E-TENDER DOCUMENT

NAME OF WORK: SUPPLY,INSTALLATION,TESTING AND COMMISSIONING OF VRV/VRF AIR CONDITIONING WORK FOR RECEPTION AREA AT NATIONAL SCIENCE CENTRE DELHI

National Science Centre
Near gate No. 4, Pragati Maidan
Bhairon Marg, New Delhi – 110001
(A constituent unit of National Council of Science Museums)

NATIONAL COUNCIL OF SCIENCE MUSEUMS

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Annexures:

INSTRUCTIONS TO THE TENDERERS/BIDDERS FOR E-SUBMISSION OF BIDS ONLINE THROUGH E-PROCUREMENT SITE https://eprocure.gov.in/eprocure/app

This tender document has been published on the Central Public Procurement (CPP) Portal (URL: https://eprocure.gov.in/eprocure/app). The tenderers/bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates (DSC). The instructions given below are meant to assist the tenderers/bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal. More information useful for submitting online bids on the CPP Portal may be obtained at: https://eprocure.gov.in/eprocure/app

REGISTRATION

Tenderers/bidders are required to enrol on the e-Procurement module of the Central Public Procurement Portal (URL: https://eprocure.gov.in/eprocure/app) by clicking on the link "**Click here to Enrol**" on the CPP Portal. Enrolment is free of Charge.

As part of the enrolment process, the tenderers/bidders will be required to choose a unique username and assign a password for their accounts.

Tenderers/bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

Upon enrolment, the tenderers/bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode /e mudra etc.), with their profile.

Only one valid DSC should be registered by tenderers/bidders. Please note that the tenderers/bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.

Bidder then logs in to the site through the secured log-in by entering their user ID & password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

(a) There are various search options built in the CPP Portal, to facilitate tenderers/bidders to search active tenders by several parameters. These parameters could include organization name, location, date, value, etc. There is also an option of '**Advanced Search'** for tenders, wherein the tenderers/bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

(b) Once the tenderers/bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective "My Tenders" folder. This would enable the CPP Portal to intimate the tenderers/bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

(c) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

(a) Tenderer/bidder should take into account any corrigendum published on the tender document before submitting their bids. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and contents of each of the documents that need to be submitted.

(b) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally they can be in PDF / XLS / RAR / DWF formats as mentioned. **Bid documents may be scanned with 100 dpi with black and white option.**

(c) To avoid the time and efforts required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the tenderers/bidders. Tenderers/bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting the bid just by tagging and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

1) Tenderer/bidder should log into the site well in advance for bid submission so that he/she up loads the Bid in time i.e. on or before the bid submission time as per the system. Bidder will be responsible for any delay due to other issues.
2) Tenderer/bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3) Tenderer/bidder has to select the payment option as "offline" to pay the EMD and enter details of DD/any other accepted instrument. Alternatively, EMD can be paid by NEFT/RTGS in the account of National Science Centre, Delhi as per details provided in Annexure I. The agency should provide the transaction code details for verification.
4) Tenderer/bidder should deposit the EMD instrument as per the instructions specified in the tender document. Scanned copy of DD/any other acceptable instrument as mentioned towards EMD should be uploaded while online submission of the tender and the original DD/other acceptable instrument should be posted/couriered/given in person to the Tender Processing Section latest before the Bid Opening (Technical) Date & Time or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the Scanned copy and the data entered during bid submission time otherwise the Tender will be summarily rejected. In the case of payment by NEFT/RTGS, the transaction details are to be provided in the form of screen shot taken at the time of payment in pdf format.
5) The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the tenderers/bidders. The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected

6) Tenderers/bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. The price bid has been given as a standard **Rate Quote Sheet (BoQ Template)** in .xls format with the tender document, which is to be downloaded and to be filled by all the tenderers/bidders. Tenderers/bidders are required to download the **Rate Quote Sheet (P BoQ Template)** file, open it and complete the green colored (unprotected) cells with their respective financial quotes and other details (such as name of the Tenderer/bidder). No other cells should be changed. Once the details have been completed, the tenderer/bidder should save it and submit it online, without changing the filename. If the **Rate Quote Sheet BoQ Template)** file is found to be modified by the tenderer/bidder, the bid will be rejected. In e-Tendering, intending tenderer/bidder can quote their rate in figures only. The total amount is generated automatically. Therefore, the rate quoted by the tenderer/bidder in figures shall be taken as correct. The Comparative Statement is also generated automatically by the system. The Comparative Statement and rate quoted by each tenderer/bidder shall be downloaded. **The manual calculation check of tenders/bids and Comparative Statement, shall be final. In case, any discrepancy is noticed, the decision of appropriate NCSM authority shall be final and binding.**

7) The server time (which is displayed on the tender's/bidder's dashboard) will be considered as the standard time for referring the deadlines for submission of the bids by the tenderers/bidders, opening of bids etc. The tenderers/bidders should follow this time during bid submission. The tenderers/bidders are requested to submit the tenders/bids through online e-tendering system to the **Tender Inviting Authority (TIA)** well before the bid submission end date & time (as per Server System Clock).
8) All the documents being submitted by the tenderers/bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
9) The uploaded tender documents become readable only after the tender opening by the authorized tender/bid openers.
10) Upon the successful and timely submission of tenders/bids, the portal will give a successful tender/bid submission message & a tender/bid summary will be displayed with the NIT/tender/bid no. or Name of Work and the date & time of submission of the tender/bid with all other relevant details.
11) The tender/bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any tender/bid opening meetings.

ASSISTANCE TO TENDERERS/BIDDERS

(a) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the **Tender Inviting Authority (TIA), National Science Centre, Near Gate No. 04, Pragati Maidan, Bhairon Road, New Delhi- 110001 Ph.0-7428693710,0-742869311,0-7428693712,0-7428693713,0-7428693713 Website:www.nscd.gov.inEmail:nscdelhicivilsection@gmail.com** Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed call to the 24x7 CPP Portal Helpdesk Ph. **1800-3070-2232.**

NOTICE INVITING E-TENDER
(E-NIT)

No. NSCD/15014/1/e tender/AC2/26-27 Dated:16.06.2026

1. The **National Science Centre, Delhi** is a constituent unit under the National Council of Science Museums, Kolkata* (*hereinafter referred to as the Museum/Centre).

2. Online e-tenders (Percentage Rate Bid) are hereby invited from reputed and experienced Engineering/Technical/ Interior contractors who are also empanelled with Central Government / Central Autonomous Bodies/ State PWD/ Central Public Sector Undertakings/ listed corporate houses of repute or in any other dept. and capable of carrying out the work of "**Supply, Installation, Testing and Commissioning of 48 HP VRV/VRF Air conditioning system for Reception area at National Science Centre, Delhi**" with excellent finishing quality.

Eligibility Criteria

3. The bidder could be an Individual, Limited Company/Corporation, Proprietary Firm, Partnership etc. enlisted/ empanelled with Central Government / Central Autonomous Bodies/ State PWD/ Central Public Sector Undertakings/ listed corporate houses of repute or in any other dept. in appropriate category.

4. The Bidder should have the requisite work experience and should have successfully completed similar works/ projects during the last 5 years (the cut-off date will be the date of publication of the tender) as per the details given below:

   (i) 1 (one) similar work (in Central Government / Central Autonomous Bodies/ State PWD/ Central Public Sector Undertakings/ listed corporate houses of repute) of aggregate cost not less than 80% of the estimated cost.

   OR

   (ii) 2 (two) similar works (at least one of them should be in Central Government / Central Autonomous Bodies/ State PWD/ Central Public Sector Undertakings/ listed corporate houses of repute) each costing not less than 60% of the estimated cost.

   OR

   (iii) 3 (three) similar works (at least one of them should be in Central Government / Central Autonomous Bodies/ State PWD/ Central Public Sector Undertakings/ listed corporate houses of repute) each costing not less than 40% of estimated cost.

   (Similar works mean: Supply, Installation, Testing and Commissioning of VRV/VRF Air-conditioning work as per CPWD specifications.)

5. Bidders should have valid GST Registration, Income Tax PAN Number.

6. Agencies should be Empanelled with **CPWD/ State PWD/ Railways/MES/ other Central Government/State Government Departments/ or in any other government/ semi-government/ Banks/ public sector dept./ corporate houses of reputed,** under appropriate class/ category to take up the work of the estimated value.

7. **The place of work**: National Science Centre, Near Gate No.4, Pragati Maidan, New Delhi.

8. **Important Information & Dates: -**

i) Name of Work	**Supply, Installation, Testing and Commissioning of 48 HP VRV/VRF Air conditioning system for Reception area at National Science Centre, Delhi**
ii) Estimated cost of work	Rs. 24,98,977.00
iii) EMD Amount	Rs.62,500.00
iv) Period of completion of work	45 (Forty Five) Days
v)Bid Document Publishing Date & Time	June 16, 2026 As per portal time
vi) Bid Document Download Start Date & Time	June 16, 2026 As per portal time
vii) Seek Clarification start Date & Time	June l6,2026 As per portal time
viii) Seek Clarification End Date & Time	June 30,2026 As per portal time
ix) Bid Document Download End Date & Time	June 30, 2026 As per portal time
x) Bid submission Start Date & Time	June 17, 2026 As per portal time
xi) Bid submission End Date & Time	June 30, 2026 As per portal time
xii) Bid Opening(Technical) Date & Time	July 1, 2026 (3.00 PM)

9. The works cover Supply, Installation, Testing and Commissioning and Comprehensive AMC of 5 years including one year guarantee period for the Work of Supplying, Installation, Testing and Commissioning of VRV/VRF Air conditioning work for Reception area at National Science Centre, Delhi. The work shall be executed as per CPWD Specifications for HVAC works 2004 CPWD General Specifications for Electrical Works Part-I, II & IV as amended up to date, relevant IE Rules, relevant IS and as per directions of Engineer in charge. These additional specifications and conditions are to be read in conjunction with above and in case of variations specifications given in the additional specifications and conditions shall apply. However nothing extra shall be paid on account of these as the same are to be read along with the schedule of quantities for the works.
10. The intending tenderers/bidders must read the terms and conditions of NATIONAL SCIENCE CENTRE, DELHI carefully. They should only submit their bid if they consider themselves eligible and if they are in possession of all the documents required.
11. Information and Instructions for tenderers/bidders posted on website shall form a part of the bid document.
12. The bid document consisting of plans, specifications, schedule of quantities of various types of items to be executed and the set of Terms and Conditions of the contract to be complied with and other necessary documents can be seen and downloaded from https://eprocure.gov.in/eprocure/app free of cost.
13. Out of the online bid documents submitted by intending tenderers/bidders, the technical bids of only of those tenderers/bidders shall be opened, who have deposited Earnest Money Deposit as specified duly scanned, uploaded and found in order. And the financial bids of only those tenderers/bidders shall be opened when they uploaded documents are found to be in order.
14. Those contractors not registered on the website mentioned above, are required to get themselves registered beforehand.
15. The intending tenderer/bidder must have valid Class II or Class III Certificates with signing key usage (DSC) to submit the bid.
16. The e-Tenders are invited under two envelopes system. The first electronic envelope will be named as Technical Envelope & will contain documents of tenderer's/bidder's satisfying the eligibility conditions, scanned copies of EMD, EMD exemption documents, NIT etc. and the second electronic envelope will be named as Financial Envelope containing Rate Quote Sheet. The bidder shall submit TECHNICAL BID ENVELOPE and FINANCIAL BID ENVELOPE simultaneously. The technical bids will be evaluated first and thereafter financial bids of only the eligible tenderers/bidders shall be opened. These envelopes shall contain one set of the following documents:-
    a) **TECHNICAL BID ENVELOPE shall contain the following documents**:
    i) Scanned copy of Demand Draft/Pay order or Banker`s Cheque of any Nationalised/ Scheduled Bank or any other accepted instrument or or RTGS/NEFT transaction details as the case may be towards payment of EMD

in favour of **NATIONAL SCIENCE CENTRE payable at DELHI in pdf format.**

Note:- EMD deposited in other modes than online transfer, has to be drawn or duly pledged in favour of "National Science Centre Delhi. "For online direct transaction in the account of NSCD the account details of NSCD are given in the ANNEXURE-I

The bidders registered with National Small Scale Industries Corporation (NSIC)/ MSME for the Tendered item under single point registration scheme and desirous of claiming exemptions available to such units on EMD, should submit a copy of each of their valid NSIC/ MSME certificate. Bidders claiming exemption of EMD under this rule (170 of GFR) are however required to submit a signed Bid securing declaration as per format given in **Annexure – D.**

ii) Scanned copies proof of eligibility as per CLAUSE No.3 to 6 of NIT whichever is applicable.

a) Work Experience Certificates/ Work Completion Certificate along with Work Order/Letter of Intent issued by Govt. /Semi-Govt./Autonomous/PSUs and/or Reputed Institution of requisite magnitude with appropriate Authority as per clause No. 4 of NIT whichever is applicable.

b) Scanned copies of GST registration and PAN card issued from appropriate authority in pdf format.

c) Scanned copy of ENLISTMENT ORDER/ registration certificate with appropriate authority as applicable, in pdf format as per eligibility criteria as per clause No.6 of NIT

iii) Scanned copy of UNDERTAKING (as per Annexure – A, B&C) duly signed with company seal and uploaded in pdf format.

iv) Tender Document comprising of Schedule of Quantities/specification and drawing in pdf format (TENDERXXXXX.pdf file) digitally signed.

v) Catalogue, literature, specification details should accompany the quotation as part of the technical bid and scanned copy of OEM dealer authorization letter.

b) FINANCIAL BID ENVELOPE shall contain:

Rate Quote Sheet (BOQ Template) in .XLS format. Bidders may quote their rate in this envelope.

17. E-tenders which do not fulfil any of the above conditions or are incomplete in any respect are liable for summary rejection.
18. The Museum/Centre does not bind itself to accept the lowest e-tender/bid and the right to reject or accept any or all the e-tenders/bids; e-tendered items or schedules received without assigning any reason whatsoever.
19. Canvassing in connection with e-tenders/bids is strictly prohibited and the e-tenders/bids submitted by the tenderers/bidders who resort to canvassing will be liable for rejection on that ground alone.
20. E-tenders incorporating additional conditions are liable to be rejected.

21. The tenderer(s)must declare in writing that neither he nor any of them is in anyway related to any officer in the National Science Centre, Delhi (National Council of Science Museums, Kolkata), or any of its constituent units as per the format given in Annexure-A
22. GST, Income tax and Labour Cess etc. or duties on materials, freight & transit, Insurance, F .O.R site in respect of this contract will be payable by the successful tenderer and shall be deemed to be include in the rate quoted by the agency. Nothing extra will be payable for increase in such taxes or duties even if imposed or levied either before or after the e-tenders are opened or during currency of contract.
23. Before submitting the e-tender, the tenderer shall examine all specifications, drawings, conditions of contract and inspect the site if necessary. The e-tender must be balanced in respect of individual items so that the rates quoted shall remain in force even if the quantities deviate (increase or decrease) to any extent before or during the execution of the work. The successful tenderer/bidder shall be paid at their rate quoted.
24. For the purpose of opening of the e-tenders/bids as described in Clause 9(i) of the Notice Inviting e-tender it is clarified that only on receiving the EMD, physically in National Science Centre, Delhi before the bid opening date, the Technical Bid Envelope will be opened. After the authority is satisfied that the documents in the Technical Bid Envelope are in order, the FINANCIAL BID ENVELOPE may be opened, subsequently.
25. It may be noted that the Technical Bid Envelope which are not found in order as per National Science Centre, Delhi (NCSM) requirements may be summarily rejected.
26. The selected tenderer will be issued a Letter of Intent by the Museum/Centre and given 07 days mobilisation time which shall be counted from the date of issue of the Letter of Intent. Within the mobilisation time the tenderer must scrutinise all the working drawings, CPM/PERT/BAR CHART, specifications, etc. and obtain clarifications from the Architect wherever necessary and submit a revised BAR CHART if required by the Museum/Centre. During the mobilisation time, the tenderer shall also mobilise all their resources including men and materials, obtain the supply of water and electricity necessary for construction, if necessary and sign an Agreement with Museum/Centre in approved format at site on a non-judicial stamp paper of proper denomination. The date of commencement of work shall be the date of issue of Letter of Intent.

