



नैनो विज्ञान एवं प्रौद्योगिकी संस्थान

INSTITUTE OF NANO SCIENCE & TECHNOLOGY

(An Autonomous Research Institute of the Department of Science and Technology,
Government of India)

Habitat Centre, Sector-64, Phase-X, Mohali-160062, Punjab

Name of Work for the NIT **Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.**

N.I.T No. **01/ INST/2020-21**

Amount. : ₹ 4,52,69,600/- (Civil—: ₹ 3,15,31,760/- + E&M (A-V) -: ₹ 1,37,37,840/-)

INSTITUTE OF NANO SCIENCE AND TECHNOLOGY, MOHALI

Name of work: Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.

S. NO.	DESCRIPTION	PAGE NO.
1	NIT Covering Page	1
2	INDEX	2
3	PART – A (ELIGIBILITY BID)	5
4	Information and Instructions for Tendering	6
5	Section I: Brief Particulars of the Work	16
6	Section II: Information & Instructions for Bidders	18
7	Information & Instructions for Engineers for tendering	24
8	Section III: Information regarding Eligibility, Letter of Transmittal	25
9	Form A : Financial Information	26
10	Form B1 : Net Worth Certificate from Chartered Accountant	28
11	Form C : Details of Eligible Similar Nature of Works Completed	29
12	Form D: Assessment of Quality for completed works.	30
13	Form E: Structure and organization	31
14	Form F: Affidavit for Non-Execution of Works on Back to Back basis	32
15	Form G: Affidavit on Non-Blacklisting	33

16	Form H: Declaration about Site Inspection	34
17	Criteria for Evaluation of the Performance of Contractors for Pre Eligibility (Annexure I)	35
18	CPWD 6 for e-Tendering	37
19	CPWD 8: Composite Item Rate bid	44
20	Proforma of Schedules A to F	47
21	Form of Application by the Bidder for seeking Extension of Time (Annexure II)	57
22	Form of Application by the Contractor for seeking Rescheduling of Milestones (Annexure III)	59
23	List of Testing Equipment's to be Provided by the Contractor at Site (Annexure IV)	60
24	List of Machinery Tools & Plants to be deployed by the Contractor at Site (Annexure V)	61
25	Integrity Pact	62
26	Form of Earnest Money Deposit (Bank Guarantee Bond) (Annexure VI)	72
27	Form of Performance Security / Guarantee	74
28	Payments Schedule	77
	PART – B [Wall Panelling, False Ceiling, Flooring and Auditorium Chairs]	79
1	Performa of Schedules	80
2	General Specification	87
3	Technical Specifications	88
4	Special Conditions	90
5	Additional Conditions	96
6	List of Preferred Makes	98
	PART – C [AV & ELECTRICAL COMPONENTS]	101
1	Eligibility condition for associate agency for execution of E&M works	102

2	Special conditions for all E&M works	103
3	OEM Authorization Certificate (Annexure-I)	107
4	Additional Specifications and Conditions	118
5	Part C1- SITC of AV Systems	130
6	Minimum technical specifications to be submitted along with technical bid	132
7	Part C2- SITC of Lighting i/c IEI works	133
8	Brief technical specifications	137
9	Preferred Makes	138
PART- D : Auditoriums Drawing & HVAC Drawings		
1.	Auditorium-1 Drawing	141
2	Auditorium-2 Drawing	142
3	No ATPL-INST-SE-FF-08	143
4	No ATPL-INST-SE-MF-07	144
FINANCIAL BID		
Schedule of Quantity – see Part-I (33 pages) & II (15 pages)		

Certified that this NIT No. **01/ INST/ 2020-21** contains 190 pages only.

Dr. Asifkhan Shanavas,
Scientist- C

Dr. Vivek Bagchi
Scientist – C

Varender Singh
Assistant Engineer

Niranjan Singh
Consultant (Engg)

DIRECTOR,
INSTITUTE OF NANO SCIENCE AND TECHNOLOGY,
MOHALI

PART - A

STAGE -1 ELIGIBILITY BID

**INFORMATION AND INSTRUCTIONS FOR BIDDER FOR
TENDERING FORMING PART OF BID DOCUMENT**

The Director, Institute of Nano Science and Technology, Mohali invites item rate composite bids for Construction of Auditorium in the Institute of **Nano Science and Technology, Knowledge City, Sector-81, Mohali** from eligible firms/ contractors of repute in **TWO BID SYSTEM** (eligibility –cum- technical bid, and financial bid) for the following work:

Sl. No.	NIT No.	Name of work & Location	Estimated cost put to bid	Earnest Money	Period of completion	Last date & time of submission of Bid, EMD, copy of receipt for Deposition of original EMD	Time and date of pre bid meeting	Time and date of opening of Tender
1	2	3	4	5	6	7	8	9
1	01/INST/2020-21	Construction of Auditorium in the Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic Treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.	Estimated cost: : ₹4,52,69,600/- {(E&M/A.V) - : ₹ 1,37,37,840/- + Civil – : ₹ 3,15,31,760/-}	: ₹9,05,392/-	90 Days	12-10-2020 at 11.00 am	06-10-2020 at 11.00 am	12-10-2020 at 12.00 pm

Scope of Work:

1. The scope of work covers all aspects of planning; Finalizing the concepts, developing architectural drawings and execution of the renovation work of the

existing infrastructure facilities on 2 floors of INST Building including associated services such as acoustics, AV, furniture, stage lighting etc.

2. Broad scope of work includes conceptualization, planning, preparation of detailed architectural drawings, coordination, execution and commissioning of following, to the utmost satisfaction as approved by competent authorities at INST Mohali -
 - a) Reconstruction of above including packing of internal facade periphery by brickwork, floor & acoustical wall paneling, as per the requirement, to the satisfaction of INST.
 - b) New flooring as per the requirement over appropriate base work as approved.
 - c) New acoustical wall paneling starting from framework to end finish in the complete auditorium walls around stage and seating area
 - d) Door works, as per the specifications as approved.
 - e) Painting/ polishing/ finishing as per specifications as approved.
 - f) Providing partitions for control room as approved.
 - g) Auditoriums Chairs as approved as per the scope.
 - h) Electrical system including stage lighting, Audio visual, and other associated services works as approved.
 - i) Internal signage of approved type.
3. As the new infrastructure is to be developed in an existing building, the planning and execution should include integration of proposed services viz. stage lighting, audio visual, their power distribution, etc. complete without disturbing the essential services in the rest of the building.
4. Obtaining the necessary approval for final Drawings from competent authorities at INST Mohali before execution.
5. Project Management and quality control by deploying Competent Technical Personnel.
6. Materials used shall be as per the approved makes. No materials shall be used without the prior approval of Engineer- In-Charge.
7. Sufficient number of samples/ display boards shall be submitted to facilitate approval of finishing and other items.

The following is to be used as an indicative guideline by the bidder to design the proposed auditoriums. The bidders are free to use their creativity, knowledge and concepts etc. wherever considered necessary.

Area	Provisions
Overview	<ul style="list-style-type: none"> • Design of Auditoriums - 1 & 2 with aesthetic interior and high quality acoustics as per requirement • Acoustically treated false ceiling over stage and seating area with adequate lighting in both Audi-1 and 2 as per requirement • Minimalistic stage lighting in Audi-1 as per requirement • Standard seating arrangement for Auditorium 1 will be ≥ 230 Nos • Standard seating arrangement for Auditorium 2 will be ≥ 95 Nos • Providing control room in both Audi- 1 and 2. • For Audi-1, providing 2 acoustically insulated Entry/Exit door, 2 doors for green room with appropriate treatment, 1 flush door in the peripheral wall, 1 door for control room with appropriate treatment • For Audi-2, Two acoustically treated insulated Entry/Exit doors, 1 door for control room and acoustically treating 2 doors for AHU room
Flooring.	<ul style="list-style-type: none"> • Audience gallery in luxury performance tile (LPT) or stone polymer composite tile (SPC) floor. • Stage in teak solid wood floor.
False Ceiling	<ul style="list-style-type: none"> • Acoustical Grid ceiling in Stage Area & Control room. NRC 0.9 - 1.0. • Acoustical PET panel ceiling over audience seating area in Audi-1 & Audi-2. • Auditorium internal lighting & stage lighting (only in Audi-1) as per design.
Wall Lining/ Partitions	<ul style="list-style-type: none"> • Acoustical PET panel finish in auditorium seating area & control room of 0.7 NRC. • Full height gypsum partitions of approved make, quality & texture for control room. • Glass partition for control room.
Finishing &	<ul style="list-style-type: none"> • Plastic emulsion paint with POP on exposed wall area or pelmet

Furnishing	as per design.
Acoustics.	<ul style="list-style-type: none"> • Best Quality acoustics inside control room & stage area of auditorium.
Miscellaneous Works.	<ul style="list-style-type: none"> • Brick work construction between the external ACP sheets & internal paneling as per the sanction of structural engineer for heavy load consideration. • Stage extension in Audi-1 as per the sanction of structural engineer for heavy load consideration. • Providing & fixing of step mounted S.S. Railing on extreme aisles in seating area of Audi-1 • Providing & fixing of steps on either side of audience gallery with mounted S.S. Railing in Audi-1. • 40 mm thick flush door finish with 1.5 mm thick laminate on both sides for green room doors. • 50mm Thk single vision panel door for control room. • 83mm Thk sound reducing acoustical double doors for auditorium entrances in auditorium-1 & 2. • Internal Signage in SS brush finish & artwork.
Illumination.	<ul style="list-style-type: none"> • Stage lighting should be energy efficient. • Stage lights will include spotlights, effect lights and wash lights for various cultural and official events, as indicated in Annexure VI-2 • Minimalistic approach should be followed for all stage light fixtures to avoid obscured line of view of audience at all level. • All internal and stage lights should be controlled individually or in group by DALI dimmable system
Furniture	<ul style="list-style-type: none"> • Auditorium Chairs Audi-1: ≥230 Nos and Audi-2: ≥95 No. • Equipment rack, desk table & chair in control room. • Movable podium as per AV requirements.
Audio Visual	<ul style="list-style-type: none"> • State of Art audio system with high end brands of Audio industry as indicated in Annexure VI-2. • The Audio should be supported by projection systems and motorized screens as indicated in Annexure VI-2.

- Design of AV system in the auditorium suitable for speech & stage performances, acoustics work suitable for the performance auditorium with a reverberation time (RT 60) of 1.2 to 1.5 Seconds.
- Audience area lighting design including dimming control and scene selection. Both stage

lighting and general lighting system shall be integrated for scene selection.

- HVAC layout which is being carried out through a separate contract is uploaded. If any modification in the HVAC layout uploaded along with the NIT is required, same may be suitably modified for achieving the required performance. Such modified layout shall be uploaded with the technical bid.
- Testing of acoustic treatment of the auditorium including false ceiling (absorptive and reflective), wall paneling (absorptive and reflective), fixed chairs, stage flooring, gallery & aisle flooring in the auditorium to achieve a Reverberation time (RT60) of 1.2 to 1.5 Seconds for the specified performance in the auditorium along with Audio- Visual system. Providing doors, AV control room in the auditorium hall with access door are also in the scope of this work.
- SITC of Audio-Visual system with its components including Audio-visual System suitable for the Auditorium performances as per requirement and additional conditions mentioned in the bid documents.
- SITC of auditorium lighting including DALI dimming control system, power and control distribution for lighting with lighting bus bar above false ceiling.
- Sprinkler to be fixed in parallel with false ceiling works by other agency.
- Fire Alarm System: Smoke detectors to be installed in parallel with False Ceiling works by other agency.
- Making suitable provision for cable trunking with floor boxes in stage wooden floor area for AV system.

Contractors, who fulfill the following requirements, shall be eligible to apply. **Joint Ventures, Consortium and special purpose vehicles are not accepted.**

1. Should have satisfactorily completed the works as mentioned below during the last Seven years ending previous day of last day of submission of Bid:

Three similar completed works each costing not less than: ₹1.81 Crore

OR

Two similar completed works each costing not less than: ₹2.72 Crore

OR

One similar completed work costing not less than: ₹3.62 Crore

Similar work shall mean design and execution of acoustic treatment including audio-visual system of an auditorium consisting one or more components of interior works of auditorium false ceiling, wall paneling, flooring, auditorium chairs all executed under one agreement in India.

Note:

- (i) The completion cost of the work shall only include gross value of components as mentioned in the similar works and the components of completed work of general lighting including the cost of materials supplied by the Government/Client but excluding those supplied free of cost. Thus, the completion cost shall not include the cost of building and structures. This should be certified by an officer not below the rank of the Project Manager or as Equivalent.
 - (ii) Complete set of TDS certificate (Form 16A) shall be submitted in case the similar work is executed for a private body, which shall form basis for establishing the completion cost of work executed.
 - (iii) The value of all above 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 previous day of last day of submission of Bid.
2. **Turnover:** Should have had average annual financial turnover (gross) of ₹ 2.27 Crore on civil/ electrical **construction/ interior** works during the last immediate three consecutive year ending 31st March 2020 (**Certificate from Chartered Accountant to be attached**).
 3. Should not have incurred any loss (profit after tax should be positive) in more than two years during last five consecutive years ending 31st March 2020. (The balance sheet in case of Pvt. / Public Ltd. Company means its standalone finance statement and consolidated financial statement both).
 4. Net worth certificate of minimum 15% of the estimated cost put to tender issued by certified Chartered Accountants. (**Copy to be attached**).
 5. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid only if he considers himself eligible and he is in possession of all the documents required.
 6. Information and instructions for bidder posted on website shall form part of bid document.
 7. Bid documents 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 downloaded from website www.inst.ac.in or www.eprocure.gov.in free of cost
 8. The bid can only be submitted along with the mandatory original documents such as demand draft or pay order or banker's Cheque or deposit at call receipt or fixed deposit receipt and bank guarantee of any scheduled bank towards EMD in favour of **Director, INST, Mohali** as mentioned in NIT.

9. On opening date, the contractor or his representative may be present to see the bid opening process.
10. **Certificate of financial turn over:** At the time of submission of bid, contractor is to submit affidavit / certificate from CA mentioning financial turnover of last three years or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of eligibility cum technical bid.
11. If bidder does not quote any percentage above/below on the total amount of the bid or any section/sub head in percentage rate bid, the bid shall be treated as invalid and will not be considered as lowest bidder.
12. The **eligibility bid** shall be opened first on due date and time as mentioned above. The contractors who qualifying the eligibility bid shall be required to make 30 Minutes PPT presentation on the proposed INST Auditorium (both Audi-1 and Audi-2) design to be critically examined in respect of (i) 3D visualization, (ii) plan of project execution,(iii) RT60 value and acoustic simulation (iv) prior experience in AV integration in similar composite auditorium works with evidence of such works, before the **Empowered Evaluation Committee (EEC)** constituted by the Director, INST, Mohali. Keeping in view the specific requirement of auditoriums the weightage of the eligibility criteria and PPT presentation shall be **60%** and **40%** respectively. Based on the combined score of eligibility criteria and PPT presentation the eligible contractors will be informed for opening of their financial bid in due course.
13. Pre-bid conference shall be held on **06/10/2020 at 11.00 AM** in the Board Room, INST, Sector 64, Mohali to clear the doubts of intending bidders, if any. Bidders may send by e-mail all their queries before pre-bid conference, latest by **03.00 PM on the 03.10.2020** to office of **the Consultant (Engg) /e-mail ID: niranjan.singh@inst.ac.in / director @inst.ac.in**. As a result of pre-bid conference, certain modifications may be required. Addendum / Corrigendum shall be uploaded by the Consultant (Engg), if felt necessary by him, which shall form part of bid document.

The bidders are advised to physically visit the auditorium site before attending the pre-bid meeting to have more clarity about the site conditions and availability of space for execution of the work.
14. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
15. Integrity pact of the bid document shall be signed between Engineer-in- Charge and the successful bidder after acceptance of the bid.

16. The bidder must associate with himself, agencies of the appropriate eligibility to bid for each of specialized nature of items / work listed below individually. Such works shall be got executed only through associated agencies specialized in these fields. The bidder whose bid is accepted shall indicate the name(s) of his associated specialized agencies those fulfilling the eligibility criteria laid down below within **7 days** after award of work for the approval of the Engineer-in-Charge of that component, whose decision shall be final and binding. If the bidder, having valid electrical license if applicable for E&M works or himself fulfils the eligibility criteria laid down below for associated specialized agencies, then the bidder shall not require to associate with himself the associated specialized agency.

Eligibility Criteria for Specialized Associate Firms

Description on /Type of work	The Specialized firms should have experience of carrying out similar works satisfactorily during last 7 years ending previous day of last day of submission of bid as per following:	Remarks
1	2	3
<p align="center">1. SITC of Internal Electrical Installation Works</p>	<p>The main contractor should engage an agency registered in CPWD in appropriate class & category.</p> <p align="center">OR</p> <p>An electrical contract firm with valid electrical license issued by competent authority fulfilling eligibility criteria having completed</p> <p>(i) One similar completed work of value not less than: ₹11.50 Lakh.</p> <p align="center">OR</p> <p>(ii) Two similar completed works each of value not less than: ₹8.65 Lakh.</p> <p align="center">OR</p> <p>(iii) Three similar completed works each of value not less than ₹5.75 Lakh.</p>	<p>The firm should submit details of enlistment or The firm should submit details of Eligibility criteria. They should submit valid Electrical Licence issued by Competent authority of appropriate class. Similar work means "SITC of Internal Electrical Installation Works." The Composite Contractor and the associated specialized agencies are required to submit the affidavit to confirm their association.</p>

LIST OF DOCUMENTS TO BE ATTACHED WITH THE TENDER DOCUMENTS

(i)	Letter of Transmittal
(ii)	Demand Draft / Pay Order or Banker's Cheque / Deposit at Call Receipt / Bank Guarantee of any scheduled bank against EMD as prescribed. (drawn in favour of Director, INST, Mohali)
(iii)	Copy of receipt for deposition of original EMD to INST Finance unit [EMD shall be in favour of Director, INST, Mohali]
(iv)	Certificate of Financial information from CA– Form “A”
(v)	Net worth Certificate from Chartered Accountant certificate—Form “B1”
(vi)	Certificate of Work Experience – Form “C”
(vii)	Criteria for evaluation of performance of Contractors for Pre-Eligibility – Form “D”
(viii)	Structure and organization – Form “E”
(ix)	GST registration Certificate of the Punjab State if already obtained by the bidder
	If the bidder has not obtained GST registration of Punjab State as required by GST Authorities, then in such a case the bidder shall submit Following undertaking along with other bid documents. “If work is awarded to me, I/We shall obtain GST registration certificate of the Punjab State, within one month from the date of receipt of award letter or before release of any payment by INST, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by INST or GST Department in this regard.
(x)	Affidavit on “No back to back execution of work” (Form F)
(xi)	Notarized Affidavit of “ No black listing by state/Central departments /PSU/Autonomous bodies (Form G)
(xii)	Declaration about Site Inspection (Form H)
(xiii)	Technical Design & Specifications as required in the Technical Bid as per Annexure A & B.

If any information furnished by the bidder is found incorrect at a later stage, he/they shall be liable to be debarred from bidding/taking up works in **INST**. The INST reserves the right to verify the particulars furnished by the bidder independently.

SECTION-I

Brief Particulars of the Work

The proposed work is in the campus of Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali. The campus is situated by the side of Indian Institute Science and Educational Research, Mohali. The auditorium building has already been completed with the following brief specifications.

- a. Structure: RCC framed with Façade work (MS member, Aluminum member and DGU, ACP).
- b. Roof: 150 mm thick
- c. Hall: Flooring with Kota / Granite stone.
- d. Stage: RCC structure with cement concrete flooring
- e. Doors: Flush Doors/ Fire
- f. Centralized HVAC system: HVAC ducting work completed and HVAC grill work will be completed after false ceiling work. (Drawings No ATPL-INST-SE-FF-08 and No. ATPL-INST-SE-MF-07 for second floor and Mezzanine Floor respectively.)
- g. Main Electrical Panel-Installed at site.
- h. Wiring for light points- Completed. Light fixture installation has to be carried out in this tender.
- i. Fire Fighting works-Sprinkler to be fixed in parallel with false ceiling works by other agency.
- j. FAS works- Smoke detectors to be installed in parallel with False Ceiling works by other agency.

Scope of Work: The scope of work is given as under.

Conceptualization, planning, preparation of detailed architectural drawings, coordination, execution and commissioning of following, to the utmost satisfaction as approved by competent authorities at INST Mohali -

- a) Reconstruction of above including packing of internal facade periphery by brickwork, floor & acoustical wall paneling, as per the requirement, to the satisfaction of INST.
- b) New flooring as per the requirement over appropriate base work as approved.
- c) New acoustical wall paneling starting from framework to end finish in the complete auditorium walls around stage and seating area
- d) Door works, as per the specifications as approved.
- e) Painting/ polishing/ finishing as per specifications as approved.

- f) Providing partitions for control room as approved.
- g) Auditoriums Chairs as approved as per the scope.
- h) Electrical system including stage lighting, Audio visual, and other associated services works as approved.
- i) Internal signage of approved type.
- j) Design of AV system in the auditorium suitable for speech & stage performances, acoustics work suitable for the performance auditorium with a reverberation time (RT 60) of 1.2 to 1.5 Seconds. The bidder has to prepare detailed design and execution drawings for the auditorium wall paneling, false ceiling, reflectors, chair layout, AV system layout plan with AV control room and other systems.
- k) Audience area lighting design including dimming control and scene selection. General lighting system shall be integrated for scene selection.
- l) Providing and testing of acoustic treatment of the auditorium including false ceiling (absorptive and reflective), wall paneling (absorptive and reflective), fixed chairs, stage flooring, gallery & aisle flooring in the auditorium to achieve a Reverberation time (RT60) of 1.2 to 1.5 Seconds for the specified performance in the auditorium along with Audio-Visual system. Providing acoustically treated doors, back entry doors to green rooms, AV control room doors, in the auditorium hall in the scope of this work.

Note1: Wherever applicable, existing doors should be acoustically treated instead of complete replacement.

Note 2: The AV control rooms shall be provided as per attached Drawing and as per particular specifications.

Note 3: The payment for fixed chairs shall be as per the actual number.

- m) SITC of Audio-Visual system with its components including Audio-visual System suitable for the Auditorium performances as per requirement and additional conditions mentioned in the bid documents.
- n) SITC of auditorium lighting including DALI dimming control system, power and control distribution for lighting with lighting bus bar above false ceiling. Stage lighting of Auditorium-1 is in the scope of the tender.
- o) Making suitable opening in false ceiling and wall paneling for Fire Alarm & Firefighting system being executed by another agency.
- p) Making suitable provision for cable trunking with floor boxes in stage wooden floor area for AV system.

SECTION II**INFORMATION & INSTRUCTIONS FOR BIDDERS****1.0 General:**

- 1.1 Letter of Transmittal and forms for deciding eligibility are given in Section-III.
- 1.2 All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, a “nil” or “no such case” entry should be made in that column. If any particulars/ query is not applicable in case of the bidder, it should be stated as “not applicable”. The bidders are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the bid being summarily disqualified.
- 1.3 References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the bidder should be signed by an officer not below the rank of Executive Engineer or equivalent.
- 1.4 The bidder may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of eligibility criteria document unless it is called for by the Engineer in charge.

2.0 Definitions:

- 2.1 In this document the following words and expressions have the meaning hereby assigned to them.
- 2.2 Employer/ Engineer-in-Charge: Means the Director, INST, acting through the Consultant (Engg) or his successor.
- 2.3 Bidder/Tenderer: Means the individual, proprietary firm, firm in partnership, limited company private or public or corporation.

2.4 Client means Institute of Nano Science and Technology, Mohali.

2.5 “Year” means “Financial Year” unless stated otherwise.

3.0 Method of application:

3.1 If the bidder is an individual, the application shall be signed by him above his full type written name and current address.

3.2 If the bidder is a proprietary firm, the application shall be signed by the proprietor above his full type written name and the full name of his firm with its current address.

3.3 If the bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full type written names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the latter case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.

3.4 If the bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The bidder should also furnish a copy of the Memorandum of Articles of Association and power of attorney duly attested by a Public Notary.

4.0 Final decision-making authority.

The Employer reserves the right to accept or reject any bid and to annul the process and reject all bids at any time, without assigning any reason or incurring any liability to the bidder.

5.0 Site visit: The bidder is advised to visit the site of work, at his own cost, and examine it and its surroundings to himself collect all information that he considers necessary for proper assessment of the prospective assignment.

6.0 Initial Criteria for eligibility.

6.1 The Bidder should have satisfactorily completed similar works during the last Seven years ending previous day of last date of submission of bids as below. For this purpose, cost of work shall mean gross value the completed work including cost of material supplied by the Government/Client but excluding those supplied free of cost. This should be certified by an

officer not below the rank of Executive Engineer should have satisfactorily completed the works as mentioned below during the last Seven years ending previous day of last day of submission of Bid:

Three similar completed works each costing not less than: ₹1.81Crore

OR

Two similar completed works each costing not less than: ₹2.72Crore

OR

One similar completed work costing not less than: ₹ 3.62Crore

Similar work shall mean design and execution of acoustic treatment including audio-visual system of an auditorium consisting one or more components of interior works of auditorium false ceiling wall paneling, flooring, auditorium chairs all executed under one agreement In India.

Note:

- (i) The completion cost of the work shall only **include gross value** of components as mentioned in the similar works and the components of completed work of general lighting including the cost of materials supplied by the Government/Client but excluding those supplied free of cost. Thus the completion cost shall not include the cost of building and structures. This should be certified by an officer not below the rank of the Engineer/ or Equivalent.
- (ii) Complete set of TDS certificate (Form16A) shall be submitted in case the similar work is executed for a private body, which shall form basis for establishing the completion cost of work executed.
- (iii) The value of all above 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 previous day of last day of submission of Bid.
- 6.2** The bidder should have had average annual financial turnover (gross) of: ₹ 2.27 Crore on civil/ electrical construction works during the last three consecutive years, balance sheet duly audited by Chartered Accountant. Year in which no turnover is shown would also be considered for working out the average.
- 6.3** The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during **available last five consecutive balance sheets**, duly certified and audited by the Chartered Accountant.

In case of Pvt. / Public Ltd. Company means its standalone finance statement and consolidated

financial statement both)

- 6.4** The bidder should submit Net worth certificate of minimum 15% of the estimated cost put to tender issued by certified Chartered Accountants. (In the format prescribed in FormB-1).
- 6.5** The bidder should have sufficient number of Technical and Administrative employees on payroll for at least 3 months immediately prior to the month of tender invitation for the proper execution of the contract. The bidder shall have to submit a list of these employees stating clearly how these would be involved in this-work, within 7 days of award of work.

7.0 Evaluation criteria.

7.1 The details submitted by the bidders will be evaluated in the following manner:

- 7.1.1 The initial criteria prescribed in para 7.0 above in respect of experience of eligible similar works completed, loss, solvency and financial turnover and bidding capacity etc. will first be scrutinized and the bidder's eligibility for the work be determined.
- 7.1.2 The bidder's qualifying the initial criteria as set out in para 7.0 above will be evaluated for following criteria by scoring method as specified in" Annexure-I" on the basis of details furnished by them.

Financial strength (Form 'A'&'B1')	Maximum 20marks
Experience in eligible similar nature of work during last seven years (Form 'C')	Maximum 20marks
Performance on works (Form 'D')—Time over run	Maximum 20marks
Performance on works (Form 'D')—Quality	Maximum 40marks

To become eligible for short listing the bidder must secure at least fifty percent marks in each attribute (section a, b, c and d) and Sixty percent marks in aggregate.

The Institute, however, reserves the right to restrict the list of such qualified Contractors to any number deemed suitable by it.

Note:-The average value of performance of works for time overrun and quality shall be taken on the basis of performance report of the eligible similar works.

(Note:- The 60% weightage of eligibility score shall be considered for opening of Financial Bid.)

8.0 Financial information

Bidder should furnish the Annual financial statement for the last five year in **Form “A”** and Net worth certificate in **Form “B1”**

9.0 Experience of similar works

9.1 The bidder should furnish the List of eligible similar nature of works successfully completed during the last seven years in **Form “C”**.

10.0 Organizational information

Bidder is required to submit information in respect of his organization in **Form “E”**.

11.0 Letter of transmittal

The bidder should submit the letter of transmittal attached with the document.

12.0 Certifications and licenses

Bidder should submit documents against certification of incorporation, Factory and Trade licenses, as applicable. Documentation should also be submitted for ISO 9001-2015 Certification for ensuring quality and OHSAS 18001/45001 Certification for compliance with Occupational Health and Safety Assessment pertaining to interior furnishings / lightings / AV solutions and their related accessories/ products in this tender.

13.0 Opening of Technical Bid – Stage 1

After evaluation of eligibility bid, a list of short-listed bidders will be prepared. Thereafter the technical bids of the short-listed bidders shall be opened at the notified time, date and place in the presence of the qualified bidders or their representatives (to be notified later)

All the bidders have to submit the details specified in the technical bid. Any bid without the required technical details will be liable for rejection.

A list of bidders who qualified in the eligibility bid and submitted the technical bid as per Annexure A & B of the bid document will be required to make 30 minutes PPT presentation **based on INST auditorium** on their (i) 3D visualization, (ii) plan of project execution, (iii) RT60 value and acoustic simulation (iv) prior experience in AV integration in similar composite auditorium works with evidence of such works to the committee constituted for this purpose through a PPT presentation. **The signed hard & soft copies of the above presentation shall be submitted at the time of presentation.**

The technical bid shall become invalid if the bidder does not make a presentation as required in the above Para.

14.0 Opening of Financial Bid - Stage -2

After evaluation of eligibility-cum- technical presentation, Financial bids of all the shortlisted bidders will be opened at the notified time, date and place in the presence of the qualified bidders or their representatives (to be notified later)

15.0 Award criteria

15.1 The Employer reserves the right, without being liable for any damages or obligation to inform the bidder, to:

- (a) Amend the scope and value of contract.
- (b) Reject any or all the applications without assigning any reason.

