

Proposed renovation of TV & Dance room, Hostel 3 for Indian Institute of Technology Bombay within IITB campus Powai. Mumbai –400 076”

NIT NO: IITB/DEAN IPS/DC/HOSTEL 3/10/2025 DATED: 08-07-2025

TENDER BID DOCUMENTS

FOR

HVAC WORKS

TECHNICAL SPECIFICATIONS

GENERAL CONTRACT SCOPE AND SPECIAL CONDITIONS FOR MECHANICAL WORKS

1. SPECIAL CONDITIONS

2. GENERAL

I. PREAMBLE

- i. This is an item rate contract. Some of the items may not be operated. The Vendor cannot raise any objection for non-operation/deletion of any items, also the rate will be remains same for any quantities variations.
- ii. BOQ to be read in conjunction with the Drawings.
- iii. All material delivered on-site shall be inspected properly and Manufacturing Test Certificate (MTC) shall be submitted to PMC / IITB for verification of the material.
- iv. The rate quoted by the Contractor shall be inclusive of the following:
 - a. All labour, materials, wastage, transportation, handling, use of tools, equipment, scaffolding, cherry picker, etc. and other items incidental to the satisfactory completion of item work at all depths, heights and at any levels.
 - b. Internal / external scaffolding as required for single or double heights. Contractor to erect scaffolding which will be stable, strong and safe. Contractor to take all precautionary measures to protect the workers / labours while working on scaffolding.
 - c. Inspection of fabricated material for FAT to be arranged by contractor wherever required.
 - d. Samples of any material, Mock-up (Preferably a working mock up) at place as desired by the Design Architect, Consultants or PMC.
 - e. Making shop drawings as & when required and asked by the PMC / Design Architect / IITB in 4 sets.
 - f. The scope is also inclusive of name plate & tagging of switch boards / Distribution Boards / Cables etc, pasting of warnings, ferruling, O&M trainings, handing over documents with O&M manuals, As-built layouts, in proper readable format in 4 set & Soft Copies.
 - g. All necessary miscellaneous items to complete the item to the satisfaction of PMC, Design Consultant & Client
 - h. In Case of discrepancy in item description / specification in BOQ, technical specifications and drawings, most stringent specifications to be followed.
 - i. This project is IGBC compliance & vendor should comply the same wherever applicable for procurement & installations.

These special conditions are intended to amplify the General Conditions of Contract and shall be read in conjunction with the same. For any discrepancies between the General Conditions and these Special Conditions, the more stringent shall apply.

II. SELECTION CRITERIA

HVAC vendor must be done Similar kind of work with clean room installation testing commissioning & hand over documentation & required authority approvals. We have required atleast 3 works do be done in 2023-2024 with value not less than the estimated value.

III. SCOPE OF WORK

- i. The work to be carried out under this contract comprises of the Mechanical installation works for the proposed project called for in the documents. The work covered under this contract comprises of supply (wherever called for), installation, connection, testing and commissioning of the Mechanical installation commencing from point of electric power supply within the project site as per specifications, relevant Indian standards, Code of practice.
- ii. The contractor shall carry out and complete the said work under this contract in every respect in conformity with the current rules and regulations of the local Electricity Authority, the Indian Standards and with the directions of and to the satisfaction of the Consultant / PMC and IITB. The Contractor shall furnish all labor and install all materials, appliances, equipment (except those items which will be supplied by the Owner to the contractor at site), necessary for complete provision and testing of the whole mechanical installation as specified herein and shown on the drawings. This also includes any material, appliances, equipment not

specifically mentioned herein or noted on the drawing as being furnished or installed but which are necessary and customary to make complete installation with all related accessories and required other electrical systems shown in the schedule or described herein, properly connected and in working order.

- iii. The work shall include all incidental jobs connected with mechanical installation such as, cutting / drilling holes through walls / floors and grouting for fixing of fixtures, equipment etc. Chiseling in the wall or principal structure is not permitted.
- iv. Ensure the vendor performs pressure testing to verify the ductwork system's integrity and detect any leaks.
- v. Specify the testing method (e.g., positive or negative pressure test) and acceptance criteria.
- vi. Require the vendor to perform air balancing to ensure the HVAC system delivers the designed airflow rates to each space or terminal unit.
- vii. Verify that the vendor uses calibrated instruments and follows industry standards (e.g., AABC, NEBB, or SMACNA) for testing and balancing

IV. FEES, PERMITS AND TESTS

- i. The Contractor shall pay for all fees and obtain permits required for the installation work. On completion of the work the contractor shall obtain and deliver to IITB, certificates of final inspection and approval by the local electric supply authority and the electrical inspector.

V. MATERIAL AND EQUIPMENT

- i. All material and equipment shall conform to the relevant standards and shall be of the approved make and design. The materials and equipment shall conform to relevant Indian Standards. The Contractor shall be responsible for the safe custody of all the materials and shall insure them against theft, damage by fire, earthquake etc. A list of items of materials and equipment, together with sample of each shall be submitted to the IITB. Any item which is proposed as a substitute shall be accompanied by all technical detail giving sizes, particulars of materials and the manufacturer's name and shall be submitted to IITB. At the time of the submission of proposed substitute, the Contractor shall state the credit, if any due to the owner. In the event the substitution is approved, all changes and substitutions shall be requested in writing and approvals obtained in writing from IITB. IITBs decision in the matter shall be final.
- ii. All materials of the same kind of service shall be identical and made by the same manufacturers. Any deviation to this rule shall be approved by the Design Architect / Consultant. Top priority shall be given to the products that have a permanent agent providing spare parts and maintenance facilities in the same city where the project is situated.

VI. MANUFACTURERS

- i. Where manufacturers have furnished specific instructions relating to the materials used in this job, covering points not specifically mentioned in these documents, these instructions shall be followed in all cases.
- ii. Where manufacturer's names and / or catalogue numbers are given, this is an indication of the quality, standards and performance required.
- iii. When interfacing occurs, equipment shall be mutually compatible in all respects.

VII. COMPLETENESS OF TENDER

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

VIII. INSPECTION AND TESTING

- i. IITB reserves the right to request inspection and testing at manufacturer's works at all reasonable times during manufacturing of the items for this contract. Tests on site of completed works shall demonstrate, among other things:

- a. That the equipment installed complies with the specifications in all particulars and is of the correct rating, technical parameters for the duty and site conditions.
- b. That all items operate efficiently and quietly to meet the specified requirements.
- c. That all the features performed at its best and loading / unloading of the system.
- d. That all the accessories used in the work are of specified make only. And any deviation in the same needs written approval from IITB.
- e. IITB may carry out inspection and testing at manufacturer's works for this contract. No equipment shall be delivered without prior written confirmation from the IITB's site Engineer. In case factory inspection is carried out, then all travelling and lodging expenses of the inspection team of the officials of the IITB shall be borne by the Contractor, also all expenses related to testing shall be to in Contractor's account. If any test fails, then the cost of the travel, lodging and boarding of the inspection team of the officials of the IITB shall also be borne by the contractor for all subsequent visits till the tests are satisfactorily conducted.
- f. The contractor shall provide all necessary instruments and labor for testing, shall make adequate records of test procedures and readings, shall repeat any tests requested by IITB and shall provide test certificates signed by a properly authorized person. Such test certificates shall cover all works.
- g. If tests fail to demonstrate the satisfactory nature of the installation or any part thereof, then no claims for the extra cost of modifications, replacements or retesting will be considered. IITB's decision as to what constitutes a satisfactory test shall be final.

The above general requirements as to testing shall be read in conjunction with any requirements specified elsewhere.

IX. PRICE DETAILS

At any time and at the request of IITB, the contract shall provide details or breakdown of costs and prices of any part or parts of the works.

X. TEST CERTIFICATES

The contractor shall submit test certificates from Govt. approved - NABL Labs for all the electrical and mechanical materials / system installed. These shall be issued by a government recognized inspection office certifying that all the equipment, materials, construction and functions are in agreement with the requirements of these specifications, ISI and when ISI is not applicable other approved certifying agencies.

XI. INSTRUCTION MANUAL

The contractor shall prepare and produce instruction, operation and maintenance manuals in English for the use, operation and maintenance of the supplied equipment and installations, and submit 4 sets to IITB, at the time of handing over.

XII. SAMPLES AND CATALOGUES

- i. Before ordering the material necessary for the installations, the contractor shall submit to IITB for approval, minimum three samples of every kind of materials along with the catalogues.
- ii. For big items, the submission of catalogues shall be enough. No material shall be procured prior to the approval of the IITB.

XIII. VENDOR AND SHOP DRAWINGS

- i. The contractor shall prepare and submit to Consultant / IITB, for the approval, two sets of vendor detailed drawings.
- ii. Before starting the work, the contractor shall submit to Consultant / IITB for the approval in the prescribed manner, the shop / execution drawings for the entire installation.
- iii. IITB reserves the right to alter or modify these drawings if they are found to be insufficient or not complying with the established technical standards or if they do not offer the most satisfactory performance or accessibility for maintenance.

XIV. AS BUILT DRAWINGS

At the completion of work and before issuance of certificate of virtual completion the contractor shall submit to IITB 4 sets of layout drawing drawn at appropriate scale indicating the complete system 'as installed' duly approved by Design Architect / Consultant. These drawings must provide (in plan, folded elevation and section).

XV. SAFETY OF MATERIALS

The contractor shall provide proper and adequate, storage facilities to protect all the materials and equipment including those issued by IITB against damage from any cause whatsoever.

XVI. APPROVAL OF INSTALLATIONS / COMPLETION CERTIFICATE

Approval / Completion Certificate from the local authorities and Chief Electrical Inspector for installation and Commissioning of equipment shall be obtained and made available to IITB before handing over at no extra cost.