via wire or cable through its entire length. The piping shall be continuously kept clean of dirt etc. while constructing the joints. Subsequently it shall be thoroughly blown out using nitrogen gas.

iii. After completion of installation of the refrigerant piping, the refrigerant piping system shall be pressure tested using nitrogen gas at a suitable pressure as specified by OEM (Original Equipment Manufacturer). Pressure shall be maintained in the system for 48 hours. The system shall then be evacuated to vacuum of not less than 700 mm Hg and held for 24 hours.

iv. The supplier of air-conditioning system shall choose sizes as designed and erect proper interconnections of the complete refrigerant circuit. The thickness of copper piping shall not be less than 18 SWG for pipes upto 19.1 mm and 16 SWG for larger dia.

v. The suction line pipe size and the liquid line pipe sizes shall be selected according to the manufacturer's specified diameter. All refrigerant pipes shall be properly supported and anchored to the building/structure using steel hangers, fasteners, brackets and supports which shall be fixed to the building/structure by means of inserts or expansion shields or anchor fasteners of adequate size and number to support the load imposed thereon.

vi. The refrigerant piping should be laid in such a way that it should not distort the interior of the room, wherever the refrigerant pipe has to be laid across the room, it should be laid in a concealed manner by making appropriate boxing arrangement matching with the interior of the room. All associated minor Civil Engineering works (like chasing on wall, ceiling & re-

plastering & repainting etc.) related with the above items are included in the scope of work. The above scope does not include false ceiling wherever required.

vii. Entire liquid and suction refrigerant pipe lines including all fittings, valves and strainer bodies, etc. shall be insulated with 19mm/ 13mm thick electrometric nitrile rubber as specified in BOQ.

9 **Drain Piping duly insulated**

i. The drain pipe connection of each cassette unit to the main header should be 32mm dia and the header pipe should be of 40mm dia. The drain-pipe should be heavy PPR pipe ISI marked and conforming to relevant IS complete with fitting as required whereas the connection of the fan coil unit to the PPR pipe should be with U trap & flexible braided pipe. The drain piping should be insulated with 9 mm thick tubular nitrile rubber insulation.

ii. For proper drainage of condensate U trap shall be provided in the drain piping wherever required. All pipe supports shall be prefabricated and pre-painted slotted angle support, properly installed with clamps. The condensate drain pipe arrangement for disposal of condensate water be made in such a way that there should not be any leakages of condensate water inside rooms as well in the route of drain water pipe line & water should be discharged at the location jointly decided with Engineer-in-Charge of work. All associated Civil Engineering works as per requirement at site in above connection like making chase in the wall & restoring it original shape by re-plastering & repainting, etc. are included in the scope of work. The arrangement of drain-pipe shall be made in such a way that it should not affect the aesthetic of the building as well as is maintenance friendly & easily accessible.

10 **VARIOUS SIZES PVC INSULATED COPPER CONDUCTOR WIRING CABLES**

i. PVC insulated multi stranded sheathed copper conductor wiring cable for working voltage uptoand including 1100 Volts, ISI marked conforming to IS 694/1990 (Latest Version).

ii. Wiring of installation shall be in conformity with IS 732/1989 (Latest Version), IS 4648/1968 (Latest Version).

14 **RIGID PVC CONDUIT PIPE**

i. Laying conduit shall be in conformity with IS: 732/1989 (Latest Version), IS 4648/1968 (Latest Version).

ii. Fitting for rigid non-metallic conduit shall conform to IS 3419/1989 (Latest Version) and accessories shall conform to relevant IS.

15 **GENERAL**

IITD will not be responsible for any accident to the staff by any reasons whatsoever. The contractor will ensure that the staff employed by him on site is duly insured for liability in case of any accident, strikes, riots, civil commotion, etc. IITD will not be liable for any damage caused due to any reasons.