15.2 Any effort on the part of the bidder or his agent to exercise influence or to pressurize the employer would result in rejection of his bid. Canvassing of any kind is prohibited.

**INFORMATION AND INSTRUCTION FOR ALL CONCERNED FOR
TENDERING.**

Finance Unit, INST should receive the original EMD for tender if received separately.

At the time of issue of NIT shall also fill and upload the following prescribed format of receipt of deposition of original EMD along with NIT.

Receipts of deposition of original EMD		
	Receipt No.	Date:
1.	Name of work	Construction of Auditoriums at Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.
2.	NIT No	01/INST/ 2020-21
3.	Estimated cost	: ₹4,52,69,600/-
4.	Amount of Earnest Money Deposit	: ₹9,05,392/-
5.	Last date of submission of Bid	Up to 11:00 Hrs 12-10-2020

1.	Name of the Contractor	
2.	Form of EMD	
3.	Amount of Earnest Money Deposit	
4.	Date of Submission of EMD	

Date

Signature

Name and Designation of EMD receiving Officer along with Office stamp.

SECTION- III
INFORMATION REGARDING ELIGIBILITY,
LETTER OF TRANSMITTAL

From :

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

To

The Director,

Institute of Nano Science and Technology, Mohali-160062

Subject: Submission of bids for the work of “Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of General Lighting and Audio-Visual System.”

Sir,

Having examined the details given in the bid document for the above work, I/we hereby submit the relevant information.

1. I/we hereby certify that all the statement made and information supplied in the enclosed forms “A to H” and accompanying statement are true and correct.
 2. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
 3. I/we submit the requisite certified solvency certificate and authorize the Director, INST, Mohali to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/we also authorize Director, INST, Mohali, to approach individuals, Employer, firms and corporation to verify our competence and general reputation.
 4. I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works:
-

Name of work	Certificate from

Certificate: It is certified that the information given in the enclosed eligibility is correct. It is also certified that I/we shall be liable to be debarred, disqualified/cancellation of enlistment in case any information furnished by me/us found to be incorrect.

Enclosures: Seal of bidder

Date of submission:

Signature(s) of bidder(s).

FORM 'A'
FINANCIAL INFORMATION

- I. Financial Analysis – Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five financial years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (**Copies to be attached**).

S.NO	Description	Financial Years				
		2015-16	2016-17	2017-18	2018-19	2019-20
(i)	Gross Annual turnover on construction works					
(ii)	Profit / Loss (standalone finance statement and consolidated financial statement both)					

- II. Financial arrangements for carrying out the proposed work.

- III. Solvency Certificate from Bankers of the bidder in the prescribed Form "B".

Signature of Chartered Accountant with Seal & Signature of bidder(s).

FORM 'B1'

FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT

It is to certify that as per audited balance sheet and profit and loss account during financial year, the net worth of M/s.....
(Name & Registered Address of Individual/firm/company) as on(the relevant date) 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 (the relevant date)

Signature of the Chartered Accountant

.....

..... Name of the
Chartered Accountant

.....

Membership No. of ICAI

Date and Seal

FORM "C"

DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING THE LAST SEVEN YEARS ENDING PREVIOUS DAY OF LAST DATE OF SUBMISSION OF BIDS.

S No	Name of work/project and location	Owner or sponsoring organization	Cost of work in rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Whether EOT case decided- Yes/ No, if yes, with or without levy of compensation	Litigation/ arbitration cases pending/ in progress with details*	Name and address / telephone Number of officer to whom reference may be made	Whether the work was done on back to back basis— Yes/No
1	2	3	4	5	6	7	8	9	10	11

*Indicate the gross amount claimed and awarded by the arbitrator

Note:

1. Complete set of TDS certificate (Form 16 A) shall be uploaded in case the similar work is executed for a private body, which shall form basis for establishing the completion cost of work executed.
2. **Actual date of completion:** Completion certificate including performance Report issued by Executive Engineer or Equivalent rank shall be submitted

Signature of bidder(s).

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORMS "C"

1. Name of work/project & Location

2. Agreement no.

3. Estimated cost

4. (a) Tendered cost

(b) Completion Cost:

5. Date of start

6. Date of completion

(i) Stipulated date of completion

(ii) Actual date of completion

7. Amount of compensation levied for delayed completion, if any

(a) Whether case of levy of compensation for delay has been decided or not Yes/No

(b) If decided, amount of compensation levied for delayed completion, if any

8. Amount of reduced rate items, if any

9. Performance Report

(1) Quality of work Outstanding/ Very Good /Good/Poor

(2) Financial soundness Outstanding/Very Good/Good/Poor

(3) Technical Proficiency Outstanding/Very Good/Good/Poor

(4) Resourcefulness Outstanding/Very Good/Good/Poor

(5) General Behavior Outstanding/Very Good/Good/Poor

Dated: Executive Engineer or Equivalent

Note: **Supporting Documents showing completion cost of relevant component of work/ items included in the tender to be submitted.**

FORM 'E' STRUCTURE & ORGANISATION

1	Name & address of the bidder	
2	Telephone no./Telex no./Fax no.	
3	Legal status of the bidder(Copies of original document defining the legal status) :	
a.	An Individual	
b.	A proprietary firm	
c.	A firm in partnership	
d.	A limited company or Corporation	
4	Particulars of registration with various Government Bodies (copy of self-attested photocopy)	
	Organization /Place of registration	Registration Number
	1.	
	2.	
	3.	
5	Names and titles of Directors & Offices with designation to be concerned with this work.	
6	Designation of individuals authorized to act for the organization	
7	Has the bidder, or any constituent partner in case of partnership firm, Limited Company /Joint Venture ever been convicted by the court of law? If so, give details.	
8	In which field of Civil, Electrical & Mechanical Engineering construction the Bidder has specialization and interest?	
9	Any other information considered necessary but not included above.	

Signature of bidder(s).

FORM 'F'

**AFFIDAVIT FOR NON-EXECUTION OF WORKS ON BACK TO
BACK BASIS**

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 bidding in CPWD in future for ever. Also, if such a violation comes to the notice of Department before date of start of work and during the execution stage, the Engineer-in-charge shall be free to cancel the agreement and to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

Note: Affidavit to be furnished on a Non-Judicial stamp paper worth: ₹100/ -

.....

.....

Date

Signature by an Authorized
Officer of the firm
with stamp

FORM 'G'**AFFIDAVIT ON NON-BLACKLISTING**

I/We undertake and confirm that our firm/partnership firm has not been blacklisted presently (as on last date of submission of bid) by any state/Central Department/PSUs/Autonomous bodies of Central Government. Further that, if such an information comes to the notice of the department then I/we shall be debarred for this work. Also, if such an information comes to the notice of department on any day before date of start of work and during execution stage, the Engineer -in-charge shall be free to cancel the agreement and to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee

Note: Affidavit to be furnished on a Non-Judicial stamp paper worth: ₹100/ -

.....

.....

Signature by an Authorized Officer of the firm with stamp

Date

Signature of Notary with seal

FORM 'H'
DECLARATION ABOUT SITE INSPECTION

To,
The Director,
Institute of Nano Science and
Technology,
Mohali-160062

Sub: Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SI System.

Dear Sir,

It is hereby declared that as per CPWD-6 FOR BIDDING, I/ We the bidder inspected and examined the subject site and its surrounding and satisfy myself / ourselves as to the nature of the ground and sub-soil (so far as is practicable), the forms and nature of the site./ ourselves before submitting the bid, the accommodation which may require and all necessary information as to risks, contingencies and other circumstances which may influence or affect our bid have been obtained. I/We the bidder shall have full knowledge of the site and no extra charge consequent upon any misunderstanding or otherwise shall be claimed in later date.

I /We bidder shall be responsible for arranging and maintaining at 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 me/us implies that I / We have read this notice and all other contract documents and has made myself /ourselves aware of the scope and specifications of the work to be done and local conditions and other factors having a bearing on the execution of the work.

Yours faithfully

(Duly authorized signatory of the bidder)

ANNEXURE - I

CRITERIA FOR EVALUATION OF THE PERFORMANCE OF CONTRACTORS FOR PRE-ELIGIBILITY

Sr.No	Attributes	Maximum Marks	Evaluation criteria			
(a)	Financial strength	20	(i) 60% marks for minimum eligibility criteria. (ii) 100% marks for twice the minimum eligibility criteria or more. In between (i) & (ii) – on pro- rata basis			
(i)	Average annual turnover	16				
(ii)	Solvency certificate	4				
(b)	Experience in similar class of works i.e., Audio-visual and interior works of auditorium including false ceiling, wall paneling, flooring, auditorium chairs	20	(i) 60% marks for minimum eligibility criteria. (ii) 100% marks for twice the minimum eligibility criteria or more. In between (i) & (ii) – on pro-rata basis			
(c)	Performance on works (time over run)	20	Score			
	Parameter					
	Calculation for Points					
	If TOR =		1.00	2.00	3.00	> 3.50
(i)	Without levy of Compensation		20	15	10	10
(ii)	With levy of Compensation		20	5	0	-5
(iii)	Levy of compensation not decided	20	10	0	0	

	(TOR = AT/ST, where AT = Actual Time; ST=Stipulated Time in the AGREEMENT plus Justified Period of Extension of Time) Note: Marks for value in between the stages indicated above is to be determined by straight line variation basis.	
(d)	Performance of works(Quality)	(40marks)
	(i) Outstanding	40
	(ii) Very Good	30
	(iii) Good	20
	(iv) Poor	0

(Note: - 60% weightage is to be considered for opening of financial bid)

ANNEXURE – 1A

CRITERIA FOR EVALUATION OF THE PERFORMANCE OF CONTRACTORS IN TECHNICAL PRESENTATION

S. No.	Attributes	Max Marks
1	3D visualization	40
	Stage	
	Audience seating area	
	Control room	
	Ceiling	
	Acoustic panel design	
2	Project execution	20
	Work plan	
	Time line	
3	Reverberation time achieved and associated simulations	20
4	Experience on integration of audio visual in similar composite auditorium works with evidence of such works	20
Total marks		100

(Note: - 40% weightage is to be considered for opening of financial bid)

CPWD – 6

GOVERNMENT OF INDIA

NOTICE INVITING TENDER FOR TENDERING

Item rate composite bids, for construction of an Auditorium at Institute of Nano Science and Technology, Mohali, are invited on behalf of Director, INST, Mohali from eligible firms / contractors of repute in three bid system A- Eligibility Bid, B- Technical Specification Bid II-Financial Bid) for the work of“ Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.”

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

- 1.1 The work is estimated to cost: ₹ 4,52,69,600/-

This estimate, however, is given merely as a rough guide.

For composite bid, besides indicating the combined estimated cost put to bid, should clearly indicates 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 bidders is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-

1.2.1 **Criteria of eligibility for submission of bid documents.**

Contractors, who fulfill the following requirements, shall be eligible to apply. **Joint Ventures, Consortium and special purpose vehicles are not accepted.**

- a. Should have satisfactorily completed the works as mentioned below during the last Seven years ending previous day of last day of submission of Bids:

Three similar completed works each costing not less than: ₹1.81Crore

OR

Two similar completed works each costing not less than: ₹2.72Crore

One similar completed work costing not less than: ₹3.62Crore

Similar work shall mean design and execution of acoustic treatment including audio-visual system of an auditorium consisting one or more components of interior works of auditorium false ceiling, wall paneling, flooring, auditorium chairs all executed under one agreement in India.

Note:

- (i) The completion cost of the work shall only include gross value of components as mentioned in the similar works and the components of completed work of general lighting including the cost of materials supplied by the Government/Client but excluding those supplied free of cost. Thus, the completion cost shall not include the cost of building and structures. This should be certified by an officer not below the rank of the Executive Engineer / Project Manager or Equivalent.
 - (ii) Complete set of TDS certificate (Form 16 A) shall be submitted in case the similar work is executed for a private body, which shall form basis for establishing the completion cost of work executed.
 - (iii) The value of all above 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 previous day of last day of submission of Bid.
- b. Should have had average annual financial turnover (gross) of: ₹2.27 Crore on civil/ electrical **construction** works during the last three consecutive years ending 31st March 2020 (copy of certificate from Chartered Accountant to be enclosed).
 - c. Should not have incurred any loss (profit after tax should be positive) in more than two years during last five consecutive years ending 31st March 2020. (The balance sheet in case of Pvt. / Public Ltd. Company means its standalone finance statement and consolidated financial statement both)
 - d. Net worth certificate of minimum 15% of the estimated cost put to tender issued by certified Chartered Accountants. (Copy to be attached).
 - e. Should have sufficient number of Technical and Administrative employees on payroll for at least 3 months immediately prior to the month of tender invitation for the proper execution of the contract. The bidder shall have to submit a list of these employees

stating clearly how these would be involved in this work, within 7 days of award of work.

2. Agreement shall be drawn with the successful bidders on prescribed Form No. CPWD 7 incorporating amendments up to last date of submission of bid which is available as a Govt. of India Publication and also available on website www.cpwd.gov.in. Bidders shall quote his 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 90 days 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 website www.inst.ac.in or www.eprocure.gov.in free of cost.
6. Earnest Money in the form of Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (**drawn in favour of Director, INST, Mohali**) is to be deposited in original.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the bid shall be deposited along with the tender documents.

The tender documents including eligibility bid, technical bid and financial bid will be submitted upto 11.00AM on 12.10.2020 and also opened at **12:00 PM on same day ie. 12-10-2020**

7. The bid submitted shall become invalid if:
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not deposit original EMD along with the tender / IINST Finance unit in advance.
 - (iii) The bidder does not submit copies of all the documents as stipulated in the bid document.

- (iv) If any discrepancy is noticed by the bid opening authority, In the documents submitted along with the tender by the bidders.
 - (v) If a bidder quotes nil rates against each item in item rate bid or does not quote any percentage above/below on the total amount of the bid or any Section/subhead in percentage rate bid, the bid shall be treated as invalid and will not be considered as lowest bidder.
8. The contractor whose bid is accepted will be required to furnish performance guarantee of 5% (Five Percent) of the bid amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than : ₹ 10,000/-) or Deposit at Call receipt of any scheduled bank/Banker's Cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any Scheduled Bank (in case guarantee amount is less than : ₹ 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare board including provident fund code number if applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work and programme Chart (Time and progress) within the period specified in Schedule F.
9. The competent authority on behalf of the Director INST 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 put forth by the bidders shall be summarily rejected.
10. 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 to rejection.
11. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the

same at the rate quoted.

12. The contractor shall not be permitted to bid for works in the INST in case of contractors for award and execution of contracts, in which his near relative is posted as Finance Unit of INST or as an officer in any capacity. 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 gazette officer in the INST/DST. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of his parent Department.
13. No Engineer of gazette 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 previous permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at 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.
14. The bid for the works shall remain open for acceptance for a period of seventy five (75) days from the date of opening of technical bids in case bids are invited on 2 or 3 bid envelop system.

If any tenderer withdraws his tender or make any modification in the terms & conditions of the tender which is not acceptable to the department / Institute within 7 days after last date of submission of bids, then the government shall without prejudice to any other rights or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

If any tenderer withdraws his tender or make any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the government shall without prejudice to any other rights or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

15. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 10 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 C.P.W.D. Form 8 or other Standard C.P.W.D. Form as applicable.

16. For Composite Bids the bid document will include following three components:

Part A. CPWD-6, CPWD-8 including Schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD 2020 as amended / modified up to last date of submission of the bid

Part B. General / specific conditions, specifications and schedule of quantities applicable to major component of the work.

Part C. Schedule A to F for minor component of the work (CE/SE/EE in charge of major component shall also be competent authority under clause 2 and clause 5 as mentioned in Schedule A to F for major components), General/specific conditions, specifications and schedule of quantities applicable to minor component(s) of the work.

19.1.1 The bidder must associate with himself, agencies of the appropriate eligibility to bid for each of specialized nature of items / Minor works listed in the bid documents individually. Such works shall be got executed only through associated agencies specialized in these fields. The bidder whose bid is accepted shall indicate the name(s) of his associated specialized agencies those fulfilling the eligibility criteria laid down in the bid documents within **7 days** after award of work for the approval of the Engineer in charge whose decision shall be final and binding. If the bidder, having valid electrical license if applicable for E&M works, himself fulfils the eligibility criteria laid down in the bid documents for associated specialized agencies, then the bidder shall not require to associate with himself the associated specialized agency.

19.1.2 The eligible bidders shall quote rates for all items of major component as well as for all items of minor components of the work.

19.1.3 Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.

19.1.4 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works.

19.1.5 The main contractor has to associate agency(s) for specialized component(s) / minor component conforming to eligibility criteria as defined in the bid document and has to

submit detail of such agency(s) to Engineer-in-Charge of relevant component(s) within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-Charge of relevant component(s).

- 19.1.6 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer- in-Charge of relevant specialized / minor component. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in- charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.
- 19.1.7 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-Charge of the discipline of minor component directly to the main contractor.
- 19.1.9A The composite work shall be treated as complete when all the components of the work are Complete. The completion certificate of the composite work shall be recorded by Engineer-in-Charge of major component after record of completion certificate of all other components.
- 19.1.9 B Final bill of whole work shall be finalized and paid by the INST only after finalization of both the components (major and minor) in the final bill for composite contract.
17. **In case of reduction in scope of work no claim on account of reduction in value of work, loss of expected profit, consequential overheads etc. Shall be entertained.**
18. GST or any other tax applicable in respect of inputs procured by the contractor for this contract shall be payable by the contractor and INST/ Govt. will not entertain any claim whatsoever in respect of the same.

CPWD-8**INSTITUTE OF NANO SCIENCE AND TECHNOLOGY, MOHALI**

Bid for the work of “Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System”.

(i) Hard copies of Eligibility and technical bid and Financial Bid are to be submitted by 11.00 AM on **12/10/2020**.

(ii) Eligibility bid and technical bid are to be opened in presence of bidder /their authorized representative who may be present at 12.00 PM on **12/10/2020** in the office of Director, INST, Mohali.

(iii) The date and time of opening of Financial Bid shall be intimated to all eligible bidders separately by e-mail.

T E N D E R

I/We have read and examined the notice inviting bid, schedule, A, B, C, D, E & F, Specification 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 bid document for the work.

I/We hereby bid for the execution of the work specified for the President of India within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawings 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.

I/We agree to keep the bid open for **Seventy Five (75) days** from the date of opening of technical bid and not to make any modification in its terms and conditions.

A sum of : ₹9,05,392/- is hereby forwarded in receipt treasury challan/ deposit at call receipt of a scheduled bank/ fixed deposit receipt of scheduled bank/ demand draft of a scheduled bank/ bank guarantee issued by 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 President of India 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 work as specified, I/We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the bid documents upon the terms and conditions contained in the bid documents.

Further, I/We agree that in case of forfeiture of Earnest Money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-bidding 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 bidding in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work and during the execution stage, 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 bid documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated

Signature of Contractor

Postal Address

Signature of Witness:

Address: Occupation:

ACCEPTANCE

The above bid (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the President of India for a sum of Rs
... ..

(Rupees)

The letters referred to below shall form part of this contract

Agreement: - a)

b)

c)

For & on behalf of the President of
India. Signature

.....

Dated.....

Designation.....

PROFORMA OF SCHEDULES**(Major Component)**

(Separate Performa for Civil, Elect. & Hort. Works in case of Composite Bids) (Operative Schedules to be supplied separately to each intending bidder)

SCHEDULE 'A'

Schedule of quantities (asper PWD.3) 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
1	2	3	4	5
---- Nil ----				

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S. No	Description	Hire charges per day	Place of Issue
1	2	3	4
---- Nil ----			

SCHEDULE 'D'

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

As attached in NIT

SCHEDULE 'E'

Reference to General Conditions of contract.

GCC 2020 incorporating amendment up to last date of submission of bid.

Name of Work

Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SI System.

Estimated cost of work

: ₹4,52,69,600/-

(Civil - : ₹3, 15,31,760/-

E&M/ AV—: ₹ 1,37,37,840/-)

Earnest Money:

(will be returned after receiving performance guarantee.)

Performance guarantee

5% of bid value

Security deposit

2.5% of bid value

SCHEDULE 'F'**GENERAL RULES****&DIRECTIONS:**

Officer inviting bid

Director, INST, Mohali

Definitions:

- | | |
|---|--|
| 2(i) Engineer-in-Charge | Consultant (Engg)/ Assistant Engineer, INST |
| 2(ii) Accepting Authority | Director, INST, Mohali
Or successor thereof |
| 2(iii) Percentage on cost of materials and labour to cover all overheads and profits: | 15% |
| 2(iv) Standard Schedule of Rates | DSR (E&M) 2018 with upto date correction slips up to last date of submission of bid. |
| 2(vi) Department | Institute of Nano Science and Technology, Mohali |
| 2(vii) Standard CPWD Contract Form: | GCC 2019 CPWD corrected up to last date of submission of bid. |

Clause 1

- (i) Time allowed for submission of performance guarantee, programme chart (time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of Letter of acceptance. **07 days**
- (ii) Maximum allowable extension with late fee at 0.1% per day of performance guarantee amount beyond the period provided in (i) above. **03 days**

Clause 1 A

The defect liability / maintenance period shall be **24 Months** after the date of completion of work for this contract agreement.

Clause 2

Authority for fixing compensation under clause 2 **Director, INST, Mohali or successor thereof**

Clause2A **Not Applicable**

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start **10 days**

MILE STONE AS PER TABLE GIVEN BELOW

Sl. No.	Description of Milestone (Physical)	Time allowed in days (from date of start)	Amount to be withheld in case of non-achievement of milestone
1	Installation of false ceiling in entire auditorium including electrical & AV system and indicated civil works.	30 Days	2 % of the tendered value of the work
2	Framework for wall paneling& Installation of light fittings in false ceiling. Completion of AV control room.	60 Days	2 % of the tendered value of the work
3	Installation of wall paneling, Supply & installation of all equipment, fixing of auditorium chairs, doors and all flooring works.	80 Days	0.50% of the tendered value of the work
4	Testing & Commissioning of all fixtures/equipment and handing over i/c obtaining all statutory approvals.	90days	0.50 % of the tendered value of the Work

Clause 5.4

The form of application by the contractor for seeking rescheduling of milestone or seeking extension of time

Annexure –II & III

Schedule of rate of recovery for delay in submission of the program/modified programme in terms of delay days

: ₹ 1000.00 per day

Clause 6, 6A

Clause applicable - (6or6A)

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.

: ₹ 50 Lakhs

Clause 7A

Whether Clause 7A shall be applicable

Yes. No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in- Charge.

Competent authority deciding payment by contractor for failure in submission of completion plan

**Director, INST, Mohali
orsuccessor thereof**

Clause 10A

List of testing equipment to be provided

by the contractor at site lab:

As per **Annexure IV**

Clause 10B

Whether Clause 10 B (ii) shall be

Applicable

No

Clause10C : Component of labour expressed -25%

Clause10CA

Not Applicable

Clause 10CC

Clause 10 CC to be applicable in contract

Not Applicable

sWith stipulated period of completion exceeding the period shown in the next column.

Clause 11

Specifications to be

Followed for

execution of work

CPWD General Specifications for Electrical Works Part I Internal – 2013 with up to date correction slips till last date of submission of bid. Relevant IS codes or specified international codes, manufacturer's specification wherever CPWD specification is not available.

Clause 12

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2, 12.3		Type of work: Project & Original work
12.2	Deviation limit beyond which clauses 12.2 & 12.3 shall apply for building work	30% (Thirty percent)
12.3	i) Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work (except earth work)	100% (One Hundred percent)
	ii) Deviation Limit for items in earth work subhead of DSR or related items	100% (One Hundred percent)

Clause 16

Competent authority
for deciding reduced
rates.

Director, INST, Mohali or successor thereof

Clause 17

Contractor Liable for
damages, defects during

24 Months

Clause 18

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

As per Annexure V

Clauses 19 C, 19 D, 19**G, 19 K**

Competent authority for

Director, INST, Mohali or successor thereof

Clause 19L: The ESIC and EPF contribution on the part of the employer in respect of this contract shall be paid by the agency. These contribution on the part of the employer paid by the agency shall be reimbursed by the Engineer-in-charge to the agency on the receipt of request from the agency along with relevant supporting documents

Clause 25: Constitution of Dispute Redressal Committee (DRC)

(Office Order No. F.No. 15(3)/2019-INST

Dated: 11.09.2020)

1. Prof. S. Anantha Ramakrishna : Chairman
Director, CSIR-CSIO, Chandigarh
2. Dr. S.K.Sardana (Retd IDES), Member Judge : Member
Chandigarh Disputes Redressal Commission, Chandigarh
3. Prof. Jagdeep Singh, Registrar, IISER, Mohali : Member
4. Shri Nand Lal Chauhan. Mohali , Retd SE, CPWD, Mohali : Member
5. Shri R.K. Gupta, Retd. EE, CPWD, Panchkula : Member

Note: The above constitution of Dispute Redressal Committee is subject to change, for which necessary notification shall be issued by the competent authority of the INST Mohali, if required.

Clause 32**Requirement of technical representative(s) and recovery rate****For AV & Acoustic Installation Works**

SI no	Minimum Qualification of Technical Representatives	Designation of Technical Staff	Minimum experience	No. (Major and Minor Component)	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
					Figures	Words.
1	Graduate Engineer or Diploma Engineer	Project Manager cum Planning /Site/Quality /Billing	5 Years or 10 years respectively	1(E&M) +1 (Civil)	: ₹ 40,000 / - Per Month	: ₹ Forty thousand Per Month

1. In addition to the above, the specialized firm engaged by the main contractor shall deploy sufficient number of experienced Engineers/ Technicians and work force along with required T&P. For slow progress and any untoward incident, the main contractor shall be responsible.
2. Assistant Engineers retired from Government services and holding Diploma will be treated at par with Graduate Engineer. Diploma holder with minimum 10- year relevant experience with a reputed construction company can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineer
3. The bidder shall submit a certificate of employment of the technical representative(s) (in the form of copy of Form-16 or CPF deduction issued to the Engineer employed by him) along with every running account bill / final bill and shall produce evidence of regular physical availability of such engineers on the above project whenever required by the Engineer-in-Charge.

ANNEXURE-II

Form of Application by the Contractor for seeking Extension of Time Part-I

1. Name of Contractor :
2. Name of work as given in the agreement :
3. Agreement No. :
4. Estimated amount put bid :
5. Date of commencement of works as per agreement :
6. Period allowed for completion of work as per agreement :
7. Date of completion stipulated in agreement :
8. Period for which extension of time if has been given previously :

	EE's letter no. and date	Extension granted	
		Months	Days
(a) 1 st extension.....			
(b) 2 nd extension.....			
(c) 3 rd extension.....			
(d) 4 th extension			
(e) Total extension previously given...			

9. Reasons for which extension have been previously given
(Copies of the previous applications should be attached):
10. Period for which extension if applied for
11. Hindrances on account of which extension is applied for with dates on which hindrances occurred and the period for which these are likely to last.
- (a) Serial no.
 - (b) Nature of hindrance
 - (c) Date of occurrence
 - (d) Period for which it is likely to last
 - (e) Period for which extension required for this particular hindrance
 - (f) Overlapping period if any, with reference to item.
 - (g) Net extension applied for
 - (h) Remarks, if any.

Total period on account of hindrances mentioned above.....Months..... Days

12. Extension of time required for extra work.
13. Details of extra work and the amount involved:
- (a) Total value of extra work
 - (b) Proportionate period of extension of time based on estimated amount put to bid on account of extra work.
14. Total extension of time required for 11 &12

Submitted to the Sub Divisional Officer

Signature of Contractor

Dated.

Annexure-III**Form of Application by the Contractor for seeking Rescheduling of Milestones**

1. Name of Contractor :
2. Name of work as given in the agreement
3. Agreement No.
4. Estimated amount put bid :
5. Date of commencement of works as per agreement :
6. Period allowed for completion of work as per agreement :
7. Date of completion stipulated in agreement
8. Rescheduling of milestones done previously :

Mile stone No. Already reschedules	EE's letter No and Date	Rescheduling of milestone Done	
		Original Date	Rescheduled Date
(A) 1 st Milestone			
(B) 2 nd Milestone			
.....			

Rescheduling of Milestone applied for

Mile stone No. for which rescheduling is applied	Original / Reschedul ed date	Details and Period of Hindranc es	Comments of Executive Engineer	Proposed rescheduled date
(C) 1 st Milestone				
(D) 2 nd Milestone				

Submitted to the Sub Divisional Officer

Signature of Contractor**Dated.**

ANNEXURE – IV**LIST OF TESTING EQUIPMENTS TO BE PROVIDED BY
THE CONTRACTOR AT SITE**

All necessary equipment for conducting all necessary tests shall be provided at the site by the contractor at his own cost. The following minimum testing equipment shall be available at site:-

1) FOR AUDIOSYSTEM

Sr No	Description	Qty
2.2.1	Impedance Meter	1 No
2.2.2	Phase checker	1 No
2.2.3	Hi-quality SPL Meter	1 No
2.2.4	Hi-quality Spectrum Analyzer	1 No
2.2.5	Signal generator	1 No
2.2.6	Digital Multi-meter	1 No
2.2.7	Impedance meter	1 No
2.2.8	Oscilloscope	1 No
2.2.9	Pink Noise Generator	1 No
2.2.10	Test Pattern Generator	1 No
2.2.11	Lux Meter	1 No
2.2.12	Video Test Source (uptill Full HD)	1 No
2.2.13	CD Test Disk	1 No

2) FOR VIDEOSYSTEM

Sr No	Description	Qty
2.3.1	Digital Oscilloscope	1 No
2.3.2	Video / Computer pattern generator	1 No
2.3.3	Portable video monitor	1 No
2.3.4	CAT 5/6 Cable Tester	1 No
2.3.5	Test tone CD / generator	1 No

ANNEXURE – V**LIST OF MACHINERY, TOOLS AND PLANTS TO BE DEPLOYED BY THE CONTRACTOR AT SITE:**

Sl. No.	Equipment	Numbers (Minimum)
1	DG set of minimum capacity 62.5 KVA.	1
2	Steel/Aluminum Ladder 1.5 m to 8 m	2 No
3	Tong Tester	1 No
4	Multi meter	1 No
5	Laser distance meter (40m)	1 No
6	Portable Ordinary drilling machine	1 No
7	Any other machinery required for completion of the work as per decision of Engineer-in-charge.	As per Actual requirement.