27. The successful e-tenderer /bidder selected for the work has to deposit the prescribed performance guarantee (i.e 3% of the tendered amount)and sign the formal agreement within 07 days from the date of issue of Letter of Intent to them by the Museum/Centre failing which their EMD deposited with tender, is liable to be forfeited.

28. The validity period of the e-tender shall be at least 03 (Three) months from the date of opening of e-tenders. This period may be extended with mutual consent if the decision regarding issue of Letter of Intent is delayed for any reason.

29. After obtaining clarification from all the tenderers National Science Centre may modify the technical and commercial conditions /specifications if required and will interact with the tenderer whose technical and commercial bids are acceptable. The date and time of opening of price bid will be intimated in advance and in case the tenderer wants to modify his price bid he can submit the same before opening of the technical bid as

intimated by National Science Centre. This however may be allowed only if there are any changes in the specifications/items by National Science Centre during tender discussions.

30. The E-tenderer will not be allowed to alter or modify any condition at a time after the technical bid has been accepted and decision of opening the price bid has been taken.

31. National Science Centre reserves the right to accept /reject any or all the bids and call for fresh price /tender as the case may be without assigning any reason. National Science Centre reserves the right to award the work in full or in part dividing amongst the tenderer as found suitable by the competent Authority.

32. **Make in India (MII) The tender abide with GOI order date 15th June 2017 to give purchase preference to Make In India (MII) product mentioned in order. Document link as follows:**

    https://dpiit.gov.in/sites/default/files/publicProcurement_MakeinIndia_15June2017.pdf

33. **Force Majeure :-** In the event of either party being rendered made by Force Majeure to perform any obligation required to be performed by them under the contract, the relative obligation of the party affected by such Force Majeure shall be suspended for the period during which such cause lasts. The term "Force Majeure" as employed herein shall mean acts of God, War, Civil Riots, Fire directly affecting the performance of the contract, Flood and Acts and Regulations of respective government of the two parties namely the M/s ----------and NCSM. Upon the occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid thereby, shall notify the other party in writing, the beginning of the causes amounting to Force Majeure as also the ending of the said clause by giving notice to the other party within 72 (Seventy two) hours of the alleged beginning and ending of the cause respectively. If performance under this agreement is suspended by Force Majeure conditions lasting for more than two months, either party shall have the option of cancelling this agreement in whole or par at its discretion without any liability on its part. Time for performance of the relative obligation suspended by Force Majeure shall stand extended by period for which such cause lasts.
34. All disputes and difference between the successful tenderer and the Centre of any kind except quality of workmanship and materials whatever arising out of or in connection with the order on the carrying out the work shall be referred to the sole arbitration of a person nominated by the Director General, National Council of Science Museums, whose decision in this regard will be final and binding on both the successful tenderer and the Centre. The provision of the Arbitration and Conciliation Act 1996 or any statutory modification or re-enactment thereof and of rules made hereunder for the time being in force shall apply to arbitrations proceeding under this council

Appendix to NIT

1. SUMMARY CONDITIONS OF CONTRACT:

Defect Liability Period	One year from the date of virtual completion as certified by the Museum/Centre or from the date of passing of final bill.
Time for Completion	**45 Days** from the date of Letter of Intent as per NIT Clause 8 (iv) &21(NIT).
Minimum value of work for Interim Certificate	One lakh or less at the discretion of the Museum/Centre but not more than one running bill in a fortnight.
Earnest Money to be deposited with the e-tender	**62500/-** In Case of online transaction in the account of NSCD as per **ANNEXURE-I**
Liquidated damages for non-completion of work in time (Clause 39 of the general conditions of contract).	One per cent per week of the total cost of the work awarded subject to a maximum of 10% of gross value of work done or cost of the work awarded whichever is greater.
Liquidated damages for insufficient progress of work (Clause 39 of the general conditions of Contract).	Half per cent per week of the total cost of the work awarded subject to a maximum of 10% of gross value of work done or cost of the work awarded whichever is greater.

2. RETENTION MONEY FOR DLP OF 01 YEAR FROM DATE OF COMPLETION OF WORK:

Total **: 10% as per the following detail-**

i. **Performance guarantee** **:** 3% of tendered value (After adjusting 2.5 % EMD deposited with tender) to be deposited on award of work before signing of agreement through Demand Draft drawn on any Nationalised Bank/Certified Cheque from a Nationalised Bank or insurance surety bond or fixed deposit receipt or bank guarantee or online transaction in the account of NSCD as per **annexure-I**.

Note: - i. EMD and Performance Guarantee (PG) deposited in other modes than online transfer, has to be drawn or duly pledged in favour of National Science Centre, Delhi.

ii. **Security deposit** : 7 % of the value of work done to be recovered from R.A. Bills

3. Period of submitting final bill : 03 months from the date of virtual completion by the successful tenderer.

4. **Payment Terms** i) 70% of the cost of equipment supplied may be released as secured advance at the discretion of the Centre.

ii) Final payment may be released within 30 days of Satisfactory completion of the work.

4. ESCALATION CLAUSE **: Not applicable**

5. MATERIALS TO BE ISSUED (for civil works only) **: No material shall be issued departmentally**,

6. REMARKS (for civil works only)

It shall be the responsibility of the successful e-tenderer to erect at site an appropriate shed for proper storage of cement with a capacity for three months' consumption. The stored cement shall be under double lock-with one key in custody of the successful e-tenderer and the other key in custody of the Museum/Centre so that the storage shed can be opened only in presence of both together. It shall be the responsibility of the successful e-tenderer to arrange for electricity and water or any other service required for construction and to arrange for housing of their own staff outside the site.

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GENERAL CONDITIONS OF CONTRACT

TECHNICAL SPECIFICATION AND CONDITION (AIR CONDITIONING)

GENERAL CONDITIONS OF CONTRACT

1. INTERPRETATION

The terms as used in the e-tender documents and agreement and named hereunder shall have the meanings herein assigned to them except where the subject or context otherwise requires :-

"This agreement" shall comprise of the Articles of Agreement along with the Appendix, the Conditions of Contract, the Priced Schedule of Quantities, Specifications and Drawings and CPM/PERT/BAR CHART attached hereto and including those to which only a reference is made herein.

"Work" or "Works" shall mean all work or works defined by Bills of quantities, Drawings, Specifications and such other work or works as the successful e-tenderer may be entrusted with for carrying out under this agreement as per Clause 4 of the Articles of Agreement.

"Museum/Centre" shall mean National Science Centre Delhi under the National Council of Science Museums which shall include the persons for the time being in management of the Society and its assigns.

"Engineer" shall mean the Curator or Technical Officer authorized as such by the Museum/Centre or in the event of his ceasing to be Engineer for the work such other firm or persons as may be appointed by the Museum/Centre as Engineer for this work. (Further elaboration given in Clause 2 below):

"Successful e-tenderer" shall mean the Contractor and shall include his/their respective heirs, executors, administrators and assigns.

"Site" shall mean the site of the construction works as shown on the site plan attached hereto including any buildings and erection thereon and any other land adjoining these to (Inclusive) as aforesaid allotted by the Museum/Centre for the use of successful e-tenderer.

"Act of Insolvency" shall mean any act of insolvency as defined by the Presidency towns Insolvency Act, or the Provincial Insolvency Act or any Amending Statute.

"Notice in Writing" or "Written Notice" shall mean a notice or communication in written, typed or printed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office of the addressee and shall be deemed to have received when in the ordinary course of post it would have been delivered. "Virtual Completion" shall mean that the works carried out are fit for occupation in every respect including removal of scaffolding, plant, surplus material and rubbish and cleaning of dirt from work and site. Words imputing persons include firms and corporations words imputing the singular only also include the plural and vice versa where the context so requires.

Short headlines are given to each Clause for convenience only and they will not limit the meaning or scope of the Clause in any way.

2. ENGINEER

The plans, agreement and documents above mentioned shall form the basis of this agreement and the decision of the said Engineer or the other Engineer for the time being as

mentioned in the said conditions, in reference to all matters or dispute as to material and workmanship shall be final and binding on both the parties.

The term "Engineer" shall mean the firm or person(s) appointed by the Museum/Centre to superintend the work. He/They will receive his/their instruction for the work from the Museum/Centre.

The successful e-tenderer shall afford the said Engineer(s) every facility and assistance for examining the work and materials and for checking and measuring works and materials.

The Engineer or any Authorized Assistant of the Engineer shall have power to give notice to the successful e-tenderer or to his Supervisors of non-approval of any work, or materials, and such work shall be suspended or the use of such materials shall be discontinued. The work from time to time be examined by the Engineer or the Engineer's Assistant but such examination shall not in any way exonerate the successful e-tenderer from the obligation to remedy any defects due to materials or workmanship not in accordance with the contract which may be found to exist at any stage of the work or may appear within the defects liability period mentioned in clause 19.

3. SCOPE OF THE CONTRACT

The successful e-tenderer shall carry out and complete the works in every respect in accordance with this contract and in accordance with the directions of the Engineer and to the satisfaction of the Engineer and the Museum/Centre. The Engineer may from time to time issue further drawings and/or written instructions, detailed directions and explanations in regard to :

(a) The variation or modification of the design, quality or quantity of works for the addition or omissions or substitution of any work.

(b) Any discrepancy in the drawings or between the schedule of quantities and/or drawing and/or specifications.

(c) The removal from the site of any material brought therein by the successful e-tenderer and the substitution of any other materials there from.

(d) The removal and/or re-execution of any works executed by the successful e-tenderer.

(e) The dismissal from the works of any persons employed thereupon.

(f) The opening up for inspection of any work covered up.

(g) The amending and making good of any defects under Clause19.

The successful e-tenderer shall comply with and duly execute any work comprised in such instructions, detailed directions and explanations, provided always that if the Engineer's instructions involved variations from the priced Schedule of Quantities, such instructions shall be issued by the Museum/Centre and the successful e-tenderer shall take the action stipulated in Clause 29.

If the work shown on any such further drawings or detailed drawings or that may be necessary to comply with any such instructions, directions, or explanations be in the opinion of the successful e-tenderer, extra to that comprised in or reasonably to be inferred from the contract he shall before proceeding with such work, give notice in writing to this effect to the Engineer, and in the event of his not doing so three days before the commencement of such work the successful e-tenderer shall not be entitled to any allowance in respect of any such extra work. But if such notice has been duly given and the

Engineer and the successful e-tenderer, fail to agree as to whether or not there is any extra, then if the Engineer decides that the successful e-tenderer is to carry out the said work, the successful e-tenderer shall do so accordingly, and the question whether or not there is any extra and if so, the amount thereof shall failing agreement be settled by the Arbitration as provided in Clause 39 on a reference being made by the successful e-tenderer.

4. SCOPE OF WORK

Even if not specifically mentioned in the schedule of quantities, the successful e-tenderer shall be deemed to have allowed necessary material, labour, tools and plants etc. required for satisfactory completion of the items of work as indicated in drawings and description given in the specifications, which are attached herewith unless the item specifies labour only or otherwise. Rates quoted also apply for work in patches, strips, small or large areas, and for different shapes and in different sizes and in different planes (Horizontal/vertical or inclined).

5. INSPECTION OF SITE

The e-tenderer must visit site before giving e-tender and must get acquainted with the working conditions.

The e-tenderer shall examine all specifications, e-tender conditions and drawings before e-tendering for the works.

The e-tenderer shall obtain all information relating to local regulations, bye-laws, application of any and all laws relating to his work or profession. No additional claims shall be admissible on this account.

6. SUCCESSFUL E-TENDERER TO PROVIDE EVERYTHING NECESSARY

The successful e-tenderer shall provide everything necessary for the proper execution of the works according to the true intent and meaning of the drawings and specifications and bill of quantities taken together, whether the same may or may not be particularly shown on the drawings or described in the specifications or included in the bill of quantities, provided that the same is to be reasonably inferred there from and if he finds any discrepancy in the drawings, or between the drawings and specifications and bill of quantities, he shall immediately refer the same to the Engineer who shall decide which shall be followed. Figured dimensions shall be followed in reference to scale.

The Successful e-tenderer shall supply, fix and maintain at his cost during the execution of any works, all the necessary centering, scaffolding, staging, planking, timbering, shuttering, shoring, pumping, fencing, boarding, watching and lighting by night as well as by day required for the proper execution and protection of the public and the safety of any adjacent roads, streets, cellars, vaults, eves, pavement, walls, houses, buildings and all erections, matters or thing, and they shall take down and remove any or all such centering, scaffolding, etc. as occasion shall require or when ordered to do so and shall fully reinstate and make good all matters and all things disturbed during the execution of the works to the satisfaction of the Engineer before a Virtual Completion Certificate is issued.

The Successful e-tenderer shall make his own arrangements for laying temporary water and electrical power lines including excavation if necessary so as not to cause any obstructions

along locations approved by the Engineer. The water supply lines, hose pipes, electrical lines, underground or overhead etc. belonging to them should not cause damage to the property of the museum/centre including gardens, plants, flowers, hedges, flower pots in the Campus etc. Any expenditure incurred by the museum/centre due to damage so caused shall be debited to the Successful e-tenderer's account. It is their complete responsibility to ensure that the garden area and its approaches and other areas not allocated to them are not encroached upon by their men and materials. They have to provide a fence at their cost to confine the activities of construction, labour and materials, to the construction area as approved by the Engineer or his representative. The bitumen carpeted road in front of museum/centre's office, Science and Exhibits Laboratory, Stores and Workshop or garden paths and defined areas will not be allowed to be used by their labour, materials, trucks and other modes of transport system. Their labour is not allowed to use Campus grounds for baths, calls of nature etc.

The museum/centre shall on no account be responsible for the expenses incurred by the successful e-tenderer for hired ground or electric power or water obtained from elsewhere.

7. DRAWINGS, DESIGNS ETC.

Contract drawings are diagrammatic but shall be followed as closely as actual construction permits. Any deviations made shall be in conformity with the architectural and other service drawings.

Architectural drawings shall take precedence over electrical and other service drawings as to all dimensions.

Successful e-tenderer shall verify all dimensions at site and bring to the notice of the Engineer all discrepancies or deviations noticed. The Engineer's decision shall be final and binding.

All drawings issued by the Museum/Centre are the property of the Architects and shall not be lent, reproduced or used on any other works than intended without the written permission of the Architects.

Large size details and manufacturer's dimensions for materials to be incorporated shall take precedence over small scale drawings.

One complete set of drawing, specifications and schedule of quantities shall be furnished by the Engineer to the successful e-tenderer and the Engineer shall furnish, within such time as he may consider reasonable, one copy of any additional drawing which in his opinion may be necessary for the execution of any part of work. Such copies shall be kept on the works, and the Engineer and his representatives shall at all reasonable times have access to the same and they shall be returned to the Engineer by the successful e-tenderer before the issue of the certificate for the balance of this account under the contract.

Museum/Centre will make all efforts to give all drawings, designs, decision etc. from time to time and the successful e-tenderer shall make timely requests for the same. No claim whatsoever shall however be entertained for compensation for the delay in supply of drawings, designs, decisions, running payments, etc. from the Successful e-tenderer. Drawings shown at the time of issue of e-tenders and forming part of the contract shall indicate scope of work and drawings issued subsequently during the execution of work shall be deemed to be drawings elaborating the basic scheme. If any detailed drawings

show an item for execution, which in the opinion of the successful e-tenderer is not covered under the items of the contract, he shall immediately refer it to the Engineer, for final decision. Decision of the Engineer as to whether it is an extra item or not or whether it is covered by contracts and if not what extra rate should be paid shall be final and binding on both the parties to the contract i.e. Museum/Centre and the Successful e-tenderer.

The tenderer shall work out the HEAT LOAD for all the three seasons and shall ensure inside conditions as specified

8. REFERENCE DRAWINGS & SHOP DRAWINGS

Reference Drawings

The Successful e-tenderer shall maintain one set of all drawings issued to him as reference drawing. These shall not be used at site.

All corrections, deviations and changes made at the site shall be shown on these reference drawings for incorporation in the completion drawings. All changes to be made shall be initiated by the Engineer.

Shop Drawings

The Successful e-tenderer at his own cost shall submit to the Engineer as well as to the Architect four copies of shop drawings related to Air conditioning work etc. for approval.

9. SCHEDULE OF RATES AND SPECIFICATIONS

Specifications as attached herewith shall be applicable. However, the e-tenderer shall include in his rates all such items of work which are not specifically included in the e-tender schedule but are required to be executed to complete the works in accordance with the drawings, specifications etc. The Museum/Centre is not bound to follow the practice and mode of measurements followed by other departments.

10. ERROR IN SCHEDULE OF QUANTITIES, IF ANY

Should any error appear in the bill of quantities, other than the E-tenderer's prices and calculation, it shall be rectified by the Engineer after informing the Museum/Centre. Such variation shall constitute a deviation of the contract and shall be dealt with as hereinafter provided.

11. NOMENCLATURE OF ITEM

Nomenclatures of the items of works mentioned in the priced schedule are only a brief description of the work. The work shall have to be executed in accordance with the specifications for the work to the satisfaction of the Engineer of the work. Any omission in description will not absolve the successful e-tenderer from his responsibilities to complete the work in a satisfactory manner.

12. METRIC UNITS

The bills of quantity indicate the unit of Metric system. The mode of measurement of different items of work shall be as per details contained in specification and special conditions, with the equivalent of the units mentioned therein in Metric System.

13. CPWD/PWD SPECIFICATIONS AND I S CODES

CPWD/PWD specifications & relevant I.S. Code of practice shall be applicable, for all items of work

14. ORDER OF PRECEDENCE

If any discrepancy is noticed between the conditions and specifications, drawing etc. the following would be the order of precedence:

(a) Schedule of Quantities.
(b) Notice Inviting E-tender (NIT)
(c) General Conditions of Contract (GCC)
(d) Drawings and notes thereon.
(e) Specifications for General Building (civil works) Sanitary and Plumbing, Electrical Installation, Air-conditioning, Acoustic Treatment, Furniture making and/or Wood Paneling, Elevators and Escalators, etc.
(f) CPWD/PWD Specifications & I.S. codes.

15. SETTING OUT WORK ETC.

(a) The successful e-tenderer at his own expense shall set out the works and shall be responsible for the true and perfect setting out of the same and for the correctness of the positions, levels, dimensions and alignment of all parts thereof. If at any time any error shall appear during the progress of any part of the work, the Successful e-tenderer shall at his own expense rectify such error if called upon to the satisfaction of the Engineer.

(b) All soil, filth, or other matter of an offensive nature taken out of any trench, sewer, drains, cesspool or any other place shall not be deposited on the surface, but shall be at once carted away by the Successful e-tenderer to some pit or place to be provided by him.

16. MATERIALS

All materials used for this work shall be conforming to the Specifications.

As far as practicable materials shall conform to the latest Indian Standards as amended up to-date. All materials used on the project shall be approved by the Engineer before use.

Successful e-tenderer may be required to purchase such materials of particular make or from a particular source if in the opinion of Engineer the same is necessary and is required for the proper and reasonable compliance of the specifications and in the interest of better quality of work. The fittings and accessories to be used in the work shall be presented for approval well in advance. Approved fittings shall be kept in the office of the Engineer in a mounted lockable board, to be approved by the successful e-tenderer.

(a) Storage of Materials

All materials shall be stored in a proper manner protected from natural elements so as to avoid contamination and deterioration.

Successful e-tenderer's store shall be open to inspection by the Engineer at all reasonable hours.

Locations of stores and storage yards shall be approved by the Engineer prior to construction or occupation.

Successful e-tenderer shall take adequate protection of the materials against fire and other calamities.

All watch and ward staff for his work shall be appointed and maintained by the Successful e-tenderer at his own expense.

(b) Inspection and Testing of Materials

The Successful e-tenderer at his own expense shall make all necessary arrangements for carrying out tests on materials as required by the Engineer. He shall also be required to produce manufacturer's test certificates for the materials supplied by him whenever required by the Engineer. The tests carried out shall be as per the relevant Indian Standards in approved laboratories. The Museum/Centre reserves the right to appoint the testing authorities.

17. FAULTY MATERIALS AND WORK

(a) The Engineer shall during the progress of the work has power to order in writing from time to time the removal from the work, within such reasonable time or times as may be specified in the order, to any materials and/or Workmanship which in the opinion of the Engineer are not in accordance with the specifications or the instructions of the Engineer. The substitution of proper materials or any workmanship and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specifications or instructions shall have to be forthwith carried out by the Successful e-tenderer at his own cost upon receiving such order. In case of default on the part of the Successful e-tenderer to carry out such order the Museum/Centre shall have the power to employ any other persons to carry out the same and all the expenses consequent thereon or incidental thereto shall be borne by the Successful e-tenderer and shall be recovered from them by the Museum/Centre from any money due to or that may become due to the Successful e-tenderer or from the amount of retention money.

(b) In lieu of rectifying the work not done in accordance with the contract the Engineer may, with the consent of the Museum/Centre allow such work to remain, and in that case may make allowance for the difference in value together with such further allowance for damage to the Museum/Centre as in their opinion may be reasonable.

Provided always that nothing in this clause shall relieve the Successful e-tenderer from his liability to execute the works in all respect in accordance with those terms and upon and subject to the conditions of this contract or from his liability to make good all defects.

18. ACCESS

The Museum/Centre or its representatives shall at all reasonable time have free access to the works and/or to the workshops factories or other places where materials are being prepared or constructed for the contract and also to any place where materials are lying or from which they are being obtained and the Successful e-tenderer shall give every facility to them for inspection, examination and testing of the materials and workmanship. Except the representative of Public Authorities and those mentioned

above, no person shall be allowed on the works at any time without the prior written permission of the Engineer or the Museum/Centre.

If any work is to be done at a place other than the site of works the Successful e-tenderer shall obtain prior written permission of the Engineer for doing so.

19. DEFECT LIABILITY PERIOD AND DEFECTS AFTER COMPLETION

Defect Liability, Period shall be one year from the date of virtual completion of work, as certified by the Museum/Centre. Any defect, shrinkage or other faults, which may appear within the defect liability period, in the opinion of the Engineer, arising from materials or workmanship not in accordance with the contract or from failure to take due precautions, shall upon the directions in writing of the engineer and within such reasonable time as shall be specified therein be amended and made good by the Successful e-tenderer at his own cost. In case of default, the Museum/Centre may employ and pay any other person/persons to amend and make good such defect, shrinkage or other faults and all damage, loss and expenses consequent thereon or incidental thereto shall be made good and borne by the Successful e-tenderer.

Such damage, loss and expenses shall be recoverable from the Successful e-tenderer by the Museum/Centre or may be deducted by them from any money due or that may become due to the Successful e-tenderer. The Museum/Centre may also in lieu of such amendments deduct from any money due to the Successful e-tenderer, a sum to be determined by the Engineer equivalent to the cost of amending such works, and in the event of the amount retained under Clause 27 (the amount held as retention money) being insufficient, recover the balance from the Successful e-tenderer, together with expenses the Museum/Centre may have incurred in connection therewith. The Successful e-tenderer shall remain liable under the provisions of this clause notwithstanding the signing by the Engineer of any certificate or the passing of any bills.

20. OPENING OF WORK

(a) All works under or in course of execution or executed in pursuance of the contract shall at all times be open to the supervision of the Museum/Centre, Engineer or their representatives.

21. HEIGHTS

Successful e-tenderer's rates shall include lifts upto all heights given in drawings or as required during execution. They should satisfy themselves for correctness and allow for variation if necessary. Nothing extra will be paid for additional lifts except where special items for lifts exist in schedule. E-tenderer shall include in his e-tender rates allowance for works at extra heights required for double or multiple staging, tall centring, scaffolding etc. for all items including extra labour if any. If any deviation from the contract drawings in respect of height is noticed by the e-tenderer in any subsequent working drawing issued to him during continuance of the works that must be brought to the notice of the Engineer (in writing) sufficiently before commencing execution of the work. The decision of the Engineer as to whether this will be an extra item or not or whether the Successful e-tenderer is entitled to get any extra payment or not for execution of this extra height will be final and binding.

22. SCAFFOLDING, CENTERING & SHUTTERING

The Successful e-tenderer shall use external scaffolding to ensure true line in vertical and horizontal planes. Centering, shuttering and scaffolding required for execution of this work may vary from single floor height to multi floor heights, which may require multiple staging, scaffolding, centring and shuttering. Since the payments will be made to the successful e-tenderer at net quoted rates, irrespective of the heights involved the e-tenderers must see and study the drawings carefully before e-tendering their rates.

23. SITE CLEARANCE AND CLEAN UP

The Successful e-tenderer shall, from time to time clear away all debris and excess materials accumulated at the site.

After all fixtures, equipment and appliances have been installed and commissioned, they shall clean up the same and remove all plaster, paints, stains, stickers and other foreign matter of discoloration leaving the construction in ready to use condition.

On completion of all works they shall demolish all temporary storages put up by them, remove all surplus materials and leave the site in a broom clean condition.

24. RATES

The rates quoted must be inclusive of charges towards freight, transit, insurance, F .O.R site and any other surcharges & inclusive of GST. However any modification in the rate of GST brought by the government will be applicable to the tender and final billing will be done as per the prevailing rates at the time of billing mentioning GST separately.

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25. QUANTITIES

All the quantities given in schedule of quantities are provisional.

The e-tenderers shall be deemed to have given Balanced Rates for each item, irrespective of the quantities given. Also irrespective of variation in quantities to any extent the e-tenderer shall be paid at accepted contract rates only. Museum/Centre reserves the right to increase or decrease quantities to any extent.

26. SECURED ADVANCE

(a) The Successful e-tenderer shall not be entitled to be paid for the materials brought to site, which remains unused or unfixed. The Engineer, with the concurrence of the Museum/Centre may pay an advance up to 70% of the cost of such material as calculated from the respective e-tender item. When in any certificate, of which the Successful e-tenderer has received payment the value of material at site has been included, such materials shall become the property of the Museum/Centre but the Successful e-tenderer shall be liable for any loss or damage to any such material. They shall furnish an indemnity bond in the prescribed form (ANNEXTURE B) along with their claim for advance against materials brought to site for *bonafide* use in specific items under the schedule of quantities.

(b) The secured advance so paid shall be adjusted in the running account bills as and when the materials are used subject to wastage.

(c) If the specification or schedule of quantities of the work provided use of any special description of materials to be supplied by the Museum/Centre or it is required that the Successful e-tenderer shall use certain stores to be provided by the Museum/Centre, such materials and stores and the price to be charged therefore as hereinafter mentioned, being so far as practicable for the inconvenience of the Successful e-tenderer but not so as in any way to control the meaning or effect of this contract, the Successful e-tenderer may be supplied with such materials and stores as and when required from time to time to be used by him for the purpose of the Contract only, and the value of the full quantity of material and stores supplied at the rates specified in the said schedule appendix memorandum may be set off or deducted from any sum then due or thereafter to become due to the Successful e-tenderer under the contract or otherwise, or from the retention money or against the sale proceeds thereof, if the same is held up in Government Securities, the same or sufficient portion thereof being in this case sold for the purpose. All materials supplied to the Successful e-tenderer by the Museum/Centre shall remain absolute property of the Museum/Centre. The Successful e-tenderer shall be fully responsible for their storage and maintenance and shall not on any account remove those from the site of the work. The material shall at all times be open to inspection by the Engineer and/or the Museum/Centre. At the time of the completion of work or termination of the contract, or even earlier if so required by the museum/center, the same shall be returned to them. The successful e-tenderer shall not be entitled to return any such material unless the same is, in the opinion of the Engineer of the Museum/Centre in perfectly good condition; and shall have no claim for compensation on account of any such materials so supplied to him as aforesaid being unused by him or for any wastage in or damage to any such materials.

(d) No material shall be issued by the department

27. RETENTION OF MONEY

This shall mean and be 10% of the total cost of work awarded or the gross value of the work as paid for against this contract whichever is greater including the initial earnest money, performance guarantee and recovered from the running bills. In case of termination of contract, this retention money shall be forfeited and amount necessary to make up this amount shall be recovered from the money due to the successful tenderer under this contract, or any other contract.

The retention money will be refunded to the successful tenderer after the defect liability period of one year from the virtual completion of the work and after the successful tenderer has rectified all the defects pointed out to him during the defect liability period. **However, 15% of the quoted AMC cost of the succeeding year will be withheld towards the security deposit of AMC from this retention money.**

28. AUTHORITIES, NOTICES AND PATENTS

The successful e-tenderer shall confirm to the provision of any Act of the Legislature relating to the works, the Regulations and Bye-Laws of any corporations and of any electric and other Companies and/or authorities with whose systems the structure is proposed to be connected, and shall, before making any variation from the drawings or specifications that may be necessitated by so conforming, give to the Engineer written notice, specifying the variation proposed to be made, and the reason for making it, and apply for instructions thereon. If compliance with this clause involves any extra work not included in this contract, he shall specify these items of work and the allowance or extra payment required on their account. In case he shall not, within seven days, received such instructions, shall proceed with the work, conforming to the provision and/or regulation of bye-laws in question.

The amount claimed as an extra or whether there is an extra or not shall be decided by the Engineer and will be subject to arbitration clause if so required.

The successful e-tenderer give all notices required by the said regulations or bye-laws to be given to any authority and pay to such authority or to any public office all fees that may be properly chargeable in respect of the works and lodge the receipts with the bill.

The successful e-tenderer shall indemnify the Museum/Centre against all claims in respect of patent rights, and shall defend all action arising from such claims and shall himself pay all royalties, licence fees, damages, cost and charges of all and every sort that may be legally incurred in respect thereof.

29. DEVIATIONS

The successful e-tenderer may when authorize and when directed, in writing by the Engineer with the approval of the Museum/Centre add or omit or vary the works shown upon the drawings, or described in the specifications, or included the bill of quantities, but they shall make no addition, omission or variation without such authorization or direction. A verbal authority direction by the Engineer shall, if confirmed by him in writing within seven days, be deemed to have been given in writing.

No claim for an extra shall be allowed unless it shall have been executed under the provisions of Clause 28 or by the authority of the Engineer with the concurrence of the Museum/Centre as therein mentioned. Any such extra if herein referred to, as an authorised extra shall be governed by Clause 35. No variation i.e. additions or substitutions shall vitiate the contract.

30. PRICE FOR DEVIATIONS

Deviations shall be valued at the net rates contained in the E-tenderers' original e-tender or where the same may not apply direct at rates analogous to the prices therein contained. If the altered, additional or substituted work included any class of work for which no rate is specified in the contract, then the Successful e-tenderer shall within seven days of the date of receipt of the order to carry out the work, inform the Engineer with a copy to the Museum/Centre the rate which he intends to charge for such class of work with proper analysis. In the event of his not doing so, within a

reasonable time before the commencement of such work, he shall not be entitled to any allowance or payment in respect of any such extra work. When such notice has been duly given, the Engineer with the consent of the Museum/Centre may agree to such a rate but if the Engineer does not agree to this rate, the Engineer may cancel his order to carry out such class of work and arrange for it to be carried out departmentally or through any other agency or in such a manner as he may consider advisable or he may decide that the Successful e-tenderer shall carry out such items of work and in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him according to such rate or rates as shall be fixed by the Engineer which will, however be subject to the Arbitration Clause.

However, in respect of the rates for extra/new items, if there are any, the opinion of the Engineer as to whether it is an extra item or not, and if so, what rates should be paid shall be final and binding on the successful e-tenderer shall be derived from contract items so far as applicable and the rates which cannot be derived from contract will be fixed on the basis of actual cost of materials and labour, plus 15% as successful e-tenderers' overheads and profits on all trades except on the cost of materials supplied departmentally.

Successful e-tenderer shall not claim any idle and remobilization charge for interim delay due to late decision by the Museum/Centre. Such legitimate interim delays shall however be considered for extension of time, if any.

Furthermore, they shall submit analysis of rates with justifications for claiming extra on any deviation item at least 45 days prior to the probable date of execution of the referred item.

31. MEASUREMENTS

In case of dispute between the successful e-tenderer and the Museum/Centre as to under which item a particular work is to be measured the decision of the Engineer shall be final and binding on both the parties to the contract. If for any items, the mode of measurements is not specified the decision of the Engineer about the mode of measurement shall be final and binding on both the parties to the contract.

32. PREPARATION OF RUNNING AND FINAL BILLS

Maximum value of work for interim certificate shall be Rs. Two lakh (at discretion of the Museum/Centre) but not more than one interim payment shall be made. A maximum of 70% of the item rate against the supply of equipment at site, subject to submission of tax invoice by the tenderer, copy of tax invoice of the manufacture and certification by the Engineer at his discretion, will be made which will be adjustable fully in the final bill, in the interest of the work. The Engineer or his representative shall take measurements/ count of equipment in presence of successful e-tenderer's representative and record them in the Measurement Book from time to time and shall prepare abstract for running and final bill, including recovery statements. The submission of proof for the cost of equipment (for SITC work) along with the tax invoice needs to be submitted by the tenderer for the preparation of running bill.

The bill abstract shall be prepared on standard CPWD form on the basis of abstract of quantities prepared by the Engineer in triplicate. The Successful e-tenderer should sign the bill and Measurement Book with the remark "Measurement and bill accepted". However, in the final bill, the successful e-tenderer shall have to certify – "The bill is accepted in full and final settlement of all claims and demands against this work". In case a large amount is blocked in the final bill pending technical/audit check, advance up to the extent of 75% of net final bill amount may be paid to the successful e-tenderer, with the approval of the Engineer at his direction even after the completion date is over.

33. CERTIFICATES AND PAYMENTS

(a) The Engineer may from time to time intimate in writing to the Successful e-tenderer that he requires the works to be measured and they shall attend or send qualified agent to assist the Engineer or the Engineer's representative in taking such measurements, and calculations and to furnish all particulars or to give all assistance required by the Engineer. Should they not attend or neglect or omit to send such agent then the measurement taken by the Engineer or approved by him shall be taken to be correct measurements of the work unless objected to within one month of their being recorded in the measurement book or books. Such measurements shall be taken in accordance with the mode of measurements mentioned in the specifications.

(b) The Successful e-tenderer or his agents may at the time of measurement take such notes of measurements as they may require.

(c) The Engineer or his authorized representative will issue on the basis of necessary measurement interim valuation certificates to the Successful e-tenderer in respect of items of work, rates for which exist in the priced schedule of quantities or have been subsequently agreed upon between the parties, and shall send the measurement books and the valuation certificates to the Museum/Centre. The Successful e-tenderer shall be entitled under these certificates of the Engineer to payments, within 15 days from the date of each certificate, unless objected as provided in sub-clauses (a) & (b) at the rate of maximum 90% of the value of work so executed and the balance being retained towards retention money subject to a maximum of Rs. 5.00 lakhs. The engineer shall issue such certificates within fifteen days of notice from the Successful e-tenderer provided measurements have been taken and the value of the work done since last payment exceeds the amount stated in the appendix and not more than one certificate is required in a fortnight, provided always that the issue by the Engineer of any certificate during the progress of the work or after their completion shall not have any effect as a certificate of satisfaction or relieve the Successful e-tenderer from his liability under Clause 20 and 21. Provided all defects are removed and the retention money is not forfeited or has not become liable to be forfeited under this contract, 50% of the amount under retention money shall be refunded without interest within three months of the date of virtual completion of the works and the balance after the

defect liability period is over or the final bill is passed for payment whichever is later.

(d) All intermediate payments shall be recorded as payments by way of advance against the final payment only and not as payment for work actually done and completed. The final bill shall be submitted by the Successful e-tenderer within 3 months of the date fixed for completion of the work. The measurement of the work taken by the Engineer or his representatives after one week's notice to the Successful e-tenderer shall be final and binding on him unless objected to within one month of their being recorded in the measurement books.

(e) The Museum/Centre may in consultation with the Engineer, but absolutely at his discretion, make an advance payment on account, which will be merged in the next intermediate payment, based on measurements.

(f) Advance for materials brought to site: The Successful e-tenderer shall execute a bond in favor of the Museum/Centre in the prescribed format attached hereto for each advance or intermediate payment received by him. If the Successful e-tenderer commits any default in the terms of the said bond and he fails to pay the bond amount, the Museum/Centre shall have the power to:

(i) Seize and utilize the said materials or any part thereof for the completion of the works.

(ii) Remove and sell by public auction the materials seized or any part thereof, and out of the proceeds of the sale, retain all sums repayable to the Museum/Centre together with interest thereon at the rate prescribed by Govt. of India from time to time for capital outlays.

(iii) Deduct all or any part of moneys owing from out of the retention money or any other sum or sums due to the Successful e-tenderer under this agreement.

(g) The Successful e-tenderer agrees that before final payment shall be made on the contract, he will sign and deliver to the Museum/Centre either in the measurement books or otherwise as required, a valid release and discharge certificate from any and all claims and demands whatever from the Museum/Centre for all matters arising out of or connected with the contract.

34. TIME AND DAMAGES FOR NON-COMPLETION OF WORK IN TIME

(a) All the construction works shall progress strictly as per the enclosed CPM/PERT/BAR CHART. If however, the Successful e-tenderer desires some minor modifications in the same he may apply to the Museum/Centre within mobilisation time and before execution of the agreement indicating the reasons for which changes are required. The Museum/Centre may after scrutiny, agree to the modifications suggested if the reasons cited by the successful e-tenderer are considered valid. The decision of the Museum/Centre in this respect will be final and binding. The modifications, if any, are to be incorporated in the CPM/PERT/BAR CHART and this will form a part of the agreement.

(b) The starting time specified for carrying out of the work as entered in the CPM/PERT/BAR CHART shall be reckoned from the date of issue of the Letter of Intent. The date of completion or such date as is duly extended under Clause 35

shall be strictly observed by the Successful e-tenderer. The work shall, throughout the stipulated period of the contract, be preceded with all diligence (Time being deemed to be the essence of this Contract) by the successful e-tenderer strictly according to the CPM/PERT/BAR CHART which is a part of this agreement.

(c) At any stage during the execution of the work if the work lags behind the target indicated in the CPM/PERT/BAR CHART for reasons directly attributable to the Successful e-tenderer, he shall be liable to pay as agreed liquidated damages equivalent to half percent of the total cost of work awarded every week for the period the work lags behind the CPM/PERT/BAR CHART subject to a maximum of 10% of the total value of work, awarded or gross value of work done, whichever is greater.

(d) In the event of Successful e-tenderer's inability to complete the VRV/VRF Air conditioning work by the scheduled date of completion, the Museum/Centre shall have the right to terminate the contract as per Clause 38 or allow the successful e-tenderer to continue and complete the work within specific date. In the latter case, during the period of continuation, the successful e-tenderer shall pay as agreed liquidated damage equivalent to one per cent of the total cost of work awarded for every week that the work remains unfinished subject to a maximum of 10% of the total value of work awarded or gross value of work done, whichever is greater.

35. EXTENSION OF TIME

If the successful e-tenderer shall desire an extension of time for completion of the work on the grounds of his having been unavoidably hindered in its execution and for reasons not attributable to him on the following grounds:-

(a) by reason of any exceptionally inclement weather like Cyclone, severe flood etc., normal monsoon shall not be considered a valid reason for extension of time,

(b) by reason of proceedings taken or threatened by, or legal disputes with adjoining or neighbouring owners,

(c) due to delay in the work of other agencies or tradesman engaged or nominated by the museum/centre: if such delay is directly responsible for delay in execution of this work,

(d) by reason of any general strike or lockout affecting the building made, strike or any kind of labour trouble in successful e-tenderer's own organisation shall not be a valid reason for extension,

(e) in the event of delay in execution of work wholly attributable to delay in supply of drawings by Architect or Museum/Centre in spite of request from the successful e-tenderer well in advance, he shall apply in writing to the Engineer within seven days of the date of the hindrance on account of which he desires such extensions as aforesaid and the engineer, with the consent of the Museum/Centre may if reasonable ground be shown therefore allow such extension of time, if any, be necessary or proper,

(f) in case of the total value of the work exceeds the total value of the e-tender owing to deviation in quantities or extra items, the successful e-tenderer will be entitled to

ask for extension of time in proportion to the increased value of work. Increase in value of work due to escalation shall not be a valid reason for extension of time.

(g) No extension of time shall be given to the successful e-tenderer for non-supply or delay in supply of cement and/or steel as per Clause 51. The successful e-tenderer hereby agrees that extension of time requested for by him and granted by the Museum/Centre shall be treated as an extension of time allowed to them without any claim for compensation or damages for any reasons whatsoever including those for which the extension is granted.

If an extension of time is granted by the Museum/Centre for reasons of delay not attributable to the successful e-tenderer as indicated above then the escalation clause will remain in force and the successful e-tenderer will be entitled to receive extra payments for variation in prices and wages subject to the ceiling limit of 20% of the total value of work as indicated in Clause 30.

However the museum/centre in the interest of work is, allows any extension of time for reasons of delay directly attributable to the successful e-tenderer, the escalation clause will not remain in force during such extended period.

36. SUSPENSION OF WORK BY THE SUCCESSFUL E-TENDERER

If the successful e-tenderer suspends the works without obtaining extension of time or in the opinion of the Engineer neglects or fails to proceed with due diligence in executing his part of the contract or if he makes default more than once in the manner mentioned in Clause 17 above the Museum/Centre or the Engineer shall have power to give notice in writing to the successful e-tenderer requiring that the works be proceeded with reasonable speed and output must be commensurate with the CPM/PERT/BAR CHART. Such notice shall specify the act of default on the part of the successful e-tenderer. After such notice has been given the Successful e-tenderer shall not be at liberty to remove from the site of work or from any ground continuous thereto any plant or materials belonging to him which had been placed thereon for the purpose of the work, and the Museum/Centre shall have a lien upon all such plants and materials to subsist from the date of such notice being given, until the notice have been complied with. Provided always that such lien shall not under any circumstances subsist after the expiration of thirty one days from the date of such notice being given, unless the Museum/Centre has entered upon and taken possession of the works and site and of all such plants and materials until the works have been completed under the power hereinafter conferred upon it. If the Museum/Centre exercises the above power it may engage any other agency to complete the works or finish the works departmentally and exclude the successful e-tenderer, his agents and servants from entry upon or access to the same except that the successful e-tenderer or any one person appointed in writing by him and accepted by the Museum/Centre may have access at all reasonable times during the progress of works to inspect, survey and measure the works. Such written appointments marked with Museum/Centre's consent or a copy thereof shall be delivered to the Engineer before the person so appointed comes to the works. The Museum/Centre shall take such steps as, in the opinion of the Engineer may be

reasonable and necessary for completing the works without undue delay & expense, using for that purpose the plants and materials above mentioned, in so far as they are suitable and adopted to such use. Upon the completion of the works the Engineer shall certify the amount of expenses properly incurred, consequent on the incidental to the default of the successful e-tenderer as aforesaid, in completing the works by other persons. Should the amount so certified as the expenses properly incurred, including Museum/Centre's overhead if the works were carried out departmentally, be less than the amount which would have been due to the Successful e-tenderer upon the completion of the works by him, the difference shall be paid to the Successful e-tenderer by the Museum/Centre. Should the amount of the former exceed the later, the difference shall be paid by the Successful e-tenderer to the Museum/Centre. The Museum/Centre shall not be liable to make any further payment or compensation to the Successful e-tenderer for or on account of the proper use of the plants for the completion of the works under provisions hereinbefore contained other than such payment as is included in the contract price. After the works have been so completed by persons other than the successful e-tenderer under the provisions hereinafter contained, the Museum/Centre shall give notice to the Successful e-tenderer of such completion and may require him from time to time, before and after such completion, to remove his plants and likewise all such materials as aforesaid as may not have been used in the completion of the works, from the site. If such plants and materials are not removed within such reasonable time, the Museum/Centre may remove and sell the same, holding the proceeds, less the cost of the removal and sell, to the credit of the successful e-tenderer. The Museum/Centre shall not be responsible for any loss sustained by the successful e-tenderer from the sale of plants in the event of the successful e-tenderer not removing it after notice, or for any damage thereto or deterioration thereof in any event.

37. DETERMINATION OF CONTRACT BY THE MUSEUM/CENTRE

If the successful e-tenderer goes into liquidation, whether voluntary or compulsory or shall make an assignment or a composition for the benefit of the greater part, or shall enter into a Deed of Agreement with its creditors or if the Receiver of the Successful e-tenderer shall be unable, within fourteen days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Museum/Centre that he is liable to carry out and fulfil the contract and if so required by the Museum/Centre to give reasonable security therefore or if the successful e-tenderer shall suffer execution to be issued or shall suffer any payment under this contract to be attached by or on behalf of any of the creditors or the Successful e-tenderer or shall assign, charge or encumber this charge or encumber this contract thereunder or shall neglect or shall fail to proceed to perform all or any of the act, matters or things by the contract, to be observed and performed by the successful e-tenderer for three clear days after written notice shall have been given the successful e-tenderer in manner, matter hereinafter mentioned, requiring the successful e-tenderer to observer perform the same or

shall use improper material or workmanship in carrying on the works or shall in the opinion of the Engineer not exercised such due progress as stipulated in the enclosed CPM/PERT/BAR CHART forming part of this contract which would enable the works to be completed within the time agreed upon or shall abandon the contract, then, and in any of said cases, the Museum/Centre may notwithstanding any previous waiver, determine the contract by a notice in writing in which case the retention money (including the earnest money and the initial security deposit) and whether paid in one sum or deducted by instalment shall stand forfeited and be absolutely at the disposal of the Museum/Centre. The Successful e-tenderer shall have no claim or compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made advances on account of or with a view to the execution of the work or the performance of the contract. The successful e-tenderer shall not be entitled to recover or be paid any sum for any work actually performed under the contract unless and until the Engineer will have certified in writing the performance of such work and the value of work payable in respect thereof and the successful e-tenderer shall only be entitled to be paid the value so certified. The certificate of the Engineer shall be based on measurements taken by him or under his supervision and with due notice to the Successful e-tenderer and on rates in the priced schedule or as subsequently communicated by the Engineer with the approval of the Museum/Centre, under this agreement except for arithmetical errors, shall be final and conclusive. The Successful e-tenderer must remove his plant, materials, scaffolding etc. from the site within 10 days (ten days) of the receipt of the notice from the Museum/Centre after which they will vest in the Museum/Centre who may, dispose them off as per Clause 38 by sale or auction on account of and at the risk of the successful e-tenderer who will have no claim for loss or compensation on this account.

38. TERMINATION OF CONTRACT BY SUCCESSFUL E-TENDERER

If payment of the amount payable by the Museum/Centre under the certificate of interim payment issued by the Engineer in accordance with clause 32 shall be in arrears and unpaid for sixty days after notice in writing requiring payment of the amount shall have been given by the Successful e-tenderer to the Museum/Centre in manner hereinafter mentioned or if works be stopped for six months under the order of the Museum/Centre for any reason not connected with any default on the part of the Successful e-tenderer or by any injunction or other order of any court of law made for any reasons not connected with any such default on the part of the successful e-tenderer then and in any of the said cases the successful e-tenderer shall be at liberty to terminate the contract by notice in writing to the Museum/Centre and he shall be entitled to recover from the Museum/Centre payment for all works executed and for useful materials (but not plants) purchased for the purpose of the contract and is brought to the site. In arriving at the amount of such payment, the net rates contained in the successful e-tenderer's e-tender shall be followed, or where the same may not apply, rates proportional to the prices

therein contained. Rates for materials may be determined by the Engineer on actual vouchers produced by the successful e-tenderer and/or prevailing market rates at the discretion of the Engineer. The Successful e-tenderer shall not be entitled to recover or be paid any sum for any work actually performed under the contract, unless and until the Engineer has certified in writing the performance of such work and the value payable in respect thereof and the successful e-tenderer shall only be entitled, to be paid the value so certified. The certificate of the Engineer shall be based on measurements taken by him or under his supervision after due notice to the successful e-tenderer and shall be final and conclusive except for arithmetical errors. The successful e-tenderer must remove his plant, materials, scaffolding etc. from the site within ten days or such time as may be extended by the Museum/Centre in writing, from the receipt of the notice from the Museum/Centre after which they will vest in the Museum/Centre who may dispose them off as per Clause 37 by sale or auction on account of and at the risk of the successful e-tenderer who will have no claim for loss or compensation on this account.

39. ARBITRATION

(a) Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawing, and instructions hereinbefore mentioned and so to any question, claim right, matter or thing whatsoever, in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works, or the execution of the same whether arising during the progress of the work or after the completion or abandonment thereof but excluding disputes on material and workmanship as per Clause 16 & 17 which is binding on both parties, shall be referred to the sole arbitration of a person nominated by the Director General, National Council of Science Museums and if the former is unable or unwilling to act to the sole arbitration, of some other person appointed by the Director General, NCSM willing to act as such arbitrator. The submission shall be deemed to be submission to Arbitration under the meaning of the Arbitration & Conciliation Act, 1996 or any statutory modification or re-enactment thereof for the time being in force. The award of arbitrator so appointed shall be final, conclusive and binding on all parties to this contract.

(b) It is agreed that the Successful e-tenderer shall not delay the carrying out of the work by reasons of any reference to arbitration and shall proceed with the work with all due diligence and shall, until the decision of arbitration, abide by the decision of the Engineer duly conveyed to him.

(c) The Arbitrator(s) may from time to time with the consent of the parties, extend the time for making and publishing the award.

40. COMPENSATION

All sums payable by way of compensation or liquidated damage under any of these conditions shall be considered as reasonable compensation to be applied to the use

of Museum/Centre without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

41. WORK ON HOLIDAYS

Successful e-tenderer shall not carry out work on any Government holidays except with the permission of the Engineer. The contract period will be inclusive of such holidays.

42. WORK SUPERVISOR AND FOREMAN

The Successful e-tenderer shall keep a qualified and experienced Engineer for supervision of works to ensure best quality work. He shall also give all necessary personal superintendence during the execution of the works and as long thereafter as the Engineer may consider necessary until the expiration of the 'Defect Liability Period' stated in Clause 19 above. The Successful e-tenderer shall also during the whole time, the works are in progress, and employ competent Foreman approved by the Engineer whose qualification must conform to the requirements specified by the Engineer. In special cases he shall be constantly in attendance of the building while the men are at work. Any directions, explanations, instruction or notices given by the Engineer to such Foreman shall be held to be given to the Successful e-tenderer.

43. DISMISSAL OF WORKMEN ETC.

The Successful e-tenderer shall on the request of the Engineer immediately dismiss from the works any person employed thereon who may, in the opinion of the Engineer be unsuitable or incompetent or who may in the opinion of the Museum/Centre or the Engineer misconduct himself and such person shall not be again employed or allowed on the works without the written permission of the Engineer and/or the Museum/Centre.

44. ASSIGNMENT OR SUBLETTING OR BRIBES

(a) This contract shall not be assigned or sublet without the written approval of the Museum/Centre. If the Successful e-tenderer shall assign or sublet this contract, or attempts to do so or become insolvent or commence insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, pre-requisite award, reward or advantage pecuniary or otherwise, shall either directly or indirectly be given, promised or offered by the Successful e-tenderer, any of his servants or agents to any officer of the Museum/Centre or to persons who shall become in any way directly or indirectly interested in the Contract, the Museum/Centre may thereupon by notice in writing rescind the contract and the retention money of the Successful e-tenderer shall thereupon stand forfeited and be absolutely at the disposal of the Museum/Centre, and the same consequences shall ensure as if the contract had been rescinded under Clause 42 thereof and (in addition) the Successful e-tenderer shall not be entitled

to recover or to be paid for any work therefore actually performed under the contract.

(b) The whole of the works including the contract shall be executed by the Successful e-tenderer and he/they shall not directly or indirectly transfer or assign or underlet the contract or any part, share or interest therein nor shall he take a new partner without the written consent of the Museum/Centre and no subletting shall relieve the Successful e-tenderer from the full and entire responsibility of the contract or from active superintendence of the works during the progress.

45. OTHER PERSONS ENGAGED BY MUSEUM/CENTRE

The Museum/Centre reserves the right to use the premises and any portion of the site for the execution of any work not included in this contract, which he may desire to have carried out by other persons, and the successful e-tenderer shall allow all reasonable facilities for the execution of such work, but is not required to provide any plant or materials for the execution of such works except by special arrangement with the Museum/Centre.

46. OTHER AGENCIES AND PROVISIONAL SUMS

(a) The Successful e-tenderer is to afford all reasonable facilities to all other agencies, sub-agencies, specialists, merchants, tradesman and others who may at any time be appointed by the Engineer with the consent of the Museum/Centre for executing any work or supplying any goods relating to the constructions, servicing, equipping or furnishing of the building under construction or in the compound. In case of delay in completion of his work due to other agencies' work, the Successful e-tenderer shall only have a right to ask for extension of time but no other claim on this or any other account shall be entertained by the Museum/Centre.

(b) If any provisional sum is included in the bill of quantities they are to be deducted wholly if not required or in part the Museum/Centre reserves to itself the right to appoint any agency to do the work allowed for in provisional sums and the successful e-tenderer shall not have any right to claim any profits on this account.

47. LABOUR WAGES AND REGULATIONS

Notwithstanding any contained in the conditions of this contract the Successful e-tenderer shall comply with the provision of the contract labour (Regulation & Abolition) Act 1970 and various rules framed thereunder by different State Government, in respect of all labourers directly or indirectly employed by the Successful e-tenderer in the works through labour contracts or otherwise the Successful e-tenderer shall be considered as "Principal Employer".

The Successful e-tenderer agrees to grant Provident Fund benefits in accordance with Employees Provident Fund Act 1962 and Scheme thereunder to his workers. The successful e-tenderer shall pay not less than "fair wages" to labourers engaged by him on the work. No labour below the age of fourteen years shall be employed.

The successful e-tenderer shall at his own expense provide or arrange for provision of footwear for any labour doing cement mixing work.

48. INSURANCE FOR DAMAGE TO PERSONS AND PROPERTY

(a) The Successful e-tenderer shall be responsible for all injury to persons, animals or things and for all damages to property, structural and decorative, whether such injury or damage arise from carelessness or accident or in any way connected wherewith. This clause shall be held to include, interalia, any damage due to causes as aforesaid to buildings (whether immediately adjacent or otherwise) and to roads, streets, footpaths, bridges or ways as well as all damage caused to the buildings and works forming the subject of this contract by the inclemency of weather. The Successful e-tenderer indemnifies the Museum/Centre and holds him harmless in respect of all expenses arising from such injury or damage to persons or property aforesaid and also in respect of any claim made in respect of injury or damages consequent upon such claim.

(b) The successful e-tenderer shall reinstate all damage of every sort mentioned in this clause, so as to deliver up the whole of the contract works complete and perfect in every respect and so as to make good and otherwise satisfy all claims for damage as aforesaid to the property or third parties.

(c) The Successful e-tenderer also indemnifies the Museum/Centre against all claim which may be made upon the Museum/Centre during the currency of this contract by any employee or representative of an Employee of the agency, or any sub-agency, employed by him, for any injury to or loss of life or such employees, or for compensation payable under any law for the time being in force to any workman or to the representative of any deceased or incapacitated workmen.

(d) The Successful e-tenderer also indemnifies the Museum/Centre in respect of any costs, charges and/or expenses, including legal costs as between Solicitor and client, occurring out of any award of compensation and/or damages consequent upon such claims.

(e) The Museum/Centre shall be at liberty and is hereby empowered to deduct the amount of any damages, compensation cost, charges and/or expenses arising or ascertaining from or in respect of any such claim and/or damages as aforesaid from any sum, or sums due to, or become due to the Successful e-tenderer.

49. NOTICE

Notice for the Museum/Centre, the Engineer or the Successful e-tenderer may be served personally or sent by registered post addressed to the office of the Museum/Centre or the last known place of business of the Engineer and the Successful e-tenderer or in the case of the successful e-tenderer also be being left on the works. Any notice sent by registered post shall be deemed to be served at the time when in the ordinary course of post it would be delivered.

TECHNICAL SPECIFICATION AND CONDITION (AIR CONDITIONING)

1. GENERAL:

The system design, basis of design, estimated requirements and other relevant data are outlined in this section.

2. SCOPE OF WORK:

The scope comprises supply, installation, testing commissioning of air-conditioning by VRV/ VRF system. The system to facilitate the operation & control of Cassette type Air conditioning units for Fun Science gallery at 2nd floor of National Science Centre Delhi. The system shall be able to cater the partial load which can be as low as 20% of the total load. Thereby the operation of indoor& outdoor units is minimized. The Inverter based Scroll Compressors/Digital Scroll compressor which has higher EER is employed in the VRV/VRF systems ensures trouble free operation. Proper drain for each unit shall be worked out without major additional to the building. Proposed AC system will be microprocessor controlled inclusive of safety factor & gadgets.

The condensing units should be capable of providing cooling within ambient range of 15 degree C to 50 degree C in the range of 10 degree C to 35 degree C. The Outdoor Unit should have DC Inverter Scroll Compressor and Constant Speed Scroll Compressor. The Outdoor Unit should have a D-Shape Coil for better efficiency and DC Current Operated Fan Motor. All the Indoor Units to have an EEV built in system and nowhere the EEV to be placed outside separately. All expose pipe to be covered with race way or heavy duty flexible pipe for protection. Special precaution to be taken while, installing of the drain piping.

The contractor shall be responsible for any leakage / seepage due to poor installation of HVAC drain till the guarantee period. Drain point to be tested for 24 hours after blocking one end. Drain piping will be plugged at both ends by appropriate method after completing the drain test to avoid chocking due to foreign material.

3. PRICE:

The quoted price shall include supply, installation, testing, commissioning & handing over of the equipment's at **above site .** The prices shall include all material, packing, crating, insurance, freight, handling, labour, tools, tackles, lifts, leads and all other charges if any for the equipment at the above site inclusive of the GST.

4. SCHEDULE & MANNER OF OPERATION

The work shall be completed within the period of 84 days. Time being essence of this contract, the contractor shall make available all labour and material in adequate quantities as and when required, expedite and schedule the work as required and also manage the operation in such a manner that the work will be completed within the stipulated time as per the contract. In addition to providing a detailed time and progress schedule, the contractor shall submit the plan of action to meet the specified dead line for project completion to the Engineer-in-charge and also prepare and submit a bar chart in consultation with Engineer-in-charge and shall strictly adhere to the same. If the contactor fails to meet the time line as per the bar chart agreed by the contractor than the Engineer-in charge has the right to depute other agencies at his own risk and cost. The contractor shall be responsible to handover the system to the owner with complete satisfaction.

5. PERFORMANCE BOND CONTRACT:

The contract shall be performance bond contract and therefore the Contractor shall make their independent checks for heat loads, selection of equipments and allied works thereof and shall be fully responsible for the conditions as per design criteria.

6. DRAWING / DESIGN APPROVAL:

The contractor shall prepare and furnish all relevant shop drawings along with the sections after inspection at the site. for approval to the Engineer-in-charge. The execution work shall commence only after the shop drawings/design are approved by the Engineer-in-charge and also responsible for the fitment of equipment and accessories. The contractor will submit shop drawing/ design to the engineer in charge, within 07 DAYS after getting work order.

The list of shop drawings shall be as follows:
Detail plans for complete area.
Refrigerant piping routes with sections.
Outdoor unit location
Electrical panel for outdoor unit, indoor unit D.B and control scheme.
Mounting stand & foundation details.
Drain piping layout with section.
Control cabling detail along with sizes. Power cable sizes and earthing wire sizes

7. GUARANTEE:

The contractor shall guarantee the equipment against all defects of materials and workmanship for the period of twelve months from the date of commissioning & handing-over of the equipment to the owner as certified by the Engineer-in-charge. However, compressor will have the warranty of five years. Any defects arising during the guarantee period shall be rectified and made good by the vendor at his own risk & cost to the satisfaction owner.

8. INSPECTION:

Routine performance testing of equipment shall be carried out at works in the presence of the Engineer in charge / representatives**.**

9. SUPERVISION

Contractor shall depute their team of engineer for the supervision of installation, testing, commissioning & handling over at site of work.

10. SECURITY

The contractor is responsible for all the equipment's, piping, wiring and all related accessories till the time of handing over to the customer.

11. TEST

The contractor will perform summer and monsoon and winter test and confirm the performance of units as specified in the design data.

12. MAINTENANCE

The contractor will provide sufficient of service team along with the service spares during the guarantee (defect) period at site. The plant is not likely to run on all days. However, any defects, including drain, arising during warranty period will be attended within 24 hours.

13. CIVIL WORK

Chasing, cutting and finishing with chicken wire mesh of the brick work or floor for laying the drain pipe and copper pipe to be in contractor scope.

14. TECHNOLOGY DESCRIPTION

DC INVERTER TECHNOLOGY

Inverters are used to vary the speed of motors and in this way can be used to control the capacity of a compressor. For refrigeration users they can be an effective method of accurately matching compressor capacity to load requirement. A way of reducing compressor output is needed in almost every application. Without the means to run efficiently at low capacity, compressor cycling by switching on/off is most commonly used. This method introduces large fluctuations and high power consumption due to heavily loaded heat exchangers. Multiple compressor solutions overcome this problem to some extent and stepping by means of cylinder unloading is used with piston compressors.

Effect of the Inverter on Performance and Power Input

The capacity can be calculated as being in direct proportion to the speed. A compressor is designed to have optimum pumping efficiency at its nominal speed, usually 1450 rpm. When operating at speeds other than the nominal the efficiency will change because of the behaviour of the valve reeds and the change in pressure drop through the valve plate. However, as these tend to balance out, the change in volumetric efficiency is small.

Power Measurement and Cable Sizing

The inverter can cause distortion of the sinusoidal current waveform, and between the inverter and the motor there is a stepped current approximating to a sine wave. High quality inverters will introduce minimum distortion and power losses. Power can be measured using the two wattmeter method on the input to the inverter.Currents can exceed the amounts calculated from this power. Cables, fuses and contactors will need to be sized for the true RMS current flowing through them. General rules for this are:

Cable from motor to inverter - size for 10% more
current than standard. Cable from inverter to mains -
size for 20% more current than standard.

Start Contactor Positioning

The inverter should not be allowed to operate with the output from the inverter to the motor open circuit. There should be a contactor each side of the inverter, i.e. between the inverter and the mains and between the inverter and the compressor motor. They should be interlocked to break the mains side first. When switching on, the motor side contactor should be made first.When using an inverter bypass, care should be taken to ensure there can be no voltage feedback to the inverter. Therefore when the bypass contactor is closed and the bypass is in operation, the contactors on either side of the inverter must be open.

Starting and Ramp Up

An inverter is capable of delivering a soft start, but at the same time care must be taken

to ensure that stalling does not occur. The inverter must be able to deliver sufficient power at the lower frequencies to ensure that the compressor accelerates to nominal speed in approximately 3 seconds or less. Only general guidance can be given here, because the exact torque requirements will depend on system pressures at the time of start up. Longer ramp up times could result in inadequate lubrication. It may be necessary to set the inverter to deliver a slightly increased. Voltage at the low frequency applicable during ramp up, but this should not result in deviation from the V/f rule during normal operation.

Electrical Screening and Voltage Rise

Wiring of the electrical enclosure and the installation must be carefully conducted in accordance with EMC recommendations. High quality, high reliable pressure sensors must be used and it is necessary to follow EMC measures to ensure that the inverter does not disturb the signals from pressure transducers. Suction and high pressure sensors signals must be noise-free to the controller input. The inverter itself should be fitted with suitable EMC filters. Because the waveform generated by the inverter is built up from pulses, there is a danger that the rate of voltage rise on an individual pulse can be too fast. Generally this is measured in kV per microsecond, and limits at the motor terminals which should be adhered to during the first microsecond.

Vibration

A compressor running at fixed speed imposes vibrations on its associated framework at a set group of frequencies. The framework can of course be designed such that its natural frequencies differ from the imposed frequencies. A compressor driven at variable speed will impose different frequencies at each speed, so the framework design to eliminate vibration throughout the speed range is more complex. The framework structure should be stiff enough such that its resonant frequencies are above the maximum frequency, i.e. 60 or 65 Hz. Designing with natural frequencies below the minimum speed 20 or 25 Hz, could lead to vibration problems during start up. Spring mounts should not be used as they have a natural frequency below 65 Hz.

Internally Compounded Compressors

The operation of internally compounded compressors at variable speed may require the selection of a different liquid injection inter stage cooling expansion valve.

15. OUTDOOR UNIT WITH HEAT PUMP

- The outdoor shall be factory assembled weather proof casing constructed from heavy gauge MS panels and coated with baked enamel finish of colour approved by architect. The unit should be completely factory wired tested with all necessary control.
- The condensing unit shall be capable of assessing the requirement of liquid refrigerant flow of each evaporating unit at all time by means of a microcomputer control expansion valve and generating the required total flow of refrigerant liquid for supply to the evaporator unit.
- ODU shall have minimum 2 Scroll Compressors and be able to operate even in case one of the compressors is out of order.
- It should also be provided with duty cycling for multiple Inverter/Digital Compressor switching starting sequence of multiple ODU.
- The ODU shall be modular in design and should be allowed for side by side installation The unit shall be provided with its microprocessor control panel. The odu unit should have anti-corrosive point free steel plate for easy mounting of the unit. The unit shall be manufactured/ assembled in India as per Indian atmospheric conditions

and should be capable of performing for outdoor temperature of 50 deg. c .

- The ODU should be filled with low noise, aero-spiral design fan with grill for spiral discharge airflow to reduce pressure loss and should be fitted with DC Fan Motor to better efficiency. The unit should also be capable to deliver of adequate external static pressure.
- The condensing unit shall be designed to operate safely when connected to multiple indoor cassette type ceiling mounted. .
- Noise level shall not be more than 58 dB (A) at normal operation measured horizontally 1 M away and 1.5 M above ground.

* Control Wiring from ODU to IDU shall be contractor's scope.

A. COMPRESSOR:

1- The compressor shall be Highly Efficient Hermetic Scroll type and capable of Inverter Control. It shall change the speed in accordance to the variation in cooling load requirement or the refrigerant volume thru loading or unloading.

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

3- The inverter shall be IGBT (insulated gate bipolar transistor) type for efficient and quiet operation.

B. HEAT EXCHANGER

1- The heat exchanger shall be constructed with copper tubes mechanically bonded to Aluminium fins to form a cross fin coil.

2- The Aluminium fins shall be treated with anti-corrosion resin film.(suitable chemical coating)

3- The unit should be with E- bypass / Split type Heat Exchanger for good efficiency of Condenser.

4- The unit shall be provided with necessary number of direct driven low noise level propeller type fan arranged for vertical/ horizontal discharge. Each fan shall have safety guard.

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

C. REFERIGERENT CIRCUIT

1- The refrigerant circuit shall have liquid and gas shut off valve or a solenoid valve at condenser end.
2- All necessary safety devices shall be provided to ensure the safety operation of the system.

D. SAFETY DEVICES

1- Following safety devices shall be part of ODU

(a.) High Pressure Switch. (b.) Fuse.

(c) Fan Drive OLP. (d.) Fusible plug

(e.) OLR (f.) OLP for Inverter/ digital.

(g.) Single Phase preventer

E. ANTI CORROSION TREATMENT

1- The portions of machines like side panel, outer panel , bottom frame, which are exposed to corrosive atmosphere, should be alloyed hot-dip zinc coated steel plate, coated with corrosion protection powder polyester resin coating on both inner and outer surfaces in thickness of 64microns or more.

2- Finned coil protection net should have coating of resin coating containing ultraviolet ray absorbent. Fan and its fan protective net should be with weather resistant polypropylene resin.

3- The copper pipe-aluminium fan shall be with special acrylic resin coated. And internal

4- Supports, frame, control box shall also be hot-dip zinc coated steel plate and with rust preventive powder coating of 64 microns or more on inner and outer surface.

5- All screws, bolts used in outdoor unit shall be with SUS410, Zinc-Nickel alloy plating, zinc Chrome acid film treatment and rust inhibitor coating.

F. OIL RECOVERY SYSTEM:

Unit shall be equipped with an oil recovery system to ensure stable operation with long refrigeration piping length. High efficiency oil separator shall be fitted to the discharge side of the compressor together with factory filled oil equalization system.

16. INDOOR UNIT

A. GENERAL

The selection deals with supply installation testing commissioning of Cassette types of indoor units confirming to general specifications. Each indoor unit has Electronic Expansion Valve which senses the temperature based on variation of the load and conveys the same for the outdoor modules to respond accordingly. The indoor unit shall be selected as per the dehumidified CFM.

1. Indoor units shall be Cassette type as specified in BOQ. Each unit shall have electronic control valve to control the refrigerant flow rate respond to load variations in the area it serves. The address of the indoor unit shall be set automatically in case of individual control. In case of centralized control, it shall be set by liquid crystals remote Controller. The fan shall be dual suction, aerodynamically designed turbo, multi-blade type, statically & dynamically balanced to ensure low noise and vibration free operation of the system. The fan shall be direct driven type, mounted directly on motor shaft having support from housing.
2. The cooling coil shall be made out of seamless copper tubes and have continuous aluminium fins. The fins shall be spaced by collars forming an integral part. The tubes shall be staggered in the direction of airflow. The tubes shall be hydraulically/mechanically expanded for minimum thermal contact resistance with fins. Each coil shall be factory tested at 21 kg/sqm air pressure under water.
3. Unit shall have cleanable type filter fixed to an integrally moulded plastic frame. The filter Shall be slide away type and neatly inserted.
4. Each unit shall be provided with Electronic Expansion Valve for cooling/heating
5. Each Cassette type unit shall be with wireless LCD type remote controller. The controller shall be able to change the fan speed and angle of swing flap individually and change s in set temperature as per requirement.

B. Cassette type Ceiling Mounted Units

1- The units shall be Ceilingl mounted type. The unit includes pre-filter, fan section and DX-Coil section. The housing of unit shall be light weight powder coated galvanized steel. Noise level should not be more than 37 db at medium speed at 1.5m distance.

2- Unit shall have an attractive external casing for supply and return air.

17. REFERIGERENT

1- Refrigerant should be only R-410A/R-32

2- The entire condensing unit & evaporative unit should be factory assembled and tested. The units should come with an initial charge of referred R-410A from the factory. Any additional required refrigerant shall be added at site free of cost & loss of refrigeration due to deflect in equipment or workmanship or workmanship shall also be filled and guarantee up free of cost during execution period.

18. REFERIGERANT PIPING

- All refrigerant piping for the air-conditioning system shall be constructed from soft seamless upto 19.1mm and hard drawn copper refrigerant pipes for above 19.1mm with copper fittings and silver soldered joints. The refrigerant piping arrangements shall be in accordance with good practices within the air conditioning industry, and are to include charging connections, suction line insulation and all other items normally forming part of proper refrigerant circuits.
- All joints in copper piping shall be sweat joints using low temperature brazing and or silver solder. Before joining any copper pipe or fitting, its interiors shall be thoroughly cleaned by passing a clean cloth via wire or cable through its entire length. The piping shall be continuously kept clean of dirt etc. while constructing the joints subsequently it shall be thoroughly blown out using nitrogen.
- After the refrigerant piping installation has been completed, the refrigerant piping shall be pressure tested using nitrogen at 32 Kg per sq.cm. Pressure shall be maintained in the system for 24 hours. The system shall then be evacuated to minimum vacuum if 700 mm Hg and held for 24 hours. The air-conditioning supplier shall be design sizes and erect proper interconnections of the complete refrigerant circuit.
- The thickness of copper piping shall not be less than mentioned below

Pipe Size in mm (OD)	Wall Thickness in mm
54.1	1.5
41.3	1.3
38.1	1.3
34.9	1.3
28.6	1.2
25.4	1.2
22.2	1.0
19.1	1.0
15.9	1.0

12.7	0.8
9.5	0.8
6.4	0.8

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

19. DRAIN PIPING

The IDU shall be connected to the drain pipe made of rigid heavy duty UPVC, density 10 KG/sqcm min 20 MM dia meter. The pipe under floor should be 20 Kg/sqcm. The pipe shall be laid in proper slope for efficient draining of the condensate water.

20. PIPE INSULATION

Refrigerant Pipe Insulation:

(a). The whole of the suction and liquid line including all fitting , valves and strainers bodies etc shall be insulated with 19 MM/ 13 MM respectively thick class 'o' Electrometric Nitrile Rubber sleeve as per BOQ.

(b). The joint shall be properly sealed with R242 adhesive of poly chloroprene to ensure proper bonding at the ends.

(c). Insulation of cold lines shall be carried out with Arma flex/K-flex insulation sheets and tubes of appropriate thickness so that condensation does not occur.

Drain Pipe Insulation

(a). Drain pipe carrying condensate water shall be insulated with 6 MM thick Nitrile rubber close cell insulation.

(b). For proper drainage of condensate U-trap shall be provided in the drain piping (wherever required).

(c). All pipe supports shall be of pre-fabricated and pre-painted slotted angle supports properly installed with clamp

FORMAT FOR BANK GUARANTEE BOND
(For EMD only)

1. In consideration of the (Name and address of the Museum/Centre) hereinafter called the Museum/Centre having stipulated under clause 16 of the Notice Inviting E-tender No. ……. for the work of (mention name of work as in NIT) at the aforesaid site agreed to accept payment of Earnest Money for due fulfillment of the terms and conditions contained in the said NIT (including appendix) for participation in the e-tender from (Name and address of the prospective e-tenderer) (hereinafter called the prospective e-tenderer) by production of a bank guarantee of (Mention amount of EMD in figure & words) only, we (Name and address of Bank furnishing guarantee (Br. Code …….) (hereinafter referred to as "The Bank") do hereby undertake to pay to the Museum/Centre an amount not exceeding (mention EMD amount in figure & Words) only against any loss or damage caused to or suffered or would be caused to or suffered by the Museum/Centre by reasons of any breach by the said prospective e-tenderer of any of the terms or conditions contained in the said NIT (including appendix) relating to participation in the e-tender.

2. We, (Name of Bank), do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Museum/Centre stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Museum/Centre under National Council of Science Museums by reasons of any breach by the said prospective e-tenderer of any of the terms or conditions contained in the said NIT (including appendix) or by reason of the prospective e-tenderer's failure to comply with conditions contained in the said NIT relating to participation in the e-tender. 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 (mention amount of EMD in figures and words) only.

3. We, (Name of Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period as mentioned in Clauses 26 and 27 of the said NIT (including appendix) or the period stipulated under clause 28 for deciding the e-tender and that it shall continue to be enforceable till the dues of the Museum/Centre under or by virtue of the said NIT (including appendix) have been fully paid and its claims satisfied or discharged or the Museum/Centre certified that the terms and conditions of the said NIT (including appendix) have been fully and properly honored and carried out by the said prospective e-tenderer for participation in the e-tender and accordingly discharges the guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the periods stipulated above, we shall be discharged from all liability under this guarantee thereafter.

4. We, (Name of the Bank) further agree with the Museum/Centre that they shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to extend time of deciding the e-tender as may be expedient and to forbear or enforce any of the terms and conditions relating to the NIT (including appendix) and we

shall not be relieved from our liability by reason of any such extension being granted to the said proposed e-tenderer for any forbearance, or act of omission on the part of the Museum/Centre or any indulgence by the Museum/Centre to the said proposed e-tenderer or by any such matter or thing whatsoever which under the law relating to surety.

5. We, (Name of the Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Museum/Centre in writing.

Dated, the …….. day of ……..…….

For ……..

(Authorised signatory of the Bank with Seal)

FORMAT FOR BANK GUARANTEE BOND *
(For Performance Guarantee/Retention Money only)

1. In consideration of the ……..…….…….. ……..…….. (hereinafter called "The Museum/Centre") having agreed to exempt …….……..…… .. …… ….. (Hereinafter called the "successful e-tenderer' from the demand, under Clause 16 of the Notice inviting E-tenderNo. …… dated …… and/or the terms and conditions of an Agreement dated ……. Made between the Museum/Centre and successful e-tenderer(s) …… for ……(hereinafter called "the said agreement") of Earnest Money/Retention Money for the due fulfillment by the said Contract(s) of the terms and conditions contained in the said NIT or the conditions of (execution of work) or the agreement on production of a bank guarantee of Rs……(Rupees …… …… only), We ……..…….(hereinafter referred to as "The Bank") do hereby undertake to pay to the Museum/Centre an amount not exceeding Rs……..…….. against any loss or damage caused to or suffered or would be caused to or suffered by the Museum/Centre by reasons of any breach by the said successful e-tenderer of any of the terms or conditions contained in the said NIT, the conditions of Contract or the Agreement.

2. We, ……. do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Museum/Centre stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Museum/Centre under National Council of Science Museums by reasons of any breach by the said successful e-tenderer of any of the terms or conditions contained in the said NIT or the conditions of contract or the Agreement or by reason of the successful e-tenderer's failure to perform as per conditions contained the said NIT or the condition of contract or the Agreement. 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……..

*Note:

(Bank guarantee bond towards Retention Money/Security deposit as defined under clause 32 of the General Conditions of contract at the time of signing of agreement on award of work acceptable only if furnished by any of the Nationalised Banks.)

3. We, ……..…….. further agree that the guarantee herein contained shall remain in full force and effect during the period as mentioned in Clause 26 & 27 of the said NIT read with clause 32 of the conditions of contract, or the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till the dues of the Museum/Centre under or by virtue of the said NIT or the conditions of contract or the Agreement have been fully paid and its claims satisfied or discharged or the Museum/Centre certified that the terms and conditions of the said NIT or the conditions of contract or the Agreement have been fully and properly honoured and carried out by said successful e-tenderer and accordingly discharges the guarantee.

   Unless a demand or claim under this guarantee is made on us in writing on or before the ……..

   We shall be discharged from all liability under this guarantee thereafter.

4. We, …….. further agree with the Museum/Centre that they shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said successful e-tenderer from time to time or to postpone for any time or from time to time any of the powers exercisable by the Museum/Centre against the said successful e-tenderer 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 successful e-tenderer for any forbearance, or act of omission on the part of the Museum/Centre or any indulgence by the Museum/Centre to the said successful e-tenderer or by any such matter or thing whatsoever which under the law relating to surety.
5. We, ……..…….lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Museum/Centre in writing.

   Dated, the ……. day of ……

For ……

(Authorised signatory of the Bank with seal)

FORMAT FOR LETTER OF INTENT*

……. Date …….

(Mention file number)

Sub: Letter of Intent for the work of ……

Dear Sirs,

With reference to your e-tender dated ……..……..……(and further clarification vide letter number ……..…….. dated ……..……) # it is intended to award the aforesaid work at the e-tendered amount of Rs……

(Value based on only items of work intended to be awarded for execution)

You are, therefore, requested to sign an agreement as per standard format already printed in the e-tender documents purchased by you while e-tendering for this job. For this purpose, you are requested to send us a non-judicial stamp paper of appropriate value for preparing the contract Agreement within a week from the date of this letter.

You may avail of 07days mobilization time from the date of issue of this letter of Intent for mobilizing your men, materials and other necessary resources for the construction. During mobilization period, you are requested to study all the drawings and designs annexed hereto and the Bar-Chart and obtain clarifications from the architect or this office immediately.

Please note that the work has to be completed within ……. weeks/months in which mobilization time period of 15 Days

days is also included. The date of commencement of work would be reckoned as the date of issue of this letter (as per clause 7 (v) & 21 of NIT).

Thanking you,

Yours faithfully,

Sd/-

Controller of Administration

Letter of intent is to be issued in the letter head of the parent Museums/Centers and a Xerox copy is to be maintained as office copy on which signature of the authorized representative of the successful e-tenderer is to be obtained with date at the time of issue of original letter of intent. # Delete words within brackets if not applicable in specific case.

FORMAT FOR ARTICLES OF AGREEMENT
INSTRUCTIONS (not to be typed in Agreement)

(Articles of Agreement have to be typed on non-judicial stamp paper. The value of the stamp paper varies from state to state and is to be known from the particular place. The stamp paper will be purchased by the successful e-tenderer and the agreement may be typed by the Museum/Centre according to the format.)

ARTICLES OF AGREEMENT made at …….
…….
(Place)
this…… day of ……...
(Date) (Month & Year)
between the ……
……..
(Name of the parent Museum/Centre)
(under the National Council of Science Museums, a Society registered under the Societies Registration Act of West Bengal, 1961), hereinafter referred to as the Museum/Centre which expression shall include its successors and assigns on the one part
and……
……
……
……
(name of the successful e-tenderer)
trading in the name and style of ……...
……
……
……
(Name and complete address of the successful e-tenderer)
hereinafter referred to as the successful e-tenderer which expression shall include his/their respective heirs, executors, administrators and assigns on the other part.
WHEREAS the Museum/Centre is desirous of getting the work of
……...……
..…… therein done and has caused
(Name of the work)
Notice Inviting E-tender (Including appendix), drawings, schedule of quantities and specifications describing the work and conditions of contract to be prepared
by…….…….
……..……..……
……
(Name and address of the Architect).

AND WHEREAS the said NIT (including appendix) drawings as per list attached, specifications and the priced schedule of quantities and conditions of contract have been signed by or on behalf of the parties hereto. AND whereas the Successful e-tenderer has deposited in Cash or Bank Draft a sum of Rupees ……...

…….….

(exact amount in words)

the amount being 2.5% of the estimated value of the e-tender rounded off to the nearest hundred) with the Museum Centre as Initial Security for the due performance of this Agreement as provided in the said conditions. In the case of Bank Guarantee, the period of Bank Guarantee referred to being valid until the defect liability period as specified in e-tender and to be revalidated to required dates as demanded by the Museum/Centre if completion date is extended.

NOW IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

1. In consideration of the payments to be made to him as hereinafter provided the successful e-tenderer shall upon and subject to the conditions herein contained execute and complete the work within ……. months from the date of issue of letter of intent (as defined under NIT clauses 7 (i) and 21) and as per the said drawings and such further detailed drawings as may be furnished to him from time to time and described in the said specifications and the said priced schedule of quantities along with the progress of the building work.

2. The Museum/Centre shall pay to the successful e-tenderer such sum as shall become payable hereunder at the time and in the manner specified in the said conditions.

3. Time is the essence of this agreement and the successful e-tenderer shall proceed with the work, throughout the stipulated period of this contract, strictly according to the CPM/PERT/BAR CHART attached herewith and forming a part of this agreement. At any stage during execution, if any work lags behind the target as indicated in the CPM/PERT/BAR CHART for reasons directly attributable to the successful e-tenderer, he shall pay or allow the Museum/Centre to deduct from any money due to him a liquidated damage as per Clause 39 of the conditions of contract.

4. This agreement comprises the work above and all subsidiary works connected therewith, even though such works may not be shown on the drawings, or described in the said specifications or the priced Schedule of Quantities.

5. The Museum/Centre through the Engineer (As defined under clause 2 of General conditions of contract) reserves to itself the right of altering the drawings and of adding to or omitting any item of work or of having portions of the same carried out departmentally or otherwise and such alterations or variations shall not vitiate this agreement.

6. All disputes and differences of any kind whatever except as excluded under Clause 2 of General Conditions of contract appended herewith, arising out of or in connection with the contract on the carrying out of works (Whether during the progress of the work or after their completion and whether before or after the determination, abandonment or breach of the contract) shall be referred to arbitration as per Clause 39 of the said conditions of contract. In case of any legal dispute, other than the arbitration, the court of jurisdiction shall be at the place written in the first line of this agreement.
   The provisions of the Arbitration & Conciliation Act 1996 or any statutory modification or re-enactment thereof and of the rules made there under for the time being in force shall apply to arbitration proceedings under this clause.

   Successors against all loss, damage, cost expense or otherwise which may be incurred by him by reasons of any default on the part of successful e-tenderer in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and / or cost incurred by the Centre/ Museum, the decision of the Engineer-in-Charge will be final and binding on the parties.

In witness whereof the parties have set their respective hands the day and the year and the place hereinabove written.

Signed by for and on behalf of the Museum/Centre ……..

…….

(Controller of Administration)

In the presence of

1. …….

Seal *(Dy Controller of Finance & Accounts)*

2. ……

Signed by the said Successful e-tenderer …….

In the presence of

(1) ……

Seal

(2) ……..

FORMAT FOR
BOND FOR SECURED ADVANCES AGAINST
SUPPLY OF MATERIALS

KNOW ALL MEN by these presents that I/WE ……
……. do hereby bind myself/ourselves, my/our respective heirs, executors, administrators and assigns to pay to the……..
……
……..……
under the National Council of Science Museums a Society registered under the Societies Registration Act, 1961 (hereinafter called 'The Museum/Centre') on demand a sum of Rs ..…….. (Rupees …….....
……
…….……
only).
Dated this ……day of ……two thousand and ……only).
WHEREAS by an agreement dated……for work of
……...……
the Museum/Centre has agreed in its discretion to allow advance on security of materials belonging to me/us and brought by me/us to the site of the works undertaken by me/us for construction purposes.
AND WHEREAS the Museum/Centre has agreed to advance to me/us a sum of Rs…….(Rupees…….
…….……only).
on the security of materials shown in the schedule below and the said Museum/Centre has granted advance of Rs…….……...
……..……
KNOW ALL MEN by these presents that I/WE ……
……. do hereby bind myself/ourselves, my/our respective heirs, executors, administrators and assigns to pay to the……..
……
……..……
under the National Council of Science Museums a Society registered under the Societies Registration Act, 1961 (hereinafter called 'The Museum/Centre') on demand a sum of Rs ..…….. (Rupees …….....
……
…….……
only).

Dated this ……day of ……two thousand and ……only).

WHEREAS by an agreement dated……for work of ……...……the Museum/Centre has agreed in its discretion to allow advance on security of materials belonging to me/us and brought by me/us to the site of the works undertaken by me/us for construction purposes.

AND WHEREAS the Museum/Centre has agreed to advance to me/us a sum of Rs…….(Rupees……only).on the security of materials shown in the schedule below and the said Museum/Centre has granted advance of Rs……...NOW THE CONDITIONS OF THE SAID WRITTEN OBLIGATION IS THAT IN THE EVENT OF THE SAID BOUNDEN

(a) not using the sum advanced for expediting the execution of the works under the said contract.
(b) offering as security properly, not absolutely his own property or encumbered in any manner.
(c) not acting in accordance with the terms of the agreement for the execution of the work.
(d) failing to make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the materials which shall remain in the site of the said works in his own custody and at his responsibility, open to inspection by the Museum/Centre or any officer authorised in that behalf.
(e) using the materials or any part thereof in such a manner as to be damaged or deteriorated in a greater degree than is due to usual wear and tear thereof.
(f) removing the said materials from the site of works except with the written permission of the Museum/Centre or any officer authorised in that behalf.
(g) failing to repay the advance in full before receiving payment of the price payable to him for the said work under the terms and the provision of the said agreement.
(h) defaulting in the performance or observance in any respect of any of the terms and the provisions of the agreement.
(i) or committing a breach in any manner whatsoever of any other terms of the contract or default in repayment of the money

AND upon his making such payment the above written obligation shall be void and of no effect, otherwise, it shall be and remain in full force and vital.

Provided always that it is hereby agreed and declared the decision of the Museum/Centre as to whether the said ……has or has not performed the obligations and observed the conditions hereinbefore recited shall be final and binding on the successful e-tenderer.

Signed by the above bounden
in the presence of

(1) …….

(2) ……

LIST OF APPROVED MAKES

Note: 1) The Tenderer shall confirm the make of the system he intends to use, however the Engineer-In-Charge reserves the right to approve any of the make specified.

2) The contractor shall get the samples of all other items, which are not covered in the approved price list, approved from the Engineer-In-Charge.

S. No	Description of Item	Approved Makes
1.	**High Rise Equipment**	
1.1	VRV/VRF System using Compressor of following make only	Daikin/Hitachi/O-general/ Mitsubishi/ Voltas/ Blue Star/LG /Carrier or OEM
1.2	Y-Joints VRV/VRF system	Daikin/Hitachi/ogeneral/Mitsubishi/Voltas/BlueStar /LG/Carrier Or OEM
2	Cassette type Indoor unit	Same as S.No 1.2
3	**Cables & Accessories**	
3.1	Control Cables	Skytone/ Delton/Finolex /Havells
3.2	XLPE / PVC Insulated Aluminium Conductor Armoured Power Cables	Skytone/ Universal/finolex/Havells
3.3	Communication Cable	Fusion/ Comscope / Contemp/Finolex
3.4	Cable Gland Double Compression with Earthing Links	Power/Gripwell /Baliga Lighting Ltd.
3.5	PVC Insulated Copper Conductor Stranded Flexible Wires	Finolex/ polycab/ Skytone Havells
3.6	PVC Conduit & Accessories (ISI Approved)	BEC/ Precision/ D Plast/ Polypack
3.7	MS/ GI Conduit (ISI Approved)	BEC/ AKG/ STEEL KRAFT
3.8	Accessories for MS/GI Conduit (ISI Approved)	Sharma Sales Corporation/ Super Sales Corporation
3.9	Bi metallic Cable Lugs	Hax (Brass copper Alloy India Ltd)/ Dowell's (Biller india Pvt. Ltd.)
3.10	Lugs (Tinned Copper)	Dowell
3.11	Cable Tray	Kelp/Fletco/MM Enterprises.
3.12	Selector Switches/ Toggle Switch	Siemens/ L&T/ Kaycee
3.13	Change over switch	Siemens/ L&T/ HH Elcon/ HPL-Socomech
3.14	Overload Relays with built in single phase preventer	L&T/ Minlec/Siemens/ Group Schneider (MG) France
4	**Pipes & Fittings**	
4.1	UPVC pipe for drain	AKG/Polypack/supreme
4.2	Copper Pipes	Totaline/Rajco/Max flow/Mandev
6	**Insulation**	
6.1	Closed Cell ElastomericInsulation	Armacell/K-flex/A-flex/Superlon

6.2	Aluminum Tape	Johnson/ Birla 3M
7.	**<u>Electrical Equipment</u>**	
7.1	Electrical Panel Board/ Motor Control Centre (Power Coated)	Tricolite/ Adlec Systems pvt Ltd./Triton/ System Power Control/SSP/ Adhunik and approved make
7.2	Starters/ Switch gear	Siemens/ L&T/ Group Schneider (MG) France
7.3	Miniature Circuit Breaker (MCB)	Siemens/ MDS Legrand/ Hager (L&T)
7.4	Moulded Case Circuit breaker (MCCB)	Siemens/ L&T/ GE Power/ Group Schneider (MG)NS
7.5	Earth leakage circuit Breaker (ELCB)	MDS Legrand/ Hager (Larsen & Toubro)
7.6	Push Button Starter	Siemens/ L&T/Group Schneider (MG)
7.7	Auxiliary Relays/ Contactors	Siemens/ L&T/ Group Schneider (MG) France
7.8	Line Type Fuse	Siemens/ L&T/GE
7.9	Timer	Siemens/ L&T/GE
7.10	Terminal Block	Elmax
7.11	Voltmeter/ Ammeter (Digital)	Automatic Electric/ L&T/ Siemens / Enercon
7.12	Indicating Lamps (LED Type)/ Push Button	Siemens/ L&T/ Vaishno
7.13	Single Phase Preventer (Current Base)	L&T/ Minlec
7.15	Electronic Digital Meters (A/V/PF/Hz/KW/KWA) With Led Display	Enercon System Pvt. Ltd/ L&T

NATIONAL SCIENCE CENTRE
(National Council of Science Museums)
Pragati Maidan, Near Gate No. 4, Bhairon Road,
New Delhi -110 001
Bill of Quantities

NAME OF WORK-- Supply, Installation Testing and Commissioning of 80 HP VRV/VRF Air conditioning system for Prehistoric (Evolution) gallery at National Science Centre, Delhi					
Sr. no.	**Description of work**	**Qty**	**Unit**	**Rate including GST**	**Amount including GST**
	VRF/VRV Air conditioning work-:- Part A				
1	Supplying, Installation, Testing and Commissioning of48HP modular type VRV/VRF Air cooled outdoor unit suitable for cooling and heating by using 100% inverter driven capacity control having all highly efficient Hermetically Sealed inverter type Scroll compressor(s) minimum two compressors for above 14 HP modules microprocessor based controller, top discharge the condensing units all vibration isolation pad etc. including fully charging of R410 A refrigerant up to good cooling effect, all Inverter compressors special acrylic coated heat exchanger, Y-branch as required, outdoor unit support, auto check function for connection error, auto address setting Refrigerant temperature control and capacity as mentioned below. The unit shall deliver the rated capacity at AHRI conditions and work even at 50°C ambient temperature without tripping ,cooling /heating operation, The outdoor units must have variable Evaporating temperature function to automatically modulate the refrigerant temperature from 6 Deg C to 11 Deg for energy efficiency . The unit price shall be inclusive of full charge of Refrigerant gas & oil, weatherproof MCCB with ELCB for each out door unit and refrigerant piping housed in compact housing duly powder coated complete as required for trouble free operation, as per specification. Internal wiring having interconnected control wiring, sub cooling circuit, low noise condenser fan, This shall include the with lifting, shifting and positioning along with proper RCC foundation .Providing fabrication and balancing of MS channel base frame for outdoor unit ,. The COP at AHRI conditions shall not be less than 3.1and IEER not less than 6.5 including loading, unloading, shifting and foundation with Cement concrete, Anti				

	vibration rubber pads as per manufacturer standard and suitable for operation with 415+- 10% ,50 Hz 3 phase power supply etc. as required.				
	(Note:- 1. The quoted rate should include the complete cost of installation for the outdoor unit at the terrace, regardless of the height. This includes making all necessary arrangements for lifting and placing the unit, as well as any civil foundation works required. The agency is advised to inspect the site before submitting a quote, in order to familiarize themselves with the site conditions and the specific area where the outdoor units will be installed.)				
	Note:-2Bidder has to provide OEM'S authorization letter pertaining to this work at the time of bid submission				
1(i)	Outdoor Unit 48 HP (Note;- Above out door unit can be used in individually or in combination as per site requirement	1	Nos	1039632.00	1039632.00
2	Supply, Installation, Testing and Commissioning of following minimum capacity 4 way Cassette type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan /dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration Isolation, Corded remote control etc., suitable for operation on single phase 230 V ± 10%, 50Hz AC supply, complete, as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow asper room requirement in auto mode. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor)				
2(i)	3.6 TR Unit	12	Nos	44269.00	531228.00
2(ii)	2.0 TR Unit	1	Nos	39734.00	39734.00
2(iii)	1.2 TR Unit	1	Nos	38601.00	38601.00
3	Supply, Installation, Testing and Commissioning of Y Joints. Joints shall be of same Original Equipment Manufacturer (OEM) make as of ODUs and IDUs				
3(i)	Indoor units (Suction line +Discharge line)	12	Set	4535.00	54420.00
4	Supply,Installation,Testing and Commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/ hard drawn copper refrigerant piping for VRV/VRF system complete with fittings with suitable adjustable ring type hanger supports, jointing/brazing including accessories insulated with XLPE Class –O- tubular insulation				

	/with class o closed Celle elastomeric nitrile rubber sleeves sections of 19 mm thick insulation given below for suction and Liquid lines, all accessories as per specifications etc. as require.				
4(i)	28.8 mm dia(OD) Hard drawn with tube thickness 1.2 mm.	100	RMT	1157.00	115700.00
4(ii)	22.2 mm dia (OD) Hard drawn with tube thickness 1.0 mm.	20	RMT	904.00	18080.00
4(iii)	19.1 mm dia(OD) Hard drawn with tube thickness 1.0 mm..	20	RMT	739.00	14780.00
4(iv)	15.88 mm dia (OD) Soft drawn with tube thickness 1.0 mm	100	RMT	615.00	61500.00
4(v)	12.7 mm dia (OD) Soft drawn with tube thickness 0.8 mm	40	RMT	487.00	19480.00
4(vi)	9.52mm dia (OD) Soft drawn with tube thickness 0.8mm	100	RMT	346.00	34600.00
4(vii)	6.4mm dia (OD) Soft drawn with tube thickness 0.8 mm	30	RMT	256.00	7680.00
5	Supply, installation, testing and commissioning of 2 Core x 1.5 sq mm flexible copper conductor PVC insulated / PVC shielded cable in suitable conduit between indoor unit and outdoor unit as per specifications for transmission complete as required. Arrived rates item 1.17.1-70/- plus cost of conduit item 1.12.2-145/- total is 215/- (Payment will be made as per actual measurement)	250	RMT	215.00	53750.00
6	Supply & laying of 2.5 sq mm x3 core copper flexible cable from indoor unit to D.B for all the units with the necessary fittings.	250	RMT	115.33	28832.50
7	Providing and fixing of UPVC drain water pipe with fittings support, jointing and any other item required to make the system complete with 6mm closed cell nitrile rubber foam insulation with proper saddling .Nominal diameters of of pipee in mm as indicated below. (Payment will be made as per actual execution)				
7(i)	25mm dia (with 6mm class O Nitrile rubber insulation)	40	RMT	210.00	8400.00
7(ii)	32mm dia (with 6mm class O Nitrile rubber insulation.	30	RMT	229.00	6870.00
7(iii)	40mm dia (with 9mm class O Nitrile rubber insulation.	30	RMT	260.00	7800.00
8	Supply and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5% in convenient section, jointing with connectors, suspended from the ceiling with M.S. suspenders including bolts and nuts, painting suspenders etc as reqd. (Payment will be made as per actual execution)				

8(i)	150mmX50mmX1.6 mm thickness	40	RMT	1018.00	40720.00
9	Supply and Installation of VRV/VRF Outdoor unit Frame work constructed out of MS Channel (75 x 40) having cross angle supports, 150 x 150 mm size MS plates in bottom. The complete stand shall be enamel painted and with anti-vibration pads.	3	Nos	6146.00	18438.00
	Cables				
10	Supplying of following sizes and core XLPE insulated aluminium conductor Armoured over all PVC sheathed of 1.1 KV Grade cable conforming to relevant IS-7098 code and technical specifications				
10(i)	3.5 Core 150 Sq mm	80	RMT	846.89	67751.20
10(ii)	3.5 Core 35 sq mm	80	RMT	179.34	14347.20
10(iii)	4 Core 25 sq mm	30	RMT	146.62	4398.60
11	Laying of one number PVC Insulated and PVC sheathed /XLPE power Cables of 1.1 KV grade of following size on wall surface as required.				
11(i)	Up to 185sq mm (Clamped with 25/40mmX3mm MS flat Clamp)	100	RMT	123.50	12350.00
12	Laying of one number PVC Insulated and PVC shethed /XLPE power Cables of 1.1 KV grade of following size on wall surface as required.				
12(i)	Up to 35 sq mm, clamped with 1 mm thick saddle	80	RMT	48.33	3866.16
13	Supplying and fixing of 20.00 mm dia PVC conduit along with accessories in surface /recess including cutting the wall and making good the same in case of recessed conduit as required.	200	RMT	128.00	25600.00
14	**HVAC AC Outdoor unit Panel**				
	Fabrication'Supply,installation,testing & commissioning of outdoor type feeder pillar compartmentalized double door, front and back openable cover with locking arrangement ,dust and vermin proof with slanting roof on the Top made out of 2.0mm thick CRCA sheet and size not less 2.4 sq mtr and 300mm depth with 300 amp copper bus bar fixed on suitable size pedestal made from M.S Angle iron base d frame of size 50mmx50mmx5mm and grouting in the RCC &proper gland plate at the bottom complete with painting ,supplying and fixing the following accessories;-				
	1.INCOMER				
	a) 200A(36KA) DH type 4 pole MCCB. 1 No.				
	b) 4 Strip 200 Amp TPN copper bus bar size 50mmX6mm with coloured sleeves-1 set				
	c) Neutrallink-1No.				
	d) LED-3 Nos(R.B.Y)				

	e) Digital Ammeter-1No.with inbuilt selector switch				
	f) Digital Voltmeter(0-500v)- 1No.with inbuilt selector switch				
	g) Watt meter				
	h) CT 500/5-1set				
	2.OUTGOING				
	63 Amps.36 KA TP MCCB DH type. 6Nos ,5 Nos for outdoor units and 1 No. for indoor units DB				
	Neutral link 6 Nos.				
	Instruments-: 1 No Multi-function meter with (volt,Amp,Kwa,kw)				
	1 sets of phase indicating lights (RBY) with protection fuses(one set for each incoming breaker).				
	1sets auto trip indicating lamp.				
	Note -Short Circuit capacity should not less than 35k Amp				
	Complete as above	1	No	198000.00	198000.00
15	Supplying and fixing following way prewired vertical mounted TP&N MCB distribution board of steel sheet for 415 volts on surface / recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar din bar, detachable gland plate, inter connections, powder coated painted including earthling etc, as required.				
	Incoming 63 Amp FP MCB 36 KA C type 1 No.				
	Outgoing 20 Nos 6 Amp SP MCB C type				
	Complete DB as above	1	No.	20500.00	20500.00
	End Termination				
16	Supplying and making cable end terminations with brass compression gland and Aluminium lugs for 150 sq mmx 3.5 core pvc insulated sheathed XLPE Aluminium conductor cable of 1.1 KV complete as required.	2	Set	588.00	1176.00
17	Supplying and making cable end terminations with brass compression gland and aluminium lugs for 35 mmx 3.5 cores pvc insulated sheathed XLPE aluminium conductor cable of 1.1 kv complete as **required.**	8	Set	369.00	2952.00
18	Supplying and making cable end terminations with brass compression gland and aluminium lugs for 25Sq mmx4 core PVC insulated sheathed XLPE aluminium conductor cable of 1.1 kv grade complete as required	2	Set	315	630.00
19	Earthing with GI earth plate 600mmx600mmx6 mm	2	Nos	15205.00	30410.00

	thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long including 2.7 meter GI strip of 25mmX5mm thick etc. with charcoal/coke and salt as required				
20	Providing and fixing 25mm x5 mm thick GI strip on surface or in recess for connections etc as required.	40	RMT	145.00	5800.00
21	Supplying and laying of 6 SWG dia GI wire on surface or in recess for loop earthling along with recessed conduit /sub main wiring /cable as required.(Payment will be made as per actual execution)	50	RMT	49.00	2450.00
22	Buy back offer of old Hi wall split Air conditioning units 2.0 TR Make- Voltas/Blue star including copper pipe , outdoor stand and wire. As is where is basis.	9	Nos	-3500.00	-31500
				Total Rs.	**2498976.66**
				Say	**2498977.00**
(**Rupees Twenty Four Lakhs Ninety Eight Thousand Nine Hundred Seventy Seven only)**					
OPTINAL ITEM :-PART –B					
1	Comprehensive A.M.C of 48 HP VRV/VRF air conditioning system including Cassette type indoor units, Supply and charging of gas after One year warranty period) on year to year basis for 4years.	Rate Only			
1(i)	Ist year AMC Charges on expiry of warranty period	Rate Only	LS	96000.00	96000.00
1(ii)	2nd year AMC Charges on expiry of warranty period	Rate Only	LS	100800.00	100800.00
1(iii)	3rd year AMC Charges on expiry of warranty period	Rate Only	LS	105840.00	105840.00
1(iv)	4th year AMC Charges on expiry of warranty period	Rate Only	LS	111132.00	111132.00
1(v)	5th year AMC Charges on expiry of warranty period	Rate Only	LS	116690.00	116690.00

Important Note

1.Tenderers should visit the site before quoting the rate to understand the nature /scope of work and condition of the site.

2. Rates shall be quoted inclusive of all materials, wastage labour, shifting charges, & d uties etc. required for this job. No additional payment shall be made by the National S

cience Centre, Delhi for this purpose.

3. The works are to be carried out without obstructing the visitor's movements and may a also be required to carry out beyond office hours for which no additional payment s shall be made.
4. All materials are to be got approved from the Engineer-in- Charge before utilizing at si te.
5. The works are to be carried out following all required precautionary, fire and safety rules/ measures.
6. Rates quoted shall include cost of all minor civil works/making good of surfaces.
7. Regarding the work the directives of the Engineer-in-Charge shall be final and binding.
8. Dimensions given in the drawing are only indicative. The actual dimensions may Vary depending on the site condition.
9. **Rates quoted above or below in percentage will be applicable for Part 'A' VRV/ VRF Air conditioning work and optional item Part 'B'(Comprehensive A.M.C charges for 5 years post one year warrantee period).**

Date

Sing& Seal of Contractor

ANNEXURE-I

BANK DETAILS OF NATIONAL SCIENCE CENTRE, DELHI

Name of the Account Holder	NATIONAL SCIENCE CENTRE, DELHI
Account No.	2417101004100
Bank Name	CANARA BANK
Bank Address	6, Bhagwan Das Road, New Delhi
IFSC Code	CNRB0002417
MICR Code	110015045
Type of Account	Saving Account
Branch Code	2417

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Annexure – A

(Format for Declarations & Undertaking to be typed on bidder agency's letter head and to be submitted in Part –I (TECHNICAL ENVELOPE) of the e-tender document)

DECLARATION -1

Name of the work: Supply, Installation, Testing and Commissioning of 48 HP VRV/VRF Air conditioning system for Reception area at National Science Centre, Delhi.

This is to certify that neither I/we/any of us is in anyway related to any employee in the National Council of Science Museums, Kolkata, or any of its constituent units.

Date:
Place:

(Signature of the tenderer)
with company seal/rubber stamp

DECLARATION -2

I/We hereby declare that I/we have not quoted any extra condition along with the Part-II (FINANCIAL ENVELOPE) of the e-tender.

Date: **(Signature of the tenderer)**
with company seal/rubber stamp

Place:

UNDERTAKING

This is to certify that I/we have carefully gone through the drawings/specifications, etc. given in the e-tender document & have clearly understood the site working conditions, time schedule given and have accordingly quoted my balanced rates after going through all details.

I/We also undertake that the physical EMD instrument shall be deposited by me/us with the office of NATIONAL SCIENCE CENTRE, DELHI inviting the e-tender before the bid opening date otherwise the NATIONAL SCIENCE CENTRE, DELHI inviting the e-tender may reject the bid and also take action to withdraw my/our enlistment or debar me/us from further tendering in NCSM or its constituent units.

I/we hereby give an undertaking that I/we shall carryout the work strictly as per the given specifications, and shall complete the same within the stipulated time frame.

Date:
Place:

(Signature of the tenderer/ bidder)
With company seal/rubber stamp

Annexure --B

(To be submitted on Agency's Letter head in the Portal as well as hard copy)

Ref:
Date:

DECLARATION

We, M/s. ……, hereby solemnly declare as

follows, in respect of the Tender No. ……..... :-

a) That, we have downloaded all the documents from CPP e-Procurement Portal of NIC and all the uploaded information / statements are true to the best of our knowledge.

b) That, our firm is not involved in any Litigation or Arbitration with NCSM/ National Science Centre, Delhi during the last 05 (five) years.

Date:

Place:

(Signature of the tenderer/ bidder)
with company seal/rubber stamp

ANNEXURE – C

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

[Department User may ask for Tender Acceptance Letter instead of asking Signed Tender Document from the Bidders. This is a sample format; User may revise it as per their Tender Conditions]

Date:

To,

Acceptance of Terms & Conditions of Tender.

Tender Reference No:

Name of Work:

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned ' Tender/Work' from the web site(s) namely:
   _____
   _____
   __

   as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .,), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organization too has also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours faithfully,

ANNEXURE - D

National Science Centre
Near gate No. 4, Pragati Maidan

Name of the work: Supply, Installation, Testing and Commissioning of 48 HP VRV/VRF Air conditioning system for Reception area at National Science Centre, Delhi.

Bhairon Marg, New Delhi – 110001
(A constituent unit of National Council of Science Museums)

Bid Securing Declaration Form

Date ---------- Tender No.----------

I/We. The undersigned, declare that:
I/We undersigned that, according to your conditions, bids must be supported by a Bid Securing Declaration.
I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from date of notification if I am/We are in a breach of any obligation under the bid conditions, because I/We

a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i)fail or refuse to execute the contract , if required, or (ii) fail or refuse to furnish the performance Security, in accordance with the instructions to bidders.

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

Signed : (insert signature of person whose name and capacity are shown)
In the capacity of (insert legal capacity of person signing the Bid Securing Declaration)

Name: (insert complete name of person signing he Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Dated on----------day of ---------- (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

ANNEXURE 'E'

National Science Centre
Near gate No. 4, Pragati Maidan
Bhairon Marg, New Delhi – 110001
(A constituent unit of National Council of Science Museums)

Undertaking for Certification of Quoted Rates and Quality Assurance by Tenderer.

Date ----------

Tender No.----------

I/We, the undersigned, hereby declare and certify that the rates quoted in this tender are based on an in-depth estimation and a thorough cost analysis of each item listed in the scope of work.

I/We have conducted a comprehensive review of the requirements, specifications, and conditions of the tender and confirm that all factors have been accounted for in our pricing. I/We assure that there shall be no compromise in the quality of materials, workmanship, or any aspect of the work being tendered.

I/We further declare that the proposed rates are fair, reasonable, and we will execute & complete the work to the highest standards expected, as per the tender documents and specifications provided.

Signature of the tenderer/ bidder

With company seal/rubber stamp: _____

Date: _____

Place: _____