16.1 Attending to complaints

All defects and deficiencies under Warrantee/CAMC period should be rectified promptly after lodging of complaint. The complaint can be lodged through telephonic message or through complaint register kept in the office of Engineer-in-charge. For expeditious disposal

of complaint, contractor will keep sufficient reserve of unit exchange spare quantity & item to be kept as unit spares shall be jointly decided with Engineer-in-charge.

The contractor will furnish Telephone No. and his contact person to whom the complaint has to be lodged.

16.2 **Maintenance schedules**

In addition to attending to complaints, the contractor will be required to carry out prescribed maintenance schedules/preventive maintenance. The maintenance and preventive maintenance schedules and the work to be done in each schedule shall be jointly decided in consultation with Engineer-in-charge.

A Proper record of maintenance schedules to be opened based on Performa jointly decided with Engineer-in-charge. The contractor & Engineer-in-charge of IITD shall jointly record the details of maintenance schedule in the register meant

ADDITIONAL TECHNICAL SPECIFICATIONS

1.0 BASIS OF DESIGN

Location –IIT Delhi
Latitude – 28.58 Deg. North
longitude – 77.06 Deg.

A. Outside Design Conditions DBT °C WBT °C
Summer / Monsoon / Winter 46/35.0/7.2 23.9/28.3/5.0

B. Inside Design Conditions DBT °C RH
Summer / Monsoon 22.220± 1 Around 50%

C. POWER SUPPLY:

Stabilized three phase four wire AC supply i.e. 415 Volts ±10 % & 50 Hz ± 5 % with double earthing shall be made available near eachoutdoor unit & Single-phase power supply with earthing near each indoor units.

D. Parameters for Heat load Application

i) Light Load – 2.0 W / Sq Ft.
ii) Occupancy as per Furniture Layout.
iii) Fresh Air – as per Ashrae 62.1-2007
iv) Glass Solar Gain – 0.56
v) Glass U Factor – 1.13 BTU/HR/SFT/°F.
vi) Wall U Factor - 0.36 BTU/HR/SFT/°F.
vii) Partition Load - 0.32 BTU/HR/SFT/°F.
viii) Ceiling / Floor Load - 0.46 BTU/HR/SFT/°F.
ix) Exposed Roof - 0.12 BTU/HR/SFT/°F.
x) Equipment Load – As per Occupancy / 0.15 W Per Computer

2.0 The capacity/rating of various equipments in this contract are given for guidanceonly. The AC contractor shall check in detail the design parameters againstselection of equipment. The AC contractor shall be responsible for maintainingthe desired inside conditions with the equipments selected & offered by him andshall not deprive him of the responsibility if selection of

equipment is notthoroughly checked. In case of shortfall the AC contractor shall replace/ modifyequipment for achieving desired parameter without any extra cost to owner/employer. The contractor would be bound to replace the equipment / equipmentsselected by him if design condition is not achieved by the AC System offered &installed by him.

2.1 Variable Refrigerant Volume Air-cooled Unit (With Inverter CompressorControl)

A) Outdoor Unit (Imported With Inverter Compressor Control)

S. No. Unit Condition of Services
a) Type -- Heat Pump Type(Cooling & Heating)
b) Total Quantity Nos. 192 HP
c) Capacity (Cooling & Heating) please see BOQ
d) Capacity (Heating) KW As Per Std.
e) Connectable No. ofPossible indoor unit Nos. 36 / or One to one
f) Air entering condenser Deg CDB 43.33(Outdoor unit shall be suitable for operation at 46 Deg C and more)
g) Electric Supply -- 415 V/3 Ph/50 Hz--
h) Permissible Refrigerant Length 100 Meter MinimumPipe Length for EachOut Door Unit
i) COP AHRI condition >7.1

B) Indoor Units (Ceiling Suspended / Floor Mounted Duct Type)

2.2 G.S.S. DUCTING
a) Class of Galvanizing VIII
b) Code of fabrication ISS-655 (revised)
c) Material of hangers MS
d) Quantity of sheet Lock forming quality