Note: The above list is only indicative and not exhaustive

62
INTEGRITY PACT

To,

.....,

.....,

.....

Sub:NITNo.01/INST/2020-21 for the work: Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SI System.

Dear Sir,

It is here by declared that CPWD 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 tender/bid documents, failing which the tenderer/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 INST, MOHALI.

Yours
faithfully

Director/
Consultant (Engg)

INTEGRITY PACT

To,

The Director,
Institute of Nano Science and Technology,
Mohali

Sub: Submission of Bid for the work of **Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.**

Dear Sir,

I/We acknowledge that INST, Mohali 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 documents, failing which/ 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 ACCEPT ANC 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 CPWD. 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, INST shall have unqualified, absolute and unfettered right to disqualify the tenderer /bidder and reject the tender /bid in 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 INST.**

INTEGRITY AGREEMENT

This Integrity Agreement is made at on thisday of 20.....

BETWEEN

**Director, INST, Mohali represented through Head of Office, INST,
Mohali, (Hereinafter referred as the '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

(Details of duly authorized signatory)

(Hereinafter referred 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 Bid (NIT No. 01/INST/2020-21) (hereinafter
referred to as "Tender/Bid") and intends to award, under laid down organizational procedure,
contract for **Construction of Auditorium Institute of Nano Science and Technology,
Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling,
False ceiling and Flooring including necessary Acoustic treatment, providing
Auditorium chairs and SITC of Lighting and Audio-Visual System.**

Herein after 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 asunder:

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:

(a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the bid, 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.

(b) The Principal/Owner will, during the bid process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the bid 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 bid process or the contract execution.

(c) The Principal/Owner shall endeavor to exclude from the bid 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 (PC 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 bidding 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 bid 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 bid 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 bid 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)/Contract(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 bid but not both. Further, in cases where an agent participate in a bid 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 practice 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 bidding 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 bid 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 bid 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 Article3(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 of 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 bid process.
- 2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the bid process or action can be taken for banning of business dealings/ holidaylistingoftheBidder/ContractorasdeemedfitbythePrincipal/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 sub-contractors 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 Subcontractors/sub-vendor.
- 2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractor
- 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 bid or violate its provisions at any stage of the bid process, from the bid process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

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, NST.

Article 7- Other Provisions

- 1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters 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 intentions.
- 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' here to 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/Contract 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 :

ANNEXURE-VI

FORM OF EARNEST MONEY DEPOSIT (BANK GUARANTEE BOND)

WHEREAS, contractor(Name of contractor) (hereinafter called "the Contractor") has submitted his tender dated..... (date) for "**Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SI System.**

." (hereinafter called "the Bid") KNOW ALLPEOPLE by these presents that we (name of bank) having our registered office at.....(hereinafter called" the Bank") are bound unto **Director, INST, Mohali** (hereinafter called "the Engineer-in-Charge") in the sum of : ₹.....(: ₹ in words.....)for which payment will and truly to be made to the said **Director, INST, Mohali** the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this..... day of 20... .THE CONDITIONS of this obligation are:

- 1) If after bid opening the contractor withdraws his bid during the period of validity of bid (including extended validity of bid)specified in the form of bid;
- 2) If the contractor having been notified of the acceptance of his bid by the **Director, INST, Mohali**.

a) fails or refuses to execute the form of agreement in accordance with the Instructions to contractor, if required ;OR

b) fails or refuses to furnish the performance guarantee, in accordance with the provisions of bid document and Instructions to contractor,

We undertake to pay to the **Director,INST, Mohali** either up to the above amount or part thereof upon receipt of his first written demand, without **Director,INST, Mohali** having to substantiates his demand, provided that in his demand the **Director,INST, Mohali** will note

that the amount claimed by his is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including the date* after the deadline for submission of bid as such deadline is stated in the instructions to contractor or as it may be extended by the **Director,INST, Mohali** notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE.....

SIGNATURE OF THEBANK

WITNESS.....

SEAL

(SIGNATURE, NAME ANDADDRESS)

*Date to be worked out on the basis of validity period of six months from last date of submission of bid.

Annexure- VII**FORM OF PERFORMANCE SECURITY**
(GUARANTEE)BANK GUARANTEE BOND

In consideration of the President of India (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between **Director, INST, Mohali** and..... (Hereinafter called "the said contractors") for the work(hereinafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs.....(Rupees.....only) in favour of **Director, INST, Mohali** as a security /guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We..... (Hereinafter referred to as "the Bank") hereby undertake to pay to the Government an amount not exceeding Rs..... (Rupees..... only) on demand by the Government.

2. We(Indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the Government stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs..... (Rupees only).

3. We, the said Bank further undertake to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the contractors in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the contractors shall have no claim against us for making such payment.

4. We.....(indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractors and accordingly discharges this guarantee.

5. We..... (Indicate the name of the Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractors from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractors and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractors or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We.....(Indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.

8. This guarantee shall be valid upto_____unless extended on demand by Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to : ₹_____

(Rupees _____ only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the _____ day of _____ for

(Indicate the name of Bank).

SCHEDULE OF PAYMENTS**A) For Items of Acoustic System**

SI No	Stages of payment	% of Item contract value
1	Installation of Wall Panels & False ceiling	40
2	Completion of civil works, flooring of Hall & Gallery, AV control room, all doors	20
3	Flooring of Stage	10
4	Successful completion of performance test	25
5	On finalization of final bill	5

B) For Items of Auditorium Chairs

SI No	Stages of payment	% of Item contract value
1	Supply & Fixing of Chairs	90
2	Successful completion of performance test	8
3	On finalization of final bill	2

C) For Items of Audio-Visual System

SI No	Stages of payment	% of Item contract value
1	Supply of all Audio and Video Equipment.	70
2	Installation of all Equipment including wiring & terminations.	10
3	Final performance test	18
4	On finalization of Final Bill	2

D) For Items of Auditorium Lighting

Sl No	Stages of payment	% of Item contract value
1	Supply of all light fixtures & Equipment.	70
2	Installation of all Equipment including wiring & terminations.	10
3	Final performance test	18
4	On finalization of Final Bill	2

PART-B

[Wall Paneling, False Ceiling, Flooring and Auditorium Chairs]

PROFORMA OF SCHEDULES**(Major Component)**

**(Separate Proforma for Civil, Elect. & Hort. Works in case of Composite Bids)
(Operative Schedules to be supplied separately to each intending bidder)**

SCHEDULE 'A'

Schedule of quantities (as per PWD.3) 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
1	2	3	4	5
---- Nil ----				

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S. No	Description	Hire charges per day	Place of Issue
1	2	3	4
---- Nil ----			

SCHEDULE 'D'

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

As attached in NIT

SCHEDULE 'E'

GCC 2019 incorporating amendment up to last date of submission of bid.

Reference to General Conditions of contract.

Name of Work :

Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SI System.

Estimated cost of work

Civil Component only –

Rs.1,44, 68,360/-

Earnest Money

Included in schedules of E&M component

Performance guarantee component Security deposit

Included in schedules of E&M
2.5% of bid value

SCHEDULE 'F'**GENERAL RULES & DIRECTIONS:**

Officer inviting bid

Director, INST, Mohali or his successor

Definitions:

- | | | |
|---|---------------------|---|
| 1(i) Engineer-in-Charge | For Civil Component | Consultant (Engg), INST or authorized representative |
| 1(ii) Accepting Authority | | Director, INST, Mohali |
| 1(iii) Percentage on cost of materials and labour to cover all overheads and profits: | | 15% |
| 1(iv) Standard Schedule of Rates | | DSR 2018 with up to date correction slips up to last date of submission of bid. |
| 1(v) Department | | Central Public Works Department. |
| 1(vi) Standard CPWD Contract Form | | GCC 2019 corrected up to last date of submission of bid. |

Clause 1

- | | |
|--|--------------------------------------|
| (i) Time allowed for submission of performance guarantee, programme chart (time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of Letter of acceptance. | Same as prescribed in Part -A |
|--|--------------------------------------|

- (ii) Maximum allowable extension **Same as prescribed in Part -A**
with late fee at 0.1% per day
of performance guarantee
amount beyond the period
provided in (i) above.

Clause 1 A

~~The~~ *liability/maintenance period shall be **24 months** after the date of completion of work for this contract agreement.*

Clause 2

Same as prescribed in Part -A

Clause 2A

Same as prescribed in Part -A

Clause 5

Number of days from the date of **Same as prescribed in Part -A**
issue of letter of acceptance for
reckoning date of start

Mile stone(s)- As per construction programme included in Part -A

Same mile stones shall be applicable for civil as well as electrical components of the work as attached. The Associate contractor will ensure that components of the work are executed in time without giving any chance for slippage of mile stones on account of delay in execution of associated works by him. However in case mile stones are not achieved by the contractor for the project the amount to be withheld under clause 5 of the contract will be done by the Executive Engineer &SM(E)-I only and not by Executive Engineer &SM(C) II.

Clause 5.4

The form of application by the contractor for seeking rescheduling of milestone or seeking extension of time

Same as prescribed in Part -A

Schedule of rate of recovery for delay in submission of the program/modified programme in terms of delay days

Same as prescribed in Part -A

Clause 6, 6A

Clause applicable - (6 or 6A)

6 A

Clause 7

Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.

Rs. 50 Lakhs

Clause 7A

Whether Clause 7A shall be applicable

Yes. No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge.

Competent authority deciding payment by contractor for failure in submission of completion plan

Director, INST, Mohali or successor thereof

Clause 10B

Whether Clause 10 B (ii) shall be

applicable

No

Clause 10C : Component of labour expressed - 25%

Clause 10CA

Not Applicable

Clause 10CC

Clause 10 CC to be applicable in con- **Not Applicable**

tracts

With stipulated period of completion exceeding
the period shown in the next column.

Clause 11

Specifications to be followed for execution of
work

CPWD Specifications 2009, Volume-I and II with
up to date correction slips till last date of
submission of bid. Relevant IS codes or
specified international codes, manufacturer's
specification wherever CPWD specification is
not available.

Clause 12

As per GCC 2019 with upto date corrections till last date of submission of tender.

Clause 16

Competent authority for deciding reduced rates.

The Director, INST, Mohali or successor thereof

Clause 17

Contractor Liable for damages, defects during defect period

24 Months

Clauses 19 C, 19 D, 19 G, 19 K

Competent authority for deciding penalty

Same as prescribed in Part -A

Clause 19 L:

Same as prescribed in Part -A

Clause 25: Constitution of Dispute Redressal Committee (DRC)

Same as prescribed in Part -A

Clause 32

Requirement of technical representative(s) and recovery rate

Same as prescribed in Part -A.

GENERAL SPECIFICATIONS

The work shall generally be carried out in accordance with relevant CPWD specifications with up to date correction slips issued up to last date of receipt of bid.

CIVIL WORK:

1. CPWD Specifications 2009 Volume- I
2. CPWD Specifications 2009 Volume- II
3. BIS Specifications.
4. Safety, Health and Environment Handbook 2019 of CPWD Publication

TECHNICAL SPECIFICATIONS

1. Performance of the auditorium:

The auditorium shall be acoustically fitted out to have a Reverberation Time (RT60) of 1.2 to 1.50 Seconds for performance by using required approved materials for absorption false ceiling, wall paneling, reflectors, sound isolators above false ceiling, if required, auditorium chairs, flooring etc.

2. False ceiling with acoustic treatment:

Specification as per **Schedule of Quantity Part-I**

Note: The light fittings in the hall shall be supported using suitable supporting assembly from the truss/purlin/light bar assembly without loading the false ceiling system.

3. Wall paneling:

Specification as per **Schedule of Quantity Part-I**. The material preferred FR grade acoustic PET panels. The climatic condition of the area where the auditorium is situated is to be taken into account while selecting the material to avoid fungal growth swelling etc.

4. Wooden Flooring in Stage:

Teak solid wooden flooring in stage area with supporting system (Framework, cavity filling, joint filling etc) as required with acoustic treatment and cable trunking system. Specification as per **Schedule of Quantity Part-I**.

5. Aisle Flooring:

Specification as per **Schedule of Quantity Part-I**. The material preferred is luxury performance tile (LPT) or stone polymer composite tile (SPC) with suitable sound absorption treatment.

6. Gallery Flooring:

Specification as per **Schedule of Quantity Part-I**. The material preferred is luxury performance tile (LPT) or stone polymer composite tile (SPC) with suitable sound absorption treatment.

Note: The auditorium chairs shall be fixed on this flooring.

7. A-V CONTROL PANEL ROOM:

The dimensions of A-V room shall be as per the drawing and as directed by the Engineer in Charge. The height of the room shall be up to the ceiling level. The work shall be executed as

per Specification in **Schedule of Quantity Part-I..**

8. Auditorium Chairs:

Auditorium chairs are to be fixed in the gallery portion with suitable fixing method as recommended by the chair manufactures. The colour of the fabric to be used shall be as approved by the Engineer in charge. Specification as per **Schedule of Quantity Part-I.**

9. Teak wood door frame:

The work shall be done in accordance with CPWD Specifications - 2009 - Vol.I & Vol. II with up to date correction slips and as per the available opening size. Specification as per **Schedule of Quantity Part-I.**

10. Painting Work:

All types of paint, polish, primer to have low VOC content as per the requirement of GRIHA. The painting work shall be executed with adequate protection. The colour shall be as approved by the Engineer in Charge.

11. Premium Acrylic Emulsion Paint

Premium acrylic emulsion paint shall be executed on all interior surfaces of building as per the architectural drawings in two or more coats. Shade shall be as approved by the Engineer in charge. Premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture shall be applied over 1 mm thick white cement-based putty. No primer is to be applied on the surface of the putty. The acrylic emulsion shall be applied directly over the surface

The work shall be carried out as per CPWD specifications 2009 Volume I and II with correction slips up to the last date of submission of tender documents with provision of IS Codes listed in CPWD specifications shall form a part of this document with all latest codes.

12. STEEL WORK:

The work shall be done in accordance with CPWD Specifications - 2009 - Vol.I & Vol. II with up to date correction slips.

SPECIAL CONDITIONS

1. The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.
2. The works to be undertaken by the contractor shall inter-alia include the following:
 - (i) Preparation of detailed SHOP drawings, coordinated drawings.
 - (ii) Obtaining of Statutory permissions where-ever applicable and required.
 - (iii) Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
 - (iv) Warranty obligation for the equipment and / or fittings/fixtures supplied by the contractor.
3. No labour camp is allowed inside the campus.
4. The work shall be carried out in the manner complying in all respects with the requirements of relevant bye-laws of the local body under the jurisdiction of which the work is to be executed or as directed by the engineer-in-charge and nothing extra shall be paid on this account. The contractor shall give due notices to the Municipality, Gram Panchayat, Police and /or other authorities as may be required under the law / rules under force and obtain all requisite licenses / permissions to carry out the work and pay all charges which may be leviable on account of his execution of the work under the agreement. Nothing extra shall be payable on this account.
5.

The contractor shall protect existing drains, pipes, cables, overhead wires, sewer lines, water lines and other services encountered in the course of execution of the work, and shall repair any damage caused by him at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services.

The contractor shall carry out his work so as not to interfere with or hinder the progress or completion of the work being performed by other contractor (s) or by the Engineer-in- Charge

and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed, so as not to interfere with the operations of other contractors. He shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of engineer-in-charge.

6.

The contractor shall make his own arrangements for water and make necessary payments directly to the State / Central Govt. departments concerned, if required.

7.

The contractor shall make his own arrangements for necessary electric connection, if required or install Diesel Generators at the site and make necessary payment including all initial cost, security money and electric charges for its use direct to the authority concerned. The Engineer-in-charge will provide all possible assistance by way of reasonable recommendation for obtaining electricity connection to the concerned authorities but bears no responsibility for the same.

8. Jurisdiction of Court

Competent Courts at Mohali and High Court of Punjab & Haryana at Chandigarh shall have the jurisdiction to decide any dispute arising out of or in respect of this contract.

9. Inspection of Site and Drawings

The Contractor shall, if required by him, before submission of the bid, inspect the soft copies of the drawings uploaded in the website and hard copies of the same in the **Office of the Consultant (Engg), INST, Mohali**. The existing auditorium in which work is to be executed also can be visited by the bidder under intimation to the INST Field staff to make the proper survey. The INST shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. It is presumed that the contractor shall satisfy himself for all possible contingencies, availabilities of materials and facilities, storage of materials incidental charges, wastages, bottlenecks etc. w h i c h a r e likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.

10. Order of Preference

Should there be any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed.

- (i) Technical Specifications and Particular specifications.
- (ii) Conditions & Special Conditions
- (iii) CPWD Specifications 2009 including correction slips issued up to the last date of uploading/submission of bid.
- (iv) Indian Standards Specifications of B.I.S.
- (v) ASTM, BS, or other foreign origin code mentioned in bid document.
- (vi) Manufacturer's specifications if B.I.S specification is not available.
- (vii) Sound Engineering practices or well- established local construction practices.
- (viii) Decision of Engineer in charge if none the above is available.

11. Idling of Men and Machinery

No claim whatsoever for idle labour, additional establishments, costs of hire and labour charges for tools and plants etc. will be entertained under any circumstances.

12. Damage Caused by Rain, Flood or any Other Natural Calamity

No payment shall be made for any damage caused by rain, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and the work for which payment has

been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.

13. Watch and Ward/Guard of the Buildings

The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including all equipment, services provided by him against pilferage and breakage during the period of Installations and thereafter till the buildings are physically handed over to the INST, Mohali i n c o m p l e t e s h a p e or one year after physical date of completion whichever is earlier. No extra payment shall be made on this account and no claim shall be admissible on this account for this period.

14. Co-Operation with Other Contractors

The Contractor shall cooperate with and provide the facilities to other agencies working at site for smooth execution of the work.

The Contractor shall:

- i) Properly co-ordinate their work with the work of other Contractors.
- ii) Provide electricity and water to other contractors at mutually agreed rates.
- iii) Resolve the disputes with other Contractors/ sub-contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.
- iv) The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-In- Charge and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and in a proper co -ordination manner and shall perform it in proper sequence to the complete satisfaction of others.

15. Safety Practices

Necessary protective and safety equipment such as helmet, safety shoes, gloves, safety belts etc. shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site.

For the safety of all labour directly or indirectly employed in the work for the performance of the contractor's part of this agreement, the contractors shall, in addition to the provisions of CPWD safety code and directions of the Engineer-in-charge make all arrangements to provide facility as per the provisions of Indian Standard Specifications (Codes) listed below and nothing extra shall be paid on this account.

1. IS 3696 Part I Safety Code for scaffolds and ladders
2. IS 3696 Part II Safety Code for scaffolds and ladders Part II ladders
3. IS 7969 Safety Code for storage and handling of building materials

No inflammable materials including P.O.L shall be allowed to be stored at site.

16. Workmen's Insurance

INST Mohali shall not be liable for any payment in respect of any damages or compensation payable according to law in respect or in consequence of any accident or injury or loss of life to any workman or other person in the employment of the contractor or his agent / representative. The contractor shall insure against such liability with an insurer approved by the Engineer-in-Charge for sum as per established norms during the entire period till completion including Maintenance period.

17. Recovery from the contractor

Without prejudice to the other rights of the Engineer-in-Charge against the contractor in respect of such default, the Engineer-in-Charge shall be entitled to deduct from any sums payable to the contractor the amount of any damages, compensation costs, charges and other expenses paid by the Engineer-in-Charge and which are payable by the contractor under this clause.

18. Final Testing of the Installation

The Contractor shall demonstrate trouble free functioning of all the Civil and E & M installations and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of the various Civil and E & M services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer in-Charge. Nothing extra shall be payable on this account

ADDITIONAL CONDITIONS

1.0 Each Bidder shall propose the materials with specification, make model, fixing method etc. for the items in the technical bid as per Annexure-VI-1 and ensure the proposed performance of the auditorium with analysis and simulation. The bidder also shall quote the amount for these items.

A committee constituted by the Director, INST, Mohali will evaluate the all bided items from each eligible bidder and reserve right to finalize the items to be used in the auditorium. This can be the materials and methodology proposed by a single bidder or combination of materials and methodology proposed by different bidders considering the performance and aesthetic aspects.

The items and methodology finalized by the committee will be binding for all eligible bidders and the bidders shall revise their financial bid for the final specification of the items and methodology.

The agency whose tender is accepted and work is awarded shall execute the items as per the schedule of quantities in the revised financial bid and ensure the performance of the auditorium. The acoustic treatment executed by the agency for the auditorium shall be tested for proposed performance of Reverberation Time (RT60) of 1.2 to 1.5 seconds (in hall empty condition with fixed chairs only) by suitable method proposed by the committee. If the performance is not satisfying, then the agency shall rectify the inadequacy by suitable method without affecting the aesthetics of the auditorium, as approved by the Engineer in Charge and nothing extra shall be paid for the additional work for this purpose.

2. The drawings given in the tender are for general guidance only. The level of the false ceiling shall be as high as possible. The arrangement of chairs shall be for the maximum numbers possible as well as for proper visibility of the programs conducted in the stage.

3. Making opening/cutout in false ceiling and wall paneling for electrical fittings, sprinkler system, grills of AC duct system etc. is in the scope of work. Nothing extra shall be paid for the same.

- 4.** The openings, ventilators etc. shall be closed, with proper supporting system and cement board at the outside face and the inside face shall be paneled with paneling materials matching with the wall paneling. The outside face of the closed area shall be painted with premium exterior paint with suitable colour as per the direction of Engineer in Charge.

LIST OF PREFERRED MAKES

- 1) A list of Preferred Brand names of various Materials/Products are shown below for usage in execution of work.
- 2) It must be ensured, in general, that all materials to be used in the works shall bear BIS Certification mark. In cases where for a particular material/product, BIS Certification Mark is not available, then the material proposed to be procured can be used subject to the condition that it should conform to CPWD Specifications and relevant BIS codes. In such cases written approval of the Engineer-in-Charge shall be obtained before use of such material in their works.
- 3) The list given below does not absolve the Executing Agency from their responsibility for using quality products. It is only after, they are satisfied about the quality and performance, the products shall be used. To achieve this, proper check on the quality of the product, actually to be used, should be exercised.

DETAILS- LIST OF APPROVED MAKES/ SUPPLIERS		
S.NO	MATERIAL	APPROVED MAKE/ SUPPLIER
I	CIVIL	
1	Water Proofing Compound	FOSROC/ DR. FIXIT/ SICA or equivalent.
II	FLOORING & SKIRTING	
1	Solid Wood Flooring	Apex Sport Services Pvt. Ltd., Ego Floor, ARMSTRONG or equivalent.
2	LPT (Luxurious Performance Tiles) Flooring	Welspun Pvt Ltd., Responsive or equivalent.
3	Solid Wood Skirting	Apex Sport Services Pvt. Ltd., Ego Floor, ARMSTRONG or equivalent.
4	Beading Profile for solid wood floor	Apex Sport Services Pvt. Ltd., Ego Floor, ARMSTRONG or equivalent.
5	LPT Skirting	Welspun Pvt Ltd., Responsive or equivalent.
6	Aluminum Skirting.	Bottomline, Alloy, Falanx, equivalent.
III	CEILING	
1	Gypsum Board	Saint Gobain (incorp. India Gypsum)/Approved, equivalent.
2	Acoustical Grid Ceiling	Armstrong, Saint gobain, AMF, equivalent.

3	Acoustical PET Panel Ceiling	Thermofriz, Anutone, Techno Acoustics, equivalent.
IV PARTITION & PANELING WOODWORKS/ PET PANELS		
1	G.I. Frame	USG / Saint Gobin
2	Flexy ply/ Marine Plywood/ Commercial ply	Century Ply / Archid Ply / ASIS equivalent.
3	Acoustic PET Panel	Thermofriz, Anutone, Techno Acoustics, equivalent.
4	Gypsum Board	Saint Gobain (incorp. India Gypsum)/Approved, equivalent.
5	Glass Partition / Glass window	Ottic, Kubic, Saint Gobain, equivalent.
V DOOR HARDWARE/ ACCESSORIES		
Green Room Door System		
1	Floor lock keeper plate	Godrej make
2	Door Handles - 300mm long SS 'H' type	
3	Exposed door closer	
4	Flush door hinges	
5	Door Lamiante	Green Lam / Merino Lam, equivalent.
6	Acoustical Door	Naviar, Shakti, Promat equivalent.
VI PAINTING/ POLISHING		
1	Gypsum Ceiling paint	Asian, NEROLAC, BERGER
VII AUDITORIUM CHAIRS		
		Specific models of GODREJ, METHODEX, FEATHERLITE or WIPRO as per specification in Annexure-VI-1
VIII MISCELLANEOUS		
1	Nosing Profile for steps	Bottomline, Prolite, equivalent
2	PVC Coving Profile for steps	Bottomline, Prolite, equivalent
3	Epoxy Paint	ASIAN, SHALIMAR, NEROLAC, BERGER
4	Stainless Screws, Nuts, Bolts, Washers	KUNDAN, ALLOY, POOJA, ATUL
5	Glass	SAINT GOBAIN, ASAHI, PILKINTON, MODI GUARD, PILKINGTON

6	Cement board reinforced with cellulose fibre	VISAKA INDUSTRIES LIMITED, SCG, EVEREST HD BOARD
7	Paint/Acrylic Emulsion/ Primer/Oil Bound Distemper/Distemper	ASIAN PAINTS, DULUX, BERGER
8	Synthetic Enamel Paint	ASIAN PAINTS, DULUX, BERGER
9	Aluminium Sections	JINDAL, HINDALCO, INDAL, BHORUKA
10	Melamine Polish	ASIAN, PIDLITE, POLYCURE
11	Expansion Fastener / Dash Fastener/Anchor Fastener, Anchor Bolts	HILTI, FISCHER, AXEL
12	Anodized Aluminum Fittings For Doors / Windows	IPSA, CLASSIC, CROWN, JYOTI,
13	Structural Steel	SAIL, TATA(TISCO), RINL, JINDAL, JSW STEEL LTD.

PART-C
[AV & ELECTRICAL COMPONENTS]

PART	COMPONENT
Part C-1	AV System for Auditorium.
Part C-2	Lighting control with Light Fixtures

**ELIGIBILITY CONDITION FOR ASSOCIATE AGENCY FOR EXECUTION OF
E&M WORK.**

1. Eligibility criteria for all E&M works are mentioned in Part -A of NIT.
2. The values of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of interest of 7% per annum, calculated from the date of completion to the last date of receipt of application for tender.
3. Specialized firm shall enclose **self attested** copies of the following documents (not required for enlisted contractors of CPWD).
 - a. Valid Electrical License in appropriate Class, if required.
 - b. Copies of GST, WCTC, if required.
4. The firm should be registered with GST.
5. Self attested copies of completion certificate(s) issued by the officer of the client department, not below the rank of Executive Engineer or equivalent, for works executed in Government and in cases of private works certificates signed by the consultant in charge and counter-signed by the owner of the building for whom the work has been carried out, will have to be furnished along with the application. The completion certificate must clearly indicate: -
 - i. Name of Work
 - ii. Stipulated date of start and actual date of completion.
 - iii. Attested copy of the final bill with matching 26AS downloaded from website (TDS) for accessing the value of **respective E&M Component** work.
 - iv. That the work has been completed satisfactorily.
 - v. Full address of the client, officer issuing certificate and location, where work is executed.
6. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
7. Information and Instructions for bidders posted on website shall form of bid document.

SPECIAL CONDITIONS FOR ALL E&M WORKS

1. The applicant should submit the willingness from Minor component contractor to get associated with the main contractor for execution of Minor component work in wholesome manner and as per the conditions set out in the MOU/Agreement in stamp paper to be entered into between the Major contractor of the work and the associated eligible Minor contractors.
2. In support of the eligibility conditions of the proposed associated MINOR contractors, **Work experience certificates, copy of their registration documents, Valid Electrical Contractor's License for electrical works, GST Documents** and other documents as required in the eligibility conditions duly attested by the applicants (Main Contractor and associate contractors) shall be submitted to the **Engineer-in-Charge, INST** who will submit these documents to the **competent authority** for deciding the eligibility. Each such a Minor contractor will certify that they are not debarred as on the day of signing of agreement / MOU.
3. The main contractor will submit agreement / MOU (for each Component) signed with eligible registered contractors of CPWD /specialized Minor contractors. The MOU in the enclosed form shall be signed by both the parties' i.e. main contractor as 1st party and associated Minor contractor as 2nd party.
4. In the event of the concerned Minor agency not performing satisfactorily or failure of associate contractor to complete the Minor work, the main contractor on the written direction of the department, shall remove the Associate contractor deployed on the work and shall submit name of new associate who fulfill the conditions mentioned in NIT to execute the leftover work without any loss of time or variation in cost to the department in this regard. Such associates shall also enter into tripartite Agreement/Contract along with the main tenderer and the departmental officer and shall meet the entire guarantee for the equipment's already supplied for which payment has been released by the Dept. in part. If any equipment supplied for the work, during the currency of the earlier Associate contractor and paid partly by the dept., becomes redundant /not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of Minor work, the main contractor shall be liable for replacement of the equipment(s) at no cost to Department. No change of Minor Contractor will be allowed without prior approval of the Engineer-in-charge of respective component.
5. The Engineer-in-charge will oversee as far as **AV system & other E&M Minor component works are concerned**. Separate tender schedule abbreviated CPWD-8

and Conditions for Minor Works are appended with this tender. It will be obligatory on the part of the contractor/tenderer to sign the tender documents for all the component parts.

