E -TENDER DOCUMENT

for
Renovation and remodeling of Dean complex at 1st floor of Main Institute Building at IIT Kharagpur (3rd call)

NIT No. IW/RAC/DC/ 2022-23
Notice Invitation Tender Serial No. NIT No. IW/RAC/DC / 2022-23 DATED 23.08.2022
Contents

1. NOTICE INVITING TENDER 2
   1.1. INTRODUCTION ........................................................................................................................................................... 2
   1.2. PARTICULARS ................................................................................................................................................................. 2
   1.3. ELIGIBILITY CRITERIA................................................................................................................................................. 3

2. INFORMATION TO BIDDERS 4
   2.1. SCOPE OF WORK ........................................................................................................................................................ 5
   2.2. GENERAL INSTRUCTIONS ......................................................................................................................................... 5
   2.3. SUBMISSION OF TENDER .......................................................................................................................................... 6
   2.4. EVALUATION OF BIDS AND AWARD OF WORK ....................................................................................................... 6

3. UNDERTAKING BY THE BIDDER 07

4. Checklist for Documents to be uploaded on
   ...................................................................................................................................................................................... 15

6. Scope of Work
   ...................................................................................................................................................................................... 16-20

7. General Conditions
   ...................................................................................................................................................................................... 21

   ...................................................................................................................................................................................... 23

    .................................................................................................................................................................................... 24

11. Schedule of Quantities (BOQ)…..uploaded separately in BOQ section on
    https://eprocure.gov.in/eprocure/app
1. NOTICE INVITING TENDER

1.1 INTRODUCTION
Indian Institute of Technology (IIT) Kharagpur, hereinafter called IITKGP, invites online tenders from the eligible contractors for Renovation and remodeling of Dean complex at 1st floor of Main Institute Building at IIT Kharagpur.

1.1. PARTICULARS

<table>
<thead>
<tr>
<th>1. NIT Number</th>
<th>IW/RAC/DC / 2022-23 DATED 23.08.2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Name of Work</td>
<td>Renovation and remodeling of Dean complex at 1st floor of Main Institute Building at IIT Kharagpur.</td>
</tr>
<tr>
<td>3. Location of Work</td>
<td>Dean complex at 1st floor of Main Institute Building, IIT Kharagpur Campus</td>
</tr>
<tr>
<td>4. Estimated Cost (including GST)</td>
<td>Rs. 1,49,842/- (One Lakh Forty nine Thousand Eight hundred Forty two only)</td>
</tr>
<tr>
<td>5. Earnest Money Deposit</td>
<td>Rs. 3,000/- (Rupees Three thousand only)</td>
</tr>
<tr>
<td>6. Time Limit</td>
<td>30 days from date of start</td>
</tr>
<tr>
<td>7. Tender Basis and Mode</td>
<td>Two stage (Technical Bid &amp; Financial Bid)</td>
</tr>
<tr>
<td>8. Mode of Payment to IITKGP (EMD/Tender fee)</td>
<td>i) Original Demand Draft/Pay Order or copy of valid registration certificate under MSE category has to be submitted physically at the office of SE(E&amp;M) on or before the due date/extended date of submission of bid. &amp; Scanned copy of Demand Draft/Pay Order/Registration under MSE category has to be uploaded on <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a> ii) Demand Draft/Pay order to be drawn in favour of IIT KHARAGPUR payable at Kharagpur.</td>
</tr>
<tr>
<td>9. Closing Date &amp; Time for Receipt of bids</td>
<td>8th Sep 2022 up to 12:00hrs</td>
</tr>
<tr>
<td>10. Date &amp; Time for Opening Technical of Bid</td>
<td>9th Sep 2022 at 12:00hrs</td>
</tr>
<tr>
<td>11. Date &amp; Time for Opening of Price Bid</td>
<td>To be informed later to the successful bidder</td>
</tr>
<tr>
<td>12. Engineer-in-charge and contact details.</td>
<td>Mr. S. Sarkar, Executive Engineer(EW) Tel: 03222-282724 Email: <a href="mailto:ssarkar@hijli.iitkgp.ac.in">ssarkar@hijli.iitkgp.ac.in</a></td>
</tr>
<tr>
<td>13. Address for tender issue, submission and opening</td>
<td>Office of Superintendent (Electrical), 1st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302</td>
</tr>
<tr>
<td>15. Website for tender submission &amp; processing (This is e-Tender only submission by Online)</td>
<td><a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a></td>
</tr>
</tbody>
</table>
1.2. ELIGIBILITY CRITERIA

1.2.1. The bidder must be registered in appropriate class of works with Government organization like CPWD/ PWD/ MES or PSUs or those having experience in similar nature of works awarded by Government / Semi Government Organizations/ Government Funded Autonomous Organization.

1.2.2. The bidder must have done at least 1 (ONE) similar work of value of 80% of the estimated cost for HVAC works or 2 (TWO) similar works for projects each of value 60% of the estimated cost for HVAC works or 3(THREE) similar work for projects each of value 40% of the estimated cost for HVAC Works with Government/Semi-government/ PSU/ Government Funded Autonomous Organization during last 7 (seven) years preceding last date of the month of tender submission.

Note:
(i) The estimated cost is Rs. 1,49,842/-
(ii) The value of executed works 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 the last date of receipt of applications for tender.
(iii) Similar works shall mean Repairing work of AC system.

1.2.3. The bidder or the specialized agency the bidder intends to associate with must be registered with appropriate government authority as a bonafide business entity and must have GST registration certificate and Permanent Account Number of income tax.

1.2.4. The validity of the registrations and licenses should be valid as on the date of tender submission.

Sd/-
Executive Engineer (E&M)

On behalf of the Director, Indian Institute of Technology Kharagpur

Copy to:
1) Dean Infrastructure(IW)
2) Asso. Dean Infrastructure (IW-E&M/ RAC)
3) Sec. to Deputy Director
4) Superintending Engineer(E&M)
5) Assistant Engineer/ Junior Engineer (RAC)
6) Notice Board
7) Tender Notice uploaded to CPPP portal & Institute Website
8) Office file
2. INFORMATION TO BIDDERS

2.1 SCOPE OF WORK
The IITKGP intends for Renovation and remodeling of Dean complex at 1st floor of Main Institute Building at IIT Kharagpur.

2.1.1 The vendor shall work out execution sequence and methodology so as to complete the project within the envisaged time and the estimated cost, duly handling the constraint mentioned above.

2.2 GENERAL INSTRUCTIONS

2.2.1 Bidding documents are to be obtained electronically through websites: https://eprocure.gov.in/eprocure/app

2.2.2 http://www1.iitkgp.ac.in/topfiles/tenders.php; ii)https://eprocure.gov.in/eprocure/app

2.2.3 This bid document shall be read in conjunction with GCC (General Conditions of Contract) available on http://www1.iitkgp.ac.in/topfiles/tenders.php.

2.2.4 The bidder shall visit and inspect the site and obtain all information on his own responsibility and at own cost, which may be necessary for the purpose of quoting and submitting the tender. No excuse or ignorance as to site conditions and local information shall be accepted after awarding of the contract. Access to the site will be granted by the Engineer-in-charge on all working days within working hours.

2.2.5 IITKGP shall not provide any space at site for labour hutments.

2.2.6 All clarifications about the tender shall be sought by bidder on or before pre-bid meeting. The bidders may make suggestions which shall be considered during the Pre Bid Meeting. Intending bidder(s) may also send their queries or suggestion, if any, through e-mail to the Engineer-in-charge on or before 30th Aug 2022, 10:30hrs. No queries shall be entertained after notification of replies to noteworthy queries received till the date of pre-bid meeting.

2.2.7 Completion certificate issued by Competent Authority will only be considered as credential. If the Completion certificate issued by Competent Authority does not reflect the type of work, then Final bill / Schedule of Quantity of the qualifying works also to be attached along with the Completion certificates. Certificate from private individuals / organizations for whom such works have been executed shall not be accepted.

2.2.8 The bidding document (consisting of specifications, the schedule of quantities of various types of items to be executed, the set of terms and conditions of the contract and other documents / drawings, if any), Addendum/Corrigenda, Clarifications to Pre-bid queries can be downloaded from the websites:

i)https://eprocure.gov.in/eprocure/app

2.2.9 http://www1.iitkgp.ac.in/topfiles/tenders.php; iii)https://eprocure.gov.in/eprocure/app. Corrigenda, if any shall be published only on these websites at any time after the closing time of tender. The institute shall not be responsible for any delay / difficulties / inaccessibility of downloading facility for any reason whatsoever. The tenderers who have downloaded the tender documents from website must visit the website and ensure that such addendum(s)/corrigendum(s) (if any) is also downloaded by them. This shall be the responsibility of the prospective registered bidders to check the website for any such corrigendum/addendum before closing time of tender and ensure that bid submitted by them are in accordance with all the corrigendum's/addendums.

2.2.10 All costs, charges & expenses that may be incurred in connection with the preparation of his tender shall be borne by him and the Institute accepts no liability whatsoever therefore.

2.2.11 Rates quoted by the bidders shall be inclusive of GST (Goods and Services Tax - Central, State and Interstate) and all applicable taxes. Income Tax and all other statutory deductions like labourcess etc. will be deducted from the bill as per prevailing rules.

2.2.12 Exemption to IITKGP against any tax/ duty/ fee/ surcharge/ charge/ cost, if any, found applicable or sought later from IITKGP after award shall be passed on to IITKGP by the contractor without dispute.

2.2.13 IITKGP reserves the right to reject any or all of the bids without assigning any reason.

2.2.14 Bid Validity: Bid shall remain valid for 120 days from the date of submission.

2.2.15 Firm Price: Bidder’s quoted Rates/Prices for executing the activities under the Contract shall remain firm till completion of the entire work & shall not attract any escalation under any circumstances whatsoever.

2.2.16 If any information furnished by the bidder is found as false / fabricated, then his bid will be rejected and treated as cancelled. Even if such manipulation is detected at any stage after signing of the contract, it would lead to termination of the contract besides forfeiture of Earnest Money Deposit and liabilities towards prosecution. In such cases the bidder will be debarred from participation in future tendering process in IITKGP for next 05 (Five) years.
2.2.17 **Earnest Money Deposit (EMD)** of requisite amount and that in prescribed mode or proof of payment thereof shall be submitted with the Technical Bid explained in following section. MSEs registered with District Industries Centers, National Small Industries Corporation and any other body specified by Ministry of MSME or Startups as recognized by Department of Industrial Policy and Promotion shall be exempted from payment of EMD in the bid. The self attested photocopy of their evidence should be submitted by the bidder(s) along with the formal request letter for exemption.

(i) In case the NSIC/MSEs registration certificate is found invalid during evaluation, the bid of such bidder shall be rejected.

(ii) Bidder so exempted for submission of EMD shall have to submit an undertaking as per Annexure-II.

(iii) Bidder not having NSIC/MSEs registration has to submit Bid Security Declaration Form (Annexure-III) along with an undertaking as per Annexure-II.

**Refund / Conversion of Earnest Money Deposit:** The Earnest Money received shall be refunded to the unsuccessful bidders without any interest upon execution of the Contract Agreement by successful bidder. The Earnest Money Deposit of successful bidder shall be retained and converted into part of Security Deposit.

2.2.18 **Forfeiture of Earnest Money Deposit:** Earnest Money Deposit will be forfeited in any of the following cases:

2.2.18.1 The bidder withdraws / modifies his tender during the period of Bid Validity.

2.2.18.2 The bidder, in case of tie between lowest bids, refuse to submit revised offer.

2.2.18.3 The bidder does not accept the correction of arithmetical errors of his tender.

2.2.18.4 The bidder fails to deposit Performance Guarantee and information as per format given in GCC within the stipulated time period before award of the work.

2.3 **SUBMISSION OF TENDER**

2.3.1 Help for Contractors, FAQ, Information about DSC and Bidders Manual Kit containing the detailed guidelines for e-Procurement system are also available on Central Public Procurement Portal. [https://eprocure.gov.in/eprocure/app]

2.3.2 It is mandatory for all the bidders to have a valid Class-II/Class-III Digital Signature Certificate (in the name of person having power of attorney to sign the Bid) from any of the licensed Certifying Agency (Bidders can see the list of licensed CA’s from the link www.cca.gov.in) to participate in e-Procurement of IIT Kharagpur.

2.3.3 It is mandatory for the bidders to get their firm/company registered with eprocurement portal https://eprocure.gov.in/eprocure/app to have user ID & password.

2.3.4 Tender documents will be available online on website https://eprocure.gov.in/eprocure/app which can be downloaded free of cost.

2.3.5 Bidders may download and refer the “Instructions for Online Bid Submission” from ([https://eprocure.gov.in/eprocure/app;jsessionid=2A56E178EED5C7D8536175EFBB573C9F.eprocgep2?page=HelpForContractors&service=page]).

2.3.6 The tender documents shall be submitted online in the prescribed format given on the websites and technical bids received online shall be opened as per NIT or Corrigendum thereof. No other mode of submission is acceptable. Detailed credentials as per the requirement of eligibility criteria and all tender papers except Bill of Quantities are to be submitted in “Technical Bid”

2.3.7 Bill of Quantities with rates duly filled in are to be submitted in the format provided online in the name of “Financial Bid”. Hence, physical submission of the documents is limited to submission of MSE registration certificate as per provision given in sub-clause 1.2.7 of NIT & 2.2.15 of Information to Bidders.

2.3.8 Representative of the bidder, who chooses to attend, may attend the online opening of the technical bid on the scheduled date and time of Bid opening. However, such representatives shall be allowed to attend the opening of the Technical Bids, only, if such person presents the letter of authority issued in his name by the bidder on his letterhead.

2.3.9 Bidders cannot submit the tender after the due date and time of e-bid submission. Time being displayed on Central Public Procurement Portal https://eprocure.gov.in/eprocure/app (“Server System Clock Time”) shall be final and binding on the bidder. e-Bids are required to be submitted by bidders, only as per the Indian Standard Time (IST) and not the time as per their location/country.

2.3.10 The bidders are advised to submit their e-bids well before the e-bid due date. IIT Kharagpur shall not be responsible for any delay in submission of bids for any reason including server and technical problems.

2.3.11 The Technical and Financial Bid shall be digitally signed by the Authorized Signatory of the bidder & submitted “on line” only. The authorized signatory of the bidder must be in possession of Power of Attorney before submitting the digitally signed bid. Scanned copies of various documents can be prepared in.pdf file format.
2.3.12 Any tender received without original Earnest Money in the form as specified in clause 1.2.8 of tender documents shall not be considered and shall be summarily rejected.

2.3.13 IIT Kharagpur reserves the right to cancel the tenders before submission/opening of tenders, postpone the tendersubmission/opening date and to accept/reject any or all tenders without assigning any reason therefor. IIT Kharagpur’s assessment of suitability as per eligibility criteria shall be final and binding.

2.3.14 Tenderers may note that they are liable to be disqualified at any time during tendering process in case any of the information furnished by them is not found to be true. EMD of such tenderers shall be forfeited. The decision of IIT Kharagpur in this regard shall be final and binding.

2.4 EVALUATION OF BIDS AND AWARD OF WORK

2.4.1 The Bid of bidder will be opened electronically on the specified date and time of opening at the Office of Superintendent (Electrical), 1st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302 in the presence of willing bidders or their authorized representatives.

2.4.2 Date, time and place of opening of Financial Bid will be informed after evaluation of Technical Bid to the Technically Qualified Bidders.

2.4.3 Bids shall, first, be checked for payment of Earnest Money Deposit. Only those bids found to have duly paid/submitted Earnest Money Deposit shall be considered for evaluation.

2.4.4 Evaluation of Technical Bid: The bids received will then be assessed on the eligibility criteria mentioned at Para1.3 of Notice Inviting Tender. Bids found not meeting the eligibility criteria shall be considered non-responsive and shall be rejected summarily.

2.4.5 IIT KGP retains the right to revert back to individual bidders with further clarifications / queries on the Technical Bid. The bidder has to respond to the queries within the specified time mentioned in the covering letter.

2.4.6 On the date & time specified for opening of Financial Bid or the Revised Financial Bids as the case may be will be opened on specified date and time.

2.4.7 EVALUATION OF Financial Bids: The Financial Bid should contain the complete bid document with duly filled in Schedule of Financial Quote. Financial Bids opened as above will be checked for arithmetical errors.

2.4.8 The successful bidder shall be issued Letter of Acceptance (LOA) of the bid, and be required to furnish a Performance Guarantee as per General Conditions of Contract, Program Schedule with specific Milestones to be achieved as to complete the work within the stipulated time limit and details of his Technical Staff to be deployed as per ANNEXURE-I.

2.4.9 Letter of Award (Work Order) shall be issued to the successful bidder only after receipt of the Performance Guarantee, along with Program Schedule and the details of Technical Staff to be deployed for the work.

2.4.10 Agreement (Contract) consisting of complete tender document including conditions, bill of quantities, technical proposal and specialized services, drawings, if any, and acceptance thereof together with any correspondence leading thereto, shall be drawn and signed with the awardee after issue of Work Order.

2.4.11 Date of start of work shall be reckoned from 10th day from the date of issue of “Letter of Acceptance”.

2.4.12 Defect Liability Period (DLP): In partial modification to clause 16 of General Conditions of Contract (GCC), the Defect Liability Period for the said work shall be 12 months after the certificate final or otherwise of its completion of work or till the final bill has been prepared.

2.4.13 TERMS OF PAYMENT:

a. 90% shall be released on completion of said work.

b. Remaining 10% shall be kept on hold till DLP.
3. **UNDEARTAKING BY THE BIDDER**

**UNDERTAKING**

I / We have read and examined the Tender document including terms & conditions, specifications, bill of quantities, drawings and designs, general rules & directions, General Conditions of Contract, Special Conditions of Contract and all relevant other documents, publications and rules referred to in the Conditions of Contract and all other contents in the tender documents for the work.

I / We, hereby tender for execution of the work specified for the Indian Institute of Technology Kharagpur within the time specified and in accordance in all respects with the specifications, designs, drawings and instructions in writing. We agree to keep the tender open for 120 days from the last date of its submission and not to make any modifications in its terms and conditions. A sum of Rs. ______________ has been deposited in cash/ demand draft of a scheduled bank as earnest money. If I / we, fail to furnish the prescribed performance guarantee within prescribed period, I / we agree that the said Director, Indian Institute of Technology Kharagpur or his authorized officer 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 work as specified, I / we agree that the Director, Indian Institute of Technology Kharagpur 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 therein.

Further, I / We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I / We shall be debarred for participation in the re-tendering process of the work.

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

Seal & Signature of Contractor

Postal Address

Dated

Witness

Address

Occupation
## TECHNICAL STAFF OF CONTRACTOR

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
<th>NAME</th>
<th>QUALIFICATION</th>
<th>EXPERIENCE</th>
<th>CONTACT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Project In-charge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineer - Structure and Civil Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineer – Electrical &amp; Mechanical Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-charge - Safety, Health &amp; Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Seal & Signature of Contractor
UNDERTAKING FOR GCC COMPLIANCE

UNDERTAKING

We hereby undertake that we shall fulfill all the terms & conditions within the specified time frame, after the acceptance of our offer in case our offer is accepted; failing which IIT KHARAGPUR may go ahead to take necessary action such as reporting the non-compliance to appropriate Government authorities and barring us from future participation in IIT KHARAGPUR works.

Seal & Signature of Contractor

DATED:
ANNEXURE - III

Bid Security Declaration Form

Date:__________________________Tender No. ________________________________________
To (Insert complete name and address of the purchaser)

I/We, The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Security Declaration.

I/We, accept that I/we may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am/We are in a breach of any obligation under the bid conditions, because I/We

a) Have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or

b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instruction to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/We are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown)
In the capacity of (insert legal capacity of person signing the bid Securing Declaration)
Name: (insert complete name of person signing he Bid Securing Declaration)
Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)
Dated on ...............................................................day of ....................................................
(Insert date of signing)
Corporate seal (where applicable)
### ANNEXURE - IV

## DETAILS OF THE FIRM

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of Firm</td>
</tr>
<tr>
<td>2.</td>
<td>Registered / Postal Address</td>
</tr>
<tr>
<td>3.</td>
<td>Working Office Address</td>
</tr>
<tr>
<td>4.</td>
<td>Working Email id</td>
</tr>
<tr>
<td>5.</td>
<td>Mobile No.</td>
</tr>
<tr>
<td>6.</td>
<td>Telephone No.</td>
</tr>
<tr>
<td>7.</td>
<td>Particulars of Registration with various government bodies/organization.</td>
</tr>
<tr>
<td>8.</td>
<td>Were you ever debarred/ blacklisted by any department during the past seven years?</td>
</tr>
<tr>
<td>9.</td>
<td>Name of Directors /Partners with Address</td>
</tr>
<tr>
<td>10.</td>
<td>Permanent Account Number (PAN) No</td>
</tr>
<tr>
<td>11.</td>
<td>GST Registration No.</td>
</tr>
</tbody>
</table>
ANNEXURE-V

Format for Net Worth Certificate

It is to certify that as per the audited balance sheet and profit & loss account during the financial year .................., the net worth of ... (individual/farm/company) having registered address at ......................... as on 31.3.2021 is Rs.................................. after considering all liabilities. It is further certified that the net worth of the company has not eroded by more than 30% in the last three years ending on 31.3.2022.

Signature of Chartered Accountant

..............

Name of Chartered Accountant

..............

Membership No. of ICAI

..............

Date & Seal
4. Checklist for Documents to be uploaded on [https://eprocure.gov.in/eprocure/app](https://eprocure.gov.in/eprocure/app)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Documents</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tender Documents</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>EMD</td>
<td>1.2.8</td>
</tr>
<tr>
<td>3.</td>
<td>Document support of Bonafide Business Entity</td>
<td>1.3.3</td>
</tr>
<tr>
<td>4.</td>
<td>GST Registration Certificate</td>
<td>1.3.3</td>
</tr>
<tr>
<td>5.</td>
<td>Permanent Account Number</td>
<td>1.3.3</td>
</tr>
<tr>
<td>6.</td>
<td>Average annual turnover of the bidder as per ITCC or profit and loss statement for last 5 year</td>
<td>1.3.6</td>
</tr>
<tr>
<td>7.</td>
<td>Experience Certificate</td>
<td>1.3.2</td>
</tr>
<tr>
<td>8.</td>
<td>ANNEXUREs</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>SOQ</td>
<td></td>
</tr>
</tbody>
</table>
4. SCOPE OF WORK

The Contract shall be executed, all in Service Renovation and remodeling of Dean complex at 1st floor of Main Institute Building at IIT Kharagpur, It will be the responsibility of the Contractor to keep the machines, in proper working condition and modify the existing ducting as per the requirement.

1. Site visit and understand the work as per the requirement of user.
2. SITC of ducting material with support, insulation of ducting as per specification, grilles & diffuser etc to ensure airflow each area/room of the dean complex.
3. Air balancing of the system.

The specification of ducting and thermal insulation shall be as under:

AIR DISTRIBUTION

1.1 Scope
The scope of this section comprises of supply, fabrication, installation and testing of all sheet metal ducts and supply, installation, testing and balancing of grilles and diffusers, in accordance with these specifications and the general arrangement shown in the drawings. The duct work will conform to IS standards/codes and relevant ASHRAE Guidelines. For this purpose it is contractors responsibility to arrange at site all necessary equipments like drilling machine, welding machine, etc. and necessary work force. The duct rates mentioned in the BOQ are inclusive of nuts, bolts, sheets, supports, gaskets etc. complete and duly installed.

1.2 Duct Material
The material for various application of air distribution ducting shall be as follows:

<table>
<thead>
<tr>
<th>Application</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Air Conditioning</td>
<td>Cold rolled sheets continuous galvanised with a zinc coating of 120GSM as per IS: 277 – 1977.</td>
</tr>
<tr>
<td>2) Supports &amp; Duct Flanges</td>
<td>Mild Steel Structural Steel Sections.</td>
</tr>
<tr>
<td>3) Gasket</td>
<td>Foamed rubber.</td>
</tr>
<tr>
<td>4) Bonding</td>
<td>Mastic Sealant.</td>
</tr>
</tbody>
</table>

1.3 Duct Fabrication.
The ducts shall be fabricated from galvanised steel sheets (GSS) class VIII conforming to ISI:277 – 1962 (revised) or aluminum sheets conforming to IS:737 – 1955 (for aluminum ducts, if any). The thickness of the sheets should be as follows:

<table>
<thead>
<tr>
<th>Maximum Side</th>
<th>Thickness of Sheets</th>
<th>Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 750 mm.</td>
<td>0.63 mm</td>
<td>24</td>
</tr>
<tr>
<td>From 751 to 1500 mm</td>
<td>0.80 mm</td>
<td>22</td>
</tr>
</tbody>
</table>

1.4 All galvanized plain sheets shall be reasonably flat and free from twist. The zinc shall be clean, even and free from galvanised spots. Sheets shall not crack or peel during bending or fabrication. All sheets shall be procured from approved manufactures.

1.5 All ducts for air conditioning and ventilation shall be rectangular in cross section and fabrication in accordance with the following table.
<table>
<thead>
<tr>
<th>Maximum Size (mm)</th>
<th>Minimum Thickness (mm)</th>
<th>Transverse Joint.</th>
<th>Bracing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 300</td>
<td>0.63 (24 SWG)</td>
<td>S-Drive, Pocket or bar Slips on 2.5 m centers.</td>
<td>None.</td>
</tr>
<tr>
<td>301 to 600</td>
<td>0.63 (24 SWG)</td>
<td>S-Drive, Pocket or bar Slips on 2.5 m centres.</td>
<td>None.</td>
</tr>
<tr>
<td>601 to 750</td>
<td></td>
<td>S-drive, 25 mm pocket or 25 mm bar slips on 2.5 m centres.</td>
<td>25X25X3 mm angles, 1.2 mm from joint.</td>
</tr>
<tr>
<td>751 to 1000</td>
<td>0.80 (22 SWG)</td>
<td>Drive, 25 mm pocket or 25 mm bar slips on 2.5 m centres.</td>
<td>25X25X3 mm angles, 1.2 mm from joint.</td>
</tr>
<tr>
<td>1001 to 1500</td>
<td></td>
<td>40X40X mm angle connections, or 40 mm pocket bar slips with 35X3 mm bar reinforcing on 2.5 m centres.</td>
<td>40x40X3 mm angles, 1.2 mm from joint.</td>
</tr>
<tr>
<td>1501 to 2250</td>
<td>1.00 (20 SWG)</td>
<td>40X40 mm angle connections, or 40 mm pocket or 40 mm bar slips, 1 m maximum center with 35X3 mm bar reinforcing.</td>
<td>40x40X3 mm diagonal angles.</td>
</tr>
<tr>
<td>2251 and above</td>
<td>1.25 (18 SWG)</td>
<td>40X40 mm angle connections, or 40 mm pocket or 40 mm bar slips, 1 m maximum center with 35X3 mm bar reinforcing.</td>
<td>40x40X3 mm diagonal angles, 60 mm angles, 60 mm from joint.</td>
</tr>
</tbody>
</table>

1.6 All duct shall be fabricated and installed unless otherwise stated as per IS : 655 – 1963 with amendment – 1 (1971 edition.)

Ducts shall be straight and smooth on the inside with neatly finished joints. All joints shall be made airtight. The gauges, joints and bracing for sheet metal duct work shall further conform to the provisions as shown on the drawings. The internal ends of slip joints shall be made in the direction of air flow. Ducts larger than 1000 mm shall be cross-broken. Duct sections upto 1200 mm length may be used with bracing angles omitted. Tapering angle should not be more than 30°. Change in dimensions and shape of ducts shall be gradual. Curved elbows shall have a centre line radius equal to one and half of the duct. All Air turns of 45° or more shall be installed in all abrupt elbows and shall consist of curved metal blades or vanes arranged to permit the air to make the turns without appreciable turbulence. Guide vanes shall be fabricated out of 0.63 mm (24 SWG) thick G. S. sheets and equally spaced on side runner to be riveted/bolted to duct sheets. Guide vanes shall be securely fastened to prevent noise or vibration. Gl splitter dampers complete with brass metal lever shall be installed at each bifurcation/trifurcation point of duct for proper flow of air quantity in each duct. Joints, seams sleeves, splitters, branches, take-offs and supports are to be as per duct details as specified.

1.7 Duct Installations

All ducts shall be installed as per the drawings and in strict accordance with approved for construction drawings prepared by the contractor.
During the construction the contractor shall temporarily close duct openings with sheet metal covers / polyethylene sheets to prevent debris-entering ducts and maintains them clean.

All necessary allowances and provisions shall be made by the contractor for beams, pipes or other obstructions in the buildings, whether or not the same are shown on the drawings. Where it becomes necessary to avoid beams or other structural work, plumbing or other pipes and / or conduits, the ducts shall be transformed, divided or curved to one side, the required area being maintained as approved or directed by the Architect/Consultants.

If a duct cannot be run as shown on the drawings, the contractor shall install the duct between the required points by any path available, subject to the approval of the Architect/Consultants.

All duct work shall be of high quality approved galvanised steel sheet, guaranteed not to crack or peel on bending or fabrication of ducts.

All ducts shall be rigid and shall be supported from the ceiling / slab by means of MS Rods of 8 mm (3/8") dia with MS angles at the bottom as shown in the drawing. The rods shall be anchored to RC slab using Anchor/dash fasteners. A rubber gasket of 5 mm thickness shall be provided between duct and angle to avoid metal-to-metal contact and vibration. Double nuts will be provided under angle supports.

The hanger spacing for duct supporting shall be not more than 2 meter.

Where ducts touches with wall or ceiling or beams or columns or floor, a rubber gasket of 5 mm thickness shall be provided between them.

All flanges, bracing and supports are to be mild steel and are to be essentially given a coat of red oxide primer.

Fire retarding flexible canvas / Rexene connections not less than 100 mm and not more than 200 mm are to be fitted to the delivery of all IDU’s.

1.8 Duct Supports.

Duct supports shall be as follows:

<table>
<thead>
<tr>
<th>Duct Perimeter (mm)</th>
<th>Support</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 1800</td>
<td>40 X 40 X 3 mm MS angle with 9 mm tie rod.</td>
<td>At Transverse Joints.</td>
</tr>
<tr>
<td>Over 1800 to 2500</td>
<td>40 X 40 X 6 mm MS angle with 12.5 mm tie rod.</td>
<td>At Transverse Joints.</td>
</tr>
<tr>
<td>Over 2500</td>
<td>50 X 50 X 6 mm MS angle with 15 mm tie rod.</td>
<td>At Transverse Joints.</td>
</tr>
</tbody>
</table>

1.9 Standard Grilles and diffusers

- The supply and return air grille/diffuser shall be fabricated from extruded aluminium sections of thickness not less than 1.5 mm. The supply air grille/diffuser shall have single / double louvers. The front horizontal louvers shall be of adjustable type. The rear vertical louvers shall be of aluminium extruded sections and adjustable type. The return air grille shall have single horizontal extruded section fixed louvers.
- The damper blades shall also be of extruded aluminium. The grille flange shall be fabricated out of aluminium-extruded section. Grilles longer than 450 mm shall have intermediate supports for the horizontal louvers.
- The ceiling type square/circular diffusers shall be of aluminium-extruded section with flush or step down face.
- All supply diffusers shall be provided with extruded aluminium dampers, with arrangement for adjustment from the bottom. (The centre portion should be spring loaded for easy removal and fitting).
- All grilles and diffuser shall be epoxy powder coated of 15 Micron in approved colour.
- Diffuser and grille shall be installed as per drawings.
- The linear grilles shall be provided with End Pieces at ends.
1.10 Testing and Balancing

After completion of the installation of the complete air distribution system all ducts shall be tested for air leaks. All dampers of supply air diffuser and supply air grille shall be balanced as per user’s requirements. The entire air distribution system shall be balanced using approved anemometer.

1.11 Mode of Measurement.

All sheet metal ducting complete with duct supports, turning vanes, canvas connections erected in position shall be measured externally and paid per unit. All dampers shall be excluded in the duct area.

All manual control/splitter including Fire & Volume control damper sections with operations linkages, locking quadrant, sheet steel enclosure, frame, erection, supporting etc. shall be measured on the basis of quantity as mentioned in BOQ and will be paid as per unit rate.

Fresh air louvers with bird screen, damper, frame, ducting, erection & sealing shall be measured on the basis of quantity as mentioned in BOQ and will be paid as per unit rate.

Grilles/diffuser including volume control damper, installation etc. will be measured on the basis area and paid per unit area.

10. THERMAL INSULATION

1.1 Scope

The scope of this section comprises of supply, fabrication, installation and testing of Accoustic Material and Thermal insulation as per specification.

1.2 Duct Thermal Insulation

Thermal Insulation:

The ducts shall be insulated with 19mm thick Al foil faced nitrile rubber (Class: O). All joints shall be sealed with 50 mm wide adhesive based aluminium tape. The thermal conductivity of the material shall be not more than 0.032 W/(m·K) and density not less than 33 kg/m³.

Mode of Measurement.

All duct thermal insulation shall be measured on the basis of duct prime surface area with addition of insulation thickness and paid for per unit area.
# ANNEXURE–VI

**PRICE-BID**

Price offer for “Renovation and remodeling of Dean complex at 1st floor of Main Institute Building at IIT Kharagpur.”

<table>
<thead>
<tr>
<th>SL No</th>
<th>Materials / Installation Required</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Rate (Rs.)</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply, installation, balancing and commissioning of fabricated at site GSS sheet metal rectangular ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per requirement. Thickness 0.63 mm sheet (24G)</td>
<td>49</td>
<td>Sqm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Supplying and fixing of following thickness duly laminated aluminum foil of mat finish closed cell Nitrile rubber (Class &quot;O&quot;) insulation on existing duct after applying <strong>suitable adhesive for Nitrile rubber</strong>. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required. 19mm thickness</td>
<td>100</td>
<td>Sqm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring &amp; removable core.</td>
<td>1.8</td>
<td>Sqm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring &amp; removable core.</td>
<td>1.79</td>
<td>Sqm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL WITH GST**