



INDIAN INSTITUTE OF TECHNOLOGY MADRAS

ENGINEERING UNIT

CHENNAI – 600 036

e - Tender No: 01/2026-27/EPC

Tender Document

Construction of Faculty complex by replacing the existing MFL building at IIT Madras

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## 1 INVITATION FOR E-TENDER.

INDIAN INSTITUTE OF TECHNOLOGY MADRAS ENGINEERING UNIT, CHENNAI – 600 036		
e-Tender No: 01/2026-27/EPC		
SUPERINTENDING ENGINEER Indian Institute of Technology Madras, Chennai - 600 036 invites lump sum rate e-tender in three cover system (Application for eligibility, Technical presentation and financial bid) for the following work from bidders who satisfy the Eligibility Criteria given below. The selection will be made using Quality oriented procurement process (QOP) and the contract will be awarded in EPC (Engineering, Procurement, and Construction) Mode-II.		
PARTICULARS OF WORK		
1.	Name of work	Construction of Faculty complex by replacing the existing MFL building at IIT Madras
2	Type of Contract	Lump sum rate contract under EPC Mode-II
3.	Construction Technology	Basement + Ground + 11 Floor Building Fast-track construction using MIVAN Shuttering technology
4.	Approximate Estimated Cost put to e-Tender	Rs. 5689 Lakhs
5.	Earnest Money Deposit (EMD) :	A Demand Draft for Rs. 66,89,000/- Or A Demand Draft for Rs.20,00,000 and a Bank Guarantee for Rs. 46,89,000. The original Demand Draft and Bank guarantee including e-Bank Guarantee towards EMD, shall be submitted in the office of the tender inviting authority on or before the Last Date for Submission of e-Tender. The Bid shall be summarily rejected if the original EMD is not received on or before the Bid Due Date.
6.	Time period for completion	15 Months
7.	Validity of the tender	90 days from the date of opening of the tender

8.	Date of Pre-bid Meeting & Venue	20.05.2026 @ 11:00 AM
9.	Last Date for Submission of e-Tender	04.06.2026 at 3.00 PM
10.	Date of Opening of the Application for eligibility	05.06.2026 at 3.00 PM
11	Date of opening of the Technical & financial bid	Will be uploaded later in CPPP portal to all eligible bidders.
12	Address of the Engineer-in-Charge	Office of the Superintending Engineer Engineering unit, Admin. Building, 3rd Floor, IIT Madras, Chennai – 600 036.

The Employer may extend the deadline for submission of e-Tenders by issuing an amendment in writing in which case all rights and obligations of the Employer and the bidder, previously subject to the original deadline will be subject to the new deadline. The amendment will be uploaded in the e-Tender website only.

Certified that this document contains 208 pages (including this page)

Superintending Engineer

Certified that no addition or deletion has been made to the tender documents downloaded from the e-Tender web site.

Signature of the Contractor

IIT Madras is proposing “Construction of Faculty complex by replacing the existing MFL building at IIT Madras” in Chennai-600036.

IIT Madras (IIT-M) proposes to select through this bidding process a competent agency to execute this work under a Design Build Contract. The selected Contractor shall have a single point of responsibility to deliver the completed building with all associated services, utilities etc, in an end-to-end scope of work covering all building-related disciplines and trades within the stipulated period.

This tender document describes the full scope, responsibilities, and deliverables from the bidders.

The built-up area shall be as per details/drawings stipulated in the tender document. The attached Tender drawings also referred to as 'Design-Intent-Drawings' for Construction, convey relevant details on Architectural Design and the design aspects of associated disciplines such as Structural, Electro - Mechanical, Public Health Engineering, etc.

The selected contractor shall appoint a Team of Experienced and reputed consultants as necessary within contractors quoted price to prepare detailed design and engineering in all related disciplines covered in scope, including preparation of documents for Statutory approvals, Good for Construction drawings, coordinated services drawings both internal and external, shop drawings for all systems and services. The Contractor’s consultant shall prepare complete level of documentation. The Contractor appointed team of Designers will take up the design and development in consultation with IIT-M appointed architectural Consultant and fully complete further detailing and coordinate between Architectural, Structural, MEP and other disciplines to prepare detailed Design & Engineering and GFC drawings. These designs shall be submitted for approval by IIT-M. The construction shall be done based on these fully coordinated GFCs, Approved Shop Drawings, manufacturers’ Installation Manual, Statutory requirements etc. The contractor should ensure that all GFC documents are available for execution at the commencement stage of the Construction.

***PART - I***

***GENERAL INFORMATION , ELEGIBILITY BID AND TENDER EVALUATION***

## 2 ELIGIBILITY CRITERIA

### **Joint ventures / Consortium companies are not allowed to participate in the tender process**

The bidders who meet the eligibility criteria defined in the Clause 2.1 to 2.4 are eligible to participate in the tender

2.1 Bidders should have completed/have an ongoing construction of at least one building with 5 storeys or more using **MIVAN** shuttering technology. Details of the completed/ ongoing buildings shall be provided.

2.2 In addition to the 2.1 above, the bidder should have successfully completed similar work/works of the value shown below during the last 7 (seven) years, ending on the last day of the month previous to the one in which the tender is invited, as per any one of the following:

- Three similar works, each costing not less than ₹ 2278.40 Lakhs, (OR)
- Two similar works, each costing not less than ₹ 3417.60 Lakhs, (OR)
- One similar work costing not less than ₹ 4556.80 Lakhs

Similar work for this criterion means construction of RCC building with at least 5 storeys in conventional mode of construction/ construction using MIVAN shuttering technology.

“Cost of work” for completed work for this criterion shall mean completed cost of work as mentioned in the final bill including internal electrical works and other services , if any, carried out under a single contract including cost of materials, if any, supplied by clients. However, the cost of materials issued free of cost shall not be considered for calculating the cost of work. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from the date of completion to last date of receipt of bids.

The following documentary proof as applicable for completion of work shall be scanned and uploaded. The sublet work/ subcontracted works executed for a principal contractor will not be considered as eligible.

- i. Completion certificates in case of works carried out for Government department. The certificate should have been issued by an officer not below the rank of Executive Engineer

- ii. Completion certificate and TDS (Tax deducted at source) in case of works carried out for private parties. The completion certificate should have been issued by the Project Manager or equivalent officer for the works completed
- iii. In case of the ongoing works the bidders shall produce the following documents
  - a. Work order copy with Project cost, duration of the contract
  - b. The signed agreement copy
  - c. The documentary proof showing the number of storeys involved in the proposed construction work

## 2.3 Financial

- 2.3.1 The tenderer should have an average annual financial turnover of not less than Rs.1708.8 lakhs during the last 3 years ending 31-3-2025 and should not have incurred any loss in more than two years during the last 5 five years ending 31 – 3 – 2025 This should be certified by a chartered accountant. The value of annual turnover figures will be brought to the current value by enhancing the actual turnover figures at a simple rate of 7% per annum
- 2.3.2 Should submit a valid solvency certificate for not less than Rs. 2278.40Lakhs duly certified by the bankers of the tenderer. The solvency certificate should have been obtained not later than 12 months from the last date for submission of e-Tender

## 2.4 Declaration

- 2.4.1 The bidder shall not be from a country sharing land border with India and if the bidder is from a country sharing land border with India the bidder should have been registered with the competent authority as per the orders of DIPP OM No. F. No. 6/18/2019-PPD dated 23rd July 2020, and MoCI Order No. P-45021/112/2020-PP (BE II) (E-43780) dated 24th August 2020. A declaration as per the format given in Annexure I of the tender document shall be submitted with the bid and Non-submission of self-declaration will lead to rejection of bid out rightly
- 2.4.2 Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16th September 2020 and other subsequent orders issued therein, shall be eligible to bid in this tender. Declaration for Class-I and Class-II local suppliers should be submitted in the prescribed proforma as per Annexure-II. Non-submission of self-declaration will lead to rejection of bid out rightly and the bidder will be treated as non-local supplier.



- 2.4.3 All bidders must sign this Integrity Pact. It commits both IIT Madras and the bidder to a fair, transparent, and corruption-free tender process and contract execution. Key rules include no bribery, no collusion, and equal treatment for all. Breaking these rules can lead to disqualification, contract termination, financial penalties, and legal action. An independent monitor will oversee compliance. Signing this pact is mandatory for your bid to be considered. Undertaking for the integrity pact to be submitted as provided in Annexure-III.
- 2.4.4 Bidders are required to conduct a physical visit to the site before participating in the tender process. Upon completing the visit, each bidder must sign an undertaking confirming their site inspection, which must be uploaded along with the tender submission. The proforma for this undertaking is provided in Annexure-IV. Additionally, the undertaking must include time stamped photographs taken by the bidder during the site visit. Tender submissions that do not include the signed undertaking and the corresponding site visit photos will not be considered for evaluation and will be rejected. To facilitate the entry at the IITM gate, the bidders shall inform their visiting schedule atleast 2 days prior to the visit, through email to [aeedesign@smail.iitm.ac.in](mailto:aeedesign@smail.iitm.ac.in) , and get the approval of the engineer-in-charge. The bidders should be mandatorily accompanied by the Engineers of IIT Madras during the visit.

### **3 PROCEDURE FOR VIEWING AND SUBMISSION OF e-TENDER**

- 3.1 Tender Documents may be downloaded from Central Public Procurement Portal <https://etenders.gov.in/eprocure/app>. The bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website <https://etenders.gov.in/eprocure/app>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at “Help for contractors”. [Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this eProcurement Portal”]. Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type ‘IIT’. Thereafter, Click on “GO” button to view all IIT Madras tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://etenders.gov.in/eprocure/app> as per the schedule attached.
- 3.2 This is a 3 Envelope tender, and all 3 envelopes shall be uploaded for tender submission.

### 3.2.1 e-Envelope 1 (application for eligibility)

e-Envelope 1 shall be uploaded with:

- 1) Letter of transmittal in the enclosed format.
- 2) The amount of EMD payable is Rs.66,89,000/-.It can be either in one of the following forms.
  - a. Demand Draft obtained from a scheduled bank for an amount of Rs.66,89,000 drawn in favour of IIT Madras, Chennai-600 036 and payable at Chennai.(Or)
  - b. Demand draft obtained from a scheduled bank for Rs.20,00,000 /- and balance amount of Rs. 46,89,000/- in the form of Bank Guarantee issued by a scheduled bank. Applicable Demand Draft and a Bank Guarantee as mentioned above shall be scanned and uploaded.
  - c. EMD in any other form except the above will not be accepted.
- 3) Details regarding experience, and financial standing.

The following documents in support of experience and financial standing shall be uploaded with the application for eligibility.

- i. Financial information in the form – ‘A’ enclosed
- ii. Solvency Certificate
- iii. Details of similar works carried out in the past in form – ‘B’ enclosed. The bidders must provide list of all similar works completed in the last 7 years.
- iv. Details of similar works in progress in form – ‘C’ enclosed. The bidders must provide the list of all similar ongoing works.
- v. Performance report of works referred to in form ‘B’ and form ‘C’ in Form – ‘D’ enclosed
- vi. Details regarding the structure of the organization in form - ‘E’ enclosed.
- vii. Details of Key technical and administrative personals in Form-‘E1’
- viii. Details of the Plants and machinery to be used in the work in Form-‘F’
- ix. GST Registration Certificate
- x. PAN card
- xi. Letter of Transmittal
- xii. TDS Certificate in case of works carried out for private parties.
- xiii. Work order copy incase of the ongoing works
- xiv. Declaration as enclosed in Annexure I, Annexure II
- xv. Integrity pact declaration as in Annexure III
- xvi. Site visit declaration in Annexure IV
- xvii. If a limited company or a corporation makes the application, the copy of power of attorney for the person submitting the tender a copy of the Memorandum of Articles of association duly attested by a public notary.
- xviii. If the application is made by a firm in partnership, A certified copy of the partnership deed along with the current addresses of all the partners of the firm shall also accompany the application.
- xix. All tender documents, prebid meeting minutes, drawings, corrigendum, addendum, drawings, soil test report, conditions of the contract published in

the tender portal shall be printed and signed in all pages by the bidder. Scanned copies of those signed documents shall be uploaded.

### **3.2.2 e-Envelope 2 (Technical Bid)**

The technical bid shall be uploaded with the following

1. Design basis report for Structure and MEP. Detailed designs and GFC drawings are not required at this stage.
2. Site Logistic plan including positioning and mobility of cranes and equipment.
3. Detailed specifications relevant to the proposed construction technology
4. Detailed method statement for executing the work.
5. Details of plants & equipment proposed to be used.
6. Quality Control & Quality Assurance plan.
7. Site safety plan.
8. Proposed construction program chart showing all activities involved in the project to complete it as per the milestones.

### **3.2.3 e-Envelope 3 (Financial Bid)**

The Financial bid shall be uploaded with Bill of quantity as a lump sum amount.

### **3.3 Instructions for submission of online bid:**

- 3.3.1 Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal URL: <https://etenders.gov.in/eprocure/app> by clicking on “Online Bidder Enrollment”. Enrolment on the CPP Portal is free of charge.
- 3.3.2 As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3.3.3 Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 3.3.4 Upon enrolment, the bidders will be required to register their respective valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.)
- 3.3.5 Once the 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 Tender” folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the tender document.
- 3.3.6 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.
- 3.3.7 Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender document / schedule and generally shall be in PDF / XLS formats as the case may be. Bid documents may be scanned with 100 dpi with black and white option.

- 3.3.8 To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, GSTIN Details, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Documents” area while submitting a bid and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process
- 3.3.9 The tenders will be received online only through portal <https://etenders.gov.in/eprocure/app>. All the technical/eligibility-related documents should be uploaded in technical bids in pdf format for evaluation purposes.
- 3.3.10 Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission date and time. Bidder will be responsible for any delay due to other issues. ii. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3.3.11 Scanned copy of the EMD . EMD will be accepted only in the form as mentioned in clause 3.2.1.2. Any other forms other than the mode mentioned in clause 3.2.1.2 will not be accepted
- 3.3.12 The validity of bank guarantee shall not be less than 180 (one hundred and eighty) days from the Bid Due Date, and may be extended as may be mutually agreed between the Authority and the Bidder from time to time. In case of Bid Security as Demand Draft , the validity shall not be less than 90 (ninety) days and it shall be in favour of “Indian Institute of Technology, Madras” payable at Chennai. The original Demand Draft and Bank guarantee including e-Bank Guarantee towards Bid Security shall be submitted in the office of tender inviting authority on or before the Bid Due Date. The Bid shall be summarily rejected if the original Bid Security is not received on or before the Bid Due Date. Scanned copy of the Bid Security should be uploaded as part of the Technical Bid. IITM will not be responsible for any delay due to postal delivery, if the documents are sent by the post, etc.
- 3.3.13 A standard BOQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the detail with their respective financial quotes and other details (such as name of the bidder). If the BOQ file is found to be modified by the bidder, the bid will be rejected.
- 3.3.14 The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 3.3.15 The Tender Inviting Authority will not be held responsible for any sort of delay, or the difficulties faced during the submission of bids online by the bidders due to local issues.
- 3.3.16 The uploaded tender documents become readable only to public view after the tender opening by the authorized bid openers.

3.3.17 Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

3.3.18 Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

#### 3.4 Assistance to bidders

3.4.1 Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

3.4.2 Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is [0120-4200462, 0120-4001002, 0120- 4001005]

3.4.3 The tender shall be submitted through the above e-Tender website as a three-envelope tender.

### 4 OPENING OF e-TENDERS

4.1.1 e-Tenders can be uploaded in the e-tender website till the stipulated date and time of submission.

4.1.2 Only e-Envelope 1 containing the eligibility application & EMD will be opened on the date of opening of tender.

4.1.3 Tender Documents uploaded without valid EMD shall be summarily rejected.

4.1.4 The e-Envelope 2 of only those tenderers who qualify as per the eligibility criteria will be opened on a date which will be intimated later.

### 5 EVALUATION OF APPLICATIONS FOR ELIGIBILITY

5.1 The applications will be evaluated for conformity to the eligibility criteria prescribed in 2.1 to 2.4 as detailed below

a) Financial strength	(20 Marks)	Evaluation
i)Average annual turnover	16 marks	i)60% marks for minimum eligible criteria. ii)100% marks for twice the minimum eligibility criteria or more.  In between (i) & (ii) – on pro-rata basis.
ii)Solvency Certificate	4 Marks	

b) Experience in similar Class of works	(30 marks)	(i)60% marks for the minimum eligibility criteria. (ii)100% marks for twice the minimum eligibility criteria or more In between (i) and (ii) on pro-rata basis.	
c) Performance on work without (time overrun)	(20 marks)		
Parameter	Calculation for points	Score	Maximum Marks
If TORI =		1.0 2.00 3.00 >3.50	20
(i)Without levy of Compensation		20 15 10 10	
(ii)With levy of Compensation		20 5 0 -5	
(iii)Levy of compensation Not decided		20 10 0 0	
TORI = AT/ST, where AT = Actual Time; ST=Stipulated Time in the Agreement plus (+) Justified Period of Extension of Time. Note: Marks for value in between the stages indicated above are to be determined by the straight line variation basis.			
(d) Performance of works(Quality)(30 marks)			
	(i) Outstanding	30	
	(ii) Very good	25	
	(iii) Good/Satisfactory/Fair	20	
	(iv) Poor	0	

- 5.2 To qualify, the bidder must secure at least 50% (Fifty percent) marks in each one of the above criteria and 60% (Sixty percent) marks in aggregate.
- 5.3 Upon shortlisting of eligible bidders, a committee from IIT Madras shall visit suitable works from the list of works given by the contractor to check the quality of execution of work. The committee shall evaluate the quality of the executed works based on the Form D1. The committee reserves the right to disqualify any bidder whose quality of work is found to be unsatisfactory based on the evaluation.
- 5.4 Even though an applicant may satisfy the specified criteria, he would be liable for disqualification if he has:

- i. Made misleading or false representation or deliberately suppressed informations in the forms, statements and enclosures required in the application for eligibility.
  - ii. Record of poor performance such as, slow progress of work, abandoning of work, not properly completing the contract, or financial failures/ weaknesses etc.
- 5.5 Only those tenderers who obtain the qualifying marks in site visit conducted by the committee shall be shortlisted for opening of their respective Technical bids (e-Envelope 2).The e-Envelope-2 of only these bidders will be opened on a date to be intimated later.
- 5.6 The qualified bidders will be required to present their technical proposal in a Power point presentation to the Evaluation committee for this work. The technical proposal will be evaluated for a maximum of 100 marks as per the following evaluation criteria

S.No	Technical Proposal submitted by the contractor	Maximum marks	Marks Allotted
1	Design basis report for Structure and MEP. Detailed designs and GFC drawings are not required at this stage	15	
2	Site Logistic plan including positioning and mobility of cranes and equipment.	10	
3	Detailed specifications relevant to the proposed construction technology	10	
4	Detailed method statement for executing the work.	10	
5	Details of plants & equipment proposed to be used.	15	
6	Quality Control & Quality Assurance plan.	10	
7	Site safety plan.	5	
8	Proposed construction program chart showing all activities involved in the project to complete the building as per the milestones.	5	
9	Performance of the ongoing and completed works to show the capability of the bidder (The mark will be arrived based on the evaluation of the committee at the site as given in clause 5.4)	20	
	<b>Maximum Marks</b>	<b>100</b>	<b>0</b>

- 5.7 Only those bidders who score the qualifying mark (70 Marks) in the technical presentation shall be shortlisted for opening of their respective financial bids (e-Envelope 3).The e-Envelopes of these shortlisted bidders will be opened on a date to be intimated later.
- 5.8 The decisions/ marks awarded by the evaluation committee is final and no representation shall be entertained in this regard.
- 5.9 A list of eligible applicants whose financial bids will be opened shall be prepared and all concerned shall be intimated.

- 5.10 The successful bidder will be selected based on the Quality-oriented procurement process (QOP) as detailed below.
- 5.11 The technical proposals will be allotted a weightage of 30%, and the financial proposals (Price bid) will be allotted a weightage of 70%.
- 5.12 The total score, both technical and financial shall be obtained by weighing the quality and cost scores and adding them up.
- 5.13 The calculation for arriving at the total combined score for Quality oriented procurement (Quality and Cost) is given below.

$$B = \frac{C_{low}}{C} X + \frac{T}{T_{high}} (1 - X)$$

Where

C = Evaluated bid price

$C_{low}$  = the lowest of all Evaluated Bid prices among responsive Bids

T = the total Technical Score awarded to the bid

$T_{high}$  = the technical score achieved by the Bid that was scored best among all responsive Bids

X= weightage for the price as specified in the Bids

- 5.14 The combined technical and cost scores of all the eligible bidders will be calculated as above and the bidder who secures the highest combined score 'B' will be selected as the successful bidder.
- 5.15 The contract will be awarded to the successful bidder at his / her quoted / negotiated amount. The bidder whose bid is accepted shall sign a written agreement with the IITM, Chennai within 15 days from the date of acceptance of the tender. The Employer reserves the right to accept or reject any bid and to annul the qualification process / e-Tender process and reject all bids at any time without assigning any reason or incurring any liability to the bidders..
- 5.16 Earnest Money Deposit (EMD) - The Earnest Money of the successful Tenderer will be taken as part of the Security Deposit as stipulated in Clause 1A of "General conditions of Contract".

## **6 INFORMATION AND INSTRUCTIONS TO APPLICANTS**

### **6.1 Definitions:**

The following words and expressions have their meaning here by assigned to them.

- 6.1.1 EMPLOYER means IIT Madras, Chennai -36 acting through the Superintending Engineer , Engineering Unit.



6.1.2 APPLICANT means individuals, proprietary firms, firm in partnership, limited company – private and Public Corporation

6.1.3 Engineer-in-charge means SUPERINTENDING ENGINEER, IITM

6.1.4 The terms **Tenderer/ Bidder** can be interchangeable and mean the same.

6.1.5 Tender means “**e-Tender**” which will be submitted online through dedicated website.

## 6.2 Information and Instructions

6.2.1 The applicant is advised to visit the site of work at his own cost and examine it and its surroundings and collect all information that he considers necessary for proper assessment of prospective assignment.

6.2.2 All information called for in the enclosed forms should be duly filled, signed, scanned and uploaded along with the e-Tender. If additional information needs to be uploaded in a separate document, reference to the same should be given against respective columns. Such separate documents shall be chronologically uploaded in the e-Tender website. If information is ‘nil’ it should also be mentioned as ‘nil’ or ‘no such case’. If any particulars/query is not applicable in case of the applicant, it should be stated as ‘not applicable’.

6.2.3 Applications made by email, fax, and post or by person will not be considered.

6.2.4 Clarifications, if any, or any additional information needed may be requested in the Pre bid meeting. The clarifications given and additional information furnished by IITM during pre-bid meeting will be recorded in the Minutes of the Pre-bid meeting which will form part of the contract. The minutes of pre bid meeting, corrigendum and Addendums will be uploaded in the e-Tender website.

6.2.5 Documents submitted in connection with the tender will be treated as confidential and will not be returned.

6.2.6 Originals of all the scanned and uploaded documents as specified shall have to be submitted only by the lowest tenderer within a week physically in the office of Superintending Engineer, Engineering Unit, IIT Madras. No separate intimation shall be given to the lowest bidder for submission of documents in the Office of Superintending Engineer, Engineering Unit, IIT Madras.

6.2.7 Contractor can upload documents in PDF format.

6.2.8 Tenderers are requested to comply with the following instructions:

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

6.2.10 The rate must be quoted in decimal coinage. Contractors must ensure to quote the rate. The column meant for quoting rate in figures appears in Cyan colour. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the tender will not be accepted and will be rejected. Therefore, if any cell is left blank and no rate is quoted by the bidder, the tender will not be accepted and will be rejected.

6.2.11 The tender submitted shall become invalid if:

- a) The tenderer is found ineligible.
- b) The tenderer does not upload all documents as stipulated in the tender document including the undertaking about deposition of original Demand Draft (EMD) of the scanned copy of EMD (Original Demand Draft) and bank guarantee uploaded.
- c) If any discrepancy is noticed between the documents as uploaded at the time of submission of tender and hard copies as submitted physically by the lowest tenderer in the office of Superintending Engineer, IIT Madras

### 6.3 Authority to sign the application:

- 6.3.1 If an individual makes the application, it shall be signed by him above his full type-written name and current address.
- 6.3.2 If a proprietary firm makes the application, it shall be signed by the proprietor (with seal) above his full typewritten name & the full name of his firm with its current address.
- 6.3.3 If the application is made by a firm in partnership, it shall be signed (with seal) by all the partners of the firm above their full typewritten names and current addresses or alternatively by a partner holding power of attorney for the firm in which case a certified copy of the power of attorney shall accompany the application. A certified copy of the partnership deed along with the current addresses of all the partners of the firm shall also accompany the application.
- 6.3.4 If a limited company or a corporation makes the application, it shall be signed by a duly authorized person holding power of attorney for signing the application, in which case a certified copy of the power of attorney shall accompany the application. Such limited company or corporation may be required to furnish satisfactory evidence of its existence. The applicant shall also furnish a copy of the Memorandum of Articles of association duly attested by a public notary.

### 6.4 Clarification on tender document.

A prospective tenderer requiring any clarification on the tender document may send his/her queries through email id. [aeedesign@smail.iitm.ac.in](mailto:aeedesign@smail.iitm.ac.in) addressed to Superintending Engineer, IITM at Chennai up to the date of pre-bid meeting. All clarifications will be provided along with the minutes of pre-bid meeting. No further communication regarding clarification/queries will be entertained after the Pre-bid meeting.