6. The main contractor shall be responsible and liable for proper and complete execution of all the minor works under his contract and ensure full coordination for the successful completion of works of other agencies including HVAC, fire alarm, firefighting and sprinkler works.
7. The associate contractor shall sign a tripartite Agreement/MOU/Contract along with the main tenderer and the departmental officer, for technical compliance of specification, guarantee etc.
8. All running payments shall be made by INST to the main contractor. Whereas running payment for minor component works shall be made by the main contractor.
9. In case main contractor fails to make the payment to the contractor associated by him within 15 days of receipt of each running account payment, then on the written complaint of contractor associated for such Minor component, Engineer in charge shall serve the show cause to the main contractor and if reply of main contractor either not received or found unsatisfactory, he may make the payment directly to the contractor associated for Minor component as per the terms and conditions of the agreement/MOU drawn between main contractor and associate contractor fixed by him. Such payment made to the associate contractor shall be recovered by Engineer-in-charge from the next R/A/ final bill/SD due to main contractor as the case may be.
10. The associate contractor shall attend the inspection of the work by the Engineer-in-Charge of minor works as and when required.
11. The bidder shall give the comprehensive on-site Guarantee / Warranty of audio - visual equipment for **minimum 3 years** from the date of commissioning from manufacturer/OEM.
12. For all the LED light fittings l/c stage lights in the agreement, Guaranty / Warranty offered should be **minimum 5 years** from the date of commissioning from manufacturer/OEM.
13. **Security deposit, i.e., 2.5% of above items (vide Sl. No: 11 & 12) of work will be withheld and amount will released only after completion of warranty period.**
14. Routine test shall be conducted on all major equipment or any other items if required as

per discretion of Engineer-in-charge. It shall be performed in presence of authorized representative of Engineer-in-charge. The Contractor shall give at least fifteen (15) days advance notice of the date when the tests are to be carried out. Testing procedure shall be as per CPWD Specifications, if not available in specification then as per relevant IS code.

15. The bidder shall provide authorization certificates from the manufacturer (as per Annexure – 1) for the sound system /equipment, projection system / equipment, electrical equipment including Speakers, Amplifiers, Mics, Projector, Interface Box, Camera, Recording & Streaming Server, Joystick etc for this specific project also confirming that they shall provide the required warranty and service guarantee for the products in case the dealer/ integrator fails to do so on a direct basis. The bidder shall also produce test certificates from the manufacturer / authorized representatives for all the equipment supplied. All equipment shall be sourced from Authorized sources for the Indian market only. Engineer in charge reserves the right to reject material which shall be purchased from un-authorized sources, not authorized for the Indian market.
16. The name of make/ model number of the E&M equipment to be procured by the successful bidder shall be as per the preferred make list mentioned in the tender document. The INST Authorities requirement shall be final and binding on the contractor.
17. The bidder should be experienced in Simulation of Sound system with respect to the acoustic parameters of lecture hall / auditorium / similar space used for similar application on EASE or similar reputed software. The bidder shall submit the results of simulation in terms of STI (Speech Transmission Index); RT60@ 500Hz, 1KHz, 2KHz, 3KHz, 4KHz and SPL, before commencing the work at site and take the approval from Engineer-in-Charge to start the work at site. **The bidder also has to submit and show the proofs of prior work done on EASE software or equivalent software. And in case the Bidder does not have the experience, then the bidder can have a partner along who should fulfill this requirement and the same simulation done needs to be presented technical bid evaluation stage. Relevant experience document from the client or concerned Architect, need to be attached in the technical bid.**
 1. The bidder shall render the information of acoustics material and audio system performance and provide the deliverable for Acoustics and Audio separately, in terms of Direct SPL, STI and RT at various frequencies during pre-qualifying stage.
 2. The bidder shall carry out the test for acoustics for Noise Criteria (NC) and RT 60,

after using the acoustics material at site.

18. The bidders shall provide OEM (Original Equipment Manufacturer) Authorization Form as per **Annexure 1** from OEM must be submitted for all the active components.
19. The bidders shall provide an undertaking for comprehensive onsite warranty of all active components for required number of years mentioned above in **Annexure 2** given below.
20. Payment Terms for all minor components shall be as per Payment **Schedule of Part A**.
21. All minor component works shall be carried out as per relevant CPWD Specifications & IS Specifications.

ANNEXURE -1

To,

The Director,
Institute of Nano Science and Technology,
Mohali-160062

NIT No. : 1/INST/2020-21

Name of Work:- Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.

Subject: OEM Authorization Certificate — For Audio, Visual & Electrical Equipment etc. as per the design

Dear Sir,

This is to inform you that M/s _____(OEM name) having its regd. Office at _____authorizes M/s- (AV Systems Integrator company name), having its Regd. office at _____ is hereby authorized to quote and supply, install, test and commission our equipment against your above tender mentioned . We shall provide full support to M/s_(AV Systems Integrator) for our range of products quoted by them to meet the above-mentioned tender requirements. We shall provide **3 years** comprehensive onsite warranty at no extra cost.

The undersigned is authorized to issue such authorization on behalf of M/s

For _____

Authorized Signatory

ANNEXURE -2

To,

The Director,
Institute of Nano Science and Technology,
Mohali- 160062.

NIT No : 1/INST/2020-21

Name of Work: Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System.

Subject: Undertaking for comprehensive on-site warranty and support

Dear Sir,

We are hereby confirm that M/s _____ (AV Systems Integrator company name), having its Regd. office at is hereby agreed to quote and supply, install, test and commission our _____ equipment against your above _____ tender mentioned. We shall provide full support for our range of products quoted by us to meet the above-mentioned tender requirements. We shall provide **3 years comprehensive onsite warranty** at no extra cost on all quoted items.

For _____

Authorized Signatory

Guidelines To Be Followed For Handing Over The System

All the following tests to be carried to the satisfaction of INST authorities and as required by INST consultant only.

A) General tests to be carried out at site

Sr. No	Description	Compliance/ Non Compliance	Remarks
2.1.1	The AV Bidder shall carry out the polarity, phasing and impedance, etc tests		
2.1.2	If the AV Bidder elects to furnish equipment designed for powering from n voltage that is different from the single- phase AC power, he shall provide within the contract at no extra expense to the Employer/S.O., suitable transformers or auto-transformers to allow powering the equipment from the available Voltage		
2.1.3	All/any equipment supplied by the AV Bidder shall be fed from the distribution board supplied by the AV Bidder. The reticulation from the distribution onto the individual space area including equipment racks within the cabinet/rack shall be done the AV Bidder. This is to have the common ground for all the power to these areas		
2.1.4	The AV Bidder shall check dimming lighting system & confirm whether the light falling near screen is controlled through that system or not		
2.1.5	The AV Bidder shall check the functionality of the projector at least 10-15 times. Also the position of the image should be consistent every time without any vertical or horizontal shift		
2.1.6	Shall perform the Feedback Tests in all areas and		

	provide the copy of test results		
2.1.7	Shall check the Gain before Feedback Test at Auditorium		
2.1.8	Shall check & confirm the sound proofing, when Partition wall is used at full volume with speech and music signal		
2.1.9	Shall check the data / telecom ports of Audio Visual Systems		
2.1.10	Shall check Hum & Noise levels of rack equipment		
2.1.11	Shall check & confirm the Signal to Noise Ratio, RE and same should be min 80db		
2.1.12	Shall check all AV Points on Connectivity Plates		
2.1.13	Shall check the functionality of all wireless microphones for dead spots and their drop outs .Drop out points to be marked on the drawings and all wireless antennas to be adjusted to avoid dead spots		
2.1.14	Shall check the FM interference with mobile phone for all the microphones		
2.1.15	Complete functionality of the system, signal levels to be checked and measurements to be recorded		

**List of testing equipment's to be provided by the contractor at site
as per ANNEXURE -3 below.**

B) Audio Tests to be carried out

The list of test equipment / meters required at site to carry the below tests are:

Sr No	Description	Brand/ Type No	Last Calibration Date	Remarks
2.2.1	Impedance Meter			
2.2.2	Phase checker			
2.2.3	Hi-quality SPL Meter			
2.2.4	Hi-quality Spectrum Analyzer			
2.2.5	Signal generator			
2.2.6	Digital Multi-meter			
2.2.7	Impedance meter			
2.2.8	Oscilloscope			
2.2.9	Pink Noise Generator			
2.2.10	Test Pattern Generator			
2.2.11	Lux Meter			
2.2.12	Video Test Source (uptill Full HD)			
2.2.13	CD Test Disk			

The Audio Test reports shall include the measurements of the following:

Sr No	Description	Compliance/ Non Compliance	Remarks
2.3.1	SPL Level / Sound Dispersion, Maximum Variation should be + 4dB		
2.3.2	Room Equalization measurements (Hard Copies and Soft Copies)		
2.3.3	Phase Test check of all speakers BGM & others		
2.3.4	Cable connectivity		
2.3.5	Cable Identification		
2.3.6	Dry Solder Check		
2.3.7	Impedance test of a loudspeaker at 125 to 8KHz		
2.3.8	Audio Signal source to be Pink Noise		
2.3.9	RF pickup test		

C) Video Tests to be carried out

The list of test equipment / meters required at site to carry the below tests are:

Sr No	Description	Brand/ Type No	Last Calibration Date	Remarks
2.4.1	Digital Oscilloscope			
2.4.2	Video / Computer pattern generator			
2.4.3	Portable video monitor			
2.4.4	CAT 5/6 Cable Tester			
3.4.5	Test tone CD / generator			

The Video test reports shall include the result of the following tests:

Sr No	Description	Compliance/ Non Compliance	Remarks
2..5.1	Proper functioning of the system by DVD and other external input devices (Video Test DVD)		
2..5.2	Lighting Interface Check		
2..5.3	Voltages to be checked		
2..5.4	A/C levels in control room, after switching ON the system for 3 hours		
2..5.5	Test Pattern results of video		
2..5.6	Circle test / Fine Cross Hatch		
2..5.7	Flat Field		
2..5.8	Pattern To Simulate Text		
2..5.9	Color Bars		
2..5.10	Tint & Color (PAL) with adjustment of brightness & contrast		
2..5.11	Video Tie Liner Check by providing video pattern generator by generating multi burst signal		
2..5.12	Variable contrast level		
2..5.13	Video images photographs,		
2..5.14	Setup of color, brightness and contrast (with essential DVDs)		

Equipment Rack

Sr No	Description	Compliance/Non Compliance	Remarks
2.6.1	The AV Bidder shall provide the Rack Layout		
2.6.2	Proper Identification and Separate tie lines for Audio / Mic / Video / Ethernet Control		
3.6.3	Photographs of rack cabling and markings (Layout Diagram)		

Handing Over

Sr No	Description	Compliance/ Non Compliance	Remarks
2.7.1	All equipment settings are to be saved in several presets for backup. Additional backup is to be provided on 2 copies of CD-R or DVD-R. Where settings cannot be backed up via softcopies, a printed record of photograph, or level settings are to be included in the O&M manuals		
2.7.2	All programming source codes and compiled backup softcopies are to be provided to the Employer at no additional cost		
2.7.3	DSP software and backup of settings are to be provided to the Employer at no additional cost		

OPERATIONAL INSTRUCTIONS

Sr No	Description	Compliance/Non Compliance	Remarks
2.8.1	Including the as-built system schematic diagrams shall be provided at the rack/cabinet. These documents shall be encased in a plastic protection sleeve. The Operational Instructions shall be created for each space and shall include all installed operating equipment, including the equipment purchased by the Employer.		
2.8.2	Markup any changes during the project implementation, and present a final as-built set of documentation, including the above drawings, and also including all Vendor manual and System Description and Maintenance section.		
2.8.3	The Vendor Manuals are to be given in alphabetical order by Manufacturer, and bound into one or more A4 binders. The Binders are to be labeled on the spine with the title “ VENDOR MANUALS ”, and with the alphabetical range of products contained.		
2.8.4	The operation section of the manual shall describe the typical power-up, power-down and any other special notes. The system operator may be assumed to be familiar with this kind of equipment, but not with the specific installation.		
2.8.5	The maintenance section shall provide a regular maintenance schedule, but the Maintenance staff must be assumed to be capable of fault finding on their own, with the aid of the as-built information provided.		

2.8.6	The final rack-layout, EQ settings, and settings on all other equipment shall be included in the manual		
2.8.7	The final rack-layout, EQ settings, and settings on all other equipment shall be included in the manual		
2.8.8	The as-built cable schedules shall likewise be Included in the manual		

OTHER HANDING OVER DOCUMENTS SHALL INCLUDE:

Sr No	Description	Compliance/ Non- Compliance	Remarks
2.9.1	Copy of drawings		
2.9.2	Set of Catalogues (Hard Copies and Soft Copies)		
2.9.3	Area/ System wise Final As-built drawings		
2.9.4	All tests to be carried for Audio, BGM and Video		
2.9.5	SPL Levels and Audio Dispersion to be measured, after feeding pink noise		
2.9.6	The schematic drawings having cable and connector number for every connection with across referenced identification matching the cable schedule		
2.9.7	Cabling routing layout plan		
2.9.8	Conduit layout plan		
2.9.9	Equipment room layout plan		
2.9.10	Equipment mounting detail		
2.9.11	System Schematic Diagrams of system to be Installed		
2.9.12	Detailed Rack Layouts		
2.9.13	System Block Diagram		
2.9.14	All equipment should be named with the brand, model, and equipment number, which matches the AV equipment layout		
2.9.15	All cable labeling should be shown on the Drawings		
2.9.16	Do's and Don't		
2.9.17	Print outs of all the automation screens		

ADDITIONAL SPECIFICATIONS & CONDITIONS

1. **The work shall be carried out strictly in accordance with Schedule of work, Scope of works cum Brief Technical Specification, Additional Conditions & Specifications, CPWD General Specifications and in accordance with Indian Electricity Rules, 1956, Indian Electricity Act, 2003 as amended up to date and as per instructions of the Engineer-in-Charge including as below and nothing will be paid extra.**
 - (a) All material shall be got approved from competent authority before use. Shop floor drawing for the final approved design shall be made for approval with final location of AV control room, all equipment's, switch boards/ LED fittings, location of Fire pump room, fire shaft, cable route etc. and then only work shall be executed inside the auditorium.
 - (b) All damages done to the building during execution of minor components (AV, Stage light & craft and other E&M installation) works shall be the responsibility of the main contractor and the same will be made good immediately at his own cost to the satisfaction of the Engineer-in-Charge. Any expenditure incurred by the department in this condition shall be recovered from the contractor and decision of the Engineer-in-Charge about recovery shall be final.
 - (c) All hardware items such as screws, thimbles, G.I. wires etc. which are essentially required for completing an item as per specifications will be deemed to be included in the item even when the same have not been specifically mentioned. All hardware materials such as nuts/bolts/screws/ washers etc. to be used in the work shall be zinc/cadmium plated iron.
 - (d) **DALI dimmable lighting system proposed with suitable rating lighting bus bar integrated with DALI control wiring. Above mentioned bus bar system shall be capable of withstanding the self-weight of light fixtures, so that same can be hanged / supported from the bus bar without any additional structural member. Bus bar will start from stage area LDB junction to entire auditorium audience area for lighting distribution only.**
 - (e) Any conduit which is not to be wired by the contractor shall be provided with GI fish wire for wiring by some other agency subsequently. Nothing extra shall be paid for the same.

- (f) Separate conduit junction boxes should be avoided, wherever number of pipes passing through the RCC slab. The conduit shall be routed through corridor as well as possible by providing a common metallic junction box of suitable size with 3mm thick phenolic laminated sheet cover, for which nothing extra will be paid. All metal boxes to be applied primer and painted. Boxes shall have socket arrangement for tightening screws, instead of simple holes in M.S. sheet. Boxes shall be again painted at the time of wiring.
- (g) For Sub main Wiring, Colour Code for different phases and Neutral (R.Y.B. black) to be maintained. While circuit wiring, wiring for fan point, wiring for light point shall be done with different colours for easy identification. Wiring for neutral shall be done with black colour and all connections to fans & fittings wherever visible shall be made with white PVC insulated copper wire or wherever cover sleeve may be provided. At Switch board, Switch shall be fixed in a logical manner w.r.t. fittings layout.
- (h) Unless specifically approved by INST authorities, loose wire box, above DB shall not be provided, if it is possible to terminate the entire conduit directly to DB. Otherwise loose wire box of same make of DB shall be provided below beam / ceiling level.
- (i) All conduits shall be terminated (DBs & Switch boxes) with suitable check nuts. All connections/ terminations to switches, sockets, MCB's etc shall be made using thimble/lugs. All SBs, DB's i/c incoming & outgoing MCB's shall be suitably numbered with PAINT for location/circuits. DB shall be fixed in recess suitably (30 mm. approx. projected from un plastered wall) to ease opening of door. Top of DB to match with door frame height as per site conditions.
- (j) Phenolic laminated sheet for draw boxes shall be of Egg white colour, and shall be filed/rounded at edges and of minimum 3mm thick.
- (k) All fittings and fans should be properly earthed through the protective conductor. Provision of earth bars in main boards, earth terminal block in DB's & earth studs in all metal boxes shall be made, connection to this stud shall be crimped. A clamp type termination should be made in the termination of earth strips (where provided) to provide surface type contact.
- (l) The earthing shall be carried out in the presence of the Engineer-in-charge or his authorized representative.
- (m) The size at switch box for providing Modular Plate type Switch/sockets shall be properly selected to take care of all switches/sockets etc. Blanking plate if required

shall also be provided at no extra cost.

- (n) For point wiring in PVC conduit with modular type switches/sockets/telephone outlets/T.V. outlets shall be of only one make.
 - (o) Whenever supply of items like AV equipment, LED fittings etc. in the Schedule of work, such items shall be supplied based on the actual requirement & target given in the mile stone only.
 - (p) The contractor shall make his own arrangement at his own cost for electrical/ general tools and plants required for the work.
2. **The work shall be carried out according to approved design/drawings/details for execution of work and as per instructions of the Engineer-in-Charge who will have the right to change the layout as per requirement at site and the contractor shall liable to simulate a design based on the same and check the performance of the total system based on the new layout. If any issue found in the desired/ final performance value during simulation in EASE software, same may be intimated to the department before finalizing the new layout.**
 3. The work shall be carried out in engineering like manner. The bad workmanship will not be accepted and defects shall be rectified at contractor's cost of the satisfaction of the Engineer-in-Charge. The programme of minor component works are to be co-ordinated in accordance with the building acoustic / finishing work and no claim for idle labour will stipulated in the tender, all minor component works shall have to be completed along with completion of major component work.
 4. All the debris of the construction works should be removed and the site should be cleared by the contractor immediately after the accruing of debris. Similarly any rejected material should be immediately cleared off from the site by the contractor.
 5. Watch and ward of the material/equipment shall be the responsibility of the contractor till handing over of installation to the department.
 6. The contractor or his representative is bound to sign the site order book as and when required by the Engineer-in-Charge and to comply with the remarks therein.
 7. The entire installation shall be at the risk and responsibility of the contractor until these are tested and handed over to the department. However if there is any delay in handing over from the department side, the installation may be taken over in parts, but the decision on the same shall rest with Engineer-in-Charge which shall be a binding on the contractor.
 8. Terms of payment:- **Payment Schedule of Part A**

- (a) **Prices:** The prices quoted by the firm shall be inclusive of all taxes and duties. No concessional/exemption certificate will be issued by the department.
- (b) No Form-D, 31/32 (Road Permit) shall be issued by the department. The road permit shall be arranged by the tenderer at his own. Deduction of Income Tax & Contract Tax at source shall be made while releasing payment through running/final bills as applicable. A TDS specifying the details of deduction shall however be issued.
9. **Test Certificate:** Test certificate for any materials brought to site before execution work of shall also be submitted failing which recovery **@1% of total amount of respective item shall be made from running account bill.** Also both type test & routine test certificate as required shall be submitted.
10. Contractor has to arrange containers with locking facility for storing the materials. Otherwise no payment will be initiated.
11. Time Period: Contractor has to plan his activities, so that minor component works are to be carried out in close co-ordination with major component works and in no case major component work be delayed because of delay in minor component work and the work has to be completed accordingly.
12. **The makes along with model number for items shall be as per preferred make list and got it approved from the competent authority before procurement by submitting technical details along with samples of materials if required.** The decision of the Engineer-in-charge will be final and binding on the contractor.
13. **Storage :-** Materials will not be allowed to store inside the buildings under construction. It is responsibility of the agency to arrange dedicated storage space for AV/ electrical items before procurement of material at site.
14. **Power & Water Supply:-** Responsibility for supply of power & water for execution of work shall be of main contractor. **For the purpose of construction work electricity shall be arranged by contractor at his own cost only.**
15. Material to be used in the work shall be ISI marked as applicable. The material in required quantity to be used in the work shall be got approved from the Engineer-in-charge before its use at site. The Engineer-in-charge shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not as per specifications.
16. Contractor shall preserve the copies of invoices, test certificates; gate passes etc. to prove the genuineness of materials /purchases. The responsibility of procurement, genuine material of specialized works shall rest with the contractor.

17. Contractor is advised to visit site before quoting rates for determining site conditions. No claim or argument shall be entertained in this regard at later stage.
18. The contractor shall submit standard Guarantee / Warranty certificate offered by the manufacturer/OEM in original for the period mentioned in guarantee Performa as per APPENDIX -1 before start of work.
19. For all the LED light fittings Guaranty / Warranty offered should be **minimum 5 years** from the date of commissioning from manufacturer/OEM.
20. All the test certificates and warranty/guaranty certificates submitted by the contractor should be **duly certified by the authorized signatory with proper stamp and signature of OEM/ Manufacturer in original.**
21. No inspection outside the country is permissible if required so the same will be deemed to be waived off and necessary test reports shall be submitted before the dispatch of equipment.
22. **The contractor shall prepare the coordinated drawings for all services in consultation with the acoustic consultant and existing execution agencies for HVAC (M/s SAM (India) Builtwell Pvt. Ltd.), firefighting & fire alarm system and stage lighting & stage craft to be used in the subsequent installation work. He shall check the drawings of other trades and carry out simulations if required to ensure that the final performance parameters of the auditorium hall are met.**

23. FEES AND NOC/PERMITS

The Contractor shall pay any and all fees and obtain permits required for the installation of this work. Statutory payments made in this regard will be reimbursed on submission of evidentiary proof. On completion of the work, if required, the contractor shall obtain and deliver to the Engineer-in-charge, certificate of final inspection and approval by the CEA/ local electricity authority Chief/Regional Fire Office/Municipal, State/Central govt. whichever is applicable.

24. DRAWINGS

The Drawings issued with tenders, are diagrammatic only and indicate arrangement of various systems and the extent of work covered in the contract.

These Drawings indicate the points of supply and of termination of services and broadly suggest the routes to be followed. Under no circumstances shall dimensions be scaled from these Drawings. The architectural/interiors drawings and details shall be examined for

exact location of equipment, electrical points & fixtures.

Maximum headroom and space conditions shall be maintained at all points. Where headroom appears inadequate, the contractor shall notify the Architect/Consultant/Engineers-in-charge/ site representative before proceeding with the installation. In case installation is carried out without notifying, the work shall be rejected and contractor shall rectify the same at his own cost.

The contractor shall examine all architectural, structural, plumbing, HVAC, Electrical and other services drawings and check the as-built works before starting the work and report to the Engineers-in-charge/ site representative any discrepancies and obtain clarification. Any changes found essential to coordinate installation of his work with other services and trades, shall be made with prior approval of the Architect/Consultant/ Engineers-in-charge/ site representative without additional cost.

25. **SPECIFICATIONS**

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

- (a) **Scope of works cum Brief Technical Specification, Additional Conditions & Specifications, Drawing, CPWD General Specifications**
- (b) Schedule of Work.
- (c) Relevant IS / NBC or other international code in case IS/NBC code is not available.
- (d) Standard Engineering Practice as consultation with Engineer-in- Charge.

The Specifications shall be considered as part of this contract. The data given herein and on the Drawings is as exact as could be secured, but its complete accuracy is not guaranteed. The drawings are for the guidance of the contractor, exact locations, distances and levels shall be governed by the site conditions and the Architectural & Interior layouts.

26. **SHOP DRAWINGS**

All the shop drawings shall be prepared on computer through Auto Cad System based on final design selected by the empowered evaluation committee (EEC) appointed by the competent authority, Architectural Drawings, site measurements and Interior Designer's Drawings within **10 days** of the award of the contract, contractor shall furnish, for the approval of the Engineer-in-Charge/ Architect/ Consultant, two set of detailed shop drawings of all equipment and materials including layouts for AV equipment & control room, fire shaft, lighting bus bar, all conduit layouts, distribution panels, switch boards,

cabinets, special pull boxes, cable trays, CMS and any other requirement to be fabricated or purchased by the contractor.

These shop drawings shall contain all information required to complete the Project as per specifications and as required by the Architect/Consultant/Engineers-in-charge/ site representative. These Drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment, also the details of all related items of work by other contractors. Each shop drawing shall contain tabulation of all measurable items of equipment/materials/ works and progressive cumulative totals from other related drawings to arrive at a variation- in-quantity statement at the completion of all shop drawings.

Each item of equipment/material proposed shall be a standard catalogue product of an established manufacturer strictly from the manufacturers listed in the preferred make list.

When the Engineer in Charge makes any amendments in the above drawings, the contractor shall supply two fresh sets of drawings with the amendments duly incorporated along with check print, for approval. The contractor shall submit further six sets of shop drawings to the Engineers-in-charge/ site representative for the exclusive use by the Engineers-in-charge/ site representative and all other agencies. No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawing for the particular material/ equipment/installation.

Shop drawings shall be submitted for approval sufficiently in advance of planned delivery and installation of any material to allow Architect/Consultant ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved program.

27. Manufacturers' drawings, catalogues, pamphlets and other documents submitted for approval shall be in four sets. Each item in each set shall be properly labeled, indicating the specific services for which material or equipment is to be used, giving reference to the governing section and clause number and clearly identifying in ink the items and the operating characteristics. Data of general nature shall not be accepted.
28. **Samples of all materials like conduits, accessories, GI Boxes, switches, Sockets, wires, CMS, cable tray, lighting bus bars, Power & control cables, LED light fittings, GI Pipe etc shall be submitted to the Engineer-in-charge/ competent authority prior to procurement.** These shall be submitted in two sets for approval and retention by Engineers-in-charge/ site representative and shall be kept in their site office for reference and verification till the completion of the Project.

Wherever directed a mock up or sample installation shall be carried out for approval before proceeding for further Installations.

29. Approval of shop drawings shall not be considered as a guarantee of performance & measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract.
30. Where the contractor proposes to use an item of equipment, other than that specified or detailed on the drawings, which requires any redesign of the structure, partitions, foundation, wiring or any other part of the mechanical, electrical or architectural layouts; all such re-design, and all new drawings and detailing required therefore, shall be prepared by the contractor at his own expense and gotten approved by the Architect//Consultant/ Engineers-in-charge/ site representative.
31. The contractor shall extend full cooperation to HVAC contractor in fixing the grill in position after completion of false ceiling. HVAC drawings are also attached for detailed study of HVAC ducting layout. Where the work of the contractor has to be installed in close proximity to, or will interfere with work of other trades, he shall assist in working out space conditions to make satisfactory adjustments.
32. If so directed by the Engineers-in-charge/ site representative, the contractor shall prepare composite working drawings and sections at a suitable scale, not less than 1:50, clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, or so as to cause any interference with work of other trades, he shall make all the necessary changes without extra cost.

33. **ACCESSIBILITY**

The Contractor shall verify the sufficiency of the size of the shaft openings, clearances in wall cavities and suspended ceilings for proper installation of his conduits cables, cable trays, panels etc. His failure to communicate insufficiency of any of the above shall constitute his acceptance of sufficiency of the same. The Contractor shall locate all equipment which must be serviced, operated or maintained in fully accessible positions. The exact location and size of all access panels, required for each concealed control damper, valve or other devices requiring attendance, shall be finalized and communicated in sufficient time, to be provided in the normal course of work. Failing this, the Contractor shall make all the necessary repairs and changes at his own expense. Access panel shall

be standardized for each piece of equipment / device / accessory and shall be clearly nomenclature / marked.

34. MATERIALS AND EQUIPMENT

All materials and equipment shall conform to the relevant Indian Standards and shall be of the approved make and design. Makes shall be strictly in conformity with list of approved manufacturers

35. MANUFACTURERS INSTRUCTIONS

Where manufacturer has furnished specific instructions, relating to the material and equipment used in this project, covering points not specifically mentioned in these documents, manufacturer's instructions shall be followed in that case.

36. COMPLETION CERTIFICATE

On completion of the installation, a certificate shall be furnished by the Contractor countersigned by the licensed supervisor / Certified Technology Specialist, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local, state/central govt./ municipal / fire authorities concerned.

37. INSPECTION AND TESTING

The Engineer-in charge or his representative may carry out inspection and testing at manufacturer's works as per CPWD specifications/ tender specifications. **No equipment shall be delivered without prior written confirmation from the Engineers-in-charge/ site Engineer.** In case factory inspection is carried out then all travelling and lodging expenses of engineer-in-charge shall be borne by the Department, however all testing arrangements shall be in the scope of contractor firm. Tests on site of completed works shall demonstrate the following:

- (a) That the equipment installed complies with specification in all respect and is of the correct rating for the duty and site conditions.
- (b) That all items operate efficiently and quietly to meet the specified requirements.
- (c) That all circuits are fully protected and that protective devices are properly coordinated.
- (d) That all non-current carrying metal parts are properly and safely grounded in accordance with the specification and appropriate Codes of Practice.

The contractor shall provide all necessary instruments and labour for testing, shall make adequate records of test procedures and readings, shall repeat any tests requested by the Engineer-in-charge and shall provide test certificate signed by an authorized person. Such

test shall be conducted on all materials and equipment and tests on completed work as called for by the Engineer-in-charge at contractor's expenses unless otherwise called for.

Any materials can be offered for testing in standard testing laboratory as per IS standards. Hence it will be the responsibility of the agency to procure the materials timely before it is used at site, in due consultation with Engineer-in-Charge. So that random samples from material supplied will be collected for testing. If any material fails the test, the agency shall be bound to remove the materials from site.

If it is proved that the installation or part thereof is not satisfactorily carried out then the contractor shall be liable for the rectification of the same. Engineer-in-charge's decision as to what constitutes a satisfactory installation shall be final.

38. COMPLETION DRAWINGS

Upon completion of the work and before issuance of certificate of virtual completion the contractor shall submit to the Engineers-in-charge/ site representative four set of layout/as built drawings in progressive manner for individual systems drawn at approved scale indicating the complete wiring system as installed. Drawing shall be prepared on AUTO-CAD (latest version). Along with the hard copies, the contractor shall submit copies of all drawings on CD and one set of all drawings on RTF shall also be submitted. These drawings must provide:

- (a) All equipment layouts & all power distribution layouts.
- (b) Single line diagram including control wiring.
- (c) Cable Trays with number and size of cables installed.
- (d) Run and size of conduits, inspection, junction and pull boxes.
- (e) Raceways and Junction Boxes.
- (f) Number and size of conductors in each conduit.
- (g) Location and rating of sockets and switches controlling the lighting and power outlets.
- (h) Location and details of distribution boards/panels, mains, switches along with phase balancing details.
- (i) A complete wiring diagram as installed and single line diagrams showing all connections in the complete AV /electrical system , i/c CMS, Cable Trays, LT & EV cables, Control cables etc..

- (j) Location of all earthing stations, route and size of all earthing conductors manholes.
- (k) Layout and particulars of all cables.
- (l) Co-ordinated service plan & section details of Service corridor showing all the components, i/c CMS, Cable Trays, LT & EV cables, Control cables etc.
- (m) Instruction, maintenance and operation manuals including maintenance schedule for all equipment. Testing & commissioning reports of all electrical equipment.

39. OPERATING INSTRUCTION & MAINTENANCE MANUAL

Upon completion and commissioning of part the contractor shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for all systems and equipment included in this contract.

This shall be supplementary to manufacturer's operating and maintenance manuals. Upon approval of the draft, the contractor shall submit four (4) complete bound sets of typewritten operating instructions and maintenance manuals; one each for retention by Consultant and Engineers-in-charge/ site representative and two for Owners Operating Personnel.

These manuals shall also include basis of design, detailed technical data for each piece of equipment as installed, spare parts manual and recommended spares for 4 year period of maintenance of each equipment.

40. ON SITE TRAINING

Upon completion of all work and all tests, the Contractor shall furnish necessary operators, labour and helpers for operating the entire installation for a period of thirty (30) working days of ten (10) hours each, to enable the Engineers-in-charge/ staff to get acquainted with the operation of the system. During this period, the contractor shall train the Engineers-in-charge/ personnel in the operation, adjustment and maintenance of all equipment installed.

41. MAINTENANCE DURING DEFECTS LIABILITY PERIOD

The Defect Liability Period for the work shall be 24(Twenty-Four) months. The contractor's liability during the defect liability period shall be the rectification of defects appearing in the work within 24 months from the date of completion recorded by the Engineer in Charge including replacement as follows which in the opinion of Engineer- In-Charge are not manmade.

42. COMPLAINTS

The Contractor shall receive calls for any and all problems experienced in the operation of the system under this contract, attend to these within 24 hours of receiving the complaints and shall take steps to immediately correct any deficiencies that may exist.

43. REPAIRS

All equipment that requires repairing shall be immediately serviced and repaired. Since the period of Mechanical Maintenance runs concurrently with the defects liability period, all replacement parts and labour shall be supplied promptly free-of-charge.

44. UPTIME GUARANTEE

The contractor shall guarantee for the installed system an uptime of 98%. In case of shortfall in any month during the defects liability period, the Defects Liability period shall get extended by a month for every month having shortfall. In case of shortfall beyond the defects liability period, the contract liability period shall get extended by a month for every month having the shortfall and no reimbursement shall be made for the extended period.

The Contractor shall provide log in the form of diskettes and bound printed comprehensive log book containing tables for daily record of all temperatures, pressures, humidity, power consumption. Starting and stopping times for various equipments, daily services rendered for the system alarms, maintenance and record of unusual observations etc. Contractor shall also submit preventive maintenance schedule.

Each tenderer shall submit along with the tender, a detailed operation assistance proposal for the Engineers-in-charge/ site representatives / Consultant's review. This shall include the type of service planned to be offered during Defects Liability Period and beyond. The operation assistance proposal shall give the details of the proposed monthly reports to the Management.

Part C-1	AV System for Auditorium.
-----------------	----------------------------------

**MINIMUM TECHNICAL SPECIFICATIONS TO BE SUBMITTED ALONG WITH
TECHNICAL BID**

(Please refer Schedule of Quantity Part-II)

Part C-2	Lighting control with Light Fixtures
-----------------	---

**MEMORANDUM OF UNDERSTANDING [M.O.U] BETWEEN (TO BE SUBMITTED
ALONG WITH ELIGIBILITY BID)**

1] M/S [Name of the firm with full address)

Enlistment Status

Valid Up to:

[Henceforth called the main contractor]

And

2] M/S [Name of the firm with full address)

Enlistment Status

Valid Upto:

[Henceforth, called Associated Electrical Contractor or Electrical Contractor]

Name of Work:- Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System. [Internal Electrical Installation Component only] as per schedule, specifications, terms and conditions of the tender.

We state that M.O.U. between us will be treated as an agreement and has legality as per Indian Contract Act (amended upto date) and the department (CPWD) can enforce all the terms and conditions of the agreement for execution of the above work. Both of us shall be responsible for the execution of work as per the agreement to the extent of this MOU allows.

We have agreed as under:

- 1- The associated electrical contractor will execute all electrical works in the wholesome manner as per terms and conditions of the agreement. Security deposit shall be deducted as per agreement.
- 2- The electrical contractor shall be liable for disciplinary action and other legal actions as per agreement if he fails to discharge obligation as per this agreement besides forfeiture of the security deposit.
- 3- All the machinery and equipments, tools and tackles required for execution of the electrical works as per agreement shall be the responsibility of the electrical contractor.

- 4- The site staff required for the electrical work (As per Clause 36 of the main agreement) shall be arranged by the electrical contractor as per terms and conditions of the agreement.
- 5. Following documents will become the part of the agreement.
 - a) Schedule of work of Minor component by indicating the percentage of payment schedule of such component.
 - b) Percentage agreed upon rates of Extra items.
 - c) Details of Statutory recoveries made from Minor component agency.
 - d) Guaranty Performa for the Internal Electrical Installations as per Appendix –I attached.

SIGNATURE OF MAIN CONTRACTOR

SIGNATURE OF ASSOCIATED

(Minor Component Electrical

Contractor)

Date

Date

Place

Place

COUNTERSIGNED
ENGINEER-in -Charge

APPENDIX –I**GUARANTEE PROFORMA****GUARANTEE FOR ELECTRICAL SYSTEM INSTALLATION**

We hereby guarantee the year round Internal Electrical Installation System which we have installed in the Complex described below:

Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector-81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SITC of Lighting and Audio-Visual System. [Internal Electrical Installation Component only]

Building: **AUDITORIUM -1 & AUDITORIUM-2**

Location: INST, Mohali Main Campus

Client : INST, Mohali

For a period of **24 months** from the date of acceptance of the total installation, WE AGREE TO repair or replace to the satisfaction of the Engineer-in-charge, any or all such work that may prove defective in workmanship, equipment or materials within that period, ordinary wear and tear and unusual abuse or neglect excluded, together with any other work, which may be damaged or displaced in so doing. In the event of our failure to comply with the above mentioned conditions within a reasonable time, after being notified in writing, we collectively and separately, do hereby authorize the Engineer-in-charge to proceed to have the defects repaired and made good at our expense, and we shall pay the cost and charges thereof, immediately upon demand.

WE ALSO HEREBY UNDERTAKE to test the entire installation upon completion and ensure that all units are functioning satisfactorily.

SIGNATURE OF CONTRACTOR

SIGNATURE OF CONTRACTOR

(Main Contractor)

(Minor Contractor for Internal Electrical Installation works)

DATE:

SEAL

BRIEF TECHNICAL SPECIFICATIONS

(Please refer Schedule of Quantity Part-II)

PREFERRED MAKE LIST FOR ITEMS IN SCHEDULE OF QUANTITY PART-II

1. Preferred Brand names of various Materials/Products is given against every item in **Schedule of Quantity Part-II**, for usage in execution of this work.
2. It must be ensured, in general, that all materials to be used in the works shall bear BIS Certification mark. In cases where for a particular material/product, BIS Certification Mark is not available, then the material proposed to be procured can be used subject to the condition that it should conform to CPWD Specifications and relevant BIS codes. In such cases written approval of the Engineer-in-Charge shall be obtained before use of such material in their works.
3. Below are some preferred brand names for general items the bidder should refer to in addition to the ones mentioned as per Sl.no.1 above.
4. The given brand names do not absolve the Executing Agency from their responsibility for using quality products. It is only after they are satisfied about the quality and performance, the products shall be used. To achieve this, proper check on the quality of the product, actually to be used, should be exercised.

INTERNAL ELECTRICAL INSTALLATIONS

PVC insulated FRLS copper wires i/c Control cables	Finolex/ Polycab /Havells/KEI
XLPE insulated PVC sheathed Al, Cu & Control Cables	Universal / RPG Cables / Finolex / CCI
UTP Cat 6a Cable	Legrand/ Molex/ Finolex/ Commscope / Panduit – Pannet.
OFC Cable	Finolex / Sterlite Tech / Commscope
MS Conduit & Accessories of MS Conduit(ISI marked)	BEC/ AKG/ NIC/ Steel Kraft
PVC Conduit – (Colour - Gray/ Ivory)	Precision/ Polycab/ AKG/Finolex/ Konseal
MCCB	Legrand -DX3 / Schneider -NSX / Siemens 3VL
MCB	Legrand DX3 / Schneider ACTI9 / Siemens 5SX4

DB/ ELCB/ RCBO	Legrand Ekinox3 / Schneider ACTI9 /Siemens Betagard
Modular type Switches/ GI Boxes/Sockets T.V./ Telephone /LAN socket Outlet etc for CMS application	Legrand Arteor / Schneider Zencelo/ Siemens
Modular type Switches/ GI Boxes/ Sockets T.V./ Telephone /LAN socket Outlet etc for Normal application	Legrand -Myrius / Schnieder / Siemens
DLP Trunking	Legrand/OBO Betterman/Schneider
Floor Trunking / Raceway (GI)	Siemens/ OBO Betterman /Legrand
Ammeter/ Voltmeter/MF Meter/Energy Meter/Intelligent Meter	AE/ MECO/ Conserve/ Secure (Only Digital type to be used)
Selector Switch	BCH/Rishabh/Conserve/Kaycee
Multifunction Meter/ Load managers	Schneider/Siemens/Legrand/Secure
LED Indication Lights	Schneider /Legrand/ BCH
Push Buttons	Schneider / Siemens / BCH
Connector and Terminal Block	Elmex/ Connectwel/ Essen
Double compression Cable Gland	Peeco/ Commet/ Gripwell / Dowells
Lugs and Thimbles	Dowells/ Multi/ Capital
Heavy duty resin filled Capacitor and Harmonic Block Reactor Thyristor Module	Legrand/ Schneider/ /Epcos
APFC Relay (Microprocessor based)	Schneider/ Beluke / Siemens
Panel Board / Feeder Pillar/ Meter Board	Tricolite Electric Industries (Pvt.)Ltd./ Advance Panel and Switchgears Pvt.Ltd./ Adlec / Power Control Equipments/ Load Controls /Leela Electric.
Indoor Lighting Fixtures	Philips/ Osram/ LT/Disano
Dimmable type LED Light fixtures (For Audience Area)	Philips/ Osram/ LT/Disano
Dimming control system & accessories (For Audience Area)	Philips/ Osram/ LT/Disano/Arraystorm / Lutron/Extron
Angle Holder/ Batten Holder	Emperor/ Anchor./K555
Cover plate for junction boxes/ switch boxes for piano type switch.	Hylem / Formica (i.e. white 3 mm thick).

G.I. Pipe	Jindal - Hissar/ Tata/ Sail
Hot Dip Galvanized Cable Tray	Profab Engineer/ MEM/Rico/Slottco/ Steelways/ BEC / Fixotech
Lighting/power bus bar	Legrand -Zucchini / Siemens / ABB
Any other item not mentioned above	With prior approval of the Engineer-in-charge
LED Stage Lights	Leksa Lighting / Desisti / Kenson Solace
Clamp & Safety chains	Leksa Lighting / Desisti / Kenson Solace
Lightbars, Suspenders & Power junction box	Stage Technologies / Leksa Lighting / Kenson Solace
DmX junction box	Kenson Solace / Nuetrick / Leksa Lighting
DmX connectors & Termination plug	Amphenol / Nuetrick / LL
Internal earthing & Cable trays	Custom
DmX splitter	Lite Puter/ Leksa Lighting/ Elation
DmX controller	Lite Puter/ Leksa Lighting/ Avolite
Power cable	Polycab / Walna / SBEE
DmX cable	Falcon / Belden / Guru Astronics

Note: For whichever items, makes of materials are not specified, the same shall be decided by the Engineer – in – charge and the decision taken by the Engineer – in – charge shall be final and binding on the contractor.

Auditorium-1

Providing and fixing steps in light weight structure

Providing of back entry doors to green room

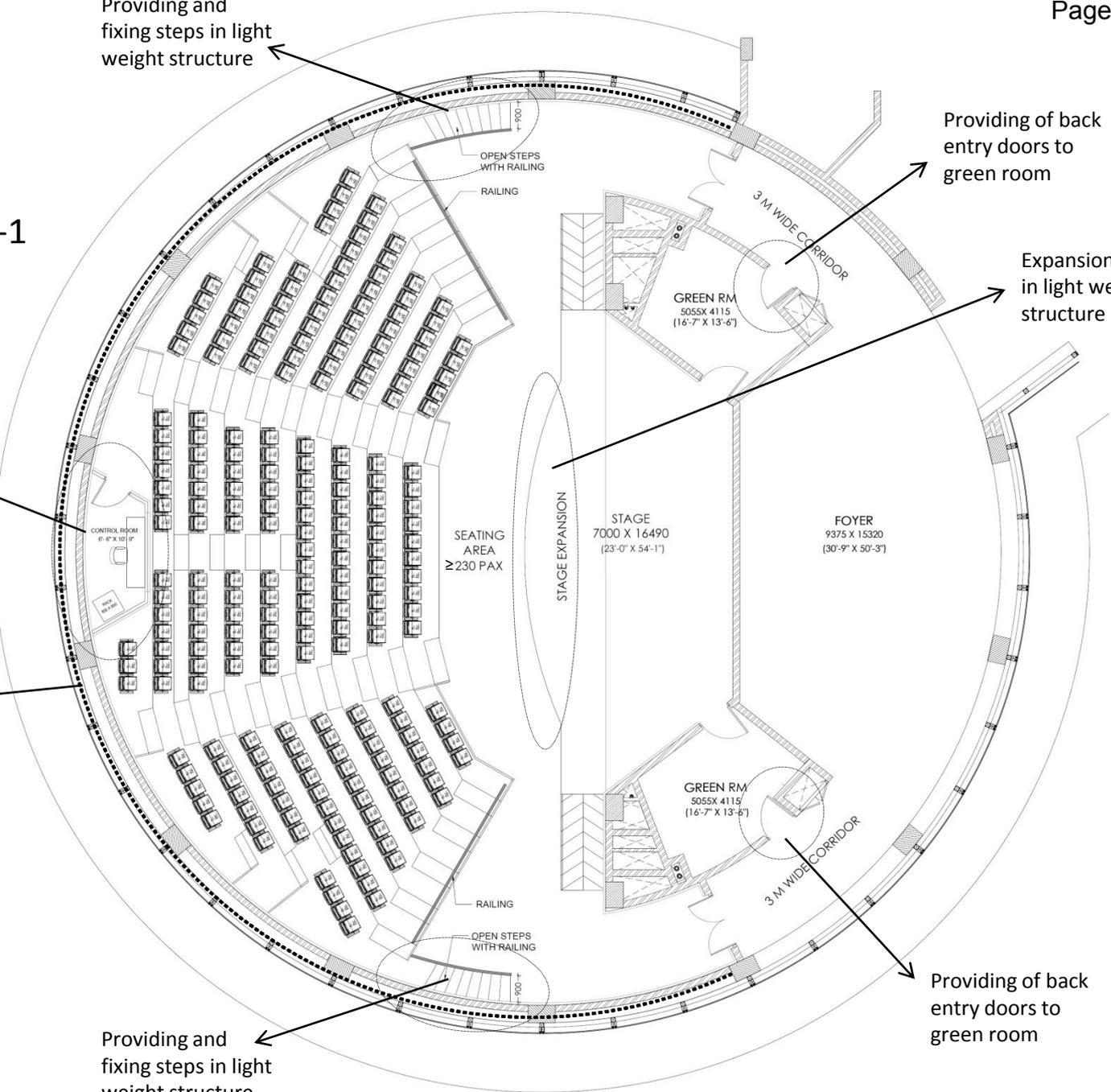
Expansion of stage in light weight structure

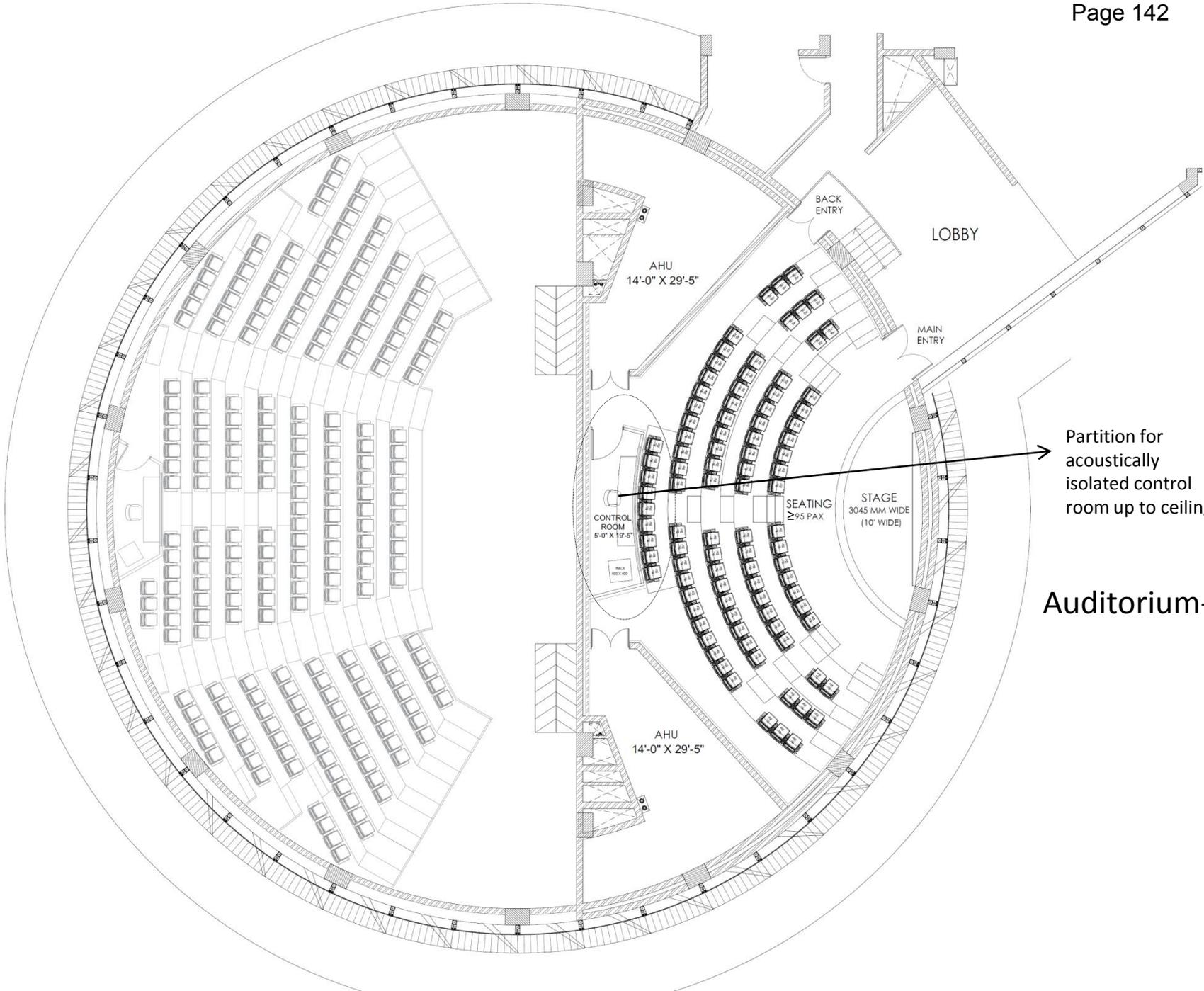
Partition for acoustically isolated control room up to ceiling

Brick wall between external ACP sheets & internal Paneling

Providing and fixing steps in light weight structure

Providing of back entry doors to green room





Partition for acoustically isolated control room up to ceiling

Auditorium-2

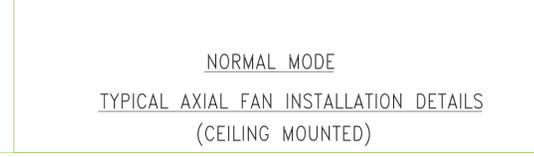
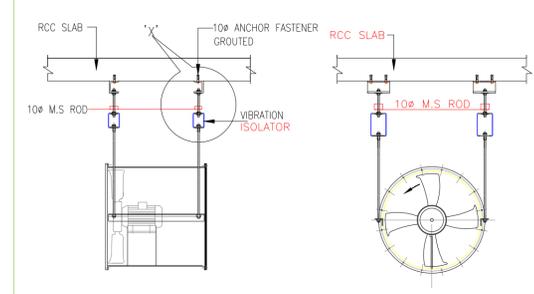
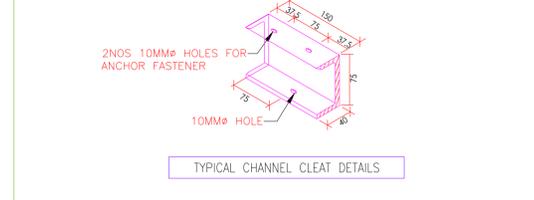
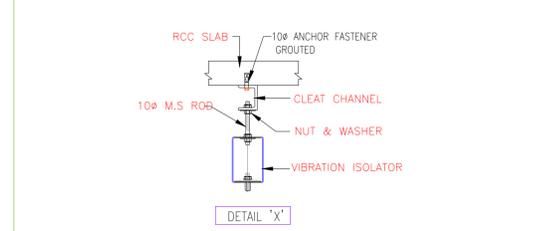
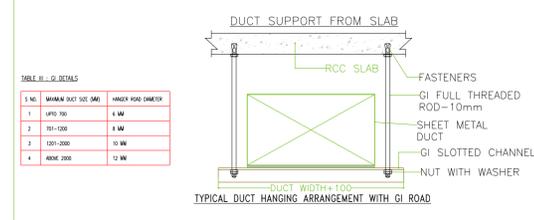
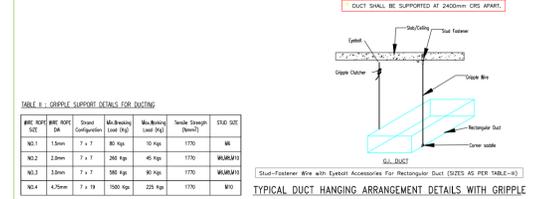
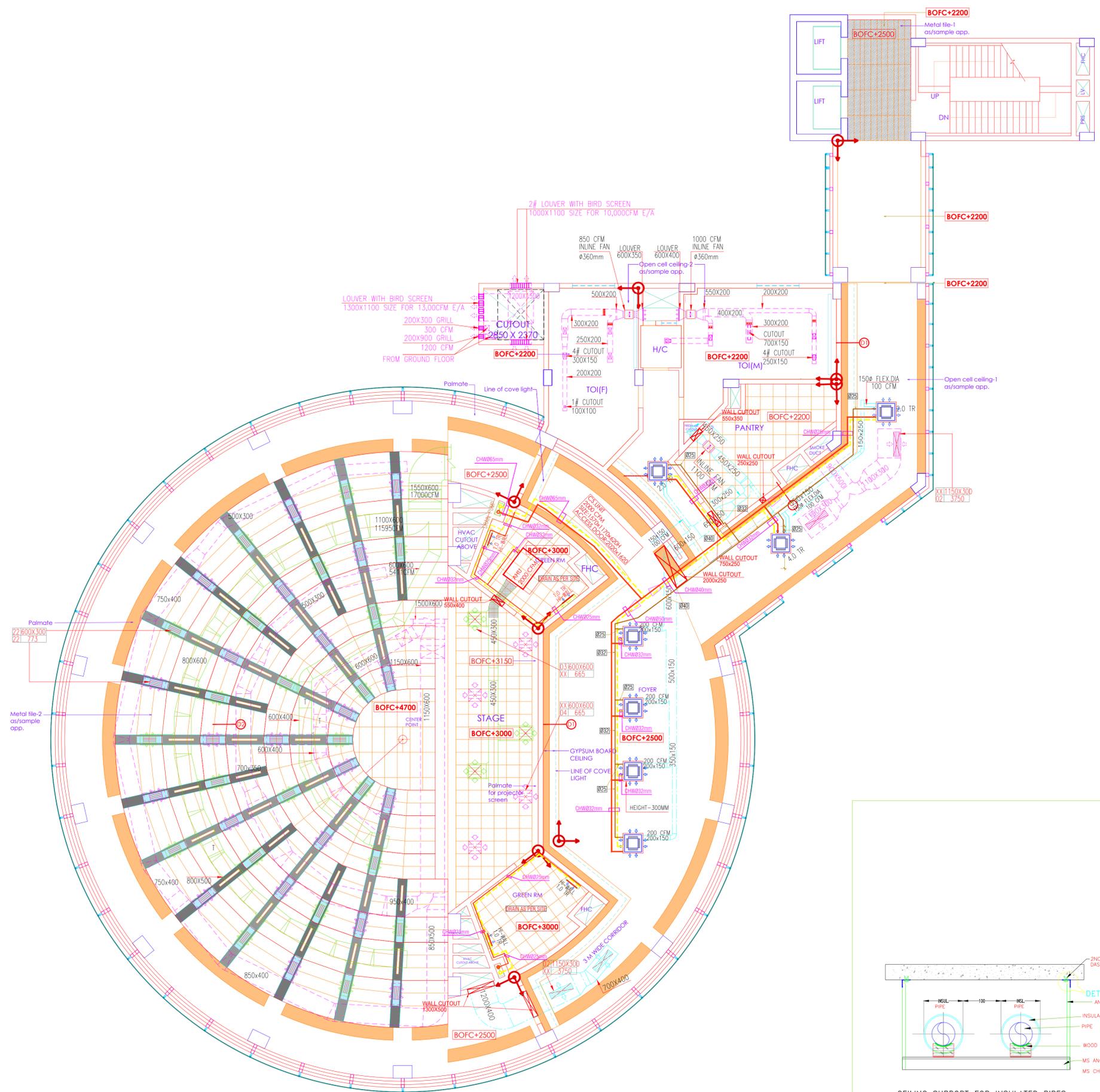
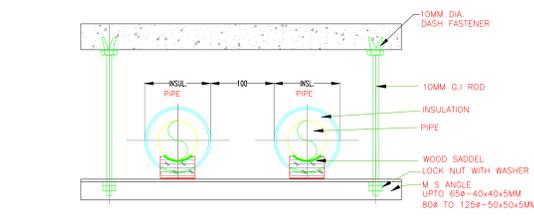


TABLE FOR TWO PIPE SUPPORTING DETAILS

S. NO.	PIPE SIZE	MS ROD FOR CEILING SUPPORT (mm)	FLOOR SUPPORT (mm)	BASE SUPPORT	OPP. WT. (Kgs./mtr.)	WT. OF PIPE (WITH INSUL.)	WT. OF PIPE+FLUID (WITH INSUL.)
1.	UP TO 65Ø	10Ø	-	40x40x5THK. ANGLE	8.6 Kgs./mtr.	11.73 Kgs./mtr.	
2.	80Ø TO 125Ø	12Ø	-	50x50x5THK. ANGLE	21.76 Kgs./mtr.	34.73 Kgs./mtr.	
3.	150Ø TO 250Ø	50x50x5 THK. ANGLE	80Ø MS PIPE	75x75x5THK. ANGLE OR 75x40 CHANNEL	60 Kgs./mtr.	112 Kgs./mtr.	
4.	300Ø TO 350Ø	50x50x5 THK. ANGLE	80Ø MS PIPE	75x40 CHANNEL	85 Kgs./mtr.	180 Kgs./mtr.	
5.	400Ø TO 500Ø	75x40 CHANNEL	100Ø MS PIPE	100x50 CHANNEL	125 Kgs./mtr.	320 Kgs./mtr.	



TYPICAL DETAILS

OTHERWISE STATED.
2. NO DIMENSION IS TO BE SCALED OFF THE DRAWING
3. DRAWINGS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS & SPECIFICATIONS.

LEGEND

S.NO	SYMBOL	DESCRIPTION
1.	[Symbol]	SUPPLY AIR DIFF./GRILL
2.	[Symbol]	RETURN AIR DIFF./GRILL
3.	[Symbol]	SUPPLY AIR DUCT
4.	[Symbol]	ACOUSTIC LINING
5.	[Symbol]	FRESH AIR DUCT
6.	[Symbol]	EXHAUST/RETURN AIR DUCT
7.	[Symbol]	REFRIGERANT PIPE
8.	[Symbol]	DRAIN PIPE
9.	[Symbol]	CHILLED WATER SUPPLY
10.	[Symbol]	CHILLED WATER RETURN
11.	[Symbol]	CONDENSER WATER SUPPLY
12.	[Symbol]	CONDENSER WATER RETURN
13.	[Symbol]	SUPPLY FIRE DAMPER
14.	[Symbol]	RETURN FIRE DAMPER
15.	[Symbol]	MOTORIZED DAMPER
16.	[Symbol]	VOLUME CONTROL DAMPER
17.	[Symbol]	CUTOFF WITH DAMPER
18.	[Symbol]	PRESSURIZATION GRILL
19.	[Symbol]	NO OF DIFF./GRILL (SUPPLY) SIZE OF DIFF./GRILL CFM NO OF DIFF./GRILL (RETURN)

Revisions

no.	date	description

SHOP DRAWING

INSTITUTE OF NANO SCIENCE & TECHNOLOGY, MOHALI

architects: SAA sika associates architects

owner: Techno Engineering Consultants

MEHRO CONSULTANTS

services consultants: Techno Engineering Consultants, Abid Husain Consultants

AIRCON TECHNIQUE PVT.LTD

INDIA: C-83, SECTOR-25, NOKIA TOWER, Gurgaon, Haryana

SEMINAR BLOCK
MEZZANINE FLOOR
HVAC PLAN

dwg no: ATPL-INST-SE-MF-07	scale: 1:100@A1
no: P-191	date: 27.04.19
	dept: Z.A

Name of Work:- Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector- 81,

MOHAN
S.L.

Bill of Quantity with Minimum Technical Specifications for Wall Paneling, False Ceiling, Flooring and Auditorium Chairs (PART-I)

Auditorium – 1 (Mezzanine Floor)

Sr.No	Description	Unit	Location	Quantity	Rate	Amount
I	CIVIL WORK					
1	Providing Post Construction Pest control and Anti-termite treatment by appointing a specialized agency as per the specifications mentioned by the Bureau of Indian Standards and Agencies specifications (whichever is higher), for General Civil, Plumbing,/ Drainage and timber/ Carpentry works, Gypsum related work, including a 5-year guarantee under suitable undertaking on stamp paper etc., complete as directed. (Mode of measurement to be on carpet-area and not the area of surface treated).	Sq.ft.	Entire Floor	6170		
2	150 mm or 230 mm Thk Brick wall:- Providing and constructing steam cured Aerated cement light weight concrete block masonry work at all levels in cement mortar 1:4 using standard size and of thickness as given below, including all scaffolding, staging, curing, raking of joints for all lifts etc. complete and as directed. Rate shall include providing RCC binders in mix proportion 1:2:4, 75mm thick reinforced with 2 nos. of 8 mm dia TOR steel bars at every 1 meter interval from floor level, including cost of reinforcement and formwork, scaffolding, all labor, hire and fuel charges for all tools and plants employed, proper cover blocks for reinforcement and all other incidental charges etc., all complete and as directed.	Sq.ft.	Between external ACP sheets & internal Paneling.	4087		
	Note:- Brick work to be carried out as per Sanction of Structural Engineer for heavy load consideration.					

3	Plastering:- Providing and applying in one coat, 12mm thick plaster on internal surface of RCC / brick/block walls in cement mortar 1:6, finished rough to take on POP punning. Rate shall include for scaffolding, making grooves, sills, pattas, curing, surface preparation before the application of plaster, providing galvanized chicken mesh to a width of 150 mm at the junctions of masonry and concrete works including tying in position by using suitable nails / clamps / screws and as directed etc. complete at all levels. The contractor shall make good the grooves, pockets etc. after the scaffolding is removed.	Sq.Ft.	On both the sides of additional brick work between external ACP sheets & internal Paneling.	8174		
4	Wall Paint:- Providing & applying Paint of approved shade and color with two coats of putty, two coats of approved primer, and three coats of approved paint, including preparation of surface, scrapping, sand papering, scaffolding, all materials and labour etc complete. Make - Asian Paints or equivalent.	Sq.Ft.	On both the sides of additional brick work between external ACP sheets & internal Paneling.	8174		
5	Providing and fixing steps in light weight structure	M.T	Staircase at the end of auditorium steps.	1.5		
	All complete as per direction of Engineer In charge.					
6	Providing and fixing base ply of 18mm Thk marine ply:- Providing and fixing base ply of 18mm Thk marine ply as a base ply & vertical sides on 8mm thk chequered plate on light weight step	Sq. Ft	Staircase at the end of auditorium steps.	130		
7	Stage Extension with light weight structure:- All complete as per direction of Engineer In charge.	M.T	Stage Area	5		

8	Providing and fixing staircase S.S. Railing in Straight form. (Step mounted):- Providing & fabricating, 1100 mm high S.S. Railing with Balustrades & S.S. Hand Rail, including bending and welding with approved special electrodes and fixing in position 60 mm dia SS hand rail supported with 25 mm dia SS round connected to Balustrade made out of 2 nos 6mm x 50 mm thick SS Flats as per drawing , including intermediate S.S. round as approved by Architects , including base plates fixing it to the floor with 10 ~ 12mm Dia Wedge bolts 4 Nos/ bracket, or welding to insert plates etc. complete as directed.	R.Ft.	Seating area staircase. From 1st to last staircase.	112		
9	Providing and fixing staircase S.S. Railing in bend form. (Step mounted):- Providing & fabricating, 1100 mm high S.S. Railing with Balustrades & S.S. Hand Rail, including bending and welding with approved special electrodes and fixing in position 60 mm dia SS hand rail supported with 25 mm dia SS round connected to Balustrade made out of 2 nos 6mm x 50 mm thick SS Flats as per drawing , including intermediate S.S. round as approved by Architects , including base plates fixing it to the floor with 10 ~ 12mm Dia Wedge bolts 4 Nos/ bracket, or welding to insert plates etc. complete as directed.	R.Ft.	Staircase at the end of auditorium steps.	34		
II	FLOORING WORK					
1	Solid Wood Flooring:- Supply and Installation of 1st class Teak wood sports flooring system. SURFACE BOARD: - 1st Class Teak Wood Sports Flooring LABO sports test certified & EN	Sq.ft.	Stage Area	1668		
	14904 certified finished with 21mm thick, 57 to 83mm wide and in random length in tongue and groove shape. The edges of the boards should have a finger lock groove and the bottom side with air pass groove and treated with special anti-termite and water-resistant lacquer.					

	THE UNDER FRAME: - Made of SPF quality Canadian Pine Wood runners of 70 mm x 45 mm, treated with anti-termite solution and fixed on the bottom side with 10 mm thick EPDM air cushioned pads, stapled through the two wings at 350 mm x 350 mm.					
	INSTALLATION: - IPS subfloor treated with a vapor barrier to be placed on the leveled IPS subfloor before laying the under frame. The runners having air cushion pads to be placed on the					
	vapor barrier in perfect level at 350 mm in 1 direction. The surface board to be screwed to the runner through the tongue only and should lock the screwed tongue by the groove of adjoining board. Ends of the boards should be locked by inserting the wooden fingers through the edge grooves and fixed with suitable adhesive. An expansion of 8 to 10 mm to be left open between the wooden flooring and the surrounding tiled area / walls.					
	FINISHING: - After installation the floor should be machine sanded in uniform level and finished with -					
	CHIMIVER PANSERI SPA MADE IN ITALY DIN & FIBA APPROVED ECO PRIMER 2K SPORTS & ECO STAR 2 K SPORTS WATER BASED POLYURETHANE LACQUER WATER BASED POLYURETHANE POLISH.					
2	LPT Flooring:- Providing and Fixing of 5 mm thick Click-N-Lock tiles with wear layer is of 0.5 mm, made up of Stone Polymer composite and has an IXPE Cushion backing of 1 mm, 100% Water & Termite proof, Scratch / Fire / UV resistant, a Recyclable Green product having WEL- LOCK click system with suitable skirting. Classification of abrasion resistance (Rubbing action of two abrading wheels of S-42 Type, load Applied 500 grams, No. of Cycles 4,2000). Designed as approved by the Engineer.	Sq.ft.	Seating area & staircase	7500		
III	SKIRTING / TRIMS / PROFILES WORK					
1	Skirting for Solid Wood Flooring:- Providing & fixing Solid wood teak skirting 90 mm High, contain top side curved flushed with wall or vertical surface.	Rft.	Stage Area	85		

2	Skirting for LPT Flooring :- Providing and Fixing Luxury performance tiles (LPT) skirting of 60mm to 80 mm High flushed with wall or vertical surface , with 6 mm groove between vertical surface and skirting.	Rft.	Seating area & staircase	100		
3	Aluminium Skirting:- Supply of bottom line Slim Skirting of 75mm high anodized aluminum skirting with EPDM gasket and	Rft.	Curved walls periphery	180		
4	Beading Profile for Solid Wood Flooring:- Providing & fixing Solid wood 25mm wide Teak Wood Beading Profile with Polish complete with all respect .	Rft.	Stage area.	280		
5	Nosing Profile for steps:- Supply & fixing of 45mm x 29mm	Rft.	For Auditorium steps	1120		
6	Coving Profile for steps:- Supply & Installation of PVC	Rft.	For Auditorium steps	1002		
7	LED Strips for Steps:- Providing & fixing LED Strips for as	Rft.	For Auditorium steps	1120		
8	LED Strips for Aisle periphery: Providing & fixing LED Strips for as per selection.	Rft.	For passage & other floor periphery	375		
IV	CEILING WORK					
1	Providing and fixing gypsum false ceiling:-	Sq.ft	Control Room & Seating Area	4400		

	at all height including providing and fixing of frame work made of special, power pressed from M.S. Sheets and galvanized with zinc coating of 120 gms / Sq.M (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25mm wide X 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm center to center, one flange fixed to the ceiling with dash fastener 12.5 mm dia X 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45x15x0.9 mm running at the spacing of 1200 mm center to center, to which the ceiling section 0.5 mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm at 450 mm center to center. (nothing extra shall be paid for openings for grilles, electrical fixtures etc. and vertical / inclined face shall be measured above 200mm high only) with 12.5 mm thick, tapered edge, fire resistant gypsum board conforming to IS: 2095-part-I. All joints to be taped with paper tape and filled with jointing compound to provide smooth surface. Entire work to be done as per specifications including two coats of primer and painting two coats of paint of approved color with roller finish and as per directions of engineer in charge.					
2	Providing & fixing up 200 mm X 200 mm ply cove with	Rft	Seating Area Edge ceiling	422		
3	Black Acoustical Grid Ceiling Tiles:- Providing & Fixing of Soft Fibre Acoustical Suspended Ceiling System with Beveled Tegular Edge Tiles With 15mm Exposed Grid.	Sq.ft	Stage Area	560		
	The tiles should have Humidity Resistance (RH) of 95%, NRC 0.9 - 1.0, Colour Black, Fire Performance UK Class 0 / Class 1 (BS 476 pt - 6 &7) in module size of 600x600x15mm, suitable for Green Building application, with Recycled content of 66% GW & 74% RW.					

	The tile shall be laid on 32with 15 mm wide T - section flanges colour black having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 32mm and a load carrying capacity of 12.5 Kgs/M2 (as per standard installation layout mentioned below) & pull out strength of 100Kgs. The T Sections have a Galvanizing of 90 grams per M2 and need to be installed with Suspension system.					
	INSTALLATION: To comprise main runner spaced at 1200mm securely fixed to the structural soffit using suspension system (specifications below) at 1200mm maximum. The First/Last suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall.					
	Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees.					
	Perimeter trim to be of wall angles of size 3000x19x19mm, secured to walls at 450 mm maximum.					
	Installation to be carried out by Trained Installation team & Installation should be carried out.					
	SUSPENSION SYSTEM:- Accessories manufactured and supplied by Industries consisting of M6 Anchor Fasteners with hanger hole, pre Straightened Hanger wire of dia – 2.5 mm of 1.80 m length having a tensile strength of 344-413 MPa and a minimum pull strength of 110 kgs. (Adjustable hook clips of 0.7mm thick, galvanized spring steel can also be used for installation purpose as an additional accessory. The adjustable clip also consists of a 4 mm aquiline wire to be used with the main runner).					
	The Tile & Grid system used together should carry a 10 year warranty.					
4	White Acoustical Grid Ceiling Tiles:- Providing & Fixing of Soft Fibre Acoustical Suspended Ceiling System with Beveled Tegular Edge Tiles With 15mm Exposed Grid.	Sq.ft	Stage Area	110		

	The tiles should have Humidity Resistance (RH) of 95%, NRC 0.9 - 1.0, Light Reflectance \geq 85%, Colour White, Fire Performance UK Class 0 / Class 1 (BS 476 pt - 6 &7) in module size of 600x600x15mm, suitable for Green Building application, with Recycled content of 66% GW & 74% RW.					
	The tile shall be laid on 32 with 15 mm wide T - section flanges colour white having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 32mm and a load carrying capacity of 12.5 Kgs/M2 (as per standard installation layout mentioned below) & pull out strength of 100Kgs. The T Sections have a Galvanizing of 90 grams per M2 and need to be installed with Suspension system.					
	Installation:- To comprise main runner spaced at 1200mm securely fixed to the structural soffit using suspension system (specifications below) at 1200mm maximum. The First/Last suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall.					
	Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees.					
	Perimeter trim to be of wall angles of size 3000x19x19mm, secured to walls at 450 mm maximum.					

	<p>Installation to be carried out by Trained Installation team & Installation should be carried out as per recommended procedure.</p> <p>SUSPENSION SYSTEM:- Accessories manufactured and supplied by World Industries consisting of M6 Anchor Fasteners with hanger hole, pre Straightened Hanger wire of dia – 2.5 mm of 1.80 m length having a tensile strength of 344-413 MPa and a minimum pull strength of 110 kgs. (Adjustable hook clips of 0.7mm thick, galvanized spring steel can also be used for installation purpose as an additional accessory. The adjustable clip also consists of a 4 mm aquiline wire to be used with the main runner).</p>					
	The Tile & Grid system used together should carry a 10 year warranty.					
5	<p>Providing & fixing 70mm thk ceiling panel using acoustic PET panel stepped Ceiling:- Product Specification is as follows:-</p>	Sq.Ft.	Seating Area False ceiling	5080		
	Density : 9mm sentetic sheets are 120-140kg/ CuM under IS 1734 (PT-1) – 1983					
	Weight : 1.20 - 1.30 Kg/sqmt.					
	NRC : 0.70					
	Fire Resistance : 25 (A grade) by ASTM – E84					
	Smoke Density Index : 300<450 by ASTM – E84					
	Composition : 100% polyester Fibre.					
	Installation:- Providing and Fixing 9mm Thk PET SHEETS should be pasted on over 6mm ply with 100mm					
	holes using SR998 as pasting adhesive. 9mm ply to support PET SHEETS on curve. Ply should be fixed on frame made from especially fabricated galvanised mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sqm including both sides) i.e. The main supporting section to fix ply board Dimensions in (mm) 80 x 26 x 51 x 0.5 x 3660, Fix around walls / partitions Dimensions in (mm) 20 x 28 x 30 x 0.5 x 3660 Primary section to support the ceiling section Dimensions in (mm)					

	15 x 45 x 15 x 0.9 x 3660 To provide suspensions from the structural soffit Dimensions in (mm) 25 x 10 x 0.5 x 3660 This same channel is then to be fixed in horizontal vertically direction at 600mm center to center so as to form a grid of 600mm x 600 mm . The panels should be backed with 25mm 1000GSM Polyester Fibre inserted inside the grid of 600 x 600 mm.					
V	PARTITION WORK					
Note:-						
1) Control joints to be incorporated wherever the length of the partitions is more than 10 Meter.						
2) All Aluminium Or G.I. sections are of Approved make.						
3) The rate to be inclusive of additional frame work for white boards, panaboard, over head storages, counter fixing.						
4) Angle beads have to be used at the external angles to get straight line and finish and protection from impacts.						
5) Edge beads have to be used to protect the exposed edges of gypboard. The edges can be at the opening for doors, windows, glazing, etc or any other exposed edges.						
6) For all partitions mode of measurement should be up to False ceilings. However the cost to be inclusive of framework with glass wool insulation and single skinned gypboard right up to the true ceiling.						
1	Frame Work:- Providing and fixing gypboard partition to consist of 25mm x 50mm x 1.2mm thick G.I. box section framework at spacing not exceeding 600mm both ways (horizontal and vertical). Framework to be secured to Floor/Walls/Columns/Ceiling/Beams using 75mm metal screws and dowels as per details.	Sq.Ft.		580		
2	Glass Wool Insulation:- Extra Rate for Providing and filling	Sq.Ft.		580		
3	First Skin of Gypsum:- Providing and fixing Single Skin of	Sq.Ft.		1160		
4	Second Skin of Gypsum:- Providing and fixing second Skin of	Sq.Ft.		1160		
5	Glass Window in Partition:- Single glazed glass panel with	Sq.Ft.		50		
VI	PANELING WORK					

1	Acoustic Straight PET Paneling:- Providing and fixing PET sheets : 2440mm x 1220mm x 9mm thick.	Sq.ft.	Stage Area	1898		
	9mm sheet with 6mm MDF strips with 100mm holes for proper acoustic with 50 mm Synthetic wadding 1000 gsm.					
	Specification of Synthetic Sheets is as follow,					
	Density : 9mm synthetic sheets are 120-140kg/ CuM under IS 1734 (PT-1) – 1983					
	Weight : 1.20 - 1.30 Kg/sqmt.					
	Fire Resistance : 25 (A grade) by ASTM – E84					
	Smoke Density Index : 300<450 by ASTM – E84					
	Composition : 100% polyester Fibre					
	They can be directly hanged from ceiling with help of suspenders. Spacing should be done according to the design or Architect in charge.					
	Application:-					
	Providing and Fixing 9mm PET Sheets should be pasted on over 6mm ply with 100mm holes using SR998 as pasting adhesive. 7.5mm Flexi ply to support PET Sheets on curve. Ply should be fixed on frame made from especially fabricated galvanized mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sqm including both sides) i.e. vertical studs of size 48 x 34 x 36 mm are placed at 600mm center to center in a floor and ceiling channel section of size 48 x 30mm					
	fixed to the floor. This same channel is then to be fixed in horizontal direction at 600mm center to center so as to form a grid of 600mm x 300mm. The panels should be backed with 25mm 1000GSM					
	Polyester Fiber inserted inside the grid of 610x 610mm.					
2	Curved Acoustic PET Paneling:- Providing and fixing PET sheets : 2440mm x 1220mm x 9mm thick.	Sq.ft.	Auditorium Other Curved Walls	2948		
	9mm sheet with 6mm MDF strips with 100mm holes for proper acoustic with 50 mm Synthetic wadding 1000 gsm.					
	Specification of Synthetic Sheets is as follows:-					
	Density: 9mm synthetic sheets are 120-140kg/ CuM under IS 1734 (PT-1) – 1983					
	Weight : 1.20 - 1.30 Kg/sqmt.					
	Fire Resistance : 25 (A grade) by ASTM – E84					

	Smoke Density Index : 300<450 by ASTM – E84				
	Composition : 100% polyester Fibre				
	They can be directly hanged from ceiling with help of suspenders. Spacing should be done according to the design or Architect in charge.				
	Application:-				
	Providing and Fixing 9mm Thk PET SHEETS should be pasted on over 6mm ply with 100mm holes using SR998 as pasting adhesive. 7.5mm Flexi ply to support PET SHEETS on curve. Ply should be fixed on frame made from especially fabricated galvanised mild steel sheet 0.50 mm thick pressed				
	section (galvanizing @120 grams per sqm including both sides) i.e. vertical studs of size 48 x 34 x 36 mm are placed at 600mm center to center in a floor and ceiling channel section of size 48 x 30mm fixed to the floor. This same channel is then to be fixed in horizontal direction at 600mm center to center so as to form a grid of 600mm x 300mm. The panels should be backed with 25mm 1000GSM Polyester Fiber inserted inside the grid of 610x 610mm.				
3	Providing and fixing Pelmet for screen made up of 18mm thick Commercial Ply with gypsum including required frame work and painted with paint in desired shade as per drawings and direction of the engineer in-charge.	Sq.ft.	Stage Area	70	
VII	DOORS				
1	Providing & fixing doors of Green Room for Auditorium.	Nos.	For Green Room	4	
	Door Size:- 1200 mm (W) X 2400 mm (Ht)				
	Frame: To have 100mm x 75mm beech wood frame and melamine polished to match the shutter.				
	Hardware :-				
	Exposed Door closer : GODREJ make				
	Hinges : 100mm long 4 nos of hinges - GODREJ make				
	Handle : 300mm long SS handles-GODREJ make				
	Lock : GODREJ dead lock with SS key guards				
	Finish : 1mm thk laminate on one side & Acoustic fabric on other side - of approved shade.				

2	Providing & fixing doors for Service access of External ACP.	Nos.	For Service access of External ACP.	1		
	Door Size:- 1200 mm (W) X 2400 mm (Ht)					
	Frame: To have 100mm x 75mm beech wood frame and melamine polished to match the shutter.					
	Hardware :-					
	Exposed Door closer : GODREJ make					
	Hinges : 100mm long 4 nos of hinges - GODREJ make					
	Handle : 300mm long SS handles-GODREJ make					
	Lock : GODREJ dead lock with SS key guards					
	Finish : 1mm thk laminate on one side & Acoustic fabric on other side - of approved shade.					
	Note:- Door to be flush with the acoustical pet paneling coming on the peripheral wall.					
3	Providing & Fixing fire rated & Sound Reducing Doors (Double Door)	Nos.	Auditorium Main Entrance Doors	2		
	Size:- 2000 mm X 2400 mm					

	<p>Providing and fixing of Wooden fire rated cum accoustic doors as per BS:476 Part- 20 & 22 & IS 3614 part-1 & part-2 for stability, integrity and thermal insulation. 03 Criteria Wooden door confirming to IS 277 with the following specification. Recommended fire door shall have doors tested for maximum rating of 2hrs. Door leaf shall be 77mm thick LAMINATE FINISH acoustic door with sound deduction of 30-35db, comprising of 140mm x 90mm hardwood (Red Mirandi) frame with approved Fire retardent primer & melamine polish, with infill of 63mm thick composite core, combination of calcium silicate board and accoustic wool insulation of 48 Kg/m3 density coated with approved FR coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick approved Non Combustible (Calcium Silicate) Board on both sides (edge to edge on internal Hard wood frame and cladded with 6mm thick commercial ply on both sides, with 50mm x 12mm exposed teak wood beading/ architrave, 01 Nos. 20 x4 mm fire & smoke intumescent seal shall be used for shutter & for</p>					
	<p>the frame 01 Nos. 20 x 4 mm fire and smoke in tumescent seal (For Smoke Sealing) on all sides except bottom (Automatic bottom seal RP:8Si of Raven Make) with 10mm thick approved teak wood beading on all side. Also astragal seal shall be used to seal the gaps between matrix board and shutter beading. The board shall be Resistant to vermin, mould growth, minor impact, abrasion and short term water attack etc. Ironmongery (Geze) and complete specification to be as per manufactures satisfaction. Architrave ect shall be excluded.</p>					
	<p>Hardware Details:- SS Ball Bearing Butt hinges , Geze Make 100x75x3mm - 8 Nos.</p>					
	<p>Door closer , Geze Make - Boxer - 2 Nos.</p>					
	<p>Triple Point locking panic bar.</p>					
	<p>Geze Make - Art No. 98536310 +</p>					
	<p>Vertical Rod - 1 Nos.</p>					

	External panic trim with half cylinder, Geze Make -Art. No.98536302 -1 No.					
	Fire Seal For Frame , Raven - 20 X 4MM - 7.40 Rmt.					
	Fire Seal For Shutter , Raven - 20 X 4MM - 11.60 Rmt.					
	Delta Seal (Perimeter Seal) , Raven - RP 120 - 7.40 Rmt.					
	Astragal Seal , Raven - RP : 16Si - 2.70 Rmt.					
	Automatic Door Bottom Seal , Raven - RP 8Si - 2.00 Nos.					
	Fasteners (HRD) , Fischer - M10 x 120mm - 13 Nos.					
	Vison Glass 200x700 Nos Saint Gobain 2 Nos.					
	Acoustical Vision panel for Control Room.	Nos.	Control Room Door	1		
4	Size:- 1200 mm X 2400 mm					
	Providing and fixing of Wooden fire rated cum accoustic doors as per BS:476 Part- 20 & 22 & IS 3614					
	part-1 & part-2 for stability, integrity and thermal insulation. 03 Criteria Wooden door confirming to IS 277 with the following specification. Recommended fire door shall have doors tested for maximum rating of 2hrs. Door leaf shall be 77mm thick LAMINATE FINISH acoustic door with sound deduction of 30-35db, comprising of 140mm x 90mm hardwood (Red Mirandi) frame with approved Fire retardent primer & melamine polish, with infill of 63mm thick composite core, combination of calcium silicate board and accoustic wool insulation of 48 Kg/m3 density coated with approved FR coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick approved Non Combustible (Calcium Silicate) Board on both sides (edge to edge on internal Hard wood frame and cladded with 6mm thick commercial ply on both sides, with 50mm x 12mm exposed teak wood beading/ architrave, 01 Nos. 20 x4 mm fire & smoke intumescent seal shall be used for shutter & for					

	the frame 01 Nos. 20 x 4 mm fire and smoke intumescent seal (For Smoke Sealing) on all sides except bottom (Automatic bottom seal RP:8Si of Raven Make) with 10mm thick approved teak wood beading on all side. Also astragal seal shall be used to seal the gaps between matrix board and shutter beading. The board shall be Resistant to vermin, mould growth, minor impact, abrasion and short term water attack etc. Ironmongery (Geze) and complete specification to be as per manufactures satisfaction. Note: - Paint/ Polish/Foam/ Silicon/ Architrave ect shall be excluded.					
	Hardware Details:- SS Ball Bearing Butt hinges , Geze Make - 100x75x3mm - 4 Nos.					
	Mortise sash lock with SS lever handle, Geze Make - 55mm BS Art. 168463					
	+ LH Art. No. 168508 +168490- 1 Nos.					
	Fire Seal For Frame , Raven - 20 X 4MM - 5.90 Rmt.					
	Fire Seal For Shutter , Raven - 20 X 4MM - 5.90 Rmt.					
	Delta Seal (Perimeter Seal) , Raven - RP 120 - 2.40 Rmt.					
	Fasteners (HRD) , Fischer - M10 x 120mm - 11 Nos.					
	Vision Glass Saint Gobain 200x700 1 Nos.					
VIII	MISCELLANEOUS					
1	Area Signage's of size 300mmx100mm with SS finish, with Symbol/ artwork, hanged from ceiling with hanging accessories. Rate should be inclusive of Plotter cut vinyl lettering of approved design & pattern. All complete as per detailed drawings & instruction of Architect.	Nos.	Entry / Exit Signage	10		
2	Control Room Table:- Providing and fixing rectangular shaped table in control room as per design. Size - 8' L X 2' W X 2'-6" Ht.	Nos.	Control room	1		
IX	Chairs					

1	The seat assembly should be made of polyurethane foam moulded with M.S. tubular frame insert which should be upholstered with fabric. The insert should be tubular frame made of 1.9 ±0.02cm x 0.16 ±0.013cm thk MS or better. Electric resistance welded round tube with flexible support straps running across the length and width of the frame. The Seat should have an auto-tip up feature making it stay in upright position when not in use enabling clear row passage.	Nos.	Audience seating	≥230		
	Seat Size: 45±0.5cm (W) x 46±0.5cm (D) or better.					
	BACKREST ASSEMBLY: The back assembly has a flexi back mechanism. It should be made of polyurethane foam moulded with M.S. tubular frame insert, upholstered with fabric and has a plastic back cover. The insert should be a tubular frame made of 1.9 ±0.02cm x 0.16 ±0.013cm thk M.S or better. Electric resistance welded round tube with flexible support straps running across the length and width of the frame.					
	Back Size : 45±0.5cm (W) x 82±0.4cm (H) or better.					
	High Resilience polyurethane foam should be moulded with density = 45±3 kg/m ³ or better.					
	A Slide Mechanism should be in place aiding in relaxed Posture with a stroke of 60±5mm or better					
	The chair rests on the ground on two side panel frames fabricated from 0.12 ±0.020cm thk or better CR steel sheet which should be clad with fabric upholstery. The side panel frame should be grouted to the floor using anchors for each panel through 0.3±0.05cm or better thk HR steel base plate.					
	The armrest should be made up of solid beech wood or better with clear lacquer coat.					
	POWDER COATING: Steel components are epoxy polyester powder coated (DFT 40-60 microns).					
	Stretchable, knitted fabric with foam base which is not glued on to the contours, but stretched over them. This gives and retains a high-quality finish.					
	Hidden Grouting bolts are preferred					
	The auditorium chair should be designed to get mounted/grouted on floors.					
	All chairs should be numbered with Aisle lighting					
	All chairs at the aisles should have an inbuilt 6Amps electrical supply socket					

Auditorium-2 (First Floor)						
Sr.No	Description	Unit	Location	Minimum Quantity	Rate	Total
I	CIVIL WORK					
1	Providing Post Construction Pest control and Anti-termite treatment by appointing a specialized agency as per the specifications mentioned by the Bureau of Indian Standards and Agencies specifications (whichever is higher), for General Civil, Plumbing./ Drainage and timber/ Carpentry works, Gypsum related work, including a 5-year guarantee under suitable undertaking on stamp paper etc., complete as directed. (Mode of measurement to be on carpet-area and not the area of surface treated).	Sq.ft.	Entire Floor	1950		
II	FLOORING WORK					
1	Solid Wood Flooring:- Supply and Installation of 1st class Teak wood sports flooring system for Auditorium hall. SURFACE BOARD:- 1st Class Teak Wood Sports Flooring LABO sports test certified & EN 14904 Certified finished with 21mm thick, 57 to 83mm wide and in random length in tongue & groove shape. The edges of the boards should have a finger lock groove and the bottom side with air pass groove and treated with special anti-termite and water-resistant lacquer.	Sq.ft.	Stage Area	300		
	THE UNDER FRAME: - Made of SPF quality Canadian Pine Wood runners of 70 mm x 45 mm, treated with anti-termite solution and fixed on the bottom side with 10 mm thick EPDM air cushioned pads, stapled through the two wings at 350 mm x 350 mm.					
	INSTALLATION: - IPS subfloor treated with a vapor barrier to be placed on the leveled IPS subfloor before laying the under frame. The runners having air cushion pads to be placed on the vapor barrier in perfect level at 350 mm in 1 direction. The surface board to be screwed to the runner through the tongue only and should lock the screwed tongue by the groove of adjoining board.					

	Ends of the boards should be locked by inserting the wooden fingers through the edge grooves & fixed with suitable adhesive. An expansion of 8 to 10 mm to be left open between the wooden					
	flooring and the surrounding tiled area / walls.					
	FINISHING: - After installation the floor should be machine sanded in uniform level and finished with					
	CHIMIVER PANSERI SPA MADE IN ITALY DIN & FIBA APPROVED ECO PRIMER 2K SPORTS & ECO STAR 2 K SPORTS WATER BASED POLYURETHANE LACQUER WATER BASED POLYURETHANE POLISH.					
2	LPT Flooring:- Providing and Fixing of 5 mm thick Click-N-Lock tiles with wear layer is of 0.5 mm, made up of Stone Polymer composite and has an IXPE Cushion backing of 1 mm, 100% Water & Termite proof, Scratch / Fire / UV resistant, a Recyclable Green product having WEL- LOCK click system with suitable skirting. Classification of abrasion resistance (Rubbing action of two abrading wheels of S-42 Type, load Applied 500 grams, No. of Cycles 4,2000). Designed as approved by the Engineer.	Sq.ft.	Seating area & staircase	2120		
III	SKIRTING WORK					
1	Skirting for Solid Wood Flooring:- Providing & fixing Solid wood teak skirting Skirting 90 mm High, contain top side curved flushed with wall or vertical surface.	Rft.	Stage Area	75		
2	Skirting for LPT Flooring :- Providing and Fixing Luxury performance tiles (LPT) skirting of 60mm to 80 mm High flushed with wall or vertical surface , with 6 mm groove between vertical surface and skirting.	Rft.	Seating area & staircase	150		
3	Aluminium Skirting:- Supply of bottom line Slim Skirting of 75mm high anodized aluminum skirting with EPDM gasket and Corner Guard.	Rft.	Curved walls periphery	70		
4	Beading Profile for Solid Wood Flooring:- Providing & fixing 25mm wide Wooden Beading Profile with Polish complete with all respect .	Rft.	Stage area.	71		

5	Nosing Profile for steps:- Supply & fixing of 45mm x 29mm AL/PVC Nosing profiler as per manufacturer's specifications	Rft.	For Auditorium steps	300		
6	Coving Profile for steps:- Supply & Installation of AL/PVC Coving profile fixed as per manufacturer's specifications.	Rft.	For Auditorium steps	65		
7	LED Strips for Steps:- Providing & fixing LED Strips for as per selection.	Rft.	For Auditorium steps	300		
8	LED Strips for Aisle periphery: Providing & fixing LED Strips for as per selection.	Rft.	For passage & other floor area periphery	202		
IV	CEILING WORK					
1	Providing and fixing Gypsum false ceiling:-	Sq.ft	Auditorium Seating Area	1775		
	at all height including providing and fixing of frame work made of special, power pressed from M.S. Sheets and galvanized with zinc coating of 120 gms / Sq.M (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25mm wide X 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm center to center, one flange fixed to the ceiling with dash fastener 12.5 mm dia X 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45x15x0.9 mm running at the spacing of 1200 mm center to center, to which the ceiling section 0.5 mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm at 450 mm center to center. (nothing extra shall be paid for openings for grilles, electrical fixtures etc. and vertical / inclined face shall be measured above 200mm high only) with 12.5 mm thick, tapered edge, fire resistant gypsum board conforming to IS: 2095-part-I. All joints to be taped with paper tape and filled with jointing compound to provide smooth surface, entire work to be done as per specifications including two coats of primer and painting two coats of paint of approved color with roller finish and as per directions of engineer in charge.					
2	Acoustical PET Panel Ceiling:-	Sq.Ft.	Auditorium Seating Area	1523		
	Product Specification is as follows:-					

	Density : 9mm sentetic sheets are 120-140kg/ CuM under IS 1734 (PT-1) – 1983					
	Weight : 1.20 - 1.30 Kg/sqmt.					
	NRC : 0.70					
	Fire Resistance : 25 (A grade) by ASTM – E84					
	Smoke Density Index : 300<450 by ASTM – E84					
	Composition : 100% polyester Fibre.					
	Installation:- Providing and Fixing 9mm Thk PET SHEETS should be pasted on over 6mm ply with 100mm					
	holes using SR998 as pasting adhesive. 9mm ply to support PET Sheets on curve. Ply should be fixed on frame made from especially fabricated galvanized mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sq.m. including both sides) i.e. The main supporting section to fix ply board Dimensions in (mm) 80 x 26 x 51 x 0.5 x 3660, Fix around walls / partitions Dimensions in (mm) 20 x 28 x 30 x 0.5 x 3660 Primary section to support the ceiling section Dimensions in (mm) 15 x 45 x 15 x 0.9 x 3660 To provide suspensions from the structural soffit Dimensions in (mm) 25 x 10 x 0.5 x 3660 This same channel is then to be fixed in horizontal vertically direction at 600mm center to center so as to form a grid of 600mm x 600 mm . The panels should be backed with 25mm 1000GSM Polyester Fibre inserted inside the grid of 600 x 600 mm.					
3	Providing & fixing up 200 mm X 200 mm ply cove with provision of light as per drawing complete with necessary cut-outs for services outlets or accessories.	Rft	Auditorium Seating Area	925		
4	White Acoustical Grid Ceiling Tiles:- Providing & Fixing of Soft Fibre Acoustical Suspended Ceiling System with Beveled Tegular Edge Tiles With 15mm Exposed Grid.	Sq.Ft.	Auditorium Stage & Control Room Area	137		

	The tiles should have Humidity Resistance (RH) of 95%, NRC 0.9 - 1.0, Light Reflectance $\geq 85\%$, Colour White, Fire Performance UK Class 0 / Class 1 (BS 476 pt - 6 & 7) in module size of 600x600x15mm, suitable for Green Building application, with Recycled content of 66% GW & 74% RW.					
	The tile shall be laid on 32 with 15 mm wide T - section flanges colour white having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 32mm and a load carrying capacity of 12.5 Kgs/M ² (as per standard installation layout mentioned below) & pull out strength of 100Kgs. The T Sections have a Galvanizing of 90 grams per M ² and need to be installed with Suspension system.					
	Installation:- To comprise main runner spaced at 1200mm securely fixed to the structural soffit using suspension system (specifications below) at 1200mm maximum. The First/Last suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall.					
	Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees.					
	Perimeter trim to be of wall angles of size 3000x19x19mm, secured to walls at 450 mm maximum.					

	<p>Installation to be carried out by Trained Installation team & Installation should be carried out as per recommended procedure.</p> <p>SUSPENSION SYSTEM:- Accessories manufactured and supplied by Industries consisting of M6 Anchor Fasteners with hanger hole, pre Straightened Hanger wire of dia – 2.5 mm of 1.80 m length having a tensile strength of 344-413 MPa and a minimum pull strength of 110 kgs. (Adjustable hook clips of 0.7mm thick, galvanized spring steel can also be used for installation purpose as an additional accessory. The adjustable clip also consists of a 4 mm aquiline wire to be used with the main runner).</p>					
	The Tile & Grid system used together should carry a 10 year warranty.					
5	<p>Black Acoustical Grid Ceiling Tiles:- Providing & Fixing of Soft Fibre Acoustical Suspended Ceiling System with Beveled Tegular Edge Tiles With 15mm Thk Exposed Grid.</p>	Sq.Ft.	Auditorium Stage Area	150		
	The tiles should have Humidity Resistance (RH) of 95%, NRC 0.9 - 1.0, Colour Black, Fire Performance UK Class 0 / Class 1 (BS 476 pt - 6 &7) in module size of 600x600x15mm, suitable for Green Building application, with Recycled content of 66% GW & 74% RW.					
	The tile shall be laid on 32with 15 mm wide T - section flanges colour black having rotary stitching on all T sections i.e. the Main Runner, 1200 mm & 600 mm Cross Tees with a web height of 32mm and a load carrying capacity of 12.5 Kgs/M2 (as per standard installation layout mentioned below) & pull out strength of 100Kgs. The T Sections have a Galvanizing of 90 grams per M2 and need to be installed with Suspension system.					

	INSTALLATION: To comprise main runner spaced at 1200mm securely fixed to the structural soffit using suspension system (specifications below) at 1200mm maximum. The First/Last suspension system at the end of each main runner should not be greater than 450mm from the adjacent wall.					
	Flush fitting 1200mm long cross tees to be interlocked between main runners at 600mm to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm module to be formed by fitting 600mm long flush fitting cross tees centrally between the 1200 mm cross tees.					
	Perimeter trim to be wall angles of size 3000x19x19mm, secured to walls at 450 mm maximum.					
	Installation to be carried out by Trained Installation team & Installation should be carried out as per recommended procedure.					
	SUSPENSION SYSTEM:- Accessories manufactured and supplied by Industries consisting of M6 Anchor Fasteners with hanger hole, pre Straightened Hanger wire of dia – 2.5 mm of 1.80 m length having a tensile strength of 344-413 MPa and a minimum pull strength of 110 kgs. (Adjustable hook clips of 0.7mm thick, galvanized spring steel can also be used for installation purpose as an additional accessory. The adjustable clip also consists of a 4 mm aquiline wire to be used with the main runner).					
	The Tile & Grid system used together should carry a 10 year warranty.					
V	PARTITION WORK					
Note:-						
1) Control joints to be incorporated wherever the length of the partitions is more than 10 Meter.						
2) All Aluminium or G.I. sections are of Approved make.						
3) The rate to be inclusive of additional frame work for white boards, panaboards, over head storages, counter fixing.						

4) Angle beads have to be used at the external angles to get straight line and finish and protection from impacts.

5) Edge beads have to be used to protect the exposed edges of gypboard. The edges can be at the opening for doors, windows, glazing, etc or any other exposed edges.

6) For all partitions mode of measurement should be up to False ceilings. However the cost to be inclusive of framework with glass wool insulation and single skinned gypboard right up to the true ceiling.

1	Frame Work:- Providing and fixing gypboard partition to consist of 25mm x 50mm x 1.2mm thick G.I. box section framework at spacing not exceeding 600mm both ways (horizontal and vertical). Framework to be secured to Floor/Walls/Columns/Ceiling/Beams using 75mm metal screws and dowels as per details.	Sq.Ft.		475		
2	Glass Wool Insulation:- Extra Rate for Providing and filling glass wool insulation of density 48 kg per cum,50mm thick as per manufacturer's specifications. The rockwool to be filled in the cavity between the framework and gypsum skins.	Sq.Ft.		475		
3	First Skin of Gypsum:- Providing and fixing single skin of gypsum board which includes tapered edge 12.5mm thick gypboard screw fixed with 25mm dry wall screw at 300mm c/c to either side of existing framework studs. Necessary cut-outs shall be provided for taking of supply and return air ducts/openings which shall be neatly finished after fixing of ducts thereby leaving no gaps. The layer should be finished so as to take on second skin in Gyp/Ply/MDF directly. Mode of measurement to be actual gypsum area.	Sq.Ft.		950		

4	Second Skin of Gypsum:- Providing and fixing second Skin of gypsum board which includes tapered edge 12.5mm thick gypboard screw fixed with 25mm dry wall screw at 300mm c/c to either side of existing framework studs. Necessary cut-outs shall be provided for taking of supply and return air ducts/openings which shall be neatly finished after fixing of ducts thereby leaving no gaps. The layer should be finished so as to take on second skin in Gyp/Ply/MDF directly. Mode of measurement to be actual gypsum area.	Sq.Ft.		950		
5	Bent Glass for window in partition:- Supply & installation of Modular Aluminium single glazed window frame of 25mm System, using (25mm x 25mm) as top channel, wall starter, and (25mm x 25mm) bottom channel. Partition Dimension – 25mm x 25mm. Finish – anodized sandblasted satin silver finish. Glass to glass butt joint with I joint aluminium finish or plexy dry joint (Clear). Glass type- 10mm, 10.8mm, 12mm & 12.8mm thk Bent toughened glass.	Sq.Ft.		100		
VI	PANELING WORK					
1	Acoustic Curved Pet Panels Paneling:- Providing and fixing TPC PET sheets : 2440mm x 1220mm x 9mm thick.	Sq.ft.	Stage Area	425		
	9mm sheet with 6mm MDF strips with 100mm holes holes for proper acoustic with 50 mm Sentetic wadding 1000 gsm.					
	Specification of Sentetic Sheets is as follows:-					
	Density: 9mm sentetic sheets are 120-140kg/ CuM under IS 1734 (PT-1) – 1983					
	Weight: 1.20 - 1.30 Kg/sqmt.					
	Fire Resistance: 25 (A grade) by ASTM – E84					
	Smoke Density Index : 300<450 by ASTM – E84					
	Composition : 100% polyester Fibre					
	They can be directly hanged from ceiling with help of suspenders. Spacing should be done according to the design or Architect in charge.					
	Application:-					

	Providing and Fixing 9mm Thk PET sheets should be pasted on over 6mm ply with 100mm holes using SR998 as pasting adhesive. 7.5mm Flexi ply to support PET sheets on curve. Ply should be fixed on frame made from especially fabricated galvanized mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sqm including both sides) i.e. vertical studs of size 48 x 34 x 36 mm are placed at 600mm center to center in a floor and ceiling channel section of size 48 x 30mm fixed to the floor. This same channel is then to be fixed in horizontal direction at 600mm center to center so as to form a grid of 600mm x 300mm. The panels should be backed with 25mm 1000GSM Polyester Fibre inserted inside the grid of 610x 610mm.					
2	Acoustical Straight Pet Panels Paneling:- Acoustic Pet Panels Paneling:- Providing and fixing TPC PET sheets : 2440mm x 1220mm x 9mm thick.	Sq.ft.	Seating area & staircase (Auditorium Other walls)	1423		
	9mm sheet with 6mm MDF strips with 100mm holes holes for proper acoustic with 50 mm Sentetic wadding 1000 gsm.					
	Specification of Sentetic Sheets is as follows:-					
	Density: 9mm sentetic sheets are 120-140kg/ CuM under IS 1734 (PT-1) – 1983					
	Weight: 1.20 - 1.30 Kg/sqmt.					
	Fire Resistance: 25 (A grade) by ASTM – E84					
	Smoke Density Index : 300<450 by ASTM – E84					
	Composition : 100% polyester Fibre					
	They can be directly hanged from ceiling with help of suspenders. Spacing should be done according to the design or Architect in charge.					
	Application:-					
	Providing and Fixing 9mm Thk PET sheets should be pasted on over 6mm ply with 100mm holes using SR998 as pasting adhesive. 7.5mm Flexi ply to support PET Sheets on curve. Ply should be fixed on frame made from especially fabricated galvanized mild steel sheet 0.50 mm thick pressed					

	section (galvanizing @ 120 grams per sq.m. including both sides) i.e. vertical studs of size 48 x 34 x 36 mm are placed at 600mm center to center in a floor and ceiling channel section of size 48 x 30mm					
	fixed to the floor. This same channel is then to be fixed in horizontal direction at 600mm center to center so as to form a grid of 600mm x 300mm. The panels should be backed with 25mm 1000GSM					
	Polyester Fibre inserted inside the grid of 610x 610mm.					
3	Acoustic Pet Panels Paneling:- Providing and fixing PET sheets : 2440mm x 1220mm x 9mm thick.	Sq.ft.	Auditorium Other Curved Walls	475		
	9mm sheet with 6mm MDF strips with 100mm holes holes for proper acoustic with 50 mm Sentetic wadding 1000 gsm.					
	Specification of Sentetic Sheets is as follow					
	Density : 9mm sentetic sheets are 120-140kg/ CuM under IS 1734 (PT-1) – 1983					
	Weight : 1.20 - 1.30 Kg/sqmt.					
	Fire Resistance: 25 (A grade) by ASTM – E84					
	Smoke Density Index: 300<450 by ASTM – E84					
	Composition: 100% polyester Fibre					
	They can be directly hanged from ceiling with help of suspenders. Spacing should be done according to the design or Architect in charge.					
	Application:-					

	Providing and Fixing 9mm Thk PET SHEETS should be pasted on over 6mm ply with 100mm holes using SR998 as pasting adhesive. 7.5mm Flexi ply to support PET SHEETS on curve. Ply should be fixed on frame made from especially fabricated galvanised mild steel sheet 0.50 mm thick pressed section (galvanizing @ 120 grams per sqm including both sides) i.e. vertical studs of size 48 x 34 x 36 mm are placed at 600mm center to center in a floor and ceiling channel section of size 48 x 30mm fixed to the floor. This same channel is then to be fixed in horizontal direction at 600mm center to center so as to form a grid of 600mm x 300mm. The panels should be backed with 25mm 1000GSM Polyester Fibre inserted inside the grid of 610x 610mm.					
VII	DOORS					
1	Providing & Fixing Fire rated & Sound Reducing Doors					
	Size:- 2100 mm X 2400 mm	Nos.	Auditorium Main Entrance Doors	1		
	Size:- 1500 mm X 2400 mm	Nos.	AHU & Back Entry Door	3		

<p>Providing and fixing of Wooden fire rated cum acoustic doors as per BS:476 Part- 20 & 22 & IS 3614 part-1 & part-2 for stability, integrity and thermal insulation. 03 Criteria Wooden door conforming to IS 277 with the following specification. Recommended fire door shall have doors tested for maximum rating of 2hrs. Door leaf shall be 77mm thick LAMINATE FINISH acoustic door with sound deduction of 30-35db, comprising of 140mm x 90mm hardwood (Red Mirandi) frame with approved Fire retardant primer & melamine polish, with infill of 63mm thick composite core, combination of calcium silicate board and acoustic wool insulation of 48 Kg/m3 density coated with approved FR coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick approved Non Combustible (Calcium Silicate) Board on both sides (edge to edge on internal Hard wood frame and clad with 6mm thick commercial ply on both sides, with 50mm x 12mm exposed teak wood beading/ architrave, 01 Nos. 20 x4 mm fire & smoke intumescent seal shall be used for shutter & for the frame 01 Nos. 20 x 4 mm fire and smoke intumescent seal (For Smoke Sealing) on all sides except bottom (Automatic bottom seal RP:8Si of Raven Make) with 10mm thick approved teak wood beading on all side. Also astragal seal shall be used to seal the gaps between matrix board and shutter beading. The board shall be</p>					
<p>Hardware Details:- SS Ball Bearing Butt hinges , Geze Make - 100x75x3mm - 8 Nos.</p>					
<p>Door closer , Geze Make - Boxer - 2 Nos.</p>					
<p>Triple Point locking panic bar.</p>					
<p>Geze Make - Art No. 98536310 +</p>					
<p>Vertical Rod - 1 Nos.</p>					
<p>External panic trim with half cylinder, Geze Make-Art. No.98536302 -1 No.</p>					
<p>Fire Seal For Frame , Raven - 20 X 4MM - 7.40 Rmt.</p>					
<p>Fire Seal For Shutter , Raven - 20 X 4MM - 11.60 Rmt.</p>					
<p>Delta Seal (Perimeter Seal) , Raven - RP 120 - 7.40 Rmt.</p>					
<p>Astragal Seal , Raven - RP : 16Si - 2.70 Rmt.</p>					

	Automatic Door Bottom Seal , Raven - RP 8Si - 2.00 Nos.					
	Fasteners (HRD) , Fischer - M10 x 120mm - 13 Nos.					
	Vison Glass 200x700 Nos Saint Gobain 2 Nos.					
3	Acoustical Vision panel for Control Room.Size:- 1200 mm X 2400 mm	Nos.	Control Room Doors	1		
	<p>Providing and fixing of Wooden fire rated cum acoustic doors as per BS:476 Part- 20 & 22 & IS 3614 part-1 & part-2 for stability, integrity and thermal insulation. 03 Criteria Wooden door confirming to IS 277 with the following specification. Recommended fire door shall have doors tested for maximum rating of 2hrs.</p> <p>Door leaf shall be 77mm thick LAMINATE FINISH acoustic door with sound deduction of 30-35db, comprising of 140mm x 90mm hardwood (Red Mirandi) frame with approved Fire retardent primer & melamine polish, with infill of 63mm thick composite core, combination of calcium silicate board and acoustic wool insulation of 48 Kg/m3 density coated with approved FR coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick approved Non Combustible (Calcium Silicate) Board on both sides (edge to edge on internal Hard wood frame and cladded with 6mm thick commercial ply on both sides, with 50mm x 12mm exposed teak wood beading/ architrave, 01 Nos. 20 x4 mm fire & smoke intumescent seal shall be used for shutter & for the frame 01 Nos. 20 x 4 mm fire and smoke intumescent seal (For Smoke Sealing) on all sides except bottom (Automatic bottom seal RP:8Si of Raven Make) with 10mm thick approved teak wood beading on all side. Also astragal seal shall be used to seal the gaps between matrix board and shutter beading. The board shall be</p>					
	Hardware Details:- SS Ball Bearing Butt hinges , Geze Make - 100x75x3mm - 4 Nos.					
	Mortise sash lock with SS lever handle, Geze Make - 55mm BS Art. 168463					
	+ LH Art. No. 168508 +168490- 1 Nos.					
	Fire Seal For Frame , Raven - 20 X 4MM - 5.90 Rmt.					

	Fire Seal For Shutter , Raven - 20 X 4MM - 5.90 Rmt.					
	Delta Seal (Perimeter Seal) , Raven - RP 120 - 2.40 Rmt.					
	Fasteners (HRD) , Fischer - M10 x 120mm - 11 Nos.					
	Vision Glass Saint Gobain 200x700 1 Nos.					
VIII	MISCELLANEOUS					
1	Area Signage's of size 300mmx100mm with SS finish, with Symbol/artwork, hanged from ceiling with hanging accessories. Rate should be inclusive of Plotter cut vinyl lettering of approved design & pattern. All complete as per detailed drawings & instruction of Architect.	Nos.	Entry / Exit Signage	10		
2	Control Room Table:- Providing and fixing Curved shaped table in control room as per design. Size - 8' L X 2' W X 2'-6" Ht.	Nos.	Control Room	1		
IX	Chairs					
1	The seat assembly should be made of polyurethane foam moulded with M.S. tubular frame insert which should be upholstered with fabric. The insert should be tubular frame made of 1.9 ±0.02cm x 0.16 ±0.013cm thk MS or better. Electric resistance welded round tube with flexible support straps running across the length and width of the frame. The Seat should have an auto-tip up feature making it stay in upright position when not in use enabling clear row passage.	Nos.	Audience seating	≥95		
	Seat Size: 45±0.5cm (W) x 46±0.5cm (D) or better.					
	BACKREST ASSEMBLY: The back assembly has a flexi back mechanism. It should be made of polyurethane foam moulded with M.S. tubular frame insert, upholstered with fabric and has a plastic back cover. The insert should be a tubular frame made of 1.9 ±0.02cm x 0.16 ±0.013cm thk M.S or better. Electric resistance welded round tube with flexible support straps running across the length and width of the frame.					
	Back Size : 45±0.5cm (W) x 82±0.4cm (H) or better.					
	High Resilience polyurethane foam should be moulded with density = 45±3 kg/m ³ or better.					

	A Slide Mechanism should be in place aiding in relaxed Posture with a stroke of 60±5mm or better					
	The chair rests on the ground on two side panel frames fabricated from 0.12 ±0.020cm thk or better CR steel sheet which should be clad with fabric upholstery. The side panel frame should be grouted to the floor using anchors for each panel through 0.3±0.05cm or better thk HR steel base plate.					
	The armrest should be made up of solid beech wood or better with clear lacquer coat.					
	POWDER COATING: Steel components are epoxy polyester powder coated (DFT 40-60 microns).					
	Stretchable, knitted fabric with foam base which is not glued on to the contours, but stretched over them. This gives and retains a high-quality finish.					
	Hidden Grouting bolts are preferred for					
	The auditorium chair should be designed to get mounted/grouted on floors.					
	All chairs should be numbered with Aisle lighting					
	All chairs at the aisles should have an inbuilt 6Amps electrical supply socket					
	Tendered Amount Grand Total PART- I					

Name of Work:- Construction of Auditorium Institute of Nano Science and Technology, Knowledge City, Sector- 81, Mohali SH: Design, Supply, Installation of Wall paneling, False ceiling and Flooring including necessary Acoustic treatment, providing Auditorium chairs and SI System.

(PART-II)

Bill of Quantity with Minimum Technical Specifications for Audio Visuals and Lighting

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
AUDIO for Auditorium – 1 (Mezzanine floor)					
1	Supply, installation, testing & Commissioning of Multi driver full range, IP54 or better rated loudspeaker system: The loudspeaker free space full range sensitivity shall be at least 92dB-SPL in the 50Hz to 16kHz range. The nominal horizontal beamwidth shall be 100 degrees, and the nominal vertical beamwidth shall be 70 degrees. The power handling capacity of the loudspeaker shall be at least 225 Watts continuous pink noise, band-limited from 50Hz to 16kHz. Max SPL shall be 117dB (123dB peak) or better with a nominal impedance of 8 Ohms or higher. Powder Coated steel grill or better with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / Martin Audio	4	Nos		
2	Bracket for Speakers.	3	Nos		
3	Supply, installation, testing & Commissioning of Modular Dual 12" Installation friendly subwoofer with a free field Freq. Range of 36 Hz - 250Hz or better. It should have an axial Sensitivity of > = 94dB (1W/1m) or more delivering a Max. Calculated SPL(Continuous) of >=123 dB (129dB Peak). The loudspeaker should have a nominal impedance of 4ohm or 2x8 ohms or better and continuous Power Handling of 2x400W (1600+1600W Peak) or more. At least 12 suspension / rigging points shall be available for flexible installs. The Subwoofer shall be enclosed in Baltic birch plywood with powder coated steel grille. Should include any other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / d&b audiotechnik	2	Nos		
4	Bracket for Subwoofer	2	Nos		
5	Supply, installation , testing and commissioning of Compact Indoor/Outdoor type IP55 rated wall mount Music Loudspeaker: Free field Frequency range (-10dB) of 80Hz to 16kHz; Power handling of 64 Watt peak; Nominal dispersion of 150 H X 150 V; Free field Sensitivity of 84 dB SPL and Max SPL of 103 dB SPL peak; Nominal Impedance 8 Ohms; Integral multi-tap Transformer with tap settings of 2/4/8/16 W @ 100V with Powder-coated steel grille; Brackets with pitch/yaw adjustment included with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / Martin Audio	2	Nos		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
6	Supply, Installation, testing and commissioning of Wedge shaped Stage Monitor Loudspeaker with Frequency Response of 90 Hz to 16 kHz or better ; Horizontal Nominal Dispersion : 90 degree Horizontal X 60 degree Vertical or better (Rotatable Horn); Sensitivity (SPL / 1 W @ 1 m) of 92 dB SPL or better. Continuous Power of 200 Watt or better; Impedance of 8 Ohm; Max SPL @ 1 Mtr (Cont.) of 120 dB SPL or better; Transducers/Drivers of HF: 1 x 1.5" or better; LF: 1 X 8" or better complete with standard accessories and wall bracket with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / d&b audiotechnik	2	Nos		
7	Supply, installation, testing and commissioning of 2 way Indoor/outdoor type wall mount Music Loudspeaker: Frequency range (-10dB) of 60Hz to 20kHz; Power handling of 400Watt peak; Nominal dispersion of 120H X 120V; Sensitivity of 87 dB SPL and Max SPL of 113 dB SPL peak; Nominal Impedance 8 Ohms; Integral multi-tap Transformer with tap settings of 20/40/80W @ 100V or better with Powder-coated magnetic steel grill; U Brackets with pitch adjustment shall be included. Shall be rated for Outdoor IP55 rated as per IEC529. Includes any accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / Martin Audio	6	Nos		
8	Supply of Digital Audio Conferencing Processor with at least 12 Mic/Line inputs & 8 analog outputs, 24 bit A-D and D-A Convertors; Sampling Rate : 48 kHz; THD : < 0.002 % ; Channel Separation (Crosstalk) : < 108 dB ; Frequency Response 20 Hz - 20 kHz ; Signal-to-Noise Ratio 90 dB ;Dynamic Range > 115 dB; 5 Control Inputs and Outputs; RS-232 and Ethernet Port for third party Control and Monitoring; 64x64 Bidirectional DANTE Audio Networking ports, Shall include USB Audio as standard Feature. In built DSP features like Conference room Routers, Input Equalizers, Router, Band Pass filter, Output Equalizer, Delay, Limiters, gates, Source selectors etc. Shall Support at least 15 remote Zone controllers with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / Symetrix/ Biamp	1	Nos		
9	SITC of 32-Input Manual Mixer. Approved Makes: Yamaha, Music Tribe, Allen & Heath.	1	No		
10	SITC of 8 channel class D Networkable Power amplifier with a Max Output Power of 8x500W@8 ohms, or bridged mode output power of 4x 1000W @ 8/4 ohms. 20Hz - 20 KHz, SNR of 102dB and THD + N of <0.4% with built in protection such as Limiters, Temperature, DC, Short Circuit, Peak Current Limiters, Turn on delay etc. Built in DSP for Matrix routing, Speaker equalization, Delays, Array EQs etc complete with Ethernet Port for Network Control, programming and monitoring. Shall offer optional Network audio connectivity (Dante or CobraNet) through expansion slot with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / Powesoft / Lab gruppen	1	No		
11	Supply, installation, testing & Commissioning of Class D amplifier with 2 Channels of Load independent 600W outputs, LZ or HZ or mixed use operation; Frequency Response : 20Hz - 20kHz for LZ mode; Dynamic range> 100dBA and THD <0.04% at rated output complete with standard accessories as required. Phoenix input and output connector. Shall include a Multichannel input compatible with Audio DSPs form the same manufacturer with other accessories and provisions complete as per the site requirement for the complete functioning.	2	Nos		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
	Approved Make: Bose / Powesoft / Lab gruppen				
12	Supply of Class D amplifier with 4 Channels of Load independent 300W outputs, LZ or HZ or mixed use operation; Frequency Response : 20Hz - 20kHz for LZ mode; Dynamic range> 100dBA and THD <0.04% at rated output complete with standard accessories as required. Phoenix input and output connector. Shall include a Multichannel input compatible with Audio DSPs form the same manufacturer with other accessories and provisions complete as per the site requirement for the complete functioning.	2	Nos		
	Approved Make: Bose / Powesoft / Ashly Audio				
13	Supply, Installation, testing and commissioning of integrated high impedance Class D zone amplifier with output power of up to 90W @ 70/100V. Frequency response of 50Hz to 20kHz; THD <0.3%; Shall include priority override and Fire alarm interface, shall include necessary loudspeaker EQs with other accessories and provisions complete as per the site requirement for the complete functioning.	1	No		
	Approved Make: Bose / Powesoft / Lab gruppen				
14	Active DI Boxes for electronic instruments.	2	Nos		
15	Floor box with 3 X XLR for microphone connectivity and 1 X XLR for monitor connectivity	2	Nos		
16	Supply of Controller - Audio DSP - Controller with Power Supply: Programmable network controller manages gain settings or scene selections, Controls: Programmable functions over encoders / touch screen, Connectivity: Ethernet - 10 base 100 or better, Display: Multi character backlit LCD with other accessories and provisions complete as per the site requirement for the complete functioning.	1	No		
	Approved Make: Bose / Symetrix/ Biamp				
17	SITC of wireless handheld microphone with (UHF),12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output 50mW or Better , Polar Pattern :- Cardioid , Carrier frequency range 500Mhz to 865Mhz , Frequency response 20Hz to 20Khz , Mute Button on Transmitter , Battery Operation time Minimum 8hr , Should have Charging Contact in Transmitter , Receiver dynamic range 80 dB (A-weighted) Or better , switching bandwidth Minimum 30 Mhz Or better with other accessories and provisions complete as per the site requirement for the complete functioning.	4	Nos		
	Approved Makes: Beyerdynamic / Shure / Sennheiser				
18	SITC of wireless Single Ear Hook Head worn microphone with (UHF),12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output 50mW or Better , Polar Pattern single Ear Hook :- Omni directional , Carrier frequency range 500Mhz to 865Mhz , Frequency response 20Hz to 20Khz , Mute Button on Transmitter , Battery Operation time Minimum 8hr , Should have Charging Contact in Transmitter , Receiver dynamic range 80 dB (A-weighted) Or better , switching bandwidth Minimum 30 Mhz Or better with other accessories and provisions complete as per the site requirement for the complete functioning.	2	Nos		
	Approved Makes: Beyerdynamic / Shure / Sennheiser				
19	SITC of Hypercardioid dynamic handheld Vocal microphone having Frequency Response of 60 - 14,000 Hz, Open Circuit Sensitivity -54 dB (1.9 mV) re 1V at 1 Pa or better, Impedance-600 ohms or better, On/off switch, Integral 3-pin gold-plated XLRM-type connector, Rugged all-metal construction, complete with stand clamp and threaded adaptor and Foam Wind Screen with other accessories and provisions complete as per the site requirement for the complete functioning.	6	Nos		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
	Approved Make: Audio Technica / Beyerdynamic / Shure / Sennheiser				
20	SITC of Hypercardioid dynamic Instrument microphone, Suitable for acoustic guitar, overheads, percussion, strings and other acoustic instruments, Frequency Response 20 - 20,000 Hz, on/off switch, Dynamic Range: 137 dB 1 kHz at Max SPL, Signal-to-Noise Ratio: 83 dB 1 kHz at 1 Pa, Impedance -150-200 ohms. Should include other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Audio Technica / Beyerdynamic / Shure / Sennheiser .	4	Nos		
21	SITC of Cardioid Condenser Gooseneck Microphone, Frequency Response 70 - 16,000 Hz, Length of Gooseneck - Minimum 410mm, Low Frequency Roll off 80Hz, 18dB/octave or better, Impedance 100 ohms or better, Signal-to-noise Ratio 66 dB, 1 kHz at 1 Pa or better, complete with Foam Windscreen, with microphone shock mount along with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Audio Technica / Beyerdynamic / Shure / Sennheiser	2	Nos		
22	SITC of Dolby Cinema Processor with Eight-Channel Digital Input (4 x AES/EBU) for Digital Cinema Server and also includes support for Dolby Surround 7.1 with other accessories and provisions complete as per the site requirement for the complete functioning.	1	No		
INSTALLATION EQUIPMENTS					
1	24 U Equipment Rack. Approved Makes: Valrack, WQ, Rittal	1	Nos		
2	4sqmm speaker cable. Approved Makes: Belden, Kramer, Klotz.	200	m		
3	2.5 sqmm speaker cable. Approved Makes: Belden, Kramer, Klotz.	300	m		
4	20/22AWG microphone cable. Approved Makes: Belden, Kramer, Klotz.	200	m		
5	Various Cable & Connectors	1	Lot		
6	Installation, Testing and Commissioning charges	1	Job		
AUDIO for Auditorium – 2 (First floor)					
1	Supply, installation, testing & Commissioning of Multi driver full range, IP54 or better rated loudspeaker system: The loudspeaker free space full range sensitivity shall be at least 92dB-SPL in the 50Hz to 16kHz range. The nominal horizontal beam width shall be 100 degrees, and the nominal vertical beam width shall be 70 degrees. The power handling capacity of the loudspeaker shall be at least 225 Watts continuous pink noise, band-limited from 50Hz to 16kHz. Max SPL shall be 117dB (123dB peak) or better with a nominal impedance of 8 Ohms or higher. Powder Coated steel grill or better with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / Martin Audio	2	Nos		
2	Pan Tilt Bracket for Speakers.	2	Nos		
3	Supply, Installation, testing and commissioning of of Wedge shaped Stage Monitor Loudspeaker with Frequency Response of 90 Hz to 16 kHz or better ; Horizontal Nominal Dispersion : 90 degree Horizontal X 60 degree Vertical or better (Rotatable Horn); Sensitivity (SPL / 1 W @ 1 m) of 92 dB SPL or better. Continuous Power of 200 Watt or better; Impedance of 8 Ohm ; Max SPL @ 1 Mtr (Cont.) of 120 dB SPL or better ; Transducers/Drivers of HF: 1 x 1.5" or better; LF: 1 X 8" or better with wall bracket and other accessories/provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / d&b audiotechnik	1	No		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
4	Supply, installation, testing & Commissioning of Modular 12" Installation friendly subwoofer with a free field Freq. Range of 36 Hz - 250Hz or better. It should have an axial Sensitivity of > = 91dB (1W/1m) or more delivering a Max. Calculated SPL(Continuous) of >=117 dB (129dB Peak). The loudspeaker should have a nominal impedance of 8 ohms or better and continuous Power Handling of 400W (1600W Peak) or more. The Subwoofer shall be enclosed in Baltic birch plywood with powder coated steel grille and other accessories/provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / EAW / d&b audiotechnik	1	No		
5	Supply, installation , testing and commissioning of Digital Sound Processor with 8 Mic/Line inputs & 8 analog outputs, 24 Bit A-D and D-A Convertors; Sampling Rate : 48 kHz; THD : < 0.002 % ; Channel Separation (Crosstalk) : < 105 dB ; Frequency Response 20 Hz - 20 kHz ; Signal-to-Noise Ratio 80 dB ;Dynamic Range : > 115 dB; 5 Control Inputs and Outputs; RS-232 and Ethernet Port for third party Control and Monitoring; inbuilt DSP features like Input Equalizers, Router, Band Pass filter, Output Equalizer, Delay, Limiters, gates, Feedback suppressors, Source selectors etc with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / Symetrix / bi-amp	1	No		
6	Supply, installation, testing & Commissioning of Class D amplifier with 2 Channels of Load independent 600W outputs, LZ or HZ or mixed use operation; Frequency Response : 20Hz - 20kHz for LZ mode; Dynamic range> 100dBA and THD <0.04% at rated output complete with standard accessories as required. Phoenix input and output connector. Shall include a Multichannel input compatible with Audio DSPs form the same manufacturer along with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Make: Bose / Powesoft / Lab gruppen	3	Nos		
7	Supply, Installation, testing and commissioning of Mixer: Min 16 Mic/line Preamps input or better; 4 Subgroup outputs or better, Min 4 Aux or better and Mixer has inbuilt effets & Reverb feature; 9band stereo graphic EQ along with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Yamaha, Music Tribe, Allen & Heath.	1	No		
8	SITC of wireless handheld microphone with (UHF),12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output 50mW or Better, Polar Pattern :- Cardioid , Carrier frequency range 500Mhz to 865Mhz , Frequency response 20Hz to 20Khz , Mute Button on Transmitter , Battery Operation time Minimum 8hr , Should have Charging Contact in Transmitter , Receiver dynamic range 80 dB (A-weighted) Or better , switching bandwidth Minimum 30 Mhz Or better with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Beyerdynamic / Shure / Sennheiser	2	Nos		
9	SITC of wireless Single Ear Hook Head worn microphone with (UHF),12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output 50mW or Better , Polar Pattern single Ear Hook :- Omni directional, Carrier frequency range 500Mhz to 865Mhz , Frequency response 20Hz to 20Khz, Mute Button on Transmitter , Battery Operation time Minimum 8hr , Should have Charging Contact in Transmitter , Receiver dynamic range 80 dB (A-weighted) Or better , switching bandwidth Minimum 30 Mhz Or better with other accessories and provisions complete as per the site requirement for the complete functioning.	2	Nos		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
	Approved Makes: Beyerdynamic / Shure / Sennheiser				
10	SITC of Hypercardioid dynamic handheld Vocal microphone having Frequency Response of 60 - 14,000 Hz, Open Circuit Sensitivity -54 dB (1.9 mV) re 1V at 1 Pa or better, Impedance-600 ohms or better, On/off switch, Integral 3-pin gold-plated XLRM-type connector, Rugged all-metal construction, complete with stand clamp and threaded adaptor and Foam Wind Screen. Should include other accessories and provisions complete as per the site requirement for the complete functioning.	2	Nos		
	Approved Make: Audio Technica / Beyerdynamic / Shure / Sennheiser				
11	SITC of Cardioid Condenser Gooseneck Microphone, Frequency Response 70 - 16,000 Hz, Length of Gooseneck - Minimum 410mm, Low Frequency Roll off 80Hz, 18dB/octave or better, Impedance 100 ohms or better, Signal-to-noise Ratio 66 dB, 1 kHz at 1 Pa or better, complete with Foam Windscreen, Complete with microphone shock mount. Should include other accessories and provisions complete as per the site requirement for the complete functioning.	1	No		
	Approved Make: Audio Technica / Beyerdynamic / Shure / Sennheiser				
INSTALLATION EQUIPMENTS					
1	24 U Equipment Rack. Approved Makes: Valrack, WQ, Rittal	1	No		
2	4sqmm speaker cable. Approved Makes: Belden, Kramer, Klotz.	75	m		
3	2.5 sqmm speaker cable. Approved Makes: Belden, Kramer, Klotz.	175	m		
4	20/22AWG microphone cable. Approved Makes: Belden, Kramer, Klotz.	100	m		
5	Various Cable & Connectors	1	Lot		
6	Installation, Testing and Commissioning charges	1	Job		
VIDEO for Auditorium – 1 (Mezzanine floor)					
1	Supply, Installation, testing and commissioning of Ceiling Mounted 6500 Lumens or better Projector with short throw lens to make screen size of 14.4 feet X 9 Feet from a distance of atleast 12 feet. The projector should be laser projector with 4K resolution or better with supporting back end equipments. The projector should have minimum contrast ratio of 300000:1 or better, Horizontal and vertical keystone correction, motorized lens shift. The projector must have atleast HDMI X1, RGB X 2, Composite Video X 1, USB X 1, Base T X 1 inputs and other accessories/provisions complete as per the site requirement for the complete functioning.	2	Nos		
	Approved Makes: Barco, Christie, Panasonic.				
2	SITC of Digital Interface Box to transmit signals directly to Projector. The Box must have 2X HDMI, 2 X VGA, 1X S Video, 1 X Composite Video, 1 X Audio In, 1X Audio Out, 1 X LAN Out, 1 X DVI-D Out, 2 X HD Base T Out. The output from Box should directly integrate into the projector without use of any external hardware and other accessories/provisions complete as per the site requirement for the complete functioning	1	No		
	Approved Makes: Panasonic, Extron, Crestron.				

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
3	SITC of Free Standing/Floor Mounted type Digital Podium built of 1.6mm CRCA Steel sheet, screw less chasis, polymer powder coated, Wooden Top, All directional wheels with lock, Display feature- Highly Sensitive, Built-in interactive Capacitive touch Monitor with Tilt facility, Screen size-22"(interactive type), Color LED, scratch resistant, antiglare & overlay tampered vandal resistant glass(3mm). The podium should be supplied with HDMI & VGA inputs at Top for connectivity, complete with other accessories/provisions as per the site requirement for the Complete functioning.	1	No		
4	SITC of Motorized Screen with Unity Gain Projection Screen with minimum Projection area of at least 14.4X9 Feet, complete with other accessories/provisions as per the site requirement for the complete functioning. Approved Makes: Milan, Draper, Dalite.	1	No		
5	SITC of Rear Projection Motorized Screen with Unity Gain Projection Screen with minimum Projection area of 14.4X9 Feet, complete with other accessories/provisions as per the site requirement for the complete functioning. Approved Makes: Milan, Draper, Dalite.	1	No		
6	Floor box with 1 X HDMI, 1 X VGA + Audio connectivity, complete as per the site requirement for the Complete functioning.	2	Nos		
6	SITC of Camera having 1/3" 2 MP CMOS with Min. 20X or More Zoom. It should have Panning angle of +170 ~ -170° and Tilting angle of +90 ~ -30°. The camera should have Ethernet, HDMI and 3G-SDI outputs and all should be parallel output. The camera should have option of control over RS-422 / RS232 / Ethernet. The camera should have Gain Control of Auto/Manual, White Balance: Auto, Indoor, Outdoor, One-Push, Manual, Exposure Control: Auto, Manual, Focus System: Auto & Manual and Image Flip facility. The camera is to be supplied with HDMI to USB Convertor for each camera and other accessories/provisions complete as per the site requirement for the Complete functioning. Approved Makes: Vaddio, Sony, Lumens.	3	Nos		
7	SITC of Recording and Streaming Solution having minimum HDMI, VGA, LAN inputs etc to which various components like Presenter Laptop / PC, Full HD PTZ Cameras, Document Cameras, etc can be connected to record upto 4 inputs simultaneously on the single frame along with Audio. It should be able to Capture from Multiple Sources and able to Record and Stream up to min Four Full Motion HD Videos simultaneously in one frame up to 1080p resolution. The system should support up to min 4 Channel Mixing and Switching where the user can do live recording of the Lectures as per the requirement. The system should have one HDMI / DVI / VGA output for the Projector or for confidence monitor for the presenter. The system should come with min 1 TB of in-built hard disk for storing up to 400-500 Hours of recording. The system should have a facility to further extend the memory through USB or eSATA Hard Disk. System should support multiple encoding rates, multiple frame rates, Auto Logo Insertion during recording. System should also be able to support Webcast, Unicast and Multicast as Streaming Solution. The system should be able to support Video Processing at different frame rates up to 30 fps; Multiple Bit Rate from 64kps to 24Mbps in Full HD Resolution of 1080p with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Mediasite, Media Pointe, Lumens, V-Brick	1	Nos		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
8	SITC of Joystick for PAN/Tilt/Zoom and Focusing, RS232C/RS455/IP Communication Interfaces, High Brightness OLED Display, Auto Backlit Keys, should be able to control at least 3 cameras, complete with other accessories/provisions as per the site requirement for the complete functioning. Approved Makes: Sony or Lumens or Vaddio	1	No.		
9	SITC of 1×4 HDMI distribution amplifier with 4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling, plus support for HDR formats, HDCP 2.2 compliant, EDID management with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Extron, Crestron, Atlona.	1	No.		
10	SITC of HD Base T Transmitter and Receiver Kit having 4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling, plus support for HDR formats, HDCP 2.2 compliant, HDBase T link status testing with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Extron, Crestron, Atlona.	2	No.		
11	SITC of 86" or higher 4K Professional Display Panel with 500 cd/m ² brightness and 178 degrees horizontal and vertical viewing angle. The display should have HDMI X2 In, DP X1 In, DVI - D X1 In, VGA X 1 In and HDMI X1 Out. It should have USBX2 In, Serial Input X 1 complete as per the site requirement for the complete functioning. Approved Makes: Christie, Panasonic, NEC.	1	No.		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
INSTALLATION EQUIPMENTS					
1	HDMI, VGA + Audio Cable - 20 m. Approved Makes: Extron, Kramer, Crestron.	1	Set		
2	HDMI, VGA + Audio Cable - 10 m. Approved Makes: Extron, Kramer, Crestron.	1	Set		
3	HDMI, VGA + Audio Cable - 5 m. Approved Makes: Extron, Kramer, Crestron.	1	Set		
4	Shielded CAT 6A (10G) Cable	50	M		
VIDEO for Auditorium – 2 (First floor)					
1	Supply, Installation, testing and commissioning of Ceiling Mounted 5000 Lumens Projector with short throw lens to make screen size of 8 feet X 5 Feet from a distance of 3 meters. The projector should be laser projector with 4K resolution or better with supporting back end equipments. The projector should have minimum contrast ratio of 300000:1 or better, Horizontal and vertical keystone correction, motorized lens shift. The projector must have HDMI X2, RGB X 2, Composite Video X 1, USB X 1, HD Base T X 1 with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Barco, Christie, Panasonic.	1	No		
2	SITC of Digital Interface Box to transmit signals directly to Projector. The Box must have 2X HDMI, 2 X VGA, 1X S Video, 1 X Composite Video, 1 X Audio In, 1X Audio Out, 1 X LAN Out, 1 X DVI-D Out, 2 X HD Base T Out. The output from Box should directly integrate into the projector without use of any external hardware with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Panasonic, Extron, Crestron.	1	No		
3	SITC of Free Standing/Floor Mounted type Digital Podium built of 1.6mm CRCA Steel sheet, screw less chasis, polymer powder coated, Wooden Top, All directional wheels with lock, Display feature- Highly Sensitive, Built-in interactive Capacitive touch Monitor with Tilt facility, Screen size - 22"(interactive type), Color LED, scratch resistant, antiglare & overlay tampered vandal resistant glass(3mm). The podium should be supplied with HDMI & VGA inputs at Top for connectivity with other accessories and provisions complete as per the site requirement for the complete functioning.	1	No		
4	SITC of Motorized Wall Mount Unity Gain Projection Screen with minimum Projection area of 8 X 5 Feet (16:10 Aspect Ratio), with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Draper, Dalite, Harkness.	1	No		
5	Floor box with 1 X HDMI, 1 X VGA + Audio connectivity.	2	Nos		
6	SITC of 1x4 HDMI distribution amplifier with 4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling, plus support for HDR formats, HDCP 2.2 compliant, EDID management with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Extron, Crestron, Atlona.	1	No		
7	SITC of HD Base T Transmitter and Receiver Kit having 4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling, plus support for HDR formats, HDCP 2.2 compliant, HDBaseT link status testing with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Extron, Crestron, Atlona.	2	Nos		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
8	SITC of 55" or higher Cieling Mounted 4K Professional Display Panel with 400 cd/m ² brightness and 178 degrees horizontal and vertical viewing angle. The display should have HDMI X3 In, DP X1 In, DVI - D X1 In, VGA X 1 In and HDMI X1 Out. It should have USB X 2 In , Serial Input X 1 with other accessories and provisions complete as per the site requirement for the complete functioning. Approved Makes: Christie, Panasonic, NEC.	2	Nos		
INSTALLATION EQUIPMENTS					
1	HDMI, VGA + Audio Cable - 20 m. Approved Makes: Extron, Kramer, Crestron.	1	Set		
2	HDMI, VGA + Audio Cable - 10 m. Approved Makes: Extron, Kramer, Crestron.	1	Set		
3	HDMI, VGA + Audio Cable - 5 m. Approved Makes: Extron, Kramer, Crestron.	1	Set		
4	HDMI Patch Cords - 3 m. Approved Makes: Extron, Kramer, Crestron.	4	Nos.		
4	Shielded CAT 6A (10G) Cable	50	meter		

Stage lighting in Audi-1 (Mezzanine Floor only)

S No.	Items	Fixed Nos	Unit price
1	SITC of 150W High Quality LED Parcan Light complete with, Lamp source 3200K CCT Colour temperature CRI & TLCI Values above 95 DmX 512 dimming with 3 channel control Beam Angle of 9° / 25° / 45° Total Power Consumption of 165W High quality output replacing 1000W Halogen Par Flicker Free 100% for Tv & Film Cameras 11.7KHz Refresh Rate, Linear Dimming 0 ~ 100% Fuse and Internal safety protections Strobe option Adjustable 1~25 times/Sec Variable Fixture provided with Yoke of Manual Adjustment 5 Pin XLR or 3 Pin XLR for DmX Black powder coated body. Make: Leksa Lighting / Desisti / Kenson Solace	2	Nos.

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
2	SITC of 200W LED Blinder Light 30 Degree complete with 3200K CCT 2x100W Chip On Board LED Lamp source DmX 512 dimming with 4 /8 Channel modes CRI & TLCI Value > 90 Strobe option Adjustable 1 ~ 25 times / Sec Variable Beam Angle 30 Degree Total Power Consumption of 220W 11.7KHz Refresh Rate In built preset's for effects Fuse and Internal safety protections Active Cooling with Low Noise Fan 5 Pin XLR or 3 Pin XLR for DmX High quality well designed inbuilt reflector Flicker Free 100% for Tv & Film Cameras Black finish housing, IP20 protection Having Strobe option and smooth dimming illuminate Stage with uniform light intensity levels. Make: Leksa Lighting / Desisti / Kenson Solace	8	Nos.		
3	SITC of 100W LED COB Par Light having 3200K colour temperature High quality uniquely designed Fresnel Lens CRI,TLCI and R9 value above 96 LED COB Based Source No Multiple Shadows – Single Source illumination Total Power Consumption of 210W Linear dimming 0 ~ 100% Adjustment Flicker Free for High FPS, Power AC90-260V, 50/60HZ Working Temperature - +40° ~ -30° Active Cooling with Low Noise Fan DmX & RDM Control options with latest technology Fixture provided with Yoke of Manual Adjustment Manual and DMX control Option mode through 5pin/3pin xlr Black powder coated fabricated housing with normal yoke. Make: Leksa Lighting / Desisti / Kenson Solace	3	Nos.		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
4	<p>SITC of 12 x 10W LED Par Light RGBW, Beam Angle 45° complete with RGBW 10W Lamp source x 12 Pcs DmX 512 dimming with 8 Channel High Bright Red, Green, Blue, White LED's Source Unlimited Color Mixing through DmX 0 ~ 100% Linear dimming In built presets for different colors Strobe Mode 20 times/Sec Data DmX through 3 / 5 Pin XLR's 65dB ~ 130dB Sound sensing capacity Power In and Out Connections High precision colors, IP20 protection Powder coated Black finish housing Having Sound Control & Master Slave Auto Run Mode Illuminate the Indoor stage with unlimited colour effects Rigidly built pressure die-casted Aluminium body. Make: Leksa Lighting / Desisti / Altman / Arri</p>	12	Nos.		
5	<p>SITC of Light fixture mouting clamp Customized for suspending on fixed bars on stage Made up of Aluminium Die casted MS threaded T bolt with yellow passivation finish Complete with black powder coating matt black finish. Safe working load 150 KG Suitable to Batten of size 30 OD to 60 OD Make: Leksa Lighting / Desisti / Kenson Solace</p>	25	Nos.		
6	<p>SITC of Light Fixture dual safety Chain made up of GI wire rope Bundled and twisted together Having load bearing capacity above 200 Kgs Sleeve on the rope. Carabiner Clip Make: Leksa Lighting / Desisti / Kenson Solace</p>	25	Nos.		
7	<p>SITC of Suspender cum clamps designed made out of MS material 150mm x 150mm x 5mm MS Base plate Threaded rod, Black powder coated finish Suitable to hold various type grid & other rigging systems. Make: Stage Technologies / Leksa Lighting / Kenson Solace</p>	20	Nos.		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
8	<p>SITC of Fixed on stage Lighting Bar 14 Mtrs Length Straight as per the design Made out of 48mm Outer Dai, 40 Nominal Bore Mild Steel Pipe Dual Barrel Arrangement Dual Construction Powder coated with Matt black Texture Fixing Through Suspenders as per site conditions End Caps on the Pipe end Upper pipe of dual construction is used to anchor the bar lower pipe is effectively used to hang the light fixtures</p> <p>Make: Stage Technologies / Leksa Lighting / Kenson Solace</p>	2	Nos.		
9	<p>SITC of High quality power junction box 4 way made up of MS Sheet metal fabricated housing black powder coated, fibre glands of suitable size fitted with Powercon or IEC connector Box 10A.</p> <p>Make: Stage Technologies / Leksa Lighting / Kenson Solace</p>	16	Nos.		
10	<p>SITC of High quality Dimming In junction box 1 way made up of MS Sheet metal fabricated housing black powder coated, fibre glands of suitable size fitted with 5 Pin DmX XLR Female socket</p> <p>Make: Kenson Solace / Nuetrick / Leksa Lighting</p>	1	No.		
11	<p>SITC of High quality Dimming Out junction box 1 way made up of MS Sheet metal fabricated housing black powder coated, fibre glands of suitable size fitted with 5 Pin DmX XLR Male socket.</p> <p>Make: Kenson Solace / Nuetrick / Leksa Lighting</p>	4	Nos.		
12	<p>SITC of Black Powder coated cable trays made out of MS Sheet fabricated for a size of 150mm with perforation for heat dissipation provided with lid.</p> <p>Make: Custom</p>	15	Nos.		
13	<p>SITC of Black Powder coated cable trays made out of MS Sheet fabricated for a size of 75mm with perforation for heat dissipation provided with lid.</p> <p>Make: Custom</p>	40	Nos.		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
14	SITC of DmX Male Female Connectors 5 Pin having rubber sheeth protection for Cross connecting DmX wiring connections Make: Kenson Solace / Nuetrick / LL	6	Nos.		
15	SITC of DmX Male Termination Connector 5 Pin soldered with required capacity of resistor for signal deframing Make: Amphenol / Nuetrick / LL	4	Nos.		
16	SITC of DmX Loop Junction Box having 1 No. of DmX 5 Pin XLR Female Socket & 1 No. DmX XLR Male Socket fitted on to a sheet metal fabricated compact Junction box powder coated with matt black texture finish paint. Make: Kenson Solace / Nuetrick / Leksa Lighting	1	No.		
17	SITC of Opto isolated RDM enabled DmX splitter unit provided with, 8 Isolated outputs Slow blow safety fuse 5 Pin XLR for output interface Dual mode to select 2 universe operation DmX Input through 5 Pin XLR Connector Powder coated compartment finish Mounting brackets for grid mount. Make: Lite Puter/ Leksa Lighting/ Elation	1	No.		
18	SITC of Digital Lighting Console with 512 DMX channels, 512 Channels. 10 Programmable Executors Master Fader, Keypad entry, LCD Display, Encoder Wheels Time control of scenes: Fade in/out, LTP slope Channels for each fixture 40 primary + 40 fine tune Switchable Page Scenes/Playbacks 10 Scenes to run simultaneoulsy 600 Scene step Shape generators: Shapes of Dimmer, Pan/Tilt, RGB, CMY, Color, Gobo, Iris and Focus, Master slider - Global, playback, fixture USB Memory - FAT32 supported Make: Lite Puter/ Leksa Lighting/ Avolite	1	No.		
19	SITC of MS sheet metal fabricated power junction box duly powder coated and fitted with 3 10amps 2 pin IEC socket, ON/OFF switch and Make: Stage Technologies / Leksa Lighting / Kenson Solace	1	No.		
20	SITC of FRLS Copper unarmoured Flexible cable having 3 Core each of 1.5 Sq mm size. Make: Polycab / Walna / SBEE	400	Nos.		
21	SITC of 3 Core DmX Cable with Sheathed nousing on the cable, well designed insulation, low noise suitable to transmit DmX signal Make: Falcon / Belden / Guru Astronics	100	Nos.		

SR. NO.	ITEM DESCRIPTION	Min Qty	UNIT	Rate	Amount
1	Mezzanine Floor only LED lights with beam angle 12 to 36 degree Protection class IEC Safety class I (I) Initial luminous flux (system flux) ≥ 2000 lm Initial LED luminaire efficacy ≥ 100 lm/W Init. Corr. Color Temperature ≥ 4000 K Init. Color Rendering Index ≥ 80 Initial input power 22 W or better Power consumption tolerance +/-10% Housing Material Aluminum Alloy Optic material Aluminum and polycarbonate Optical cover/lens material Polycarbonate Mounting device MBA Dimmable Yes Ingress protection code IP20 [Finger-protected] Mech. impact protection code IK02 [0.2 J standard] Surge Protection (Common/Differential) 2.5 kV Median useful life 40000 h or better Make: Philips/ Osram/ LT/Disano	47	Nos.		
2	First Floor only LED lights with beam angle 120 degrees Protection class IEC Safety class I (I) Initial luminous flux (system flux) ≥ 1500 lm Initial LED luminaire efficacy ≥ 110 lm/W Init. Corr. Color Temperature ≥ 6500 K Init. Color Rendering Index ≥ 80 Initial input power 13.5 W or better Power consumption tolerance +/-10% Housing Material Aluminum die cast Optic material Polycarbonate Optical cover/lens material Polycarbonate Mounting device MBA Dimmable Yes Ingress protection code IP20 [Finger-protected] Mech. impact protection code IK02 [0.2 J standard] Surge Protection (Common/Differential) 2.5 kV Median useful life 50000 h or better Make: Philips/ Osram/ LT/Disano	20	Nos.		
Grand Total PART-II (B)					
Grand Total of PART -I & PART-II (A+B)					