2.3 INSULATIONXLPE FOAM
a) For external thermalinsulation of duct As per specification
b) Density 40-60 Kg / M^3

OPEN CELL NITRILE RUBBER.
a) For external thermalinsulation of duct As per specification
b) Density 140-180 Kg / M^3

The codes, regulation as detailed below shall be followed in this contract:-

1. Safety code for air-conditioning(revised) amendment 1 IS 659: 1964 (reaffirmed 1991)

2. Safety code foe mechanicalRefrigeration IS 660: 1963 (reaffirmed 1991)

3. Testing of refrigerationcompressors IS 5111: 1993

4. Air-cooled heat exchangers IS 10470: 1983(amendment 1) (reaffirmed 1991)

5. Thermostats for use in IS 11338: 1965refrigeration etc. (reaffirmed 1991)

6. Metal Duct Work IS 655: 1963 (reaffirmed 1991)

7. Steel for general structural IS 2062: 1992purpose

8. Welding IS: 3589

9. Refrigeration As per ASHRAE / ISIAir-conditioning & RefrigerationAir-conditioning institute Standards

10. Hot Dip Zinc Coated Steel Tubes IS 4736: 1968

11. Colour code for the identification IS 2379: 1963of pipe lines

12. Specific requirements for the IS 4064 (Part II) 1978direct switching of the individualmotors.

13. PVC insulated (HD) Electric IS : 1554 (Part I)Cables for working voltage upIncluding 1100 Volts.

14. HRC Cartridge fuse links IS 2208: 1976upto 650 Volts.

15. Starter IS 8554 (Part I) 1979

16. Inspection and testing of IS 732 (Part III) 1979installation

17. PVC insulated (heavy duty) IS 1554: 1981 Part I & IIcables for working voltage up to 1.1. KV and up to 11 KVGrade respectively.

18. Code for practice for electrical IS 732: 1989wiring installations.

19. Code for practice for earthing IS 3043: 1966

20. Wrought aluminum&aluminumIS: 737alloy sheet and strip for generalengineering purposes.

21. Mild steel tubes, tublar and other IS: 1239wrought steel fittings.

22. Contactors for A.C for voltage IS 2959: 1975upto 1100 V.

23. Low voltage switch gear and IS 8623: 1993 Part I & IIControl gear assemblies.

24. Code of practice for selection IS 3914of starters for AC induction motors

25. Specification for cables glands IS 4821

26. Code for selection, installation & IS 10118: 1982 Part I to IVmaintenance of switch gear and control gear.

27. Conduits for electrical installations IS 9537: 1981 Part I to IV

28. Permissible limits of noise level IS 12065: 1987for rotating electrical machines.

29. Code of practice for installation IS 3106: 1966and maintenance of motors

30. Unbounded glass wool for thermal IS 3690: 1974insulation (1st. Revision)

4.0 **SAFTEY CODES**

The following IS codes shall be followed:

Safety code for mechanical refrigeration IS 660

Safety code for air conditioning IS 659

Safety code for scaffolds & ladders IS 3696

Code of practice for fire precaution in IS 3016

Welding & cutting operationsCode for safety procedures and practices IS 5216

In electrical worksCode of practice for safety and health IS 3696

Requirements in electrical & gas weldingand cutting operations

ANNEXURE - 1

<< Organization Letter Head >>

DECLARATION

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

1	Name & Address of the bidder	**:**	
2	Phone	**:**	
3	E-mail	**:**	
4	Contact person name	**:**	
5	Mobile number	**:**	
6	GSTIN number	**:**	
7	PAN number	**:**	
8	UTR no. [for payment of EMD]	**:**	
	BANK DETAILS		
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	**:**	
16	Blank Cheque	**:**	To be enclosed

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

IITD -2010 CORRECTION SLIPS

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

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

Reference	Existing Provision	Modified Provision
Page 5, IITD 2010	Page 5, IITD 2010 4A. Applicable for Percentage Rate Tender only (IITD-7) In case of Percentage Rate Tenders,a tenderer shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule-A, he will be willing to execute the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.	Page 5, IITD 2010 4A. Applicable for Percentage Rate Tender only (IITD-7) In case of Percentage Rate Tenders, **contractor** shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule-A, he will be willing to execute the work. **The tender submitted shall be treated as invalid if :-** **1. The contractor does not quote percentage above/below on the total amount of tender or any section/sub head of the tender.** **2. The percentage above/below is not quoted in figures & words both on the total amount of tender or any section/sub head of the tender.** **3. The percentage quoted above/below is different in figures & words on the total amount of tender or any section/sub head of the tender:** Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for

		carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes. **New Para 4B is added as below:** **4B: In case the lowest tendered amount (estimated cost + amount worked on the basis of percentage above/ below) of two or more contractors is same, such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/below on estimated cost of tender including all sub sections/sub heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.** **In case any of such contractor refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50% of earnest money shall be forfeited.** **If the revised tendered amount of two more contractors received in revised offer is again found to be equal , the lowest tender, among such contractors, shall be decided by draw of lots in the presence of SE of the circle, EE(s) in-charge of major & minor component(s) (also DDH in case Horticulture work is also included in the tender), EE(P) or EE(HQ) of the circle & the lowest contractors those have quoted equal amount of their tenders.** **In case all the lowest contractors those have quoted same tendered amount, refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each contractor.** **Contractor(s), whose earnest money is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the work.**
Reference	**Existing Provision**	**Modified Provision**
10A	In case of Percentage Rate Tenders only	In case of Percentage Rate Tenders only

(page 6-7)	percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. **However if the contractor has worked out the amount of the tender and if any discrepancy is found in the percentage quoted in words and figures, the percentage which corresponds with the amount worked out by the contractor shall, unless otherwise proved, be taken as correct. If the amount of the tender is not worked out by the contractor or it does not correspond with the percentage written either in figures or in words, then the percentage quoted by the contractor in words shall be taken as correct. Where the percentage quoted by the contractor in figures and in words tally but the amount is not worked out correctly, the percentage quoted by the contractor will, unless otherwise proved, be taken as correct and not the amount.**	percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. **(Remaining part deleted)**
Reference	**Existing Provisions**	**Modified Provisions**
Deviations/ Variations Extent and Pricing	**CLAUSE 12** The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do	**CLAUSE 12** The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which

	the main works except as hereafter provided.	he agreed to do the main works except as hereafter provided. **The completion cost of any agreement for Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration shall not exceed 1.25 times of Tendered amount.**
Deviations, Extra Items, Pricing	12.2 In the case of extra items (items that are completely new and are in addition to the items contained in the contract), the contractor may within 90 days of receipt of order or occurrence of the item(s) claim rate, supported by proper analysis, for the work and the Engineer-in-charge shall within one month of the receipt of the claims supported by analysis after giving considerations to the analysis of the rates submitted by the contractor, determined the rates on basis of market rates and the contractor shall be paid in accordance with the rates so determined.	12.2 **A. For Project and original works:** In the case of extra items (items that are completely new and are in addition to the items contained in the contract), the contractor may within 90 days of receipt of order or occurrence of the item(s) claim rate, supported by proper analysis, for the work and the Engineer-in-charge shall within one month of the receipt of the claims supported by analysis after giving considerations to the analysis of the rates submitted by the contractor, determined the rates on basis of market rates and the contractor shall be paid in accordance with the rates so determined. **B. For Maintenance including works of upgradation, aesthetic, special repair, addition/ alteration:** **In the case of Extra Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plush cost index (at the time of tender) plus/minus percentage above below quoted contract amount.** **Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.**
Deviation, Substituted Items, Pricing	In the case of substituted items (items that are taken up with partial substitution or lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following Para.	**A. For Project and original works:** In the case of substituted items (items that are taken up with partial substitution or lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in

	(a) If The market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted). (b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted)	the manner as mentioned in the following Para. (a) If The market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted). **(b)** If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted)**. For Maintenance including works of upgradation, aesthetic, special repair, addition/ alteration:** **In the case of Substitute Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plush cost index (at the time of tender) plus/minus percentage above below quoted contract amount.** **Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.**
Deviation, Deviated Quantities, Pricing	In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates	**A. For Project and original works:** In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates

	on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.	submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. **B. For Maintenance including works of up-gradation, aesthetic, special repair, addition/ alteration:** **In the case of contract items, which exceed the limit laid down in schedule F, the contractor shall be paid rates specified in the schedule of quantities.**
	12.3 The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.	12.3 **A. For Project and original works:** The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates. **B. For Maintenance including works of up-gradation, aesthetic, special repair, addition/ alteration:** In the case of decrease in the rates **Prevailing in the market** of items for the the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

Schedule F	Clause 12 No provision.	**Clause 12** **Type of work ___ ***_____** ***** To be filled by NIT approving authority either Project and original work or Maintenance works including works of up-gradation, aesthetic, special repair, addition/ alteration.**

ONLINE BID SUBMISSION:

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

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	**Documents**	**Content**	**File Types**
1.	Technical Bid	Annexure 1 [duly filled in preferably typed] and got signed	.PDF
2.		Attested Certificate of work experience as desired	.PDF
3.		Certificate of registration for GSTIN	.PDF
4.		Affidavit as per NIT condition 1.2.2 to be submitted on stamp paper	.PDF
5.		Acceptance to execute INTEGRITY PACT [see integrity pact]	.PDF
6.		EPFO & ESIC Registration proof	.PDF
7.		IITD 7 / 8 duly signed. [at page-23]	.PDF
8.		MSME / NSIC Registration [If the bidder claims for EMD exemption]	.PDF
9.		OEM authorization letter specific to this Tender for SITC of the equipment along with 4 years of comprehensive warrantee and 5 years CAMC support.	.PDF
10.		Any other document as specified in the NIT	.PDF
Envelope – 2			
Sl. No.	TYPES	Content	
1.	Financial Bid	Price bid should be submitted in BOQ format.	. BOQ

INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS: NEW DELHI-110016

SCHEDULE OF QUANTITY
[BOQ]

N/W : **Modification of Student Assembly area of LHC converting into 60 Seaters and 40 Seaters Class Room at IIT Delhi.SH:-Supply, Installation, Testing & Commissioning of Air-Conditioning works of Student lounge at 3rd& 4th floor of LHC IIT Delhi.**

	VRV/VRF SUPPLY	Unit	Qty	RATE	AMOUNT
1.	Supply, Installation , Testing and Commissioning of following nominal capacity Air - Cooled 100% Inverter based Variable refrigerant volume/flow of Scroll/Rotary modular type air-conditioning system having feature to automatically modulate the evaporative temperature with respect to load from 6 to 11 Deg C for better comfort and energy efficiency,suitable for operation on 415 V, 50 Hz AC Supply . The units should have cooling and heating mode with low noise condenserfans, auto address setting, auto check function for connection error and complete with indoor and outdoor units with individual control and fitting etc. as per quantity given below including full charging of R-410A refrigerant gas. The COP of each refrigerant circuit mentioned below shall be minimum 7.1 @ AHRI Conditions in Cooling mode. The static pressure of the outdoor unit shall be more than 75 Pa to avoid hot air recirculation. The units shall be able to operate upto 48*C in cooling mode.				
1.1	ODU - 24 HP Minimum cooling COP @ 50% Load must be 7.1 as per AHRI Conditions	Nos.	08		
2	Supply, Laying, Installation , Testing and Commissioning of Sensi - Flow / Equivalent round flow Cassette type Indoor Unit with cooling coil, electronic expansion valve, multi speed fan motors , in-built drain pump . The cassettes units shall must have dual sensors to detect the presence of people and floor temperature respectively to provide comfortable air-conditioning and energy saving. Infrared Presence Sensor shall detect human presence and adjusts the airflow direction automatically to prevent drafts. Energy saving control shall be performed when no people are				

	detected. When there is no occupancy in room the set temperature shall shift automatically by raise the temperature to preset selectable temperature (say 28 Deg C) in configurable time (say 30 minutes) respectively. All the indoor units must have force shut to connect with fire alarm to automatically stop in case of fire.				
2.1	3.98 TR Cassette Type IDU	Nos.	24		
2.2	2.56 TR Cassette Type IDU	Nos.	12		
3	Supply, Installation , Testing and Commissioning of wired remote controller and system controller for units with LCD display etc as reqd.	Nos.	36		
4	Supply, Installation, Testing and Commissioning of Refnet joint (Y-Branches) branch distributors with Variable refrigerant flow distribution couplings for refrigerant piping in copper piping. The bidder shall consider the required diameter of the refnet joint as required for the system to get connected by refrigerant piping of suitable guage for it to function satisfactorily without leakage through the joints. Cost shall also include insulation of 19mm / 13mm thick nitrile rubber closed type tubular form.	Nos.	28		
5	**REFRIGERERANT PIPING**				
5.1	Providing , fixing, testing and commissioning of Copper pipe with Suitable Size with 19mm/13mm Insulation nitrillRubbler Section Insulation / Bend/ Tee/ Joints, Elbow Etc.				
5.2	34.9 mm OD (Insulation: 19 mm)	RM	200		
5.3	28.6 mm OD (Insulation: 19 mm)	RM	100		
5.4	22.2 mm OD (Insulation: 19 mm)	RM	60		
5.5	19.1 mm OD (Insulation: 13 mm)	RM	70		
5.6	15.9 mm OD (Insulation: 13 mm)	RM	190		
5.7	12.7 mm OD (Insulation: 13 mm)	RM	70		
5.8	9.5 mm OD (Insulation: 13 mm)	RM	200		
6	**DRAIN PIPING**				
6.1	Supply installation and fixing of drain piping along with upvc fittings with 9mm Insulation				
6.2	40 MM	RM	90		
6.3	32 MM	RM	80		

7	Supply, Installation, Testing and Commissioning of Interface Adapter (BMS compatible) which is capable for connecting upto 64 indoor units .	No.	1		
8	**ELECTRICAL STARTER PANELS**				
8.1	Power point for ODU MCB with Weather proof box 300 m. amp ELCB , Incoming supply will be given by IIT	No.	9		
8.2	Supply and fixing of exhaust fan 100 cfm	No.	10		
9	**Cable**				
9.1	Supplying, laying, testing & commissioning for following size of PVC insulated and PVC sheathed/XLPE aluminum conductor cable of 1.1 KV grade as required.				
9.2	4 core 25 sq. mm. Armoured Cu cable.	RM	100		
9.3	4 core 16 sq. mm. Armoured Cu cable.	RM	100		
9.4	4 core 10 sq. mm. Armoured Aluminum cable.	RM	70		
9.5	2C x 1.5Sq.mm. Flexible	RM	400		
9.6	Supply, laying, installation and fixing of PVC conduit for communication wire	RM	300		
10	**Cable tray**				
10.1	GI Perforated Cable tray with cover for refrigerant Piping and Cable Running 16 gauge				
10.2	300mmx40 mm	RM	80		
10.3	150mmx40 mm	RM	100		
10.4	MS Stand For Outdoor unit	Kg	800		
11	**(Optional) Comprehensive Annual Maintenance Charges including cost of Spares & Services after Expiry of 4 year warranty period. [One job means carrying out the CAMC works in one month]**				
11.1	1st Year	12.00	Job		
11.2	2nd Year	12.00	Job		
11.3	3rd Year	12.00	Job		
11.4	4th Year	12.00	Job		
11.5	5th Year	12.00	Job		
12	**L1 criteria will be decided on the basis of rates quoted from item no.1 to 11. However, S/I/T/C works will be executed on the basis of rates quoted from item no.1 to 10.**				
				Total Rs.	