### 6.5 Pre-bid meeting.

The Tenderer or his authorized official representative is invited to attend the Pre-bid Meeting through video conferencing with the tender inviting authority on 20.05.2026 @ 11:00 AM . The link for joining the Prebid meeting is <https://www.microsoft.com/en-in/microsoft-teams/join-a-meeting> The meeting id is **420 456 496 431 92** and pass code is **Xi66ss9n** The purpose of the Meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. Non-attendance at the Pre-bid Meeting will not be a cause for disqualification of a Tenderer. No communication for clarification / queries will be entertained after 20.05.2026 @ 11.00 AM.

## 6.6 Amendment to tender documents

Before the deadline for submission of tenders, the tender document may be modified by issue of addenda/ Corrigendum. Any Addendum/ Corrigendum issued shall be part of the tender documents and shall be uploaded in the e-tender website only. To give prospective tenderers reasonable time in which to take the Addenda into account in preparing their tenders, extension of the deadline for submission of Tenders as necessary may be given.

## 6.7 Instructions for filling up the forms A, B, C, D, E & E1

### 6.7.1 Financial Information

The applicant should furnish the Annual financial statement for the last 5 years in form – A

### 6.7.2 Information about works

- i. List of all works of similar class successfully completed during last the 7 years in Form–B. Details of all the similar works completed in the last 7 years to be provided.
- ii. List of projects under execution or awarded in Form – C. Details of all the similar works to be provided.
- iii. Particulars of completed works and performance of the bidder shall be duly authenticated / certified by an officer not below the rank of Executive Engineer in case of Government works or the Project Manager or an equivalent officer in case of non-governmental works separately for each work in Form - D

### 6.7.3 Information about the organization

The bidder is required to submit the following information in respect of his organization in form E

- i. Name and postal address including telephone and fax nos. etc. Copies of original documents defining the legal status, place of registration and principal places of business.
- ii. Names and titles of Directors and officers to be concerned with the work, with designation of individuals authorized to act for the organization.
- iii. Information on any litigation / arbitration in which the applicant was involved during the last five years including any current litigation / arbitration in process.
- iv. Authorization for employer to seek detailed references from clients to whom works were carried out.

### 6.7.4 Letter of Transmittal

The applicant should submit the letter of transmittal as per the format attached in Section 8 of this document.

## 7 INTEGRITY PACT ADOPTION

It is hereby declared that IIT Madras is committed to following the principle of transparency, equality, and competition in public procurement. The subject tender inviting authority is an invitation of offer made on the conditions that the Bidder will sign the Integrity

Agreement, which is an Integral part of the tender /bid document. This declaration shall form part and parcel of the Integrity Agreement, and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of IIT Madras

IIT Madras has adopted and implemented the Integrity Pact in respect of Procurement transactions/Contracts. In this regard, the bidders are required to submit the filled-in format given in Annexure-III along with the tender submission. The Integrity Pact agreement must be signed by the successful tenderer and IIT Madras before the commencement of the execution of the purchase order. Non-submission of duly signed Integrity Pact may lead to rejection/disqualification as deemed fit, subject to the decision of the Competent Authority.

The details of IEM's

<b>Shri Mukesh Mittal, IRS (Retd.)</b> Z-63, Tatvam Villas, Sector-48 <ul style="list-style-type: none"><li>• Gurgaon-122 018</li><li>• Email: mukeshmittal6045@gmail.com</li></ul>	<b>Shri Prahlad Kumar Sinha, IP&amp;TAFS (Retd.)</b> C-I/9, Tilak Lane, VIP Park <ul style="list-style-type: none"><li>• New Delhi – 110 002</li><li>• Email: pekay66@gmail.com</li></ul>
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The details of IEM's are also published in IITM tender website <https://tenders.iitm.ac.in>

## 8 Forms

### LETTER OF TRANSMITTAL

**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

To

**The Superintending Engineer,**

Engineering Unit,

IIT Madras,

Chennai – 600 036

**Name of work :** Construction of Faculty complex by replacing the existing MFL building at IIT Madras.

Sir,

Having examined the details given in the notice inviting qualification application and tender and the qualification documents for the above work, I/ We hereby submit the application for eligibility, technical and financial bid for the work duly filled in.

1. I / We here by certify that all the statements made and information supplied in the enclosed forms and accompanying statements are true and correct.
2. I / We have furnished all information and details necessary for deciding our eligibility for taking part in the tendering process for the work. We have no further information to supply.
3. I / We submit the requisite solvency certificate and authorize the Superintending engineer, Engineering Unit, IITM, Chennai to approach the bank concerned to confirm the correctness of the certificate.
4. I / We also authorize the Superintending engineer to approach individuals, firms and corporations to verify our competence and general reputation.
5. I / We submit the following certificates in support of our suitability, technical know how and capability for having successfully completed the following works.

Name of work	Type of construction technology	Certificate / work order copy from

6. I / We agree to facilitate onsite inspection of the completed/ Ongoing works listed in the Form-‘B’ and Form-‘C’ by a committee of IIT Madras to evaluate the quality of the work.
7. I / We confirm that all the similar nature of works completed in the last 7 years and all ongoing works matching the similar nature of the work are listed in Form-‘B’ and Form-‘C’.

8. I/We are aware that the committee of IITM reserves the right to disqualify us if the quality of the completed/on-going work is found to be unsatisfactory.
9. I/We certify that that the tender documents uploaded is the exact replica of the document published by the IITM and no alterations and additions have been made by me / us in the e-tender document.
10. I am / We are aware that the Financial bid submitted by me/us will not be opened if i / we do not become eligible after evaluation of my/our application for eligibility.
11. I/we certify that, the declaration as enclosed in Annexure I, Annexure II, Annexure III & Annexure IV which were scanned and uploaded while submitting the e-Tender will be submitted within a week of the opening of financial bid if I/we become the successful tenderer. Otherwise, the Engineer-in-charge may reject the tender.

Seal of the Applicant

Date of submission

Signature(s) of the bidder

FORM 'A'

**FINANCIAL INFORMATION**

Details to be furnished duly supported by figures in Balance Sheet / Profit and Loss Account for the last Five years duly certified by the Chartered Accountant, as submitted by the applicant to the Income-Tax Department (Copies to be uploaded separately).

**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

I Financial Analysis –

Name of the organization : \_\_\_\_\_

PAN Number of the organization : \_\_\_\_\_

Sl No	Details	Year ending 31 <sup>st</sup> March of 2025				
		2021	2022	2023	2024	2025
1	Gross annual turnover in construction work					
2	Profit (+) / Loss (-)					

**SIGNATURE OF CHARTED ACCOUNTANT WITH SEAL**

II. Income Tax PAN details (to be enclosed separately)

III. GST Registration Certificate

SIGNATURE OF APPLICANT (S)

**FORM 'B'**

(To be duly filled, signed, scanned and uploaded along with envelope1 by the tenderer

SL NO	Name of work/project & location	Owner or sponsoring organizations	Agreement No	Scope of work /type of construction*	Cost of work in Crores	Date of commencement as per contract	Stipulated Date of completion	Actual date of completion	Litigation/ Arbitration pending / In progress with details **	Name and address/ Tel No of Officer to whom reference be made	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

\* Indicate the number of storeys in super structure

\*\* Indicate gross amount claimed and amount awarded by the Arbitrator

Signature of Applicant

In case of works carried out for private persons / Organizations copies TDS certificate along with copy of performance order and work order / Agreement should be enclosed. Private works without TDS certificates shall not be considered for valuation.



## **FORM- B1**

**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

### **ADDITIONAL INFORMATION FOR COMPLETED WORKS**

1. Name of work
2. Location
3. Client's name and address
4. Consultants name and address.
5. Scope of work / type of construction.
  - a. Number of floors in Basement.
  - b. Number of floors in Superstructure.
  - c. Height of the building.
  - d. Plinth area / Built up area.
    - i. Basement.
    - ii. Superstructure
6. Type of foundation.
7. Type of Superstructure.
8. Time taken for
  - i. Foundation.
  - ii. Superstructure.
  - iii. Total Project.
9. Specialized service provided, with cost details, if available  
(If any, specialized services provided through associate's - Particulars of the Associate's )
  - i. Communication, LAN.
  - ii. UPS.
  - iii. Water proofing Treatment
  - iv. Interior Design.
  - v. Fire Detection and Fire Fighting.
  - vi. Landscaping.
  - vii. Any other.

10. Specialized equipment deployed for the project.
11. Project Management organization structure.
12. Number of shift and its duration adopted in execution.
13. Systems adopted for timely completion of the project.

Additional information shall be uploaded separately

**Signature of bidder**

<p align="center"><b>FORM ' C '</b>  <b>(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)</b></p>										
<p align="center"><b>PROJECTS UNDER EXECUTION OR AWARDED</b></p>										
SL NO	Name of work/project & location	Owner or sponsoring organizations	Agreement No	Cost of work	Date of commencement as per contract	Stipulated Date of completion	Up to date percentage progress of work	Slow progress if any and reasons there of	Name and address/ Tel No of Officer to whom reference may be made	Remarks(Indicate whether any show cause notice issued or Arbitration initiated during the progress of work)
1	2	3	4	5	6	7	8	9	10	11

Signature of the bidder

FORM 'D'

**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

**PERFORMANCE REPORT FOR WORKS REFERRED TO IN FORM 'B' & 'C'**

1. Name of the work / Project & Location.
2. Scope of work.
  - a. Type of construction
  - b. Number of floors in Basement.
  - c. Number of floors in Superstructure.
3. Agreement No.
4. Estimated Cost
5. Tendered Cost
6. Value of work done
7. Date of Start
8. Date of completion
  - i. Stipulated date of completion.
  - ii. Actual date of completion.
9. Amount of compensation levied for delayed Completion, if any.
10. Performance report based on  
Quality of Work, Time Management,  
and Resourcefulness : Very Good / Good / Fair or Satisfactory

DATE

**EXECUTIVE ENGINEER /  
PROJECT MANAGER OR  
EQUIVALENT**

(\*Signature and seal of the client / owner  
to whom the work executed)

FORM 'D1'

**ASSESSMENT OF PERFORMANCE OF THE CONTRACTOR FOR COMPLETED  
AS WELL AS ONGOING WORKS**

Name of Work:-

Date of Inspection:-

Date of submission of report:-

Sl.No	Parameters to be assessed.	Maximum Marks	Whether the parameter is assessed Yes/ No	Marks awarded
1	Quality of finishing	10		
2	Quality of R C C / C C Work	10		
3	Quality of Flooring	10		
4	Quality of joinery	10		
5	Quality of Plumbing and Sanitary Installation	5		
6	Quality of Workmanship	15		
7	If cladding is done, observation on efficiency/ quality of cladding /Brick work	5		
8	Quality of DBs and Panels, E&M equipments, panels & feeder pillar, fire alarm system/fire fighting system	15		
9	Quality of Air Conditioning work.	5		
10	Timely completion of the previous works	15		

Note:-

All the above parameters shall be considered for assessing the overall performance of the contractor for completed as well as ongoing works.

In case any parameter is not applicable, the same will not be included in the assessment and mentioned as not applicable(N/A)

The works as assessed above shall be converted on a scale of 100 marks for completed works respectively.

The bidder shall score minimum 70% of the assessed parameters to qualify.

# FORM 'E'

## Structure of the Organisation

**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

S.No	Description	Details
1	Name and address of the applicant	
2	Name and Designation of the person submitting the tender	
3	Telephone No./Fax No/E-Mail address.	
4	Legal Status (attach copies of original document defining the legal status)	
	(a) An Individual	
	(b) A proprietary Firm	
	(c) A Firm in partnership	
	(d) A Limited Company or Corporation.	
5	Particulars of registration with various Government bodies (Attach attested photo-copy)	
	a) Registration Number.	
	b) Organization / Place of registration	
6	Names and Titles of Directors and officers with designation to be concerned with this work with Designation of individuals authorized to act for the organization.	
7	Was the applicant ever required to suspend construction for a period of more than six months continuously after the construction was commenced? If so, give the name of the project and give reasons thereof.	
8	Has the applicant or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give the name of the project and give reasons thereof.	
9	Has the applicant or any constituent partner in case of partnership firm, ever been debarred / black listed for tendering in any organization at any time? If so, give details:	
10	Has the applicant or any constituent partner in case of partnership firm, ever been convicted by a court of law? If so, give details.	
11	Field of specialization in Civil Engineering.	
12	Any other information considered necessary but not included above	

**Signature of the bidder**

**FORM ' E1'**  
**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

**DETAILS OF KEY TECHNICAL AND ADMINISTRATIVE PERSONNEL EMPLOYED BY THE FIRM / COMPANY**

SL NO	Designation	Total Number	Names	Qualification	Professional Experience	Length of continuous service with employer
1	2	3	4	5	6	7

**Note :** additional information about Technical personnel , if any , may be submitted on separate sheet.

Signature of the bidder



**FORM – F'**  
(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)

**DETAILS OF CONSTRUCTION PLANT AND EQUIPMENT LIKELY TO BE USED IN CARRYING OUT THE WORK.**

SL NO	Name of the Equipment	Nos	Capacity or Type	Age	Condition	Ownership status			Current location	Remarks
						Presently owned	To be purchased	Leased		
1	2	3	4	5	6	7	8	9	10	11
1										
2										

## **ANNEXURE-I**

(To be given on the letter head of the bidder)

e.T.No. 01/2026-27/EPC

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Dated:

### **CERTIFICATE**

*(Bidders from India)*

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and hereby certify that I am not from such a country.

**OR (*whichever is applicable*)**

*(Bidders from Country which shares a land border with India)*

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and hereby certify that I from \_\_\_\_\_ (Name of Country) and has been registered with the Competent Authority. I also certify that I fulfil all the requirements in this regard and is eligible to be considered. *(Copy/ evidence of valid registration by the Competent Authority is to be attached)*

Place:

Date:

Signature of the Tenderer

Name & Address of the  
Tenderer with Office Stamp

## ANNEXURE-II

### FORMAT FOR AFFIDAVIT OF SELF-CERTIFICATION UNDER PUBLIC PROCUREMENT POLICY(PREFERENCE TO MAKE IN INDIA) 2017

Tender Reference. 01/2026-27/EPC

Name of the work : Construction of Faculty complex by replacing the existing MFL building at IIT Madras

Date:

I/We \_\_\_\_\_ S/o, D/o, W/o, \_\_\_\_\_ Resident of \_\_\_\_\_ Hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the Public Procurement (Preference to Make in India) Policy vide GoI Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019 and 04.06.2020) MOCI order No. 45021/2/2017-PP (BE II) Dt.16th September 2020 & P- 45021/102/2019-BE-II-Part(1) (E-50310) Dt.4th March 2021 and any subsequent modifications/Amendments, if any and

That the local content for all inputs which constitute the said item/service/work has been verified by me and I am responsible for the correctness of the claims made therein.

Tick ( ✓ ) and Fill the Appropriate Category	
<input type="checkbox"/>	I/We _____ [name of the supplier] hereby confirm in respect of quoted items that Local Content is equal to or more than 50% and come under “ <b>Class-I Local Supplier</b> ” category.
<input type="checkbox"/>	I/We _____ [name of the supplier] hereby confirm in respect of quoted items that Local Content is equal to or more than 20% but less than 50% and come under “ <b>Class-II Local Supplier</b> ” category.

The details of the location (s) at which the local value addition is made and the proportionate value of local content in Percentage

Percentage of Local content: \_\_\_\_\_ %\*\* .

Place of the local content value calculated : \_\_\_\_\_

For and on behalf of ..... (Name of firm/entity)

**Authorized** signatory (To be duly authorized by the Board of Directors)

<Insert Name, Designation and Contact No.>

[Note: In case of procurement for a value in excess of Rs. 10 Crores, the bidders shall provide this certificate from statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.]

**This letter should be on the letterhead of the quoting firm and should be signed by a competent authority.**

**\*\* Services such as transportation, insurance, installation, commissioning, and training and after sales service support like AMC/CMC cannot be claimed as local value addition**

**ANNEXURE-III**  
**INTEGRITY PACT DECLARATION**

**(To be duly filled, signed, scanned and uploaded along with e-Envelope 1 by the tenderer)**

To

**The Superintending Engineer,**

Engineering Unit,

IITM, Chennai – 600 036

**Sub:** Construction of Faculty complex by replacing the existing MFL building at IIT Madras

Dear Sir.

1. I/We acknowledge that IIT MADRAS is committed to follow the principles thereof as enumerated in the Integrity Agreement.
2. I/We agree that the Tender Inviting Authority is an invitation to offer made on the condition that I/We will sign the Integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process.
3. I/We acknowledge that the submission of the bid shall be deemed an unconditional and absolute acceptance of this condition as stipulated in the NIT. I/We confirm acceptance and compliance with the Integrity Agreement in both letter and spirit and further acknowledge that the execution of the Integrity Agreement is distinct and separate from the main contract, which will take effect upon final acceptance of the tender/bid by IIT Madras..
4. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Section 9 of the Integrity Pact Agreement to be entered.
5. I/We acknowledge that, if I become the successful bidder, I will sign the integrity pact as part of the agreement, failure to sign and accept the Integrity Pact Agreement grants IIT Madras the absolute and unrestricted right to disqualify the tenderer/bidder and reject the tender/bid, in accordance with the terms and conditions of the tender/bid.

Yours faithfully  
(Duly authorized signatory of the Bidder with Seal)

## INTEGRITY PACT

To be signed by the bidder and same signatory competent/authorized to sign the relevant contract on behalf of IT MADRAS

### INTEGRITY AGREEMENT

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

### BETWEEN

IIT Madras represented through Superintending Engineer, IIT Madras

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

### AND

\_\_\_\_\_ (here-in-after referred to as "The Bidder/Contractor")

(Principal and the Bidder/Contractor are here-in-after are referred to individually as "Party" or collectively as "Parties").

### PREAMBLE

The Principal intends to award under laid down organizational procedures, contract/s for \_\_\_\_\_. The Principal values full compliance with all relevant laws of land rules, regulations, and economic use of resources and of fairness/transparency in its relations with its Bidder (s) and/or Contractor (s).

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

### Section 1-Commitments of the Principal

1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following Principles: -

- i) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or for a third person, any material or immaterial benefit which the person is not legally entitled to.
  - ii) The Principal will, during the tender process treat all Bidder(s) with equity and reasons. The Principal will in particular, before and during the tender process, provide to all Bidder (s) the same information and will not provide to any Bidder (s) confidential / additional information through which the Bidder (s) could obtain an advantage in relation to the tender process or the contract execution.
  - iii) The Principal will exclude from the process all known prejudiced persons.
1. If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal Code (IPC)/Prevention of Corruption Act (PC Act), or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officers and in addition can initiate disciplinary actions.

#### Section 2 Commitments of the Bidder (s) Contractor(s)

1. The Bidder (s) / Contractor (s) commits themselves to take all measures necessary to prevent corruption. The Bidder (s)/Contractor (s) commits themselves to observe the following principles during participation in the tender process and during the contract execution:
2. The Bidder (s)/Contractor (s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
3. The Bidder (s) / Contractor (s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other action to restrict competitiveness or to introduce cartelization in the bidding process.
4. The Bidder (s) / Contractor (s) will not commit any offence under the relevant IPC/PC Act; further, the Bidder (s) / Contractor (s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship regarding plans, technical proposals and business details, including information contained or transmitted electronically.
5. The Bidder (s)/ Contractor (s) of foreign origin shall disclose the name and address of the Agents/ representatives in India, if any. Similarly, the Bidder Contractor (s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further, all the payments made to the Indian agent/ representative have to be in India Rupees only.
6. The Bidder (s) / Contractor (s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, broker or any other intermediaries in connection with the award of the contract.

7. Bidder(s) / Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.
8. The Bidder(s)/ Contractor(s) shall not instigate third person to commit offences outlined above or be an accessory to such offences.

### Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder (s) / Contractor (s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put their reliability or credibility in question, the Principal is entitled to disqualify the Bidder (s)/Contractor (s) from the tender process or take action as per provisions of "Procedure for action in case Corrupt/Fraudulent/Collusive/Coercive Practices".

### Section 4-Compensation for Damages

1. If the Principal has disqualified the Bidder (s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit / Bid Security. If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equal to the Contract Value or the amount equivalent to Performance Bank Guarantee.

### Section 5-Previous transgression

1. The Bidder declares that no previous transgression occurred in the last three years, with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.
2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or actions can be taken as per provisions of "Procedure for action in case Corrupt/Fraudulent/Collusive/Coercive Practices"

### Section 6- Equal treatment to all Bidders/Contractors/Subcontractors

1. In case of Sub-Contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor.
2. The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
3. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

### Section 7-Criminal charges against violating Bidder (s) / Contractor (s)/Sub-contractor (s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which Constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

### Section 8-Independent External Monitor / Monitors



1. The Principal appoints competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
2. The Monitor is not subject to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him/her to treat the information and documents of the Bidders/ Contractors as confidential. He/she reports to IIT MADRAS.
3. The Bidder (s)/ Contractor (s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.
4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
5. As soon as the Monitor notices, or believes to notice, violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or to take corrective action, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
6. The Monitor will submit a written report to the Competent Authority of IIT MADRAS within 10 days as far as possible from the date of reference or intimation to him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.
7. If the Monitor has reported to the Competent Authority of IIT MADRAS, a substantiated suspicion of an offence under relevant IPC/PC Act, and the Registrar, IIT MADRAS has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
8. The word 'Monitor' would include both singular and plural.
9. In case of any complaints referred under IP Program, the role of IEMs is advisory and would not be legally binding and it is restricted to resolving the issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidder.

#### Section 9-Pact Duration

This pact begins when both parties have legally signed it. It expires for the Contractor 12 Months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded. Any violation to the same would entail disqualification of the bidders and exclusion from future business dealing.

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

#### Section 10-Other provisions

1. This agreement is subject to Indian Law. Place of performance and exclusive jurisdiction is the Registered Office of the Principal, who has floated the Tender.
2. Changes and supplements as well as termination notices, if any, need to be made in writing. Side agreements have not been made.
3. If the Contractor/Bidder is a partnership concern , this agreement must be signed by all partners .
4. Should one or several of the provisions of this agreement turn out to be invalid, the remainder of this agreement shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions in such a case.
5. Issues like warranty/guarantee, etc, shall be outside the purview of IEMs.
6. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement/Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

#### Section 11-Legal and Prior Rights

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

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

For and on behalf of Principal/Owner)

WITNESSES:

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

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

Place:

Dated:

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**Annexure-IV**  
**DECLARATION ABOUT SITE INSPECTION**

To  
The superintending Engineer  
Engineering Unit  
IIT Madras

Name of the work: Construction of Faculty complex by replacing the existing MFL building at IIT Madras.

Dear Sir,

It is hereby declared that , I/ We the bidder inspected and examined the subject site and its surrounding and satisfy myself / ourselves as to the nature of the ground, the forms and nature of the site before submitting the bid, the accommodation which may require and all necessary information as to risks, contingencies and other circumstances which may influence or affect our bid have been obtained.

I/We the bidder have full knowledge of the site and no extra charge consequent upon any misunderstanding or otherwise shall be claimed in later date.

I /We bidder am/are responsible for arranging and maintaining at own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents.

Submission of a bid by me/us implies that I / We have read this notice and all other contract documents and have made myself /ourselves aware of the scope and specifications of the work to be done and local conditions and other factors having a bearing on the execution of the work.

The following person(s) has visited the site.

S.No	Name of the employee	Designation

I/we have enclosed the times stamped photographs taken during the site inspection as a proof of site visit.

Yours faithfully

(Duly authorized signatory of the bidder)

**ANNEXURE-V**  
**Bank Guarantee for EMD**

B.G. No. Dated:

1. In consideration of you, IIT Madras having its office at Chennai 600036 (hereinafter referred to as the "Authority", which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns) having agreed to receive the Bid of \_\_\_\_\_ (a company registered under the Companies Act, 1956) and having its registered office at \_\_\_\_\_ (hereinafter referred to as the "Bidder" which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns), for the Construction of Faculty complex by replacing the existing MFL building at IIT Madras (hereinafter referred to as "the Project") pursuant to the Tender Number \_\_\_\_\_ dated ..... issued in respect of the Project and other related documents (hereinafter collectively referred to as "TenderDocuments"), we (Name of the Bank) having our registered office at \_\_\_\_\_ and one of its branches at \_\_\_\_\_ (hereinafter referred to as the "Bank"), at the request of the Bidder, as per the tender Document, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfilment and compliance of the terms and conditions of the tender Documents by the said Bidder and unconditionally and irrevocably undertake to pay forthwith to the Authority an amount of INR \_\_\_\_\_ (hereinafter referred to as the "Guarantee") as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Bidder if the Bidder shall fail to fulfil or comply with all or any of the terms and conditions contained in the said Tender Documents.
2. Any such written demand made by the Authority stating that the Bidder is in default of the due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Bank.
3. We, the Bank, do hereby unconditionally undertake to pay the amounts due and payable under this Guarantee without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claim of the Authority is disputed by the Bidder or not, merely on the first demand from the Authority stating that the amount claimed is due to the Authority by reason of failure of the Bidder to fulfill and comply with the terms and conditions contained in the Bidding Documents including failure of the said Bidder to keep its Bid open during the Bid validity period as set forth in the said Bidding Documents for any reason whatsoever. Any such demand made on the Bank shall be conclusive as regards amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding \_\_\_\_\_
4. This Guarantee shall be irrevocable and remain in full force for a period of 180 (one hundred and eighty) days from the Bid Due Date inclusive of a claim period of 60 (sixty) days or for such extended period as may be mutually agreed between the Authority and the Bidder, and agreed to by the Bank, and shall continue to be enforceable till all amounts under this Guarantee have been paid.
5. We, the Bank, further agree that the Authority shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder

- to keep its Bid open during the Bid validity period set forth in the said Bidding Documents, and the decision of the Authority that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the Authority and the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority.
6. The Guarantee shall not be affected by any change in the constitution or winding up of the Bidder or the Bank or any absorption, merger or amalgamation of the Bidder or the Bank with any other person.
  7. In order to give full effect to this Guarantee, the Authority shall be entitled to treat the Bank as the principal debtor. The Authority shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the Bids or the Bid validity period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfilment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to the Authority, and the Bank shall not be released from its liability under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the said Bidder or any other forbearance, act or omission on the part of the Authority or any indulgence by the Authority to the said Bidder or by any change in the constitution of the Authority or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Bank from its such liability.
  8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given or made if addressed to the Bank and sent by courier or by registered mail to the Bank at the address set forth herein.
  9. We undertake to make the payment on receipt of your notice of claim on us addressed to [name of Bank along with branch address] and delivered at our above branch which shall be deemed to have been duly authorised to receive the said notice of claim.
  10. It shall not be necessary for the Authority to proceed against the said Bidder before proceeding against the Bank and the guarantee herein contained shall be enforceable against the Bank, notwithstanding any other security which the Authority may have obtained from the said Bidder or any other person and which shall, at the time when proceedings are taken against the Bank hereunder, be outstanding or unrealised.
  11. We, the Bank, further undertake not to revoke this Guarantee during its currency except with the previous express consent of the Authority in writing.
  12. The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorised and has full power to execute this Guarantee for and on behalf of the Bank.
  13. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to \_\_\_\_\_ The Bank shall be liable to pay the said amount or any part thereof only if the Authority serves a written claim on the Bank in accordance with paragraph 8 hereof, on or before \_\_\_\_\_ (date falling 60 days after expiry of validity of Bank Guarantee)].

Signed and Delivered by ..... Bank

By the hand of Mr./Ms. \_\_\_\_\_ its.

.....and authorised official.

(Signature of the Authorised Signatory)

(Official seal)

**The Beneficiary details for the EMD**

Beneficiary: IIT Madras, Chennai-36

Bank: State Bank of India (SBI)

Branch: IIT Madras

IFSC Code: SBIN0001055 •

Location: IIT Campus, Chennai, Tamil Nadu

## **9 e-Tender**

- 9.1 I/We have read and examined the notice inviting e-tender, schedules, Specifications applicable, drawings, Conditions of contract and other documents and rules referred to in the conditions of contract and all other contents in the tender documents for the work.
- 9.2 I/We hereby tender for the execution of the work specified for the Indian Institute of Technology Madras, within the time specified in Schedule – ‘F’ and in accordance with all respects with the specifications, designs, drawings and instructions in writing referred to in General Rules and Directions and in Clause 11 of General conditions of contract and with such materials as are provided for, and in all respects in accordance with such conditions applicable.
- 9.3 I/We agree to keep the tender open for Ninety (90) days from the date of opening of tender and not to make any modifications in its terms and conditions
- 9.4 I/We agree that the EMD deposited by me/us be retained by IITM towards Security Deposit to ensure execution of all works referred to in the tender documents on the terms and conditions contained or referred to therein.
- 9.5 If I/We fail to furnish the prescribed performance guarantee as mentioned elsewhere within the prescribed period, I/we agree that IITM shall, without prejudice to any other right or remedy, be at liberty to forfeit the said performance guarantee absolutely.
- 9.6 I/we agree that in case of forfeiture of tender, I/we shall be debarred from participating in the re-tendering process of the work.
- 9.7 If I/we fail to commence work as specified in Clause 3A of the contract, I/we agree that IITM shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely.
- 9.8 I/we hereby declare that I/we shall treat the tender documents, drawings and other records connected with the work as secret / confidential documents and shall not communicate the information derived therefrom to any person other than a person to whom I/we am / are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.
- 9.9 I/We hereby certify that the e-tender document uploaded is the exact copy of the document published by the IITM and no alterations and additions have been made by me / us in the e-tender document

## 10 ACCEPTANCE

The above e-Tender is accepted by me for an on behalf of the Director, IITM for a sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_  
\_\_\_\_\_) )

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

- a)
- b)
- c)

For & on behalf of the Director, IITM.

Signature \_\_\_\_\_

Designation \_\_\_\_\_

Date \_\_\_\_\_



***PART - II***

***Tender Form, Schedules A to F and General Conditions of Contract, Special Conditions of Contract and Additional Conditions of Contract***

## 11 CONDITIONS OF CONTRACT

### 11.1 Definitions

In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them: -

1. The expression ‘works’ or ‘work’ shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed, whether temporary or permanent, and whether original, altered, substituted or additional.
2. The ‘Site’ shall mean the land/or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
3. The ‘contractor’ shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.
4. The ‘Engineer-in-charge’ means the Engineer who shall supervise and be in-charge of the work and who shall sign the contract on behalf of IIT as mentioned in Schedule ‘F’ hereunder.
5. ‘Accepting Authority’ shall mean the authority mentioned in Schedule.
6. ‘Excepted Risks’ are riots (other than those on account of contractor’s employees), war, acts of God such as earthquake, lightening and unprecedented floods, and other such causes over which the contractor has no control and accepted as such by the Accepting Authority.
7. ‘Market Rate’ shall be the rate as decided by the Engineer-in-charge on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Schedule ‘F’ to cover all overheads and profits.
8. ‘Schedules(s)’ referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard schedule of Rates of the CPWD mentioned in schedule ‘F’ hereunder, with the amendments thereto issued up to the date of receipt of the tender.
9. ‘Department’ means IITM which invites the tenders.
10. ‘District specification’ means the specifications followed by the state of Tamil Nadu in the area where the work is to be executed.
11. ‘Tendered value’ means the value of the entire work as stipulated in the letter of award.
12. ‘Employer, IIT Madras, IITM means Indian Institute of technology, Madras
13. Where the context so requires, words imparting the singular also include the plural and vice versa. Any reference to masculine gender shall whenever required shall refer to feminine gender and vice versa.
14. Wherever the expression “Divisional Officer” appears in the Clauses, it should be substituted by the expression “Superintending Engineer or Executive Engineer”.
15. “Engineer in Charge” means Superintending Engineer, IITM, and the Engineer means the officer representing the Engineer-in-Charge of the Project.

16. “TPQAS” means the Third Part Quality Assurance Services agency appointed by the IIT Madras for assisting IIT Madras in monitoring / execution of the works. Commissioning of all E&M services will be witnessed by third party agency and the contractor shall provide all co-operation for the same.

The spread sheet containing the Bill of Quantity shall be downloaded from the above web site and the same shall be uploaded to the e-Tender website after filling the rates. The file name of the spread sheet document which is downloaded from the e-Tender web site should not be changed in any case.

1. The rate must be quoted in decimal coinage. Contractors must ensure to quote in the rate column. The column meant for quoting rate in figures appears in Cyan colour. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as “0”. Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as “0” (ZERO).
2. The tender submitted shall be treated as invalid if :-
  - a. The contractor does not quote rate for the item mentioned in the BOQ or any section/sub head of the tender.
  - b. The rate quoted is different in figures & words on the total amount of tender or any section/sub head of the tender. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected.
3. In case the highest combined score of two or more contractors is same, such contractors will be asked to submit sealed revised offer in the form of letter mentioning lumpsum amount of tender including all sub sections/sub heads as the case may be, but the revised amount quoted on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The successful tender shall be decided on the basis revised combined score calculated based on the of revised offers. In case any of such contractor refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50% of earnest money shall be forfeited.
4. If the revised combined score of two more contractors received in revised offer is again found to be equal, the lowest tender, among such contractors, shall be decided by draw of lots in the presence of SE or EE(s) in-charge & the lowest contractors those have quoted equal amount of their tenders. In case all the lowest contractors those have quoted same tendered amount, refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each contractor. Contractor(s), whose earnest money is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the work.
5. Tenders containing proposal for any alteration in the work or in the time allowed for carrying out the work, or which contain any other condition including conditional rebates, will be summarily rejected.
6. The officer inviting tenders shall have the right to reject all or any of the tenders and will not be bound to accept the lowest or any other tender.

7. The tender for the work shall not be witnessed by a Contractor or Contractors who himself / themselves has/have tendered for the same work. Failure to observe this condition would render tenders of the Contractor tendering, as well as witnessing the tender, liable to summary rejection.
8. The tenderers shall sign a declaration under the Official Secret Act, 1923, for maintaining secrecy of the tender documents, drawings or other records connected with the work given to them.

#### 11.2 Refund / forfeiture of EMD

1. In the event of a tender being accepted, a receipt for the Earnest Money forwarded therewith shall thereupon be given to that Contractor.
2. Tender for the work shall remain open for acceptance for a period of 90 days from the date of opening of the Tender.
3. If the lowest tenderer withdraws his tender before the said period or issue of acceptance, whichever is earlier or makes any modification in the terms and conditions of the tender which are not acceptable to the Institute, then IITM, shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money.
4. Upon identification of the successful contractor, the EMD of unsuccessful bidders shall be returned to the bidders without any interest.

#### 11.3 Documents to be submitted upon acceptance of the tender.

1. On acceptance of the tender, the name of the accredited representative(s) of the Contractor who would be responsible for taking instructions from the Engineer in Charge shall be communicated in writing to the Engineer in Charge.
2. The Contractor shall give a list of IITM employees related to him.

#### 11.4 Signing of Agreement

1. The successful contractor on acceptance of his tender shall, within 14 days from the stipulated date of start of the work, sign the contract.
2. Documents constituting the contract
  - a. Non-judicial stamp paper for value not less than Rs.100 containing the brief description of the contract duly signed by both parties to the contract.
  - b. The notice inviting e-tender, the financial bid including BOQ and all other documents including drawings, technical presentations, forming the tender as issued at the time of invitation of e-tender and acceptance thereof together with any correspondence leading thereto.
  - c. Decisions taken in the Pre-bid meeting if conducted.
  - d. Any addendum or corrigendum to tender.
  - e. Letter of acceptance
  - f. Letter of award (After submission of Performance Guarantee)
  - g. Any other communications / documentation made during the tender publishing and evaluation stage.

### 11.5 Special conditions

1. The rate quoted shall be inclusive of all applicable taxes including GST prevailing on the date of closing of tender. However, the rate of tax prevailing at the date of billing will only be paid based on submission of tax invoice as per GST rules.
2. Any reduction in the rates of GST from the quoted rates in the BOQ during the currency of the contract commensurate reduction in the quoted rates in BOQ will be effected and payment will be made accordingly.
3. The e-tender is lumpsum rate e-tender in EPC Mode-II. The tenderers are requested to enter their rates in the prescribed cell in the BOQ excel sheet.
4. Child Labour is strictly prohibited.
5. Construction labour shall not be permitted (except staff for watch and ward) to stay inside the campus and no labour camp shall be allowed to be set up inside the campus.
6. The construction activities and storage of materials shall be restricted within the area earmarked around the proposed building, which shall be barricaded with materials approved by IITM.
7. The contractor shall abide by the restrictions imposed by the security wing of the Institute on the working and movement of labour, materials etc. and nothing extra shall be payable on this account. The contractor shall arrange for necessary photo identity passes for the labour for entry into the campus. Necessary charges for issuing labour and vehicle pass shall be paid by the contractor. Advance action to obtain such passes shall be taken by the contractor and no claim on this account shall be entrained.
8. Movement of labour should be restricted to the areas where work is carried out. Workers should be made to confine themselves to the work areas and should not wander into the nearby areas / buildings/ forest.
9. The work should be executed during daytime only. If the work is required to be carried out in the night, necessary permission of the Engineer-in-charge shall be obtained. Contractor will make his own arrangement for lighting the area and no extra amount for carrying out the work during night is payable. To the extent possible engaging women labour in the night shift should be avoided
10. The work shall be carried out with least hindrance to the adjoining buildings and offices and the contractor will be responsible for any damage, caused to the existing fixtures, electric fittings, cables, roads, pipelines etc. in the course of execution and the contractor shall make good any such damages for which nothing extra is payable.
11. Water for construction shall be arranged by the contractor. The contractor will not be allowed to use any of the water resources available within the campus nor will be permitted to dig any bore well inside the campus.
12. No plot rent shall be charged for materials stocked in the institute land during construction with the prior approval the Engineer. All such materials shall be removed at the time of completion of the work.

13. The contractor shall make his own arrangement for electricity required during the construction period. Necessary temporary connections from local authority / DG set will be arranged by the contractor. No extra claim will be entertained for the same.
14. Tenderer shall inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the site and shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not. Submission of a tender implies that the tenderer has read the complete contract documents and is aware of the conditions, specification of the work to be done and of the local conditions and other factors having a bearing on the execution of work. Any claim either for extra amount or for additional time for execution due to ignorance about the site and working condition is not payable.
15. All documents forming the contract shall be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scaled.
16. In the case of discrepancy between the specifications and/or the Drawings, the following order of precedence shall be observed.
  - a. Specifications and special conditions, if any
  - b. Drawings given as part of the tender
  - c. Technical presentation by the bidder
  - d. CPWD General Specifications
  - e. Relevant IS or any other international code in case IS code is not available.
  - f. Specifications of B.I.S.
17. If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer-in-charge shall be the deciding authority with regard to the interpretation of the documents and his decision shall be final and binding on the contractor.
18. Any error in description, quantity, or rate in schedule of Quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract. All such variations, errors, additions, substitutions etc shall be decided as per the terms of the contract
19. The building work shall be carried out complying in all respects with the requirements of relevant bye-laws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra will be paid on this account.
20. The work of water supply, internal sanitary installations and drainage work etc. shall be carried out as per the local body bye-laws and the contractor shall produce necessary completion certificate from such authorities after completion of the work, if required.
21. Where CPWD specifications are not available for fittings and fixtures, the same should conform to bye-laws and specification of the local Body. The contractor should engage licensed plumbers for the work.

22. The contractor shall comply with all legal orders and directions of the local or public authority or municipality and abide by them.
23. The contractor shall give a performance test of the installation(s) as per specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
24. The contractor should construct proper mortar bands of lean mix with adequate depth & size over the roof for flooding with water & proper curing. In case of Arches, wet gunny bags shall be used for a period of two weeks.
25. Sample of all materials, fixtures, flooring tiles, wall tiles, granite, doors, windows, sanitary fittings, roofing sheets, electrical fittings etc, shall be got approved in advance from the Engineer-in-Charge before taking up the respective work. The contractor shall produce all the materials in advance so that there is sufficient time for testing and approving the materials and clearance of the same before their use in work.
26. The contractor shall be furnished, free of cost one certified copy of the contract documents except Standard Specifications, Schedule of Rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract
27. For any dispute arising out of this agreement, the legal jurisdiction will be at Chennai in Tamil Nadu only.
28. Canvassing whether directly or indirectly, in connection with tender is strictly prohibited and the tenders of the contractors who resort to canvassing will be liable to rejection.
29. The contractor shall associate a Electrical/Water proofing/Fire Fighting/ Lifts contractor of the appropriate class to carry out the works with prior approval of IIT Madras. The principal contractor will be held responsible for completion of the work as per contract. No agreement will be created between the agency associated by the tenderer and IITM in this regard.
30. Other agencies related to this project will also simultaneously execute their part of works and the contractor shall cooperate and allow smooth working of all such agencies. The contractor shall leave such holes, openings etc, for laying / burying of pipes, cable, conduits, clamps, boxes and hooks for fans etc. as may be required for other agencies. Conduits for electrical wiring shall be laid in such a way that they leave enough space for concreting and do not adversely affect the structural members. The rates quoted for the items of work are deemed to include charges for coordinating with all such agencies and nothing extra is payable on this account.
31. The following events will take place in the Campus which may hinder the progress of work. The durations of the events are
  - a. Shaastra and Saarang - 10 days (normally in January)
  - b. Convocation - 2 days (normally in July)The completion time stipulated in the contract is deemed to have included the above if they happen during the duration of the contract.
32. IITM will appoint a third-party quality assurance agency to ensure quality in execution. The contractor shall give all assistance and co-operations to the agency. The third-party quality

assurance agency will also provide required input for project scheduling and monitoring. Commissioning of all E&M services will be witnessed by third party agency and the contractor shall provide all co-operation for the same.

33. In clause 25 of GCC (Form 8), a dispute redressal committee has been constituted by IITM. The procedure for inviting Dispute Redressal Committee is to be done as per Clause 25.
34. Site yard shall be barricaded as per the drawing approved by IIT Madras.
35. All marking and levelling shall be done only by using Total Station
36. Spillover of any construction materials / earth on the road surface should be cleared immediately.
37. Quality assurance plan and quality manual: The Contractor shall submit the detailed quality assurance plan and quality manual to be adopted in the above work with respect to the relevant item of work.
38. No labour shall be allowed to stay in the site of construction except watch and ward as approved by the Engineer-in-charge. Contractor shall ensure the safety of the road users while transporting the construction materials. No spillage of materials on the road will be permitted. Penalty of Rs 50000/- will be imposed if the spillage is not cleaned immediately. The Contractor shall plan the shifting of materials during the lean traffic hours preferably at night to avoid disturbance to road users.
39. The contractors are requested to inspect the site before submission of their tender documents. After the prebid meeting, the Site and material yard location will be shown to interested contractors.
40. No trees and vegetation shall be cut by the contractor.
41. Firewood collection is strictly prohibited.
42. All debris generated in the site premises / material yard should be removed and disposed outside IIT Madras campus. Necessary approval from local authority shall be obtained by the contractor.
43. IIT Madras traffic regulation and speed limit should be followed without any violation.
44. The contractor shall provide CCTV camera on the barricading to monitor activities inside and outside the site with necessary recording arrangement for a duration of one month. Upon intimation the contractor shall produce the CCTV recordings to the Engineer-in-charge or IITM Security section in the Hard disk. No additional charges will be paid for the same.
45. The rate tendered by the contractor for the items of the work shall be considered, as inclusive of pumping out or bailing out water, during excavation if required, for which no extra payments will be made. This will include water encountered from any source, such as rains, floods, sub-soil water table being high or due to any other cause whatsoever.
46. The rate quoted for all the items is inclusive of the scaffolding to be provided for executing the works. No Additional payment will be made towards scaffolding
47. The painting works shall be executed as per coverage mentioned in the list of painting products and their coverage



48. Obtaining all statutory approvals both central, state and local authorities as applicable to electrical installation are included in the scope of the work for which no extra payment will be made..
49. The debris / construction waste and other waste generated from the work spot should not be thrown inside the campus. All waste material should be taken out of the campus or should be dumped at a place earmarked by the Engineer in charge. All construction material should be stored only at places earmarked by the engineer in charge.
50. For intercarting of various materials, use of animal drawn vehicles are strictly prohibited.
51. Preparation of concrete, mortars on the roads, pavements, bare floors under the building is strictly prohibited.
52. No vegetation inside the campus should be damaged.
53. Smoking is strictly prohibited at workplace.
54. In case of violation of any rules by the contractor, penalty will be levied by IIT Madras at the following rate.
55. The campus roads shall be cleaned immediately if there is a spillage of soil etc by the vehicles engaged by the bidders
56. The rates quoted are inclusive of Commissioning at site including temporary construction of storage if required, , overhead charges, general liabilities/obligations and obtaining clearance from CEA/ Lift Inspectorate/ Fire department etc as required. However, the fee for the inspections by these departments shall be reimbursed/ borne by IIT Madras..

Sl.No	Operations	Penalty per day
1	Construction of labour shed without approval from the Engineer-in-charge	Rs50000 per shed per day
2	Labour wandering into the nearby areas / buildings / forests.	Rs25000 per incident
3	Thrown food items / waste / package item inside or outside the site premises.	Rs25000 per incident
4	Water stagnation at site due to improper maintenance attributed to the contractor.	Rs20000 per incident
5	Dumping of debris and storage of waste or other materials outside the barricaded / designated area / open space.	Rs25000 per incident
6	Improper maintenance of barricade.	Rs50000 per incident
7	Improper sanitation of labour toilets	Rs10000 per incident

Sl.No	Operations	Penalty per day
8	Collection of firewood	Rs25000 per day
9	Safety violations	Rs20000 per incident

57. Work for electrical installation shall be carried out complying with the relevant statutory requirements and national standards. It shall be the responsibility of the contractor to obtain approvals of competent Central or State Government authorities and satisfy them regarding the compliance with relevant regulations for this scope of work.
58. Electrical work should be carried out only under the supervision of licensed supervisors. The licenses possessed by the Contractor's supervisor shall be made available to the Client for scrutiny before commencement of the electrical work.
59. Test certificate for installation shall be prepared in the form required by the Electrical Inspectorate, Govt. of Tamilnadu and Tamilnadu Electricity Board. Any rework on account of remarks by Electrical Inspector shall have to be carried out by the Electrical contractor at no extra cost.

## 12 Special Conditions (For All E & M Components)

- The applicant should either himself meet the eligibility conditions for the respective E&M components and should have Electrical Contractor's License or otherwise he will have to associate with agencies, fulfilling the eligibility requirements. The consent letter from Associate Agency of the respective components of E&M work shall be submitted as per attached Proforma after award of work.
- In case the main contractor is himself eligible (as per eligibility criteria) for executing any specific E&M component and intends doing the job himself, he may not be required to associate with another agency for that component of work. In such cases the main contractor also has to submit the documents as per eligibility criteria mentioned for associated agency of individual E&M component.
- The main tenderer have to submit the following documents for association of electrical contractor within one month of award of work or 15 days before start of work whichever is earlier.
  - In support of the eligibility conditions of the proposed associated electrical contractor, copy of their registration documents, Electrical Contractor's License, duly attested by the applicants (Main Contractor) shall be submitted to the Engineer-in-Charge, IITM for deciding the eligibility. Such electrical contractor will certify that they are not debarred as on the day of application for call of tender. Proposal for associating agency for E&M work shall be submitted in Form- F of this tender document from each associate independently for all electrical and mechanical components.
  - The main contractor will submit a copy of the MOU signed with himself/themselves, and the associated contractor. The MOU in the enclosed form( FORM "F") shall be

signed by both the parties' i.e. main contractor as 1st party and associated contractor as per eligibility criteria as 2nd party (independently for all E&M components).

4. In the event of the concerned E&M agency not performing satisfactorily or failure of associate contractor to complete the E&M work, the main contractor on written directions of the Institute shall remove the Associate contractor deployed on the work and shall submit name of new associate who fulfill the conditions mentioned in NIT to execute the left over work without any loss of time or variation in cost to the Institute. Such associates shall also give an undertaking along with the main tenderer that both of them shall stand guarantee for the equipments already supplied for which payment has been released by the Institute in part. If any equipment supplied for the work, during the currency of the earlier Associate contractor and paid partly by the Dept., becomes redundant /not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of E&M work, the main contractor shall be liable for replacement of the equipment(s) at no cost to Institute. No change of Associate agency will be allowed without prior approval of the Engineer-in-charge of the work.
5. The materials shall be procured only from the original equipment manufacturers/ authorized dealers of OEM. The contractor shall submit all documentary details in fulfillment of this conditions regarding procurement of materials including relevant test certificates.
6. It will be obligatory on the part of the contractor/tenderer to sign the tender documents for all the component parts.
7. The main contractor shall be responsible and liable for proper and complete execution of the E&M work and ensure coordination and completion of both civil and electrical work.
8. The main contractor has to enter into MOU with contractor associated by him for execution of E&M component.
9. The associate contractor shall attend the inspection of the work by the Engineer-in-Charge as and when required.
10. If the contractor is associating any specialized agency for the any of the sub-heads, the payment to the specialized agency shall be paid immediately upon receipt of the payment from IIT Madras. The contractor shall submit the documentary proof for clearing of all due payments to the associated agency for the previous bill payment period.
11. If the contractor is associating any specialized agency for the any of the E&M works, the escalation amount if any paid by IITM shall be passed on to the associated agency for the applicable sub-heads. The contractor shall submit the documentary proof for clearing of all due payments to the associated agency for the previous bill payment period.

S. No	Component of E & M works	Estimated cost in Rs. In lakhs	Eligibility
C1	Internal and external Electrical	809.51	a. Three similar works each costing not less than Rs.323.81Lakhs (Or)

	Installation, Fire alarm, Public Address System, and Internet		<p>b. Two similar works each costing not less than Rs.485.71 Lakhs(Or)</p> <p>c. One similar work costing not less than Rs.647.61 Lakhs</p> <p><b>“Similar work”</b> for this criterion means <b>“Internal and external Electrical Installation, Fire alarm, and Internet”</b>.</p>
<b>C2</b>	HVAC	213.59	<p>a. Three similar works each costing not less than Rs.85.43 Lakhs (Or)</p> <p>b. Two similar works each costing not less than Rs.128.15 Lakhs (Or)</p> <p>c. One similar work costing not less than Rs.170.87 Lakhs</p> <p><b>“Similar work”</b> for this criterion means <b>“HVAC works”</b>.</p>
<b>C3</b>	Lifts	106.88	<p>a. Three similar works each costing not less than Rs.42.75 Lakhs (Or)</p> <p>b. Two similar works each costing not less than Rs.64.13 Lakhs</p> <p>c. One similar work costing not less than Rs.85.5 Lakhs</p> <p><b>“Similar work”</b> for this criterion means <b>“Supply and Installation of lifts”</b>.</p>
<b>C4</b>	Solar Photo Voltaic Power Generation Ssystem	33.04	<p>a. Three similar works each costing not less than Rs.13.22 Lakhs (Or)</p> <p>b. Two similar works each costing not less than Rs.19.82 Lakhs (Or)</p> <p>c. One similar work costing not less than Rs.26.43 Lakhs</p> <p><b>“Similar work”</b> for this criterion means <b>“Installation of Solar Photo Voltaic Power Generation Sytem and Solar heating system”</b>.</p>
<b>C5</b>	Firefighting and Fire alarm system	218.95	<p>a. Three similar works each costing not less than Rs.87.58Lakhs (Or)</p> <p>b. Two similar works each costing not less than Rs.131.37 Lakhs(Or)</p>

			<p>c. One similar work costing not less than Rs.175.16 Lakhs</p> <p><b>“Similar work”</b> for this criterion means “Firefighting and fire alarm system”.</p>
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**Form -F**

CONSENT LETTER FROM ELIGIBLE ASSOCIATE AGENCY OF E&M COMPONENT OF WORK in the Construction of ..... at IIT Madras, Chennai-36.

Sub Work 2:

C1 : Internal and external Electrical Installation, Fire alarm, Public Address System, and Internet

C2 : HVAC

C3 : Lifts

C4: Solar Photo Voltaic Power Generation Sytem and Solar heating system

C5: Fire fighting and fire alarm system

I / We hereby give my consent to associate with M/s ....., for executing E&Mof work of ..... (Mention category).

I / We will execute the work as per specifications and conditions of the agreement and as per directions of the Engineer –in-Charge for the corresponding minor work till the completion of the work.

I / We will be responsible for necessary action to handover the installations and for rectification of defects and repair during the maintenance / warranty period.

Also I / We will employ full time technically qualified Engineer / supervisor for the minor component of the work as required for the work. I / We will attend inspection of officers of the department as and when required.

Date:

Signature with seal

Major component

Contractor Address

Witness with address

(From major component contractor side)

Signature with seal

Minor component

Contractor Address

Witness with address

(From minor component contractor side)

**FORM –I**  
**PROPOSAL FOR ASSOCIATING ELIGIBLE AGENCIES FOR E&MCOMPONENTS OF**  
**WORK**

I/we hereby propose the following agencies as per mentioned against each for executing corresponding minor components of work. Their consent letter are also attached

Sl.No	Name of Associate contractor	Category and class of Registration	Enlistment copy/ completion certificate attached	Monetary Limit of work	Validity of Registration	Consent letter attached (Yes/No)
C1- Internal and external Electrical Installation, Fire alarm, Public Address System, and Internet						
1						
2						
3						

Sl.No	Name of Associate contractor	Category and class of Registration	Enlistment copy/ completion certificate attached	Monetary Limit of work	Validity of Registration	Consent letter attached (Yes/No)
C2- HVAC						
1						
2						
3						

Sl.No	Name of Associate contractor	Category and class of Registration	Enlistment copy/ completion certificate attached	Monetary Limit of work	Validity of Registration	Consent letter attached (Yes/No)
C3- Lifts						
1						
2						
3						

Sl.No	Name of Associate contractor	Category and class of Registration	Enlistment copy/ completion certificate attached	Monetary Limit of work	Validity of Registration	Consent letter attached (Yes/No)
C4- Solar Photo Voltaic Power Generation Ssystem and Solar heating system						
1						
2						
3						

Sl.No	Name of Associate contractor	Category and class of Registration	Enlistment copy/ completion certificate attached	Monetary Limit of work	Validity of Registration	Consent letter attached (Yes/No)
C5- Fire fighting and fire alarm system						
1						
2						
3						



**Note:** Self Attested photocopies of enlistment order, valid electrical contractor license, annual pre-qualification order, work experience certificates of each agency for each component of E&M work shall be submitted.

Signature of contractor

**Form- “I” Memorandum of Understanding (MOU) (to be executed for each and every E&M component if the main contractor associates an agency)**

Memorandum of Understanding (MOU) (to be executed for each and every E&M component if the main contractor associates an agency)

1. M/s. (Name of the firm with full address) 2. M/s. (Name of the firm with full address) Enlistment Status Enlistment Status Valid Upto: Valid Upto: (Henceforth called the main Contractor) (Henceforth called Associated Electrical Contractor or Electrical Contractor)

For the execution of Electrical Work: C/o ..... (Electrical Component) as per schedule specifications, terms and conditions of the tender. We state that this Memorandum of Understanding (MOU) will be treated as an agreement and has legality as per Indian Contract Act (amended up to date) and the IIT Madras can enforce all the terms and conditions of the agreement for execution of the above work. Both the main contractor and Associated E & M Contractor shall be responsible for the execution of work as per the original agreement to the extent this MOU allows. The payment shall be made by the Institute to the main contractor only and it his responsibility to make payment to the associated agency at their agreed rates . In case of any dispute, either of the main contractor or associated contractor will go for mediation by the Engineer In charge and if not satisfied may appeal against the mediation to the Chairman(EU),IIT Madras. His decision shall be final and binding on both of the main contractor and associated contractor. We have agreed as under:

1. The associated .....contractor will execute all electrical works in the wholesome manner as per terms and conditions of the agreement.
2. The associated electrical contractor shall be liable for disciplinary action if he fails to discharge the action(s) and other legal action as per agreement.
3. All the machinery and equipments, tools and tackles required for execution of the electrical works, as per agreement, shall be the responsibility of the associated electrical contractor.
4. The site staff required for the electrical work shall be arranged by the associated electrical contractor as per terms and conditions of the agreement.
5. Site order book maintained for the said work shall be signed by the representative of the main contractor/ associated contractor or the main contractor/ associated contractor themselves.

1. SIGNATURE OF MAIN CONTRACTOR

Date

Place

2. SIGNATURE OF ASSOCIATED ELECTRICAL CONTRACTOR

Date

Place

## 12.1.1 GENERAL TERMS AND CONDITIONS APPLICABLE FOR ALL E&M COMPONENTS

### *12.1.1.1 GENERAL*

1.1 The work shall be generally carried out in accordance with tender/bid specifications and the following specifications / rules.

- (a) CPWD General Specifications for Electrical work Part I Internal – 2023, as amended upto date
- (b) CPWD General Specifications for Electrical work Part II External - 2023, as amended upto date
- (c) CPWD General Specifications for Electrical work Part IV Substation -2013, as amended upto date.
- (d) General Specifications for Electrical Works (Part-III-LITS & Escalators) - 2003, as amended upto date.
- (e) CPWD General Specifications for Electrical Works Part VII D.G. Sets - 2013, as amended upto date.
- (f) General Specifications for Heating, Ventilation & Air-Conditioning(HVAC) – 2024 as amended upto date.
- (g) General Specifications for Electrical Works (Part-V-Wet riser & Sprinkler System) - 2020, as amended upto date.
- (h) CPWD General Specifications for Electrical Works Part VI Fire Detection and Alarm System – 2018 as amended upto date..
- (i) Commercial and Additional conditions for this work. j) The Indian Electricity Act, 2003, as amended upto date k) Indian Electricity Rules 1956 amended upto date

### *12.1.1.2 COMPLETENESS OF TENDER*

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

### *12.1.1.3 STORAGE AND CUSTODY OF MATERIALS*

- a. The space , if available, may be used for storage of sundry materials and erection equipments or else the agency has to make his own arrangements. No separate storage accommodation shall be provided by the department. Watch and ward of the stores and their safe custody shall be the responsibility of the contractor till the final taking over of the installation by the department.

#### *12.1.1.4 CARE OF THE BUILDING:*

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

#### *12.1.1.5 COMPLETION PERIOD*

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

#### *12.1.1.6 GUARANTEE*

- a. All equipment shall be guaranteed for a period of 24 months, from the date of taking over the installation by the department, against unsatisfactory performance and/or break down due to defective design, workmanship or material. The equipments or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.
- b. The tender shall guarantee among other things, the following: a. Quality, strength and performance of the materials used as per manufacturers standards. b. Safe mechanical and electrical stress on all parts under all specified conditions of operation. c. Satisfactory operation during the maintenance period.

#### *12.1.1.7 ACCEPTABLE MAKES OF VARIOUS EQUIPMENTS:*

- a. The acceptable makes of various equipment/components/accessories have been indicated in "Acceptable Makes" appended with the tender documents. The tenderer shall work out the cost of the offer on this basis. Alternate makes are not acceptable.

#### *12.1.1.8 DATA MANUAL AND DRAWINGS TO BE FURNISHED BY THE TENDERER:*

- a. After award of work
- b. The successful tenderer would be required to submit the following drawings after award of work for approval before commencement of installation.

- a) General arrangement drawing of all equipment of E&M components as per individual E&M component
  - b) Details of foundations for the equipment and the weights of assembled equipments.
  - c) Any other drawings necessary for the job.
- c. The successful tenderer should furnish well in advance three copies of detailed instructions and manuals of manufacturers for all items of equipments regarding installation, adjustments operation and maintenance including preventive maintenance & trouble shooting together with all the relevant data sheets, spare parts catalogue etc. all in triplicate.

#### *12.1.1.9 EXTENT OF WORK*

- a. The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation and such tests and adjustments and commissioning, as may be required by the department. The term complete installation shall not only mean major items of the plant and equipments covered by specifications but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in details in the tender document in connection with this contract as this is a turnkey job.
- b. The cables and other items shall be brought at site after taking correct measurements.
- c. In addition to supply, installation, testing and commissioning, of all E&M equipment, following works shall be deemed to be included within the scope of work to be executed by the tenderer as this is a turnkey job.
  - a) Minor building works necessary for installation of equipments, foundation, making of opening in walls or in floors and restoring them to their original condition finish and necessary grouting etc. as required.
  - b) All necessary supports may be arranged.
  - c) Testing of PTs/CTs for metering & protection purpose & relay calibration & setting.
  - d) Getting CEA inspection done & obtaining approval for energizing the installation. However, necessary fees for inspection shall be borne by the Department.

#### *12.1.1.10 Exclusion and work to be done by other agencies:*

- a. The following shall be excluded from the scope of the work:
  - i. Tree cutting.

#### *12.1.1.11 Approval of drawings, makes and models of equipment/materials for all E&M components :*

- a. The agency shall submit drawings and details such as makes and models of the equipment /materials offered by him along with specifications for all E&M components to the Engineer-in-charge of the work, before ordering the equipment/materials for approval of the department.

- b. The Engineer-in-charge shall scrutinize the proposal and approve the makes and models which are acceptable as per the schedule, specifications, conditions of the agreement and inform the agency for procurement. The approving authority shall be technical sanctioning authority of E&M component.
- c. After approval of the equipment/materials by the department the agency shall procure the equipment/materials from the OEM/authorized distributor/dealer as the case may be:
- d. Adequate care that only tested and genuine materials of proper quality are used in work shall be ensured by firm.
- e. The firm shall also ensure that:
  - a. Material are will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery. As and when the order is placed for the fittings/ fixtures, cables, switchgears, poles, other main items etc, its copy shall be endorsed to the Engineer-in-charge. The contractor will submit makes & brands of electrical fittings wires & cables, conduits and switchgears, rising mains, poles , outdoor fittings etc. of preferred make list as per tender documents for approval of Engineer-In-Charge whose decision will be final in the matter.
  - b. The firm will be required to procure material directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor if required by the department.
  - c. Inspection at factory or at godown, as required, shall be arranged by the firm for a mutually agreed date. Delivery of material shall be taken up only with the consent of department, after clearance of the material. Department shall reserve the right to waive inspection in lieu of suitable test certificate, at its discretion. All the materials to be supplied by the contractor shall be procured & brought to site as per requirement at site of work in consultation with department so that these materials are not damaged & their manufacturer's warrantee is not lost.

#### *12.1.1.12 INSPECTION AND TESTING*

- a. All major equipments shall be offered for initial inspection at manufacturer's works. The contractor will intimate the date of testing of equipments at the manufacturer's works before dispatch. The successful tenderer shall give advance notice of minimum two weeks regarding the dates proposed for such tests to the department's representative to facilitate his presence during testing. The Engineer-in-charge or his representative may witness such testing. The cost of the Engineer's visit to the factory will be borne by the Department. Equipments will be inspected at the manufacturer/ Authorized Dealers premises, before dispatch to the site by the contractor if so desired by the Engineer- in-charge. Engineer-in-charge at his discretion may waive of inspection at factory /at the manufacturer's works before dispatch.
- b. Copies of all documents of routine and type test certificates of the equipment, carried out at the Manufacturer's premises shall be furnished to the Engineer-in-charge and consignee.

- c. After completion of the work in all respects the contractor shall offer the installation for testing and operation.

*12.1.1.13 COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS:*

- a. All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian Standards related to the works covered by this specification. In particular, the equipment and installation will comply with the following: i) Factories Act. ii) Indian Electricity Rules. iii) B.I.S. & other standards as applicable. iv) Workmen's compensation Act. v) Statutory norms prescribed by local bodies like CEA, Power Supply Co., etc.
- b. After completion of the installation, the same shall be offered for inspection by the representatives of the Central Electricity Authority. The contractor will extend all help including test facilities to the representatives of CEA. The observations of CEA will be attended by the contractor. The installation will be commissioned only after getting clearance from CEA.
- c. Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

*12.1.1.14 INDEMNITY:*

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

*12.1.1.15 ERECTION TOOLS:*

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

#### *12.1.1.16 COOPERATION WITH OTHER AGENCIES:*

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

#### *12.1.1.17 INSURANCE AND STORAGE:*

- a. All consignments are to be duly insured upto the destination from warehouse at the cost of the contractor. The insurance covers shall be valid till the equipment is handed over duly installed, tested and commissioned.
- b. VERIFICATION OF CORRECTNESS OF EQUIPMENT AT DESTINATION: The contractor shall have to produce all the relevant records to certify that the genuine equipments from the manufacturers has been supplied and erected.
- c. PAINTING: This shall include cost of painting of the entire installation. The major equipments like, L T panel, DG set, lifts, HVAC equipments, axial fans, cable trays etc. shall be factory final finish painted. The agency shall be required to do only touching to the damages caused to the painting during transportation, handling & installation at site, if there is no major damage to the painting. However hangers, supports etc. of cable tray etc. shall be painted with required shade including painting with two coats of anticorrosive primer paint at site.

#### *12.1.1.18 TRAINING:*

- a. The scope of works includes the on job technical training of two persons of Department at site. Nothing extra shall be payable on this account.

#### *12.1.1.19 MAINTENANCE:*

- a. Sufficient trained and experienced staff shall be made available to meet any exigency of work during the defect liability period. The maintenance, routine as well as preventive, for one year from the date of taking over the installation as per manufacturer's recommendation shall be carried out as per OEM standards.

#### **Safety Codes & Statutory Regulations:**



- a. Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.
- b. Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer.

## 13 SCHEDULES

**Schedule ‘A’** - Schedule of Quantities of work – As enclosed

**Schedule ‘B’** - Schedule of materials proposed to be issued to the tenderer - **No material shall be issued to the tenderer by IITM**

**Schedule ‘C’**- Schedule of tools and plants proposed to be hired to the tenderer - **No tools and plants shall be hired to the contractor by IITM**

**Schedule ‘D’** - Extra schedules for specific requirements / documents for the work, if any - Nil

### **Schedule ‘E’**

Name of the work	Construction of Faculty complex by replacing the existing MFL building at IIT Madras
Estimated cost of work	Rs. 5689 Lakhs
Earnest money	Rs.66,89,000/-
Performance Guarantee	5% of the tendered value
Security Deposit	2.5% of the tendered value

### **Schedule ‘F’**

Engineer-in-Charge	Superintending Engineer, IIT Madras
Accepting Authority	Director, IIT Madras
Percentage on cost of materials and labour to cover all overheads and profits	15%

Standard Schedule of Rates	Latest CPWD DSR (Delhi Schedule of rates) applicable as on date of closing of the tender with relevant cost index
Department	Engineering Unit , IITM
Standard contract form	Form-8

### Clause 1

Time allowed for submission of Performance Guarantee, programme Chart (time and Progress) and applicable labour Licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of Letter of Acceptance	15 Days
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### Clause 2

Authority for levying compensation under clause 2	Superintending Engineer, IITM
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### Clause 5

Authority to convey the decision of shifting of milestone and extension of time. (Engineer-in-Charge or Engineer-in-Charge of Major Component in case of Composite Contracts, as the case may be)	Engineer-in-Charge
Authority to decide rescheduling of milestones and extension of time.	Engineer-in-Charge
Shifting of date of start in case of delay in handing over of the site	Engineer-in-Charge
Time allowed for execution of work	15 months
Number of days from the date of issue of letter of the acceptance for reckoning the date of start	14 Days

**Milestones to be achieved are given below**

<b>S.No</b>	<b>Milestone Details</b>	<b>Time Allowed</b>	<b>Amount to be withheld in case of Non-achievement of Milestone (% of Tendered Amount)</b>
Mile stone-1	<ul style="list-style-type: none"> <li>- Construction of site offices &amp; material stores</li> <li>- Shifting of services to commence work</li> <li>- Barricading around work site</li> <li>- Demolition of existing building &amp; debris removal</li> <li>- Submission of Site Management Plan</li> <li>- Submission of proof-checked structural design &amp; drawings</li> <li>- Submission of proof-checked MEP design &amp; drawings</li> <li>- Supply of drawings/documents to IIT-M for statutory approvals (Local bodies &amp; CMDA)</li> <li>- Submission of QA &amp; QC plan - Mobilization of complete technical manpower</li> </ul>	D+1 Month	0.55%
Mile stone-2	<ul style="list-style-type: none"> <li>- RCC works: Completion of foundation work &amp; retaining walls in basement</li> <li>- Registering project with GRIHA</li> <li>- Receipt of all MIVAN shuttering materials</li> </ul>	D+3 Months	0.55%
Mile stone-3	<ul style="list-style-type: none"> <li>- RCC works: All RCC works up to 1st floor</li> <li>- Construction of under ground sump</li> <li>- Completion of waterproofing works at substructure</li> <li>- Anti-termite treatment &amp; basement refilling</li> <li>- First site visit by GRIHA team</li> </ul>	D+5 Months	0.55%
Mile stone-4	<ul style="list-style-type: none"> <li>- RCC works: All RCC works up to 4th floor</li> <li>- Flooring: All flooring works up to 1st floor</li> </ul>	D+7 Months	0.55%

S.No	Milestone Details	Time Allowed	Amount to be withheld in case of Non-achievement of Milestone (% of Tendered Amount)
Mile stone-5	<ul style="list-style-type: none"> <li>- RCC works: All RCC works up to 7th floor</li> <li>- Flooring: All flooring works up to 4th floor</li> <li>- Restrooms: Floor &amp; wall tiling up to 4th floor</li> <li>- Joineries: All doors up to 4th floor</li> <li>- Electrical/Data/LAN/CCTV: Wiring up to 4th floor</li> <li>- Fire fighting &amp; Fire alarm system : Fire alarm cable, Sprinkler, fire hydrant pipe laying upto 4<sup>th</sup> floor. Installation of fire pumps in the fire pump room.</li> <li>- HVAC : Completion of chilled water vertical and horizontal headers, tapping from headers to individual FCU, Fixing FCU with all concealed wirings, sensors, etc upto 4th floor level.</li> <li>- Ventilation : Basement ventilation, toilet ventilation, electrical room ventilation upto 4<sup>th</sup> floor</li> <li>- Painting: Wall putty &amp; 1st coat interior painting up to 4th floor</li> <li>- Others: Interior partitions up to 4th floor, 2nd GRIHA site visit</li> </ul>	D+9 Months	0.55%
Mile stone-6	<ul style="list-style-type: none"> <li>- RCC works: All RCC works up to 10th floor</li> <li>- Flooring: All flooring works up to 7th floor</li> <li>- Restrooms: Floor &amp; wall tiling up to 7th floor, fittings up to 4th floor</li> <li>- Joineries: All doors up to 7th floor</li> <li>- Electrical/Data/LAN/CCTV: Wiring &amp; fittings up to 7th floor</li> <li>- Fire fighting &amp; Fire alarm system : Fire alarm cable, Sprinkler, fire hydrant pipe laying upto 7<sup>th</sup> floor</li> <li>- HVAC : Completion of chilled water vertical and horizontal headers, tapping from headers to individual</li> </ul>	D+11 Months	0.60%

S.No	Milestone Details	Time Allowed	Amount to be withheld in case of Non-achievement of Milestone (% of Tendered Amount)
	<p>FCU, Fixing FCU with all concealed wirings, sensors, etc upto 7<sup>th</sup> floor level.</p> <p>- Ventilation :Toilet ventilation, electrical room ventilation upto 7<sup>th</sup> floor</p> <p>- Painting: Wall putty &amp; 1st coat interior painting up to 7th floor</p> <p>- Others: Interior partitions up to 7th floor</p>		
Mile stone-7	<p>- RCC works: Completion of building including water tanks &amp; terrace parapet walls</p> <p>- Flooring: All flooring works up to Terrace floor</p> <p>- Granite works at staircase, Lift lobby and lift facia from Basement to terrace</p> <p>- Restrooms: Floor &amp; wall tiling for all restrooms, fittings for the complete building</p> <p>- Joineries: All doors, windows, ventilators, sill works up to terrace floor</p> <p>- Electrical/Data/LAN/CCTV: Wiring, fittings, CCTV, switches up to terrace floor</p> <p>- Fire fighting &amp; Fire alarm system : Fire alarm cable, Sprinkler, fire hydrant pipe laying including header line upto terrace floor</p> <p>- HVAC : Completion of chilled water vertical and horizontal headers, tapping from headers to individual FCU, Fixing FCU with all concealed wirings, sensors, etc upto terrace floor level.</p> <p>- BMS : Installation of BMS cable, field devices, DDC panel and all associated works.</p> <p>- Ventilation :Toilet ventilation, electrical room ventilation upto terrace floor</p>	D+13 Months	0.55%

S.No	Milestone Details	Time Allowed	Amount to be withheld in case of Non-achievement of Milestone (% of Tendered Amount)
	<ul style="list-style-type: none"> <li>- Painting: Wall putty &amp; 2 coats interior painting up to Terrace floor</li> <li>- External Development: Circulation roads &amp; approach roads till DLC level, culvert construction, storm water drain</li> <li>- Others: Interior partitions up to Terrace floor, plumbing lines in ducts, FRP platforms, SS Handrails at staircase, Finishing of the false ceiling works at all floors</li> </ul>		
Mile stone-8	<ul style="list-style-type: none"> <li>- Flooring: Terrace waterproofing, testing &amp; tiling</li> <li>- Joineries: All doors, windows, ventilators, sill works for the entire building</li> <li>- Painting: Completion of interior painting for entire building, 1 coat external painting</li> <li>- External Development: Completion of circulation &amp; approach roads</li> <li>- Lift : Installation of all lifts</li> <li>- Others: Installation of solar panels &amp; lightning conductor, Commissioning of the water supply and sewerage system</li> </ul>	D+14 Months	0.55%
Mile stone-9	Completion of the entire project, commissioning of all MEP works, attending to snags and handing over the site, Obtaining GRIHA 4 Star rating, Submission of as built drawings and finishing of all deliverables as per the agreement	- D+15 Months	0.55%
D is date of commencement of work			

Monthly recovery for delay in submission of the monthly progress report within specified period	Rs.50,000
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Handing over of the site : 14 days from the date of issue of letter of acceptance

**Clause 7**

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	Rs. 2 Crores or as decided by Engineer-in-charge
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Payment will be released based on the payment scheduled given in Part-IV of the tender

**Clause 7**

Whether clause 7A shall be applicable	Yes
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**Clause 8**

Competent Authorities to inspect and issue Part/ Final completion certificate.	Superintending Engineer, IITM
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**Clause 8A**

Authority to decide Compensation on account if contractor fails to submit Completion plans	Superintending Engineer, IITM
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**Clause 10A** - List of Testing equipment to be provided as listed in this Document

**A. For Building Works**

1. Balances :

- (i) 7 kg. to 10 kg. capacity, semi-self indicating type - accuracy 10 gm.
- (ii) 500 gm. capacity, semi-self indicating type - accuracy 1 gm.
- (iii) Pan balance- 5 kg. capacity - accuracy 10 gms.

2. Ovens-electrically operated, thermostatically controlled upto 110°C - sensitivity 1°C.

3. Sieves: as per IS 460-1962.

- (i) I.S. sieves - 450mm internal dia, of sizes 100 mm, 80 mm, 63mm, 50 mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75mm, complete with lid and pan.
- (ii) I.S. sieves- 200mm internal dia (brass frame) consisting of 2.36mm, 1.18mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns, with lid and pan.



4. Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly.
5. Equipment for slump test- Slump cone, steel plate, tamping rod, steel scale, scoop.
6. Dial gauges, 25 mm travel - 0.01 mm/division least count - 2nos.
7. 100 tonnes compression testing machine, electrical-cum manually operated.
8. Graduated measuring cylinders 200 ml capacity - 3 Nos.
9. Enamel trays (for efflorescence test for bricks).
  - (i) 300 mm × 250 mm × 40 mm- 2 nos.
  - (ii) Circular plates of 250 mm dia - 4 nos.

#### **B. Field Testing Instruments**

1. Steel tapes - 3 m, 15m & 30m
2. Vernier calipers
3. Micrometer screw 25 mm gauge
4. A good quality plumb bob
5. Spirit level, minimum 30 cms long with 3 bubbles for horizontal vertical
6. Wire gauge (circular type) disc
7. Foot rule
8. Long nylon thread
9. Rebound hammer for testing concrete
- 10 Dynamic penetrometer
11. Magnifying glass
12. Screw driver 30 cms long
13. Ball pin hammer, 100 gms
14. Plastic bags for taking samples
15. Moisture meter for timber
16. Earth resistance tests
17. Meggar
18. Any other equipment for site tests as outlined in BIS code and as directed by the Engineer-in-charge.

#### **Clause 10B**

Whether Clause 10B (ii) shall be applicable	Yes
Whether Clause 10B (iii) shall be applicable	Yes

**Clause 10 CC**

Whether Clause 10CC shall be applicable	Not applicable to this contract
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**Clause 11**

Specification to be followed for execution of work	Latest CPWD Specifications available as on date of closing of tender
Building information model (BIM) is applicable	Yes

**Clause 12**

Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for all types of works	100%
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**Clause 16**

Competent Authority for deciding reduced rates for items which are not as per specification	Superintending Engineer, IIT Madras
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**Clause 17**

5 (Five) years after the date of actual completion of work as recorded by the Engineer- in-Charge

**Clause 19C**

Penalty for each default	Rs. 50,000/-
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**Clause 19D**

Penalty for each default	Rs. 50,000/-
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**Clause 19G**

Penalty for each default	Rs. 50,000/-
Enhanced penalty per day for continuous default	Rs. 50,000/-

**Clause 19K**

Penalty for each default	Rs. 50,000/-
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**Clause 25**

Arbitrator Appointing Authority	Director, IITM
Place of Arbitration	Chennai, Tamil Nadu

**Clause 32**

Minimum number of Technical Personnel to be employed at site.

Designation	Minimum qualification	Minimum Experience (In years)	Number	Rate of recovery per month for non - employment
Project Manager	Graduate in Civil Engineering	20 years with relevant experience in proposed construction technology	1	Rs. 1,00,000/-
Deputy Project Manager	B.E in Civil Engineering	12 years with relevant experience in proposed construction technology	1	Rs. 80,000/-
Project / Site Engineer (Civil)	Graduate in Civil Engineering  Or  Diploma in Civil Engineering	In case of graduate, 5 years with relevant experience in proposed construction technology   In case of Diploma, 10 years with relevant experience in proposed construction technology	3	Rs. 60,000/-
Project / Site Engineer (Electrical)	Graduate in Electrical Engineering  Or	In case of graduate, 5 years , In case of Diploma, 10 years	2	Rs. 60,000/-

Designation	Minimum qualification	Minimum Experience (In years)	Number	Rate of recovery per month for non - employment
	Diploma in Electrical Engineering			
Project / Site Engineer (HVAC)	Graduate in Electrical Engineering  Or  Diploma in Electrical Engineering	In case of graduate, 5 years , In case of Diploma, 10 years	1	Rs. 60,000/-
Project Planning / Billing Engineer	Graduate in Engineering  Or  Diploma in Engineering	In case of graduate, 2 years , In case of Diploma, 5 years	1	Rs. 40,000/-
Quality control engineer	Graduate in Civil Engineering  Or  Diploma in civil Engineering	In case of graduate, 2 years , In case of Diploma, 5 years	1	Rs. 40,000/-
BIM Expert	Graduate in Engineering	10 Years	1	Rs. 80,000/-

**Clause 38**

Sl.No	Description	Percentage
<b>1</b>	Schedule / statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2023 printed by C.P.W.D.	
<b>2</b>	Variations permissible on theoretical Quantities.	
A	Cement for works with estimated cost put to for tender not more than Rs. 5 Lakhs.	3% plus /minus.
B	Steel Reinforcement and structural steel sections for each diameter, section and : category	2% plus/minus
C	Bitumen all works	2.5% plus only & nil on minus side
D	All other materials.	NIL

**Recovery rates for quantities beyond permissible variations**

Sl.No	Description of Item	Rate in figures and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond permissible variation (Exclusive of GST)
1	Portland Pozzolana Cement	Nil	110% of base price considered
2	Steel reinforcement	Nil	
3	Structural Steel	Nil	

#### **14 STATUTORY REQUIREMENTS / APPROVAL FROM STATUTORY AUTHORITIES**

1. The contractor shall submit all the signed drawings / documents to IITM as requested from time to time for obtaining local body approval and other statutory approvals, within 3 days from the date communicated. The size, format and number of copies shall be as defined time to time.
2. The detailed architectural drawing prepared by the architect will be submitted to the contractor in CADD format. It is the contractor's responsibility to convert it to the suitable Pre-DCR form to submit it to local body approvals.
3. Wherever necessary, the structural, MEP and other relevant consultants appointed by the contractor shall sign the documents

## 15 Forms

### 15.1 Guarantee bond

#### Form of performance security (guarantee) Bank guarantee bond

In consideration of the Indian Institute of Technology Madras (hereinafter called “The Institute”) Having offered to accept the terms and conditions of the proposed agreement between .....and.....(hereinafter called “the said contractor (s))for the work..... (hereinafter called “the said agreement”) having agreed to production of a irrevocable bank Guarantee for Rs.....(Rupees.....only) as security / guarantee from the contractor (s) for compliance of his obligations in accordance with the terms and condition in the said agreement.

- 1) We.....(hereinafter referred to as “the Bank”) hereby (Indicate the name of the Bank) Undertake to pay to the Institute an amount not exceeding Rs.....(Rupees.....only) on demand by the Institute.
- 2) We.....do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the Institute stating that the amount claimed is required to that recoveries due or likely to be due from the contractor (s). Any such demand on the Bank shall be conclusive as regard the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....(Rupees.....only)
- 3) We, the said bank further undertake to pay to IITM any money so demanded notwithstanding any dispute or disputes raised by the contractor (s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present guarantee being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability payment therein under and the contractor (s) shall have no claim against us for making such payment.

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

- 5) We.....further agree with the Institute that (Indicate the name of the Bank) the Institute shall have the fullest liberty without our consent without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor (s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Institute against the said contractor (s) and to forebear 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 contractor (s) or for any forbearance, act of omission on the part of the Institute on any indulgence by the Institute to the said contractor (s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
- 6) This guarantee will not be discharged due to the change in the constitution of the bank or the contractor (s).
- 7) We.....lastly undertake not to revoke this (Indicate the name of the Bank) Guarantee except with the previous consent of the Institute in writing.
- 8) This guarantee shall be valid up to.....unless extended on demand by Institute. Notwithstanding anything mentioned above, our liabilities under this guarantee is restricted to Rs ..... (Rupees ..... ) and unless a claim of writing is lodged with us within six month of the date of expiry or extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharge.

Dated the.....day of.....for.....(Indicate the name of the Bank)



## 15.2 INDENTURE FOR SECURED ADVANCES

**(For use in cases in which the contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time)**

**THIS INDENTURE** made the ..... day of .....20.....

**BETWEEN** ..... (hereinafter called the “Contractor” which expression shall where the context so admits or implies be deemed to include his executors, administrators and assigns) of the one part

**AND**

the **Director, IIT Madras** (hereinafter called the “Director” which expression shall where the context so admits or implies be deemed to include his successors in office and assigns) of the other part.

**WHEREAS** by an agreement dated..... (hereinafter called the said agreement) the Contractor has agreed

**AND WHEREAS** the Contractor has applied to the Director that he may be allowed advances on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the construction of such of the works as he has undertaken to execute at rates fixed for the finished work (inclusive of the cost of materials and labour and other charges)

**AND WHEREAS** the Director has agreed to advance to the Contractor the sum of Rupees ..... on the security of materials the quantities and other particulars of which are detailed in Accounts of Secured Advances attached to the Running Account Bill for the said works signed by the Contractor on .....and the Director has reserved to himself the option of making any further advance or advances on the security of other materials brought by the Contractor to the site of the said works.

**NOW THIS INDENTURE WITNESSETH** that in pursuance of the said agreement and in consideration of the sum of Rupees .....on or before the execution of these presents paid to the Contractor by the Director (the receipt whereof the Contractor doth hereby

acknowledge) and of such further advances (if any) as may be made to him as aforesaid the Contractor doth hereby covenant and agree with the President and declare as follows: -

1. That the said sum of Rupees .....so advanced by the Director to the Contractor as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the Contractor in or towards expediting the execution of the said works and for no other purpose whatsoever.
2. That the materials detailed in the said Account of Secured Advances which have been offered to and accepted by the Director as security are absolutely the Contractor's own property and free from encumbrances of any kind and the Contractor will not make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractor indemnifies the President against all claims to any materials in respect of which an advance has been made to him as aforesaid.
3. That the materials detailed in the said Account of Secured Advances and all other materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereinafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the Engineer-in-charge ..... Division (hereinafter called the Engineer-in-charge) and in terms of the said agreement.
4. That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor's custody and on his own responsibility and shall at all times be open to inspection by the Engineer-in-charge or any officer authorised by him. In the event of the said materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same as required by the Engineer-in-charge.
5. That the said materials shall not on any account be removed from the site of the said works except with the written permission of the Engineer-in-charge or an officer authorised by him on that behalf.
6. That the advances shall be repayable in full when or before the Contractor receives payment from the Director of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done then on the occasion of each such payment the Director will be at liberty to make a recovery from the Contractor's bill for such payment by deducting therefrom the value of the said materials then actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect

of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

7. That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing to the Director shall immediately on the happening of such default be repayable by the Contractor to the Director together with interest thereon at twelve per cent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the Director in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the President to repay and pay the same respectively to him accordingly.
8. That the Contractor hereby charges all the said materials with the repayment to the President of the said sum of Rupees .....and any further sum or sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and whenever the covenant for payment and repayment herein before contained shall become enforceable and the money owing shall not be paid in accordance therewith the President may at any time thereafter adopt all or any of the following courses as he may deem best :-
  - a. Seize and utilise the said materials or any part thereof in the completion of the said works on behalf of the Contractor in accordance with the provisions in that behalf contained in the said agreement debiting the Contractor with the actual cost of effecting such completion and the amount due in respect of advances under these presents and crediting the Contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the Contractor he is to pay same to the President on demand.
  - b. Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the President under these presents and pay over the surplus (if any) to the Contractor.
  - c. Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said agreement.
9. That except in the event of such default on the part of the Contractor as aforesaid interest on the said advance shall not be payable.
10. That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been herein before expressly provided for the same shall be referred to the Superintending Engineer ..... whose decision shall be final and the provisions of the Indian Arbitration Act for the time being in force shall apply to any such reference.

IN WITNESS WHEREOF the said .....and .....by the order and under the direction of the President have hereunto set their respective hands the day and year first above written.

Signed, sealed and delivered by.....

the said contractor in the presence of

Witness	{	Signature .....	}
		Name .....	
		Address .....	

Signed by.....

by the order and direction of the President

in the presence of

Witness	{	Signature .....	}
		Name .....	
		Address .....	

### 15.3 GUARANTEE TO BE EXECUTED BY TENDERERS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The Agreement made this..... day of ..... Two thousand and .....between ..... Son of ..... hereinafter called the guarantor of the one part and the Indian Institute of Technology (hereinafter called Institute) of the other part dated .....and made between the GUARANTOR OF THE ONE part and the Institute of the other part, whereby the contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak-proof.

AND WHEREAS GUARANTOR agreed to give a guarantee to effect that the said structures will remain water and leak-proof for ten years from the date of giving of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak-proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract.

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

- (a) Misuse of roof shall mean any operation which will damage proofing treatment, like chopping of firewood and things of the same nature which might cause damaged to the roof.
- (b) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof where by water proofing treatment is removed in parts.
- (c ) The decision of the Engineer-in-charge with regard to cause of leakage shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found, render the building waterproof at his cost to the satisfaction of the Engineer-in-charge and shall commence the work for such rectification with in 7 days from the date of issue of the notice by the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Institute by some other contractor at the GUARANTOR'S cost and risk, and the decision of Engineer-in-charge as to the cost, payable by the guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing or commits breach there under then the guarantor will indemnify the Institute against all loss, damage, cost, expense or otherwise which may be incurred by it by reason of any default on the part the GUARANTOR in formance and observance of this supplementary agreement. As to the amount of loss and or charge and / or cost incurred by the Institute the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNESS WHEREOF those present have been executed by the ..... and by ..... and for and on behalf of the Indian Institute of Technology Madras on the day, month and year first above written.

SIGNED SEALED and delivered by OBLIGOR in the presence of-

1.

2.

SIGNED For and on behalf of the Indian Institute of Technology Madras by.....in the presence of-

1.

2.

#### 15.4 PROFORMA FOR TRIPARTITE AGREEMENT BETWEEN CONTRACTOR – PAINT MANUFACTURER – IIT MADRAS

**FOR PROVIDING 10 YEARS GUARANTEE FOR EXTERNAL PAINT, 10 YEARS CONCURRENT WATERPROOFING GUARANTEE AGAINST DAMPNES INGRESS TO THE EXTERNAL PAINTING, 5 YEARS GUARANTEE FOR INTERIOR PAINT FOR WALLS & CEILING AND WATER BASED ENAMEL PAINT FOR CORRIDOR FOR THE WORK EXECUTED BY TENDERERS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF EXTERNAL WALL PAINTING ITEM INDICATED IN THE BILL OF QUANTITIES**

The Tripartite Agreement made this..... day of ..... Two thousand and .....between..... Son of ..... hereinafter called the guarantor (Contractor) of the one part and M/s..... the paint manufacturer who supplied external paint material hereinafter called the (manufacturer) of the second part and the Indian Institute of Technology (hereinafter called Institute) of the third part dated and made between the GUARANTOR OF THE ONE part, MANUFACTURER OF THE SECOND part and the INSTITUTE of the third part represented by the Engineer-in- Charge, **Whereas this agreement is supplementary to a contract (hereinafter called the Contract) dated\_\_\_\_\_ and made between the GUARANTOR on one part and the Institute on the other part** whereby the contractor, inter alia, undertook to render the external painting works as indicated in the Bill of Quantities in the said contract recited completely without any defect.

AND WHEREAS GUARANTOR and the manufacturer of the paint agreed to give a guarantee to effect that the said EXTERNAL WALL PAINTING/ INTERIOR PAINT FOR WALLS AND CEILING / WATER BASED ENAMEL PAINT FOR CORRIDOR will remain INTACT without any blistering, Fading, Grinning, Chalking, Running, Sagging, Flaking, Blooming, Wrinkling, Flashing, Saponification, Alligatoring, Checking, and Mildew (Fungus) for ten years from the actual date of completion of painting and concurrently protect the face of the painted surface against any dampness INGRESS

NOW THE GUARANTOR hereby guarantees that external wall painting work carried out by him will remain intact for 10 years and waterproof against dampness for a minimum period of 10 years to be reckoned from the date of actual completion of the painting work. (or)

NOW THE GUARANTOR hereby guarantees that interior paint for walls and ceiling / water based enamel paint for corridor carried out by him will remain intact for 5 years to be reckoned from the date of actual completion of the painting work

Provided that the guarantor will not be responsible for defects caused by earthquake or structural defects or misuse of painted surface and damages caused or improper waterproofing in toilet / expansion joint / terrace / overhead tank or leakage from water supply / drainage pipe lines or plant growth or alteration and for such purpose:

1. Misuse of painted surface shall mean any operation which will damage painting, like trimming of tree branches, fire and things of the same nature which might cause damaged to the paint.
2. Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby painting is removed in parts.
3. The decision of the Engineer-in-charge with regard to the cause of painting defect shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found, render the painting intact / waterproof against dampness and making good at his cost to the satisfaction of the Engineer-in-charge. and shall commence the work for such rectification within 7 days from the date of issue of the notice by the Engineer-in-charge calling upon him to rectify the defects and the manufacturer shall provide all required technical advice, methodology for repair, and supervision during repair failing which the work shall be got done by the Institute by some other contractor at the GUARANTOR'S cost and risk, and the decision of Engineer-in-charge as to the cost, payable by the guarantor shall be final and binding.

That if the guarantor fails to rectify the defect good or commits breach thereunder then the guarantor will indemnify the Institute against all loss, damage, cost, expense or otherwise which may be incurred by it by reason of any default on the part the GUARANTOR in formance and observance of this supplementary agreement. As to the amount of loss and or charge and / or cost incurred by the Institute the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNESS WHEREOF those present have been executed by the .....and by . and for and

on behalf of the Indian Institute of Technology Madras on the day, month and year first above written.

SIGNED SEALED and delivered by OBLIGOR in the presence of-1.

2.

SIGNED For and on behalf of MANUFACTURER by .....in the presence of-

1.

2.

SIGNED For and on behalf of the Indian Institute of Technology Madras by .....in the presence of-

1.

2.



## **16 Safety at the Site**

- 16.1 The contractor must appoint a qualified person (full time) for taking care of implementation of Safety systems
- 16.2 The Contractor shall submit the Project Safety Plan stating the methodology of implementation of systems to ensure the safe and environment friendly work place. The Safety Plan must include the following.
- 16.3 Organization Chart
- 16.4 Reporting relationship of the safety enforcement personal in a flow chart
- 16.5 Safety Committee Structure – Chairman, secretary and committee members
  - 16.5.1 Roles & Responsibilities of the Safety committee
  - 16.5.2 Enforcement of applicable Statutory requirements, standards and codes related to safety and its adherence,
  - 16.5.3 General safety rules and regulations concerning use of personal protective equipment and safety devices relevant to site activities, Awareness and Training Programs, Motivational schemes, programs for safe Access, Egress and workstation safety
  - 16.5.4 Safe use of construction power supply and upkeep / maintenance of installations
  - 16.5.5 Work permit systems
  - 16.5.6 Use, maintenance and inspection of Plant & machinery
  - 16.5.7 Scaffold & formwork norms
  - 16.5.8 Use, maintenance and inspection of Lifting Tools
  - 16.5.9 Fire Protection and prevention
  - 16.5.10 Emergency preparedness
- 16.6 Status of Safety implementation at site will be discussed in the Weekly Review meeting. Contractor must submit the safety statistics every month in the enclosed format. Merit Certificate will be issued for the achievement of safety mile stones like 0.5 million safe man hours, one million safe man hours, 1.5 million safe man hours and so on.
- 16.7 The General Guidelines governing the safety implementation shall include the following Rules., while preparing the safety plan.
  - 16.7.1 All the workmen shall undergo Safety Induction, screening before engaging them on the job. Physical fitness of the person to certain critical jobs like working at

height or other dangerous locations to be ensured before engaging the person on work.

- 16.7.2 Sub-contractors shall ensure adequate supervision at workplace. They shall ensure that all persons working under them shall not create any hazard to self or to co-workers.
- 16.7.3 Nobody is allowed to work without wearing safety helmet. Chinstrap of safety helmet shall be always on. Drivers, helpers and operators are no exception.
- 16.7.4 All labour should be dressed properly attending to work wearing dhotis, lungies should be avoided to the extent possible.
- 16.7.5 The workmen shall wear suitable protection devices like mask, gloves, shoes etc,
- 16.7.6 No one is allowed to work at or more than three meters height without wearing safety belt and anchoring the lanyard of safety belt to firm support preferably at shoulder level.
- 16.7.7 No one is allowed to enter into workplace and work at site without adequate foot protection.
- 16.7.8 Usage of eye protection equipment shall be ensured when workmen are engaged for grinding, chipping, welding and gas-cutting. For other jobs as and when site safety co-coordinator insists eye protection has to be provided.
- 16.7.9 All PPE like Safety shoes, Safety helmet, Safety belt, Safety goggles etc. shall be arranged before starting the job.
- 16.7.10 All excavated pits shall be barricaded & barricading to be maintained till the backfilling is done. Safe approach to be ensured into every excavation.
- 16.7.11 Adequate illumination at workplace shall be ensured before starting the job at night.
- 16.7.12 All the dangerous moving parts of the portable / fixed machinery being used shall be adequately guarded. Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work platforms.
- 16.7.13 Erection zone and dismantling zone shall be barricaded and nobody will be allowed to stand under suspended loads.
- 16.7.14 Contractors should spray water using Water browser periodically in the site to reduce the dust rising due to wind.
- 16.7.15 Horseplay is completely prohibited at workplace. Running at the site is completely prohibited, except in the case of emergency.
- 16.7.16 Material shall not be thrown from the height. If required, the area shall be barricaded and one person shall be posted outside the barricading for preventing the trespassers from entering the area.

- 16.7.17 Other than electricians with red helmet no one is allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.
- 16.7.18 All electrical connections shall be made using 3 or 4 core cables, having a earth wire.
- 16.7.19 Proper Earthling pits at site to be constructed. And the sensitivity must be maintained less than 1 ohm
- 16.7.20 Main panel boards should have MCB's and RCCB / ELCB's ( 30 mA sensitivity).
- 16.7.21 Inserting of bare wires for tapping the power from electrical sockets is completely prohibited.
- 16.7.22 All major, minor accidents and near misses to be recorded and reported to the IITM and the management must take necessary steps to avoid the recurrence.
- 16.7.23 Scaffoldings used should be of proper construction. No Casuarina pole / bamboo scaffolding is permitted. It should be inspected by competent person(s) before use
- 16.7.24 All tools and tackles shall be inspected before use. Defects to be rectified immediately. No lifting tackle to be used unless it is certified by the competent authority.
- 16.7.25 All tools and tackles shall be tested and have a Identification no., SWL and date of next test marked on them.
- 16.7.26 A tools and tackles inspection register must be maintained and updated regularly.
- 16.7.27 Good housekeeping to be maintained. Passages shall not be blocked with materials. Materials like bricks shall not be stacked to the dangerous height at workplace.
- 16.7.28 Must have a reverse horn on all the Earth moving vehicles and Equipments used at site.
- 16.7.29 Debris, scrap and other materials to be cleared from time to time from the workplace and at the time of closing of work every day.
- 16.7.30 Adequate firefighting equipment shall be made available at workplace and persons are to be trained in fire fighting techniques with the co-ordination of site safety co-ordinator.
- 16.7.31 All the unsafe conditions, unsafe acts identified by contractors, reported by site supervisors and / or safety personnel to be corrected on priority basis.
- 16.7.32 No children shall be allowed to enter the workplace.
- 16.7.33 Other than the Driver / operator, no one shall travel in a tractor / tough rider etc.
- 16.7.34 All the lifting tools and tackles shall be stored properly when not in use.
- 16.7.35 Clamps shall be used on Return cables to ensure proper earthling for welding works.

- 16.7.36 Return cables shall be used for earthing.
  - 16.7.37 All the pressure gauges used in gas cutting apparatus shall be in good working condition.
  - 16.7.38 Proper eye washing facilities shall be made in areas where chemicals are handled.
  - 16.7.39 Connectors and hose clamps are used for making welding hose connections.
  - 16.7.40 Proper warning boards and caution notices to be displayed at required areas inside the site.
  - 16.7.41 All cranes must have a trained signal man for signaling.
  - 16.7.42 All underground cables for supplying construction power shall be routed using conduit pipes.
  - 16.7.43 Spill trays shall be used to contain the oil spills while transferring / storing them.
  - 16.7.44 Tapping of power by cutting electric cables in between must be avoided. Proper junction boxes must be used.
  - 16.7.45 Any violation of above will attract levy of penalty by the engineer in charge on the contractor.
- 16.8 Safety Protocol for vehicles<sup>1</sup> bringing in materials /equipment/removal of demolition waste/debris and heavy vehicles into IIT Madras Campus
- 16.8.1 Within IITM Campus, the Speed limit of 20 kmph should be strictly adhered to.
  - 16.8.2 A copy of the invoice/delivery note shall be produced for authenticity at the INGATE.
  - 16.8.3 The vehicle should have a reverse horn and blinkers and they should be in working condition. These will be checked at the entry into IITM.
  - 16.8.4 The red flags to be provided for materials/components extending from the vehicle's body and having potential for collision should be prominently displayed and in a way the visibility should be more than adequate. This shall be checked by the security at INGATE. The Security guard shall also handover extract of the safety protocol to be followed to the Driver of the vehicle.
  - 16.8.5 The vehicle should be accompanied by a Helper to the Driver. In cases of vehicles bringing into the campus, heavy equipment/single piece of material/components like steel, panels, prefabricated items etc., weighing more than 50 kg. The contractor's representative shall receive the vehicle at the INGATE, accompany it to the delivery point.
  - 16.8.6 Roadside parking of vehicles including heavy vehicles needs to be strictly avoided to prevent accidents.
  - 16.8.7 Carrying the pipes/ladders etc., in two wheelers is strictly not permitted.

- 16.8.8 While working with moving heavy equipment complete barricading needs to be done and labors are not allowed to use mobile phone at the site.
- 16.8.9 Overstaying of vehicle inside the campus will fetch penalty.
- 16.8.10 Protocols for loading /unloading: Prior to loading /unloading any vehicle, the driver should:
- a) *Switch off power and ensures that the wheels are chocked with chock blocks,*
  - b) *Ensure proper engaging of nose stands, if the trailer is engaged afresh,*
  - c) *Check the surrounding for a level ground free from obstacles and undulations to prevent jerking and shifting of loads leading to fall of material, before positioning the truck*
  - d) *Check again for possible obstructions before reversing.*
  - e) *The communication during positioning must be only between the driver and cleaner, cleaner to provide guidance.*
  - f) *Placing of traffic cones with adequate coverage area to divert other traffic or movement from delineated path.*
  - g) *Unloading the construction materials/components shall be stacked only at locations approved by the Engineer-in-charge and storing on the roadside is not permitted.*
  - h) *Crowing of people around the location should be strictly prohibited. Only authorised persons should be around the zone of operation.*
  - i) *Unloading of the components shall be done under the Direct supervision of the Safety Engineer of the contractor. A weekly report on the safety protocol followed in material handling and work carried out shall be submitted to the Engineer-in-charge.*
  - j) *While handling of components/materials, in case of a single piece of the item weighing more than 50 kg, the same shall be handled only by a suitable mechanical handling equipment approved by the Engineer-in-charge.*
  - k) *Inter-carting of construction materials within the campus shall be done with truck with proper covering and hazardous signage for materials like steel rod and pipes. Construction debris shall be covered while transporting within the campus to avoid spillage and dusting.*
  - l) *Engineer-in-charge shall bring the weekly non-compliance/safety report to the Superintending Engineer.*
  - m) *The supplier should avoid entering the campus between 7.30 am and 9 am to avoid crowding at the INGATE due to school commencement time.*

- n) *Important points extracted from the above guidelines, including speed limit, can be handed over to the driver at the INGATE in the form of a pamphlet of A5 size*

## **17 INSURANCE**

### **17.1 Insurance of Works**

The Contractor shall effect Contractor's all risk insurance policy (CAR policy) in the joint names of the Employer and the Contractor, the name of the former being placed first in the policy, covering the following:

- (a) The Works at the contract price together with the materials for incorporation in the works at their replacement value.
- (b) All plants and equipment and other things brought to the site by the Contractor at their replacement value.

The insurance shall be against all losses or damages from whatever causes, other than excepted risks, for which the Contractor is responsible under the Contract. The insurance cover shall be for the period of contract and also for the period of maintenance, for loss or damage arising from a cause prior to commencement of the period of maintenance, and for any loss or damage, occasioned by the Contractor in the course of any operations carried out for the purpose complying with his course of any operations carried out for the purpose of complying with his obligations. Such insurance shall be effected with an insurer and with terms approved by the Employer. The Contractor shall, whenever required, produce the policy or policies and the receipts for payment of the current premiums.

### **17.2 Third Party Insurance**

Before commencing the execution of the Works, the contractor shall insure against the liability for any material or physical damage, loss or injury which may occur to any property or life including that of the Employer or to any person, including any employee of the Employer, by or arising out of the execution of the works or in the carrying out of the Contract. The sum insured will be for Rs.5 lakhs. Such insurance shall be effected with an insurer and in terms approved by the Employer. The Contractor shall, whenever required, produce before the Engineer-in-charge the policy or policies of insurance and the receipts of payment of the current premiums.

### **17.3 Workmen's Insurance**

The Employer's shall not be liable for any payment in respect of any damages or compensation payable according to law in respect or in consequence of any accident or injury or loss of life to any workman or other person in the employment of the Contractor or any sub-contractor, except an accident or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall insure against such liability with an insurer approved by the Employer for sum of the established norms during the entire period till completion of Period of Maintenance.

#### 17.4 Recovery from the Contractor

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

#### 17.5 Extension of time

The Contractor, in case of rebuilding or reinstatement, shall be entitled to such extension of time for completion as the Engineer-in-charge may deem fit, but shall, however not be entitled to reimbursement by the Employer of any shortfall or deficiency in the amount finally paid by the insurer in settlement of any claim arising as set out herein.

#### 17.6 Insurance by Sub-Contractors

Without prejudice to his liability under this clause the Contractor shall also cause all Sub-Contractors to effect, for their respective portions of the works, similar policies of insurance in accordance with the provisions of this clause and shall produce or cause to produce to the Employer such policies. The Contractor shall not permit a Sub-Contractor to commence work at the site unless the said insurance policies are submitted. In the event of failure of the Sub-Contractor to take out such a policy of insurance before commencing the works at the site, the Contractor shall be responsible for any claim or damage attributable to the said Sub-Contractor.

#### 17.7 Period of Policies

All the insurance covers mentioned above shall be kept alive during the complete period of the contract. If the Contractor shall fail to effect and keep in force the insurance referred to above, or any other insurance which he may be required to effect under the terms of the Contract, then and in any such case the Employer on advice of the Engineer-in-Charge may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the Employer as aforesaid from any moneys due or which may become due to the Contractor, or recover the same as debt due from the Contractor.

#### 17.8 Damage to Persons and Property – Employer to be Indemnified

The Contractor shall indemnify the Employer against all losses and claims in respect of injuries or damages to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution and maintenance of the works and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto, except any compensation or damages for or with respect to:

- (a) The permanent use or occupation of land by the works or any part thereof.
- (b) The right of the Employer to execute the works or any part thereof on, over, under, in or through any land.

(c) Injuries or damage to persons or property resulting from any act or neglect of the Employer, his agents, servants or other contractors, not being employed by the Contractor or for or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the contractor, his servants or agents, such part of the compensations as may be just and equitable having regard to the extent of the responsibility of the Employer, his servant or agent or other Contractors, for the damage or injury.

## **18 Progress Reports**

The contractor shall submit monthly progress report of the work in a computerized form. The progress report shall contain the following.

- a. Construction schedule of the various components of the work through bar chart for the next 3 quarters, showing the milestones, targeted tasks and up to date progress.
- b. Progress chart of the various components of the work that are planned and achieved for the month as well as cumulative up to the month with reasons for deviations, if any, in a tabular format.
- c. Plant and machinery statement, indicating those deployed in the work, and their working status.
- d. Man power statement, indicating the labour and staff employed in the work and the details of work carried out.
- e. Financial statement, indicating the broad details of all the running account payments received up to date, such as gross value of work done. Advances taken, recoveries effected, amounts withheld, net payments, details of payments received, etc.
- f. A statement showing the extra items submitted by the contractor and the payments received against them, items pending for sanctions / decisions by the Institute , broad details of the bank guarantees, indicating their validity period, board details of the insurance policies taken by the contractor, if any, advances received and adjusted from the department etc.
- g. Progress photographs in colour of the various items / components of the work done up to date to indicate visually the actual progress of the work.
- h. Quality assurance and quality control tests conducted during the month with results thereof.
- i. Safety report
- j. Details of drawings submitted and under revision
- k. Other details asked for by the engineer-in-charge.



## 18.1 Proforma for Reports

### 18.1.1 Physical Progress

Name of Item	Quantity as per Agreement	Quantity executed during the month	Total up to date quantity executed	Anticipated balance quantity
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### 18.1.2 Financial Progress

Amount of work done during the month	Total amount of work done up to date	Anticipated amount of balance work
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### 18.1.3 TOTAL MANHOURS WORKED DURING THE MONTH

S · N	Description	Number	Man- hours worked	OT Performed	Total
1	Company Staff				
2	Subcontractor's Workmen (including security personnel)				
	GRAND TOTAL OF MANHOURS WORKED DURING THE MONTH				

Total Man-hours worked since inception :

Safe man hours from last reported :

Lost time due to injury :

#### 18.1.4 Details of Reportable Lost Time Injury

SN	Name of Injured	Date of Accident	Resume d duty on	Man days lost			Claim Status
				Up to last month (1)	This month (2)	Total (1+2)	

Man days Lost during the month (Cumulative of 2)

Number of Dangerous Occurrences : \_\_\_\_\_

No of Near Miss Cases : \_\_\_\_\_

Routed through

Site In charge \_\_\_\_\_ Site Safety Co-ordinator /Time Keeper

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

The contractor has to submit the progress report to the Engineer-in-Charge in triplicate by 10<sup>th</sup> day of every month as per the above proforma along with photographs of the work done during that month. The contractor shall be charged @ Rs.5000 (Rupees five thousand only) in the event of non-receipt of monthly progress report on due date (i.e. on 10<sup>th</sup> of every month) in the manner prescribed above. In case 10<sup>th</sup> day happens to be a closed holiday then the progress report will be submitted on the next working day.

A videography of the work should be undertaken at various stages of construction right from the day of start of work to date of completion / occupation covering all major events inspections etc. The videography shall be reviewed time to time by the Engineer in charge.

## 19 CPWD Safety code

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying animals as well suitable footholds and handhold shall be provided on the ladder and the ladder shall be given an inclination of not steeper than  $\frac{1}{4}$  to 1 ( $\frac{1}{4}$ ' horizontal and 1 vertical).
2. Scaffolding of staging more than 3.6 m (12 ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3 ft.) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and the ends thereof with only such opening as may be necessary at the ends to permit the materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building structure.
3. Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12 ft.) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.
4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm. (3 ft.).
5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m. (30 ft.) in length while the width between side rails in a rung ladder shall in no case be less than 29 cm. (11½" for ladder upto and including 3 m. (10 ft.) in length. For longer ladders, this width should be increased at least  $\frac{1}{4}$ " for each additional 30 cm. (1 foot) of length of ladder. The step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or works shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall be responsible for providing all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defence of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of proper fencing to pay any damages and cost which may be awarded in any such suit; action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person.
6.
  - a. **Excavation and Trenching** – All trenches 1.2 m. (4 ft.) or more in depth, shall at all times be supplied with at least one ladder for each 30 m. (100 ft.) in length of trench or fraction thereof. Ladder shall be extended from bottom of trench to at least 90 cm. (3 ft.) above the surface of the ground. The side of the trenches which are 1.5 m. (5 ft.) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m. (5 ft.) of the edges of the hole or half of the depth

of the hole whichever is more. Cutting shall be done from top to bottom. Under no circumstances, undermining or undercutting shall be done.

**b. Safety Measures for digging bore holes:-**

- i. If the bore well is successful, it should be safely capped to avoid caving and collapse of the bore well. The failed and the abandoned ones should be completely refilled to avoid any accident;
- ii. During drilling, Sign boards should be erected near the site with the address of the drilling contractor and the Engineer-in-charge of the work;
- iii. Suitable fencing should be erected around the drilled bore well during the drilling and after the installation of the pump on the point of drilling, flags shall be put 50m around the point of drilling to avoid entry of people;
- iv. After drilling the borewell, a cement platform (0.50m x 0.50m x 0.60m above ground level and 0.60m below ground level should be constructed around the well casing;
- v. After the completion of the borewell, the contractor should cap the bore well properly by welding steel plate, cover the bore well with the drilled wet soil and fix thorny shrubs over the soil. This should be done even while repairing the pump;
- vi. After the borewell is drilled the entire site should be brought to the ground level.

7. Demolition - Before any demolition work is commenced and also during the progress of the work,
  - a. All roads and open areas adjacent to the work site shall either be closed or suitably protected.
  - b. No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.
  - c. All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
8. All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned. The following safety equipment shall invariably be provided.
  - a. Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
  - b. Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes, shall be provided with protective goggles.
  - c. Those engaged in welding works shall be provided with welder's protective eye shields.

- d. Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- e. When workers are employed in sewers and manholes, which are in active use, the contractor shall ensure that the manhole covers are opened and ventilated at least half an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public. In addition, the contractor shall ensure that the following safety measure are adhered to :-
  - i. Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer
  - ii. At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.
  - iii. Before entry, presence of Toxic gases should be tested using a detector lamp tested lead acetate paper which changes colour in the presence of such gases and gives indication of the presence of toxic gases.
  - iv. Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer lines, workers should be sent only with Oxygen kit.
  - v. Safety belt with rope should be provided to the workers. While working inside the manholes, such rope should be handled by two men standing outside to enable him to be pulled out during emergency.
  - vi. The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning work is undertaken during night or day.
  - vii. No smoking or open flames shall be allowed near the manhole being cleaned.
  - viii. The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
  - ix. Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge shall decide the time up to which a worker may be allowed to work continuously inside the manhole.
  - x. Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
  - xi. Air-blowers should be used for flow of fresh air through the manholes. The air-blowers shall be of portable type and electrically operated for ventilating the manholes. The Motors of these shall be vapour proof and of totally enclosed type. Non sparking gas engines shall be used so that they are not a source of friction on any inflammable gas that might be present. The air-blower shall be placed at least 2 metres away from the opening and on the

- leeward side and the space between the air-blower and manhole shall be so fenced as to prevent accident to the public.
- xii. The workers engaged for cleaning the manholes/sewers should be properly trained before allowing to work in the manhole.
  - xiii. The workers shall be provided with Gumboots or non sparking shoes bump helmets and gloves on non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
  - xiv. Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole wall.
  - xv. If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
  - xvi. The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.
- f. The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken:—
- i. No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
  - ii. Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.
  - iii. Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.
- g. Workmen executing work on scaffolds or other structures above specified height shall be provided with full body harness and fall arresters.
9. The Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form, wherever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use:
- a. White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.
  - b. Measures shall be taken, wherever required in order to prevent danger arising out of from dust caused by rubbing down and scraping.
  - c. Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by rubbing down and scraping.

- d. Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
  - e. Overall shall be worn by working painters during the whole of working period.
  - f. Suitable arrangement shall be made to prevent clothing put off during working hours being soiled by painting materials.
  - g. Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority of IITM
  - h. IITM may require, when necessary medical examination of workers.
  - i. Instructions with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.
10. When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.
11. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions:—
- i. These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.
  - ii. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.
- b. Every crane driver or hoisting appliance operator, shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding which or give signals to operator.
  - c. In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any hoisting or machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for testing.
  - d. In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-Charge. As regards contractor's machines the contractors shall notify the safe working load of the machine to the Engineer-in-Charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.
12. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of

the load. Adequate precautions shall be taken to reduce the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots and such other means as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.

13. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.
14. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.
15. To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.
16. Notwithstanding the above clauses from (1) to (15), there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India.

#### 19.1 [Model Rules for the Protection of Health and Sanitary Arrangements for Workers Employed by IIT Madras or its Contractors \(Clauses By CPWD\)](#)

##### **a. APPLICATION**

These rules shall apply to all buildings and construction works in charge of Central Public Works Department/ PWD (DA) in which twenty or more workers are ordinarily employed or are proposed to be employed in any day during the period during which the contract work is in progress.

##### **b. DEFINITION**

Work place means a place where twenty or more workers are ordinarily employed in connection with construction work on any day during the period during which the contract work is in progress.

##### **c. FIRST-AID FACILITIES**

- (i) At every work place, there shall be provided and maintained, so as to be easily accessible during working hours, first-aid boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.
- (ii) The first-aid box shall be distinctly marked with a red cross on white back ground and shall contain the following equipment:-



- (a) For work places in which the number of contract labour employed does not exceed 50- Each first-aid box shall contain the following equipments :-
1. 6 small sterilised dressings.
  2. 3 medium size sterilised dressings.
  3. 3 large size sterilised dressings.
  4. 3 large sterilised burn dressings.
  5. 1 (30 ml.) bottle containing a two per cent alcoholic solution of iodine.
  6. 1 (30 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
  7. 1 snakebite lancet.
  8. 1 (30 gms.) bottle of potassium permanganate crystals.
  9. 1 pair scissors.
  10. 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
  11. 1 bottle containing 100 tablets (each of 5 gms.) of aspirin.
  12. Ointment for burns.
  13. A bottle of suitable surgical antiseptic solution.
- (b) For work places in which the number of contract labour exceed 50. Each first-aid box shall contain the following equipments.
1. 12 small sterilised dressings.
  2. 6 medium size sterilised dressings.
  3. 6 large size sterilised dressings.
  4. 6 large size sterilised burn dressings.
  5. 6 (15 gms.) packets sterilised cotton wool.
  6. 1 (60 ml.) bottle containing a two per cent alcoholic solution iodine.
  7. 1 (60 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
  8. 1 roll of adhesive plaster.
  9. 1 snake bite lancet.
  10. 1 (30 gms.) bottle of potassium permanganate crystals.
  11. 1 pair scissors.
  12. 1 copy of the first-aid leaflet issued by the Director General Factory Advice Service and Labour Institutes /Government of India.

13. A bottle containing 100 tablets (each of 5 gms.) of aspirin.
  14. Ointment for burns.
  15. A bottle of suitable surgical antiseptic solution.
- (iii) Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.
  - (iv) Nothing except the prescribed contents shall be kept in the First-aid box.
  - (v) The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.
  - (vi) A person in charge of the First-aid box shall be a person trained in First-aid treatment in the work places where the number of contract labour employed is 150 or more.
  - (vii) In work places where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance from the works. First-aid posts shall be established and run by a trained compounder. The compounder shall be on duty and shall be available at all hours when the workers are at work.
  - (viii) Where work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

**d. DRINKING WATER**

- (ix) In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.
- (x) Where drinking water is obtained from an Intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.
- (xi) Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and waterproof.
- (xii) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

**e. WASHING FACILITIES**

- (i) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.
- (ii) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.
- (iii) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic

condition.

**f. LATRINES AND URINALS**

- a. Latrines shall be provided in every work place on the following scale namely :-
  - i. Where female are employed, there shall be at least one latrine for every 25 females.
  - ii. Where males are employed, there shall be at least one latrine for every 25 males.
- b. Provided that, where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto the first 100, and one for every 50 thereafter.
- c. Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.
- d. Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent materials and shall be cement washed inside and outside at least once a year, Latrines shall not be of a standard lower than borehole system.
- e. Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers “For Men only” or “For Women Only” as the case may be.
  - a. The notice shall also bear the figure of a man or of a woman, as the case may be.
- f. There shall be at least one urinal for male workers upto 50 and one for female workers upto fifty employed at a time, provided that where the number of male or female workmen, as the case may be exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females upto the first 500 and one for every 100 or part thereafter.
  - a. The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.
  - b. Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities.
- g. Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.
- h. Disposal of excreta :- Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm. layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn to manure).

- i. The contractor shall at his own expense, carry out all instructions issued to him by the Engineer-in-Charge to effect proper disposal of night soil and other conservancy work in respect of the contractor's workmen or employees on the site. The contractor shall be responsible for payment of any charges which may be levied by Municipal or Cantonment Authority for execution of such on his behalf.

**g. PROVISION OF SHELTER DURING REST**

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 metres (10 ft.) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq.m. (6 sft) per head.

Provided that the Engineer-in-Charge may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

**h. CRECHES**

- (i) At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One room shall be used as a play room for the children and the other as their bedroom. The rooms shall be constructed with specifications as per clause 19H (ii) a,b & c.
- (ii) The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.
- (iii) The contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the bed room.
- (iv) The contractor shall provide one ayaa to look after the children in the creche when the number of women workers does not exceed 50 and two when the number of women workers exceed 50.
- (v) The use of the rooms earmarked as creches shall be restricted to children, their attendants and mothers of the children.

**i. CANTEENS**

- (i) In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more are ordinarily employed, an adequate canteen shall be provided by the contractor for the use of such contract labour.
- (ii) The canteen shall be maintained by the contractor in an efficient manner.
- (iii) The canteen shall consist of at least a dining hall, kitchen, storeroom, pantry and washing places separately for workers and utensils.
- (iv) The canteen shall be sufficiently lighted at all times when any person has access to it.

- (v) The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colour washed at least once in each year. Provided that the inside walls of the kitchen shall be lime-washed every four months.
- (vi) The premises of the canteen shall be maintained in a clean and sanitary condition.
- (vii) Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.
- (viii) Suitable arrangements shall be made for the collection and disposal of garbage.
- (ix) The dining hall shall accommodate at a time 30 per cent of the contract labour working at a time.
- (x) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs shall not be less than one square metre (10 sq ft) per diner to be accommodated as prescribed in sub-Rule 9.
- (xi) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number. Washing places for women shall be separate and screened to secure privacy.
- (xii) Sufficient tables stools, chair or benches shall be available for the number of diners to be accommodated as prescribed in sub-Rule 9.
- (xiii) There shall be provided and maintained sufficient utensils crockery, furniture and any other equipments necessary for the efficient running of the canteen. The furniture utensils and other equipment shall be maintained in a clean and hygienic condition. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained. A service counter, if provided, shall have top of smooth and impervious material. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipments.
- (xiv) The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.
- (xv) The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No profit, No loss' and shall be conspicuously displayed in the canteen.
- (xvi) In arriving at the price of foodstuffs, and other article served in the canteen, the following items shall not be taken into consideration as expenditure namely:-
  - a. The rent of land and building.
  - b. The depreciation and maintenance charges for the building and equipments provided for the canteen.
  - c. The cost of purchase, repairs and replacement of equipments including furniture, crockery, cutlery and utensils.
  - d. The water charges and other charges incurred for lighting and ventilation.

- e. The interest and amounts spent on the provision and maintenance of equipments provided for the canteen.
- f. The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors.

**j. ANTI-MALARIAL PRECAUTIONS**

The contractor shall at his own expense, conform to all anti-malarial instructions given to him by the Engineer- in-Charge including the filling up of any borrow pits which may have been dug by him.

- k. The above rules shall be incorporated in the contracts and in notices inviting tenders and shall form an integral part of the contracts.

**l. AMENDMENTS**

Government may, from time to time, add to or amend these rules and issue directions - it may consider necessary for the purpose of removing any difficulty which may arise in the administration thereof.

**m. EPIDEMIC SITUATION**

In such situation contractor shall deploy special labour to keep the site, worker's hutments, rest rooms etc. neat and clean including sanitization. Contractor shall provide all epidemic related arrangements (at his cost following the guidelines issued by State/ Central Government in this regard.

## **20 CPWD Contractor's Labour Regulations**

### **1. SHORT TITLE**

These regulations may be called the CPWD/PWD Delhi Contractors Labour Regulations.

### **2. DEFINITIONS**

- (i) Workman means any person employed by CPWD/PWD Delhi or its contractor directly or indirectly through a subcontractor with or without the knowledge of the Central Public Works Department/PWD Delhi to do any skilled, semiskilled or unskilled manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment are expressed or implied but does not include any person :-
  - (a) Who is employed mainly in a managerial or administrative capacity : or
  - (b) Who, being employed in a supervisory capacity draws wages exceeding five

hundred rupees per mensem or exercises either by the nature of the duties attached to the office or by reason of powers vested in him, functions mainly of managerial nature: or

- (c) Who is an out worker, that is to say, person to whom any article or materials are given out by or on behalf of the principal employers to be made up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of the trade or business of the principal employers and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of the principal employer.

No person below the age of fourteen years shall be employed on the work. However, Adolescent Persons can be employed on non-hazardous works/process.

- (ii) Fair Wages means wages whether for time or piece work fixed and notified under the provisions of the Minimum Wages Act from time to time.
- (iii) Contractors shall include every person who undertakes to produce a given result other than a mere supply of goods or articles of manufacture through contract labour or who supplies contract labour for any work and includes a subcontractor.
- (iv) Wages shall have the same meaning as defined in the Payment of Wages Act.

### 3. WORKING HOURS

- (i) Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.
- (ii) When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week, he shall be paid over time for the extra hours put in by him at double the ordinary rate of wages.
- (iii) (a) Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time irrespective of whether such worker is governed by the Minimum Wages Act or not.
- (b) Where the minimum wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.
- (c) Where a contractor is permitted by the Engineer-in-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substituted holiday to him for the whole day on one of the five days immediately before or after the normal weekly

holiday and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

#### 4. DISPLAY OF NOTICE REGARDING WAGES ETC.

The contractor shall before he commences his work on contract, display and correctly maintain and continue to display and correctly maintain in a clear and legible condition in conspicuous places on the work, notices in English and in the local Indian languages spoken by the majority of the workers giving the minimum rates of wages fixed under Minimum Wages Act, the actual wages being paid, the hours of work for which such wage are earned, wages periods, dates of payments of wages and other relevant information as per Appendix 'III'.

#### 5. PAYMENT OF WAGES

- (i) The contractor shall fix wage periods in respect of which wages shall be payable.
- (ii) No wage period shall exceed one month.
- (iii) The wages of every person employed as contract labour in an establishment or by a contractor where less than one thousand such persons are employed shall be paid before the expiry of seventh day and in other cases before the expiry of tenth day after the last day of the wage period in respect of which the wages are payable.
- (iv) Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.
- (v) All payment of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.
- (vi) Wages due to every worker shall be paid to him direct by contractor through Bank or ECS or online transfer to his bank account.
- (vii) All wages shall be paid through Bank or ECS or online transfer.
- (viii) Wages shall be paid without any deductions of any kind except those specified by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.
- (ix) A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Charge under acknowledgment.
- (x) It shall be the duty of the contractor to ensure the disbursement of wages through bank



account of labour.

- (xi) The contractor shall obtain from the Junior Engineer or any other authorised representative of the Engineer- in-Charge as the case may be, a certificate under his signature at the end of the entries in the “Register of Wages” or the “Wage-cum-Muster Roll” as the case may be in the following form:-

- (xii) “Certified that the amount shown in column No ..... has been paid to the workman

concerned through bank account of labour on ..... at.....”

### **FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES**

- (i) The wages of a worker shall be paid to him without any deduction of any kind except the following:-
  - (a) Fines
  - (b) Deductions for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.
  - (c) Deduction for damage to or loss of goods expressly entrusted to the employed person for custody or for loss of money or any other deduction which he is required to account, where such damage or loss is directly attributable to his neglect or default.
  - (d) Deduction for recovery of advances or for adjustment of overpayment of wages, advances granted shall be entered in a register.
  - (e) Any other deduction which the Central Government may from time to time allow.
- (ii) No fines should be imposed on any worker save in respect of such acts and omissions on his part as have been approved of by the Chief Labour Commissioner.

Note :- An approved list of Acts and Omissions for which fines can be imposed is enclosed at Appendix-X

- (iii) No fine shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deductions.
- (iv) The total amount of fine which may be imposed in any one wage period on a worker shall not exceed an amount equal to three paise in a rupee of the total wages, payable to him in respect of that wage period.
- (v) No fine imposed on any worker shall be recovered from him by instalment, or after the expiry of sixty days from the date on which it was imposed.
- (vi) Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

## **LABOUR RECORDS**

- (i) The contractor shall maintain a Register of persons employed on work on contract in Form XIII of the CL (R&A) Central Rules 1971 (Appendix IV)
- (ii) The contractor shall maintain a Muster Roll register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (R&A) Rules 1971 (Appendix V).
- (iii) The contractor shall maintain a Wage Register in respect of all workmen employed by him on the work under contract in Form XVII of the CL (R&A) Rules 1971 (Appendix VI).
- (iv) Register of accident - The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:
  - (a) Full particulars of the labourers who met with accident.
  - (b) Rate of Wages.
  - (c) Sex
  - (d) Age
  - (e) Nature of accident and cause of accident.
  - (f) Time and date of accident.
  - (g) Date and time when admitted in Hospital,
  - (h) Date of discharge from the Hospital.
  - (i) Period of treatment and result of treatment.
  - (j) Percentage of loss of earning capacity and disability as assessed by Medical Officer.
  - (k) Claim required to be paid under Workmen's Compensation Act.
  - (l) Date of payment of compensation.
  - (m) Amount paid with details of the person to whom the same was paid.
  - (n) Authority by whom the compensation was assessed.
  - (o) Remarks
- (v) The contractor shall maintain a Register of Fines in the Form XII of the CL (R&A) Rules 1971 (Appendix-XI)
- (vi) The contractor shall display in a good condition and in a conspicuous place of work the approved list of acts and omissions for which fines can be imposed (Appendix-X)
- (vii) The contractor shall maintain a Register of deductions for damage or loss in Form XX

of the CL (R&A) Rules 1971 (Appendix-XII)

- (viii) The contractor shall maintain a Register of Advances in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIII)
- (ix) The contractor shall maintain a Register of Overtime in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIV)

#### **6. ATTENDANCE CARD-CUM-WAGE SLIP**

- (i) The contractor shall issue an Attendance card-cum-wage slip to each workman employed by him in the specimen form at (Appendix-VII)
- (ii) The card shall be valid for each wage period.
- (iii) The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.
- (iv) The card shall remain in possession of the worker during the wage period under reference.
- (v) The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.
- (vi) The contractor shall obtain the signature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

#### **7. EMPLOYMENT CARD**

The contractor shall issue an Employment Card in Form XIV of the CL (R&A) Central Rules 1971 to each worker within three days of the employment of the worker (Appendix-VIII).

#### **8. SERVICE CERTIFICATE**

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a Service certificate in Form XV of the CL (R&A) Central Rules 1971 (Appendix-IX)

#### **9. PRESERVATION OF LABOUR RECORDS**

All records required to be maintained under Regulations Nos. 6 & 7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be

made available for inspection by the Engineer-in-Charge or Labour Officer or any other officers authorised by the Ministry of Urban Development in this behalf.

#### **10. POWER OF LABOUR OFFICER TO MAKE INVESTIGATIONS OR ENQUIRY**

The Labour Officer or any person authorised by Central Government on their behalf shall have power to make enquires with a view to ascertaining and enforcing due and proper observance of Fair Wage Clauses and the Provisions of these Regulations. He shall investigate into any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

#### **11. REPORT OF LABOUR OFFICER**

The Labour Officer or other persons authorised as aforesaid shall submit a report of result of his investigation or enquiry to the Executive Engineer concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case an appeal is made by the contractor under Clause 13 of these regulations, actual payment to labourers will be made by the Executive Engineer after the Superintending Engineer has given his decision on such appeal.

- (i) The Executive Engineer shall arrange payments to the labour concerned within 45 days from the receipt of the report from the Labour Officer or the Superintending Engineer as the case may be.

#### **12. APPEAL AGAINST THE DECISION OF LABOUR OFFICER**

Any person aggrieved by the decision and recommendations of the Labour Officer or other person so authorised may appeal against such decision to the Superintending Engineer concerned within 30 days from the date of decision, forwarding simultaneously a copy of his appeal to the Executive Engineer concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

#### **13. PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER**

- (i) A workman shall be entitled to be represented in any investigation or enquiry under these regulations by:-
  - (a) An officer of a registered trade union of which he is a member.

- (b) An officer of a federation of trade unions to which the trade union referred to in clause (a) is affiliated.
  - (c) Where the employer is not a member of any registered trade union, by an officer of a registered trade union, connected with the industry in which the worker is employed or by any other workman employed in the industry in which the worker is employed.
- (ii) An employer shall be entitled to be represented in any investigation or enquiry under these regulations by :-
- (a) An officer of an association of employers of which he is a member.
  - (b) An officer of a federation of associations of employers to which association referred to in clause (a) is affiliated.
  - (c) Where the employers is not a member of any association of employers, by an officer of association of employer connected with the industry in which the employer is engaged or by any other employer, engaged in the industry in which the employer is engaged.
- (iii) No party shall be entitled to be represented by a legal practitioner in any investigation or enquiry under these regulations.

#### **14. INSPECTION OF BOOKS AND SLIPS**

The contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorised by the Central Government on his behalf.

#### **15. SUBMISSIONS OF RETURNS**

The contractor shall submit periodical returns as may be specified from time to time.

#### **16. AMENDMENTS**

The Central Government may from time to time add to or amend the regulations and on any question as to the application/Interpretation or effect of those regulations the decision of the Superintending Engineer concerned shall be final.

## Appendix 'I'

### REGISTER OF MATERNITY BENEFITS (Clause 19 F)

Name and address of the Contractor .....

Name and location of the work .....

Name of the Employee	Father's / Husband's Name	Nature of Employment	Period of actual employment	Date on which notice of confinement given
1	2	3	4	5
Date on which maternity leave commenced and ended				
Date of Delivery / miscarriage	In case of Delivery		In case of miscarriage	
	Commenced	Ended	Commenced	Ended
6	7	8	9	10
Leave pay paid to the employee				
In case of Delivery		In case of miscarriage		Remarks
Rate of leave pay	Amount paid	Rate of leave pay	Amount paid	
11	12	13	14	15

**SPECIMEN FORM OF THE REGISTER, REGARDING MATERNITY BENEFIT  
ADMISSIBLE TO THE CONTRACTOR'S LABOUR IN CENTRAL PUBLIC WORKS  
DEPARTMENT WORKS.**

Name and address of the contractor.....

Name and location of the work .....

1. Name of the woman and her husband's name.
2. Designation.
3. Date of appointment.
4. Date with months and years in which she is employed.
5. Date of discharge/dismissal, if any.
6. Date of production of certificates in respect pf pregnancy.
7. Date on which the woman informs about the expected delivery.
8. Date of delivery/miscarriage/death
9. Date of production of certificate in respect of delivery/miscarriage.
10. Date with the amount of maternity/death benefit paid in advance of expected delivery.
11. Date with amount of subsequent payment of maternity benefit.
12. Name of the person nominated by the woman to receive the payment of the maternity benefit after her death.
13. If the woman dies, the date of her death, the name of the person to whom maternity benefit amount was paid, the month thereof and the date of payment.
14. Signature of the contractor authenticating entries in the register.
15. Remarks column for the use of Inspecting Officer.

**LABOUR BOARD**

Name of work .....

Name of Contractor .....

Address of Contractor .....

Name and address of. Division .....

Name of. Labour Officer .....

Address of Labour Officer .....

Name of Labour Enforcement Officer .....

Address of Labour Enforcement officer .....

Sl. No.	Category	Minimum wage fixed	Actual wage paid	Number present	Remarks

Weekly holiday .....

Wage period .....

Date of payment of wages .....

Working hours .....

Rest interval .....



## Form XIII (See Rule 75)

## Register of Workmen Employed by Contractor

Name and address of contractor

Name and address of establishment under which contract is carried on

Nature and location of work

Name and address of Principal Employer

Sl No.	Name and surname of workman	Age and Sex	Father' s/Husband' s name	Nature of employment/designation	Permanent home address of the workman (Village and Tehsil, Taluk and Districts)	Local address	Date of commencement of employment	Signature or thumb impression of the workman	Date of termination of employment	Reasons for terminations	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

**Form-XVI (See Rule 78(2)(a))**

## Muster Roll

Name and address of contractor .....

Name and address of establishment under which contract is carried on .....

Nature and location of work .....

Name and address of Principal Employer .....For the Month of fortnight.....

Sl. No.	Name of Workman	Sex	Father's / Husband's name	Dates					Remarks
1	2	3	4	5					6
				1	2	3	4	5	

## Form-XVII (See Rule 78(2) (a))

## Register of wages

Name and address of contractor .....

Name and address of establishment under which contract is carried on .....

Name and location of work .....

Name and address of Principal Employer .....wages period: Monthly / Fortnightly

Sl.No	Name of Workman	Serial No. in the register of workman	Designation nature of work done	No. of days worked	Units of work done	Daily rate of wages/piece rate	Basic wages	Dearness allowances	Overtime	Other cash payments (indicate nature)	Total	Deductions if any, (indicate nature)	Nett amount paid	Signature or thumb impression of the workman	Initial of contractor or his representative
1	2	3	4	5	6	7	8	9	10	11		13	14	15	16

Wage Card No. ....

**Wage Card**

Wage card No .....

Name and address of contractor .....

Date of Issue .....

Name and location of work .....

Designation .....

Name of workman .....

Month / Fortnight .....

Rate of Wages .....

,

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Morning															Rate																
Evening															Amount																
Initial																															

Received from .....

a sum of Rs.

on account of my wages

The Wage card is valid for one month from the date of issue

Signature.

**Employment card**

Name and address of the contractor:

Name and address of the establishment under which contract is carried on:

Name of work and location of work:

Name and address of the principal employer:

1. Name of the workman:
2. Sl.no in the register of workman employed:
3. Nature of employment / designation:
4. Wage rate (with particulars of unit incase of piece work):
5. Wage period:
6. Tenure of employment:
7. Remarks:

**Signature of the contractor**

**Form-XV (See Rule 77)****Service Certificate**

Name and address of contractor .....

Nature and location of work .....

Name and address of workman .....

Age or date of birth .....

Identification marks .....

Father's/ Husband's name .....

Name and address of establishment in under which contract is carried on .....

Name and address of Principal Employer .....

Sl. No.	Total period for which employed		Nature of work done	Rate of wages (with particulars of unit in case of piece work)	Remarks
	From	To			
1	2	3	4	5	6

Signature

**LIST OF ACTS AND OMISSIONS FOR WHICH FINES CAN BE IMPOSED**

1. Willful in-subordination or disobedience, whether alone or in combination with other.
2. Theft, fraud or dishonesty in connection with the contractors beside a business or property of Institute.
3. Taking or giving bribes or any legal gratifications.
4. Habitual late attendance.
5. Drunkenness lighting, riotous or disorderly or indifferent behavior.
6. Habitual negligence.
7. Smoking near or around the area where combustible or other materials are locked.
8. Habitual indiscipline.
9. Causing damage to work in the progress or to property of the Institute or of the contractor.
10. Sleeping on duty.
11. Malingering or slowing down work.
12. Giving of false information regarding name, age, father's name etc.
13. Habitual lose of wage cards supplied by the employer.
14. Unauthorized use of employer's property of manufacturing or making of unauthorized particles at the work place.
15. Bad workmanship in construction and maintenance by skilled workers, which is not approved by the Institute and for which the contractors are, compelled to take rectifications.
16. Making false complaints and / or misleading statements.
17. Engaging in trade within the premises of the establishments.
18. Any unauthorized divulgence of business affairs of the employees.
19. Collection or canvassing for the collection of any money within the premises of an establishment unless authorized by the employer.
20. Holding meeting inside the premises without previous sanction of the employers.
21. Threatening or intimidating any workman or employer during the working hours with in the premises.

Form XII (See rule 78 (2) (d))

Register of Fines

Name and address of contractor .....

Name and address of establishment in under which contract is carried on .....

Nature and location of work .....

Name and address of Principal Employer .....

Sl.No.	Name of Workman	Father' s/Husband' s name	Designation/nature of employment	Act/Omission of which fine imposed	Date of Offence	Whether workman showed cause against fine	name of person in whose presence employee' s explanation was heard	wage period and wages payable	Amount of fine imposed	Date on which fine realised	Remarks
1	2	3	4	5	6	7	8	9	10	11	12



Form XX (See rule 78 (2) (d))

Register of Deduction for Damage or Loss

Name and address of contractor .....

Name and address of establishment in under which contract is carried on .....

Nature and location of work .....

Name and address of Principal Employer .....

Sl.No.	Name of Workman	Father' s/Husband' s name	Designation/nature of employment	Particulars of damage or loss	Date of damage or loss	Whether workman showed cause against deduction	name of person in whose presence employee' s explanation was heard	Amount of deduction imposed	No. of installments	Date of recovery		Remarks
										1 <sup>ST</sup> installment	Last installment	
1	2	3	4	5	6	7	8	9	10	11	12	13

**Form XXII (See rule 78 (2) (d))****Register of Advances**

Name and address of contractor .....

Name and address of establishment in under which contract is carried on .....

Nature and location of work .....

Name and address of Principal Employer .....

Sl.No.	Name of Workman	Father' s/Husband' s name	Designation/nature of employment	wage period and wages payable	Date and amount of Advance given	Purpose(s) for which Advance made	Number of installments by which advance to be repaid	Date and amount of each installment repaid	Date on which last installment was repaid	Remarks
1	2	3	4	5	6	7	8	9	10	11

## Form XXIII (See rule 78 (2) (e))

## Register of Overtime

Name and address of contractor .....

Name and address of establishment in under which contract is carried on .....

Nature and location of work .....

Name and address of Principal Employer .....

Sl.No.	Name of Workman	Father' s/Husband' s name	Sex	Designation/nature of employment	Date on which Overtime worked	Total overtime worked or production in case of piece rated	Normal rate of wages	Overtime rate of wages	Overtime earnings	Rate on which overtime wages paid	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

## **21 Clauses of contract - Attached Separately**

### ***PART -III***

#### ***Additional Conditions and Minimum Requirements & Specifications for works***

## 22 PROJECT DETAILS

NAME OF WORK:		Construction of Faculty complex by replacing the existing MFL building at IIT Madras
1	Total Plinth area	10764.3 Sqm (Area statement enclosed)
2	No of Floors	Basement+ Ground + 11 floors
3	Mode of Construction	Fastrack Mode of Construction RCC Structure with MIVAN Shuttering technology
4	Detailed scope	Refer detailed drawings and detailed scope of work.

## 23 Area statement of the proposed building

Description of floor	Level in 'm'	Plinth area in 'Sqm'
Set back	0	
Basement	-2.55	1145
Ground	0.90	1022
First	4.30	803
Second	7.70	755
Third	11.10	773
Fourth	14.50	773
Fifth	17.90	773
Sixth	21.30	773
Seventh	24.70	773
Eight	28.10	773
Ninth	31.50	773
Tenth	34.90	773
Eleventh	38.30	773
Terrace	41.70	82.3
Headroom	43.60	
<b>Total Plinth area</b>		<b>10764.3</b>

## 24 DETAILED SCOPE OF WORK

- Construction of Faculty complex by replacing the existing MFL building at IIT Madras at IIT-M using Fastrack Mode of Construction MIVAN Shuttering technology complete in all respect, according to the Architectural drawings included in the tender.

- The work needs to be executed under EPC Mode II, which involves preparation of detailed structural, MEP, external development design and drawings and shop drawings based on detailed Architectural drawings provided by IIT Madras as well as procurement and construction by the EPC contractor.
- Demolition of the existing MFL (Metal forming laboratory) including the foundation and disposal of the debris to the dump yard approved by the local body authorities. The building will be handed over with the existing doors, windows, partition, etc. The interior furniture, laboratory equipment, etc. will be retained by the IIT Madras. The existing building is having the plinth area of around 994 Sqm. The part of the building has the RCC roof and the remaining half has the double height light weight roof. The bidder shall visit the site for assessing the condition of the building. Dismantling, Demolishing by manually/ by mechanical means for RCC & PCC Work, steel work, stone & brick masonry, cutting reinforcement bars, Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts, Dismantling aluminum windows, GI sheet sheds, paver blocks, pathways, including disposal of building rubbish/ malba/ similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground outside IIT Madras Campus.
- The proposed building shall be executed as per
  - The detailed architectural given in Annexure-A
  - As per Finishing schedule and material price range given in Annexure – B
  - The list of approved make of materials is given in Annexure – C. Wherever the material make is not given, the same shall be proposed by the bidder in the technical presentation, and the decision of engineer in charge is final.
  - The Contractor shall design and execute suitable foundation system based on the Geotechnical report enclosed in Annexure-D. However, the contractor is at liberty to conduct his own investigation at his cost to satisfy himself about the report post award of contract. Further, no additional claim / time shall be entertained for any deviation due to difference in the soil investigation report of both parties.
  - The list of drawings to be submitted by the contractor during the execution work is given in Annexure-E. The list of drawings are indicative, any additional drawings to be submitted for delivering the scope of work mentioned in the tender is to be submitted by the contractor.
- Obtaining a minimum GRIHA 4 rating or above for the building. The detailed design shall incorporate all the requirements for obtaining the minimum intended GRIHA rating. The guidelines stipulated in the GRIHA manual shall be complied with during the design and construction stages. The contractor shall engage a consultant for the above (at his cost), further the contractor shall arrange for the necessary documentation, site inspections and simulations for complying with the GRIHA rating requirements. The charges payable towards the registration fee will be paid by IIT Madras. Other expenses towards travel, accommodation, etc of the GRIHA officials during the site

visit shall be borne by the bidder. IIT-M will not entertain any additional claim in this regard. The registration shall be done in the name of the IIT Madras and certificate shall be obtained in the name of the IIT Madras and handed over. The end-to-end responsibility for obtaining timely 4 Star rating from the GRIHA is under the scope of the contractor including coordinating with the Architect, making minor modifications in the architectural drawings

- Overhead tank for both domestic & treated water, lift machine room, staircase head room, finishing, external development, utilities and services such as internal plumbing (Domestic water and recycled water) & water supply (Domestic water and recycled water), sanitary, electrification (internal and external), Passenger lifts barrier free access as per the stipulated specifications conditions.
- Firefighting and fire detection as required as per NBC 2016 and the local fire officer. This includes wet riser and sprinkler system for fire fighting and Automatic fire alarm system for fire detection.
- LT Electrical distribution.
- Lift
- External developments like drainage, landscape, roads and paths etc.
- HVAC
- CCTV, Voice & data network and access control.
- Plumbing & Sanitation.

#### 24.1 Civil, Water supply, Plumbing

- The contractor is allowed to slightly modify the floor plan details for incorporating the ducts, structural design requirements, etc for the effective planning and to satisfy the code provisions, NBC norms, fire safety provision, etc., without reducing the rooms area, subject to the approval of the Engineer-in-charge.
- The bidder will not be allowed to modify the rooms layouts, staircase widths and corridor widths.
- Concrete walls at few locations may be provided with Dry partition walls/ Masonry walls to have the uniformity in the MIVAN shuttering, subject to the approval of the Engineer-in-charge.
- The preparation of the modified architectural drawing incorporating the changes is in the scope of the contractor.
- The overall plinth area and the floor wise area given in the drawings and Schedules are tentative.
- In case there is a change in the overall plinth area measured during the construction, the agreement price will be adjusted proportionally.
- The trees at the existing site will be preserved to the maximum extent possible. Hence, the approval for location of installation of the cranes, etc shall be given considering the existing tree location
- Storing the excavated soil within the storage yard inside the campus upto 4km lead and bringing back to backfill, level raising, etc



- Any additional soil required for the level raising around the building will be provided by IIT Madras free of the cost. The same shall be carried by the bidder from upto 4km lead
- Minimum grade of concrete for all RCC works shall be M35 with minimum cement content of 370 kg/Cum
- The Minimum thickness of all external walls shall be 230mm.
- Minimum Grade of reinforcement shall be– Fe550D
- Minimum dia of reinforcements
  - Columns, shear walls – 16mm
  - Beams – 12mm
  - Other RCC members – 10mm
- Only cover discs to be used to ensure proper covering to the reinforcement
- If couplers are used for reinforcement work, the same shall be galvanized.
- Appropriate ground improvement or soil stabilization measures as per the soil investigation report and structural design, if any recommended shall be carried out
- All the horizontal, vertical, inclined projections of the structure like porticos, slab projections, staircases, mummy, machine rooms, water tanks, any other architectural features shall be designed as integral part of the structure and provided
- Windows along with glazing shall be designed for wind loads applicable to the area/location as per relevant IS codes
- Structural glazing/cladding system shall be designed for applicable wind loads, thermal expansions and seismic movements.
- Inspection chambers/manholes/ gullies chambers/ valves and other accessories of approved specifications and make shall be provided considering all the site conditions and reduced level as per design parameters.
- Retro-reflective sign boards shall be made of aluminium/Stainless steel sheet supported on epoxy painted MS/SS frame work.

#### 24.1.1 Basement

- Basement shall be designed as an integral part of superstructure and integrated with foundation system with suitable water proofing system and measures for collection, pumping and disposal of any water.
- The basement shall be provided with proper drainage channels with the suitable covers, collection pit, electromechanical arrangements for automatic pumping arrangement for the collected water from the collection pit
- Pump rooms of suitable capacity shall be planned in the basement adjacent to the sumps
- Entry and exit to be provided with speed bump made with high-strength rubber or plastic, designed to withstand intended traffic
- Basement parking area marking, no parking marks, route markers, etc shall be done as per the Architectural drawings and relevant code/ NBC provisions.
- The basement entry and exit points to be provided with Unbreakable Traffic Convex Mirror of minimum 750mm dia. Sample Image :



#### 24.1.2 Water supply & Sewerage disposal

- Providing and fixing dual water supply lines (To the overhead tank and sumps), delivery lines (Domestic water and recycles water) along with the pressure relief valves at all floor levels.
- Domestic water supply shall be provided wherever the water will be touched by the human. Locations such as for pantry, wash basin, health faucet, etc shall be provided with domestic water delivery.
- Recycled water lines shall be provided for flushing in the restrooms.
- Two delivery lines shall be provided. One line for Ground to sixth floor and another line for Seventh to eleventh floor
- The domestic and recycled water connection shall be tapped from the the site periphery. The sewage shall be connected to the nearest manhole located near to the site as per the instruction of Engineer-in-charge
- HDPE pipes shall be used for the sewage line connection from the gully to nearby manhole chamber
- Delivery lines from the tank to restrooms and pantry shall be CPVC pipes
- Sewerage lines shall be UPVC SWR Type-B pipes (Minimum 75mm dia). Separate lines shall be provided as below
  - Line for soil waste from closets
  - Urinal
  - Washbasin and floor sumps
- Rain water lines shall be UPVC SWR Type-A pipes (Minimum 110mm dia)
- Fresh water supply to the terrace sumps shall be done through suitable dia CPVC pipes.
- Sensor based automatic water pumping system from sumps to overhead tanks shall be implemented
- The layout of the overhead tanks shall be slightly modified without compromising the overall capacity. The domestic water sump and fire sump shall be placed adjacent to each other.
- Recycled water tank shall be placed by leaving suitable gap between the domestic/fire water tank, to avoid contamination of the water due to leakages if any.

#### 24.1.3 Sumps

- The bidder shall construct the sumps with following capacity.

- Fire water – 1,00,000 Liters
- Domestic water – 20,000 Liters
- Recycled water – 20,000 Liters
- The sumps shall be located along the circulation road in the area earmarked in the drawing. It shall be ensured that the fire water tank is filled with domestic water and the overflow water from the fire water tank is fed to the domestic water tank to ensure the proper circulation of water in the fire water tank.
- The invert level of the sumps shall match with the Basement floor level.
- There shall be atleast 1m gap between the Building and the sump
- There shall be minimum 1m gap between the Recycled water sump and other sumps to avoid any possible mixing of domestic water and recycled water
- The sumps shall be designed to take the suitable wheel load. Each sump shall have Minimum two manhole covers with FRP ladders to access the sump and vent pipes, etc

#### 24.1.4 Super structure

- All masonry partition shall be done with AAC (autoclaved aerated concrete) blocks
- Minimum 12mm thick ready-mix plaster shall be applied for Masonry work
- Restroom ducts shall be provided with FRP platforms of minimum 200kg carrying capacity at each floor levels to enable the workmen to stand and attend repair works
- SS Handrails of Minimum SS 304 Grade. Wherever needed , matt finish handrails shall be provided
- All windows in the meeting rooms and faculty rooms shall be provided with Zebra Blinds made with 100% Polyester Fabric, typically 150 GSM or higher, dual-layered, woven with alternating sheer and opaque horizontal stripes with a built-in locking mechanism, enabling precise level adjustment. The blinds shall be extended by at least 150mm on the sides of the windows.

#### 24.1.5 Restrooms

- Internal Sanitary Fixtures and Fittings shall be provided as given below. This list is minimum requirement. Additional fittings if any need to be provided as per the architectural drawings is also under the scope of the contractor.
  - Each men's restroom shall be provided with
    - 2 Nos of half stall urinal with CP Angle valves, CP Bottle tap
    - Urinal partition made of compact high-pressure laminate as per IS:2046 and SS Patch fittings
    - 1 No of Countersunk wash basin
    - 1 No of SS Soap dispenser
    - 1 No of SS Towel ring – 12 inch
    - SS Studded beveled frameless mirror in the washbasin wall – 1000mmX900mm
    - 1 No- Wall mounted water closet with wall concealed flushing tank
    - 1 No SS health faucet with SS angle valve
    - SS Gratings – 4 Nos

- 1 Nos - Long body SS bib cock
- Each women's restroom shall be provided with
  - 1 No of Countersunk wash basin
  - 1 No of SS Soap dispenser
  - 1 No of SS Towel ring – 12 inch
  - SS Studded beweledge frameless mirror in the washbasin wall – 1000mmX900mm
  - 2 Nos- Wall mounted water closet with wall concealed flushing tank
  - 2 Nos SS health faucet with SS angle valve
  - SS Gratings – 4 Nos
  - 2 Nos - Long body SS bib cock
- Each PWD restroom shall be provided with
  - 1 No of Countersunk wash basin
  - 1 No of SS Soap dispenser
  - 1 No of SS Towel ring – 12 inch
  - SS Studded beweledge frameless mirror in the washbasin wall – 1000mmX900mm
  - 1 Nos- Wall mounted water closet with wall concealed flushing tank
  - 2 Nos SS health faucet with SS angle valve
  - SS Gratings – 2 Nos
  - 1 No - Long body SS bib cock
  - Side grab bars as per the NBC specifications
- Following door fittings shall be provided as given below.
  - Toilet main door – 1 Pair of 300mm SS door handle for men's and ladies toilet main door
  - Cylindrical lock – 1 number for men's and ladies toilet main door
- Restroom fitting model

S.No	Code No	Remarks	Product Name
1	E812599	For Water closet	Linea Plus Concealed Cistern with Half Frame
2	C032B	Water closet at toilets	UNO Wall-Hung Closet
3	E8220A1	For concealed cistern	Linea Plus Push Plate – Round, Chrome Finish
4	T2301A1	For washbasin	Quattro Pillar Cock
5	T9921A1	For closet at toilets	UNO Health Faucet
6	C05801C	Urinal	Whiz Urinal
7	C856971	Sink at pantry	Single Bowl Kitchen Sink – Flat Edge, Gloss Finish (18" L × 18" W × 8" D)

S.No	Code No	Remarks	Product Name
8	C0494	Washbasin at Toilet	Niagara Under-Counter Basin (550 × 445 × 190 mm)
9	T9899A1	Couplings	Full Thread Waste Coupling
10	T3201A1	Bottle trap for toilets	Bottle Trap – 9" (Light Type)
11	T991299	Connection hose	PVC Connecting Hose – 1.5 ft
12	G5720A1	Pantry sink	Deck-Mounted Sink Cock
13	G2007A1	For toilets	Lapis Pro Urinal Push Cock
14	T9880A1	For toilets and pantry	Cute Angle Valve
Remarks: The above Products name and models are related to the Parryware Make. The equivalent models (Equal MRP) of other approved make may be provided with the approval of the Engineer-in-charge			
15	'H' TYPE HANDLE XL-C 3000H AM – Dorma	For toilets main door	300mm SS Door handle

- Minimum 100mm sunken portion shall be given
- The waterproofing shall be done using SBR Plaster of 20mm thick + PU Bitumen modified coating + Geo textile + Foam concrete for sunken portion + Tile. The waterproofing shall be extended at least 450mm on the walls
- Restroom Main entrance doors shall be finished with minimum 1mm thick laminate

#### 24.1.6 Waterproofing

##### a. **Basement and sump raft Waterproofing with Pre applied HDPE Membrane**

- Supplying and installing waterproofing treatment for “Raft Slab” by using 1.5mm thick fully bonded HDPE sheet membrane on the Raft slab. Membrane shall be installed in strict accordance with the manufactures technical Instructions and shall provide an intimate bond to resist water migration. The fully bonded HDPE sheet membrane shall consist of a multi-layer composite film which consists of 1.2mm highly resilient HDPE film, 0.3mm of self-adhesive polymer layer and a trafficable particulate layer making .
- The fully bonded HDPE sheet waterproofing membrane shall have following typical properties:

- Hydrostatic Resistance (ASTM D 5385) - 70 m head of water
  - Peel adhesion to concrete (ASTM D903):  $\geq 880\text{N/m}$
  - Puncture Resistance (ASTM E154):  $\geq 1000\text{N}$
  - Elongation (ASTM D412) :  $\geq 500\%$
  - Tensile Strength (ASTM D412) :  $27 \pm 2 \text{ N/mm}^2$
  - UV exposure Test (ASTM G154) : No cracks, No bleeding
  - Dimensional Stability (ASTM D 836) :  $\leq 0.5\%$
- (iii) The fully bonded HDPE sheet membrane shall be installed with standard 80mm selvedge laps with release film, and end laps executed with Tape, applied as per manufactures technical instructions. Membrane shall be laid over the entire area and returned on to a vertical slab formwork. All systems to be installed as per manufacturer's recommendations, etc. complete

**b. Retaining Wall and sump wall waterproofing:**

- (i) Supply and application of pre-formed self-adhesive SBS bitumen membrane made from a mixture of bitumen and special polymers bonded to a double laminated film of high density polyethylene (HDPE) cold-applied on substrates with compatible bituminous primer is provided with a selvedge for a quick, accurate and strong bond between adjacent rolls of membrane. The adhesive selvedge guarantees the watertight properties also around joints with thickness of 1.5mm; Tensile strength (ASTM D412) :  $>2.5 \text{ Mpa}$ ; Elongation at break (ASTM D412) :  $>200\%$  ;Hydrostatic pressure resistance (ASTM D5385) : 70 m ; Puncture resistance (ASTM E 154) : 200 N; Resistance to impact(EN 12691) : pass, 300 mm; Tear strength (nail method) (N) (EN 12310-1):  $\geq 60$ . All systems to be installed as per manufacturer's recommendations, etc. complete with all lead and lift for all materials and labour and as directed by Engineer in-charge.
- (ii) Membrane protection in Vertical Wall : Supply and apply a HDPE drainage and protection board as per approved make list on base of premium grade high density polyethylene (HDPE) with dimples 8mm with the help of double side tape. The drain protection board should have high drainage capacity, High mechanical resistance, Resistant to root penetration, Resistant to all natural aggressive mediums in ground water and soil, Suitable for contact with soft water (aggressive to concrete), Can be installed on damp and wet substrates The backfilling shall be done within 2-3 days of fixing drainage boards. All systems to be installed as per manufacturers recommendation etc., complete with all lead and lift for all materials and labour and as directed by Engineer in charge.

**c. Toilet Waterproofing**

- (i) Providing and applying Latex modified bituminous water proofing membrane (Tarfelt LM of STP or equivalent) over the prepared surface as a base primer coat and allow to touch dry and apply first coat followed by second coat to achieve a minimum dry film thickness of 1000 microns. With technical

properties elongation 190-200% after 14 days (ASTM D-412) Tensile strength: 0.50Mpa (ASTM D-412), Crack bridging: 0.8mm (ASTM C-836), Pull off adhesion: 1.2Mpa (ASTM D-4541), Hardness, Shore A: >50 (ASTM D-2240). All test parameters are 14 days cured membrane. The rate also include the cost for reinforced Glass fiber mesh in between 1st and second coat application. Sprinkle sand at 0.200Kg/Sq. m in vertical areas over the final coat when it is tacky to facilitate plastering. Ensure 36 hours complete curing after final coat and conduct pond test after 7 days. The SBR modified plaster along with ghola and ghura shall be applied as subsequent layer. The rate is also inclusive of spread of 150gsm geotextile with 50mm overlapping over the fully cured coating as protective medium prior to lay of light weight screed concreting

- (ii) Polymer modified mortar :- Resurfacing of the substrate with Sika Latex (or MIXBOND SBR of FABCHEM, Rheomix 141 of BASF or Nitobond SBR of FOSROC) polymer modified cement mortar (Cement: sand ratio : 1:3 with a Water (Mixed with Sika Latex) cement ratio of 0.4-0.45), with a minimum thickness of 20 mm, to get a levelled surface. The dosage of Sika Latex will be 4 kgs per bag of cement. The rate should be inclusive of bonding coat with cement and latex mix of ratio 1:1 over the cleaned surface before application of mortar.
- (iii) Treatment to drain pipe mouth - Making opening for fixing the drain pipe with a diameter of the opening should be more than 25cm around the drain pipe to be fixed. The drain pipe to be fixed to the opening after installing swellable acrylic based PU water bar around the pipe, fixing the drain pipe to the opening made and filling the gap between the drain pipe and the opening with non shrink grout without any gap, applying a layer of cementitious water proof coating over the rainwater floor mouth (layer of cementitious coating Cement : SBR 1:1 ratio shall be applied over the wall floor junction before applying coving) and finishing the surface neatly.
- (iv) Providing gola / coving 75x75 mm in cement concrete 1:2:4 admixed with 4 Ltr of SBR latex for 50 kg of cement (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 admixed with 4 Ltr of SBR with 50 kg of cement (1 cement : 3 fine sand) as per standard design. A layer of cementitious coating Cement : SBR 1:1 ratio over the wall floor junction shall be applied before applying coving.
- (v) Providing and applying Latex modified bituminous water proofing membrane (Tarfelt LM of STP or equivalent) over the prepared surface as a base primer coat and allow to touch dry and apply first coat followed by second coat to achieve a minimum dry film thickness of 1000 microns. With technical properties elongation 190-200% after 14 days (ASTM D-412) Tensile strength: 0.50Mpa (ASTM D-412), Crack bridging: 0.8mm (ASTM C-836), Pull off adhesion: 1.2Mpa (ASTM D-4541), Hardness, Shore A: >50 (ASTM D-2240). All test parameters are 14 days cured membrane. The rate also include the cost for reinforced Glass fiber mesh in between 1st and second coat application.

Sprinkle sand at 0.200Kg/Sq. m in vertical areas over the final coat when it is tacky to facilitate plastering. Ensure 36 hours complete curing after final coat and conduct pond test after 7 days..

- (vi) Ponding test by storing water for a minimum depth of 20 cm and the water to be retained for not less than 48 hours or as required by engineer in charge to ascertain any leakage. Necessary repair / grouting to be done free cost to arrest any leakage observed.
- (vii) Geotextile:- Supply and apply a polyester based geotextile protection fleece. Product: Sarnafelt® 300 or equivalent approved by IITM. Product requirements: density  $\geq 300$  g/m<sup>2</sup>; thickness 2.4 mm; tensile strength  $\geq 430$  N/50mm; elongation at break  $\leq 100$  %; tear strength  $\geq 250$  N; puncture resistance  $\geq 1600$  N; cone drop: 13 mm.
- (viii) Supplying and applying foam concrete / polystyrene light weight concrete of not less than M 2.5 grade and density not more than 1250 kg /cum with a cement content not less than 250 kg per cum. The rate inclusive of laying the light weight concrete at terrace level including pumping, laying, levelling to get the required slope, curing etc., complete. The concrete shall be laid to maintain slope to drain the rain water over the geotextile (not less than 1 in 80). The minimum cement content shall not less than 250 Kg/cum. The mix design shall be approved by the engineer incharge. Minimum thickness of the concrete shall be 5cm

**d. Water tank waterproofing**

- (i) Supplying and applying solvent free food grade PU coating for water tank floors and wall of thixotropic coating, based on high quality elastomeric polyurethane resins. The product can be roller applied with two or more coats over the primer coat with consumptions and application as per the manufacturer specification. The number of coat, coverage, thickness, priming coat, reinforcement etc., as per manufacture specification.

**e. Terrace roof treatment**

- (i) Providing and applying Latex modified bituminous water proofing membrane (Tarfelt LM of STP or equivalent) over the prepared surface as a base primer coat and allow to touch dry and apply first coat followed by second coat to achieve a minimum dry film thickness of 1000 microns. With technical properties elongation 190-200% after 14 days (ASTM D-412) Tensile strength: 0.50Mpa (ASTM D-412), Crack bridging: 0.8mm (ASTM C-836), Pull off adhesion: 1.2Mpa (ASTM D-4541), Hardness, Shore A: >50 (ASTM D-2240). All test parameters are 14 days cured membrane. The rate also include the cost for reinforced Glass fiber mesh in between 1st and second coat application. Sprinkle sand at 0.200Kg/Sq. m in vertical areas over the final coat when it is tacky to facilitate plastering. Ensure 36 hours complete curing after final coat and conduct pond test after 7 days. The SBR modified plaster along with ghola



and ghura shall be applied as subsequent layer. The rate is also inclusive of spread of 150gsm geotextile with 50mm overlapping over the fully cured coating as protective medium prior to lay of light weight screed concreting

- (ii) Polymer modified mortar :- Resurfacing of the substrate with Sika Latex (or MIXBOND SBR of FABCHEM, Rheomix 141 of BASF or Nitobond SBR of FOSROC) polymer modified cement mortar (Cement: sand ratio : 1:3 with a Water (Mixed with Sika Latex) cement ratio of 0.4-0.45), with a minimum thickness of 20 mm, to get a levelled surface. The dosage of Sika Latex will be 4 kgs per bag of cement. The rate should be inclusive of bonding coat with cement and latex mix of ratio 1:1 over the cleaned surface before application of mortar.
- (iii) Treatment to drain pipe mouth - Making opening for fixing the drain pipe with a diameter of the opening should be more than 25cm around the drain pipe to be fixed. The drain pipe to be fixed to the opening after installing swellable acrylic based PU water bar around the pipe, fixing the drain pipe to the opening made and filling the gap between the drain pipe and the opening with non shrink grout without any gap, applying a layer of cementitious water proof coating over the rainwater floor mouth (layer of cementitious coating Cement : SBR 1:1 ratio shall be applied over the wall floor junction before applying coving) and finishing the surface neatly.
- (iv) Providing gola / coving 75x75 mm in cement concrete 1:2:4 admixed with 4 Ltr of SBR latex for 50 kg of cement (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 admixed with 4 Ltr of SBR with 50 kg of cement (1 cement : 3 fine sand) as per standard design. A layer of cementitious coating Cement : SBR 1:1 ratio over the wall floor junction shall be applied before applying coving.
- (v) Providing and applying Latex modified bituminous water proofing membrane (Tarfelt LM of STP or equivalent) over the prepared surface as a base primer coat and allow to touch dry and apply first coat followed by second coat to achieve a minimum dry film thickness of 1000 microns. With technical properties elongation 190-200% after 14 days (ASTM D-412) Tensile strength: 0.50Mpa (ASTM D-412), Crack bridging: 0.8mm (ASTM C-836), Pull off adhesion: 1.2Mpa (ASTM D-4541), Hardness, Shore A: >50 (ASTM D-2240). All test parameters are 14 days cured membrane. The rate also include the cost for reinforced Glass fiber mesh in between 1st and second coat application. Sprinkle sand at 0.200Kg/Sq. m in vertical areas over the final coat when it is tacky to facilitate plastering. Ensure 36 hours complete curing after final coat and conduct pond test after 7 days..
- (vi) Ponding test by storing water for a minimum depth of 20 cm and the water to be retained for not less than 48 hours or as required by engineer in charge to ascertain any leakage. Necessary repair / grouting to be done free cost to arrest any leakage observed.

- (vii) Geotextile:- Supply and apply a polyester based geotextile protection fleece. Product: Sarnafelt® 300 or equivalent approved by IITM. Product requirements: density  $\geq 300$  g/m<sup>2</sup>; thickness 2.4 mm; tensile strength  $\geq 430$  N/50mm; elongation at break  $\leq 100$  %; tear strength  $\geq 250$  N; puncture resistance  $\geq 1600$  N; cone drop: 13 mm.
- (viii) Supplying and applying foam concrete / polystyrene light weight concrete of not less than M 2.5 grade and density not more than 1250 kg /cum with a cement content not less than 250 kg per cum. The rate inclusive of laying the light weight concrete at terrace level including pumping, laying, levelling to get the required slope, curing etc., complete. The concrete shall be laid to maintain slope to drain the rain water over the geotextile (not less than 1 in 80). The minimum cement content shall not less than 250 Kg/cum. The mix design shall be approved by the engineer incharge. Minimum thickness of the concrete shall be 5cm

#### 24.1.7 External development

- (i) The circulation road of minimum 7.2m wide shall be provided all around the site
- (ii) The existing storm water drain running around the site shall be reformed adjacent to proposed circulation road. Necessary cross section shall be designed to carry the expected flood water
- (iii) Two box culverts of suitable capacity shall be provided for storm water drain road crossing
- (iv) Minimum 150 mm thick dry lean concrete – base and 250mm thick Granular sub base shall be provided for the circulation roads. More thickness may be provided as per design considering actual ground conditions and traffic load.

#### 24.2 [Electrical/data/voice/HVAC/Fire alarm/fire fighting, CCTV Requirements](#)

##### 24.2.1 Common:

- a) Design Basis report, Design calculation and detailed Engineering of MEP services shall be the in the scope of the tender.
- b) Design Supply installation Testing and commissioning of suitable essential and non essential Main Panel, Rising mains, floor panels, distribution boards, cabling etc.
  - i) Use copper busbar for all the panels and rising mains.
  - ii) Use Aluminium conductor armoured UG cables for sizes above 16 sq.mm and copper conductor UG cable for sizes upto 16 sq.mm for all interconnection cables from main panels to sub panels and rising mains.
  - iii) The cables for main incomer for both essential and non essential panels will be arranged by the Institute.
- c) Design Supply installation Testing and commissioning of suitable capacity UPS for UPS power sockets in the faculty rooms. Network jack with Cat 6/6A wiring, rack with patch panels for LAN, Fire alarm panels, for BMS work DDC panel, CCTV and ACS. Network switch need not be considered for LAN alone, however network switch for CCTV under the scope of this contract.

- d) Copper wiring in PVC conduits shall be used for internal wirings.
- e) Design Supply installation Testing and commissioning of Lightning conductor installation, aviation lamp at the terrace as required.
- f) Design Supply Installation testing and commissioning of earthing system for electrical panels, solar power and Lightning conductors.
- g) Design Supply installation Testing and commissioning of suitable data switches, server and storage for CCTV and ACS(Access Control System).
- h) Design Supply installation testing and commissioning of Fire alarm, fire fighting and public address system as per the NBC norms/classification of the buildings.
- i) Design Supply installation and testing and commissioning of suitable AC low side equipment for all faculty rooms/server rooms/meeting rooms as per the required heat load calculations.
- j) All low side AC equipment shall have water leak detectors (WLD Device) and to provide alarm and cutoff the child water valve.
- k) All low side AC equipment shall have fresh air provision as per ASHRAE 62.1 standard
- l) The Institute will provide chilled water (from the existing chiller plant) tapping point near by the building. The tenderer shall take the tapping from this point for HVAC installation in the building. Use HDPE pipe covered MS/GI pipe for buried installation and pre insulated chilled water pipes for open installation. The individual unit of double skin cabinet type FCU with local control thermostat shall be considered. FCU shall have dual control from both local / room thermostat and through BMS.
- m) Basement ventilation system and Mechanical ventilation system for rest rooms, electrical rooms etc. to be provided as per NBC norms. Detailed Design basis report shall be provided.
- n) Design Supply installation and testing and commissioning of Roof top solar power plant as per the space available after considering shade analysis. Aviation lamp with timer at the terrace.
- o) The proposed make of every components of the work should be furnished based on the list of preferred make.
- p) Wherever needed, Laying of conduits for electrical, telephone, data, fire alarm, BMS, CCTV shall be done along with the concreting

#### 24.2.2 Faculty Rooms :

- a) Each faculty room shall be provided with suitable watts of minimum 2 Nos. LED light fixtures of standard lux level for reading, one BLDC fan with individual control.
- b) Each faculty room shall be provided with minimum of raw power - 3 Nos. of 6 amps sockets, 2 Nos of 6/16A sockets and ups power – 4 Nos of 6 amps sockets, 1no telephone socket, 1 No. data socket in addition to Wi Fi provision.
- c) Each faculty room shall be provided with AC low side equipment. Chilled water double skin FCU - wall / ceiling mounted (outdoor type to be installed on corridor) of minimum 1.5 TR capacity shall be considered. FCU shall have dual control from both local / room thermostat and through BMS.

#### 24.2.3 Corridors:

- a) Suitable number of LED lighting fixtures either ceiling mounted or suspension type installation of required lux level conforming to appropriate National Lighting code category.
- b) Corridors shall be provided with 2 nos 6/16A raw Power socket with individual switch control for every 15 meters.
- c) 6Nos of 6A UPS power sockets of suitable rating per floor suitably distributed for Data switches and CCTV applications.
- d) Wi Fi provision shall be installed in corridor for every 10 meters.

#### 24.2.4 Rest rooms

- a) Suitable number of lighting fixtures to meet the lux level conforming to appropriate National Lighting code category.
- b) 4 Nos of 6/16 raw Power socket with individual switch control shall be provided for cleaning equipments.
- c) Mechanical ventilation system in each rest room as per ASHRAE ventilation standard.

#### 24.2.5 Basement :

- a) Suitable number of lighting fixtures to meet the lux level conforming to appropriate National Lighting code category.
- b) Suitable basement ventilation system designed as per NBC requirements.
- c) Sprinklers system should be considered in addition to the fire fighting system.

#### 24.2.6 External Lighting:

- a) Sufficient number of street light poles of appropriate height and wattage of light fittings shall be provided around the building along with the required cabling work in order to provide outdoor illumination as per the National Lighting Code category.
- b) Suitable number of lighting fixtures to meet the lux level as per the National Lighting code standard shall be provided in the exterior of the building.

All the Electrical works shall be carried out in accordance with CPWD specifications and MSES regulations.

#### 24.3 HVAC

**24.3.1 FCU:** Double skin chilled water Fan Coil Unit. These units are proposed to be mounted just outside the conditioned area with only a factory made collar penetrating through the wall/partition of the room for supply & return air purposes and fixed with SA & RA grille on the wall/partition. The unit shall be constructed out of sandwiched panels minimum 43 mm thick RPUF insulation, with thermal break profile. The outer sheet of the panel shall be 0.8mm thick and the inner sheet shall be 0.63mm thick. The unit shall have the provision to collect the return air also from the front facia of the unit adjacent to / below the supply air opening. Aluminium powder coated grille sized for both supply air and return air. The unit shall have 150mmx150mm aluminium powder coated grill with aluminium collar dampers on the boxing for fresh air provision. The units shall be with blow through design, units complete with pre-filters, fan section with DIDW forward curved fan directly coupled to a single phase motor operable in 3 speeds, 3 or 4 row deep cooling coil & extended drain tray. Unit shall have a filter track with factory-supplied cleanable nylon mesh filters in aluminium frame. Each coil shall have a manual air vent on upper connection, a drain port on the lower connection. The coil section and drain tray sections shall be provided with sandwiched insulation.

The unit shall be sized to accommodate the isolation valves as well as the control valve. The unit shall be factory fitted with isolation valves (ball valve with strainer at inlet and without strainer at outlet), 2 Way Motorised Valve (On/Off type) motorised valve with spring return (Valve to close when the power supply is cut off), necessary interconnections etc., Room Thermostat compatible for BMS integration (Bacnet over MSTP) with On/Off, Fan Speed and Temperature Control with a digital large display & interconnecting wiring between FCU and Thermostat in conduits. copper flexible multicore cable with plug top for power to FCU, drain pump and water leak device. FCU shall have dual control from both local / room thermostat and through BMS.

Drain pumps for FCU units: Drain pump shall be linked to the corresponding FCU unit such that the FCU unit shall automatically switched OFF incase of drain sump capacity is full and unit shall automatically switched ON when the drain sump is partially emptied.

Water Leak Alarm Interlock Relay: FCU unit shall be provided with a water leak tape in the drain pan. The tape shall be fixed at a height of about 3mm from the top of drain tray using suitable spacers. In case of any choke in the drain line, when the water in the tray rises and touches the tape, the tape shall trigger a relay to a) raise a water leak alarm b) provide a potential free contact for BMS and c) force close the two-way valve of the unit.

- 24.3.2 **Pre Insulated Chilled water piping buried in earth** in welded construction with MS ERW pipes with factory made HDPE jacketed PUF insulation complete with all fittings, flanges, pressure testing as per specification. Pipes 150mm dia and below shall be C class as per IS1239. 200 mm and above shall be as per IS3589. Entire pipelength to be provided with leak detection tape with suitable connectors. Detection tape to include tape, all connectors, T-Joints and any other joints as required. All joints of HDPE pipes to be suitably welded with HDPE welding. concrete pedestals with required foundation at regular intervals in trenches, clamping the pipes onto concrete pedestals with U clamps. (clamping to be done over the HDPE sleeves).
- 24.3.3 **Pre Insulated Chilled water piping inside buildings** in welded construction with MS ERW pipes with factory made GI spiral pipe jacketed PUF insulation complete with all fittings, flanges, pressure testing as per specification. Pipes 150mm dia and below shall be C class as per IS1239. 200 mm and above shall be as per IS3589. Necessary supports with PUF saddles. All necessary fittings such as bends, tees, reducers, flanges etc. and supports such as clamps with Puff sections, anti-vibration hangers etc. all pipes fitting/supports.
- 24.3.4 **Butterfly valves** with C I body SS disc nitrile sheet & O - ring & PN 16 pressure rating with extended stem complete with companion flanges, nuts, bolts, nuts, etc. Insulation thickness as per the connected chilled water piping and covered with 300 micron polythene sheet as vapour barrier and finished with GI cladding as per pipe specification. Valves 200mm and larger shall be equipped with gear arrangement for operation. Adequate Butterfly valves to be provided wherever required for maintenance purpose.
- 24.3.5 **Ball valves** complete with heavy duty PN 16 carbon steel body, stainless steel ball and shaft etc. Insulation thickness shall be as per the connected chilled water piping. Adequate Ball valves to be provided wherever required for maintenance purpose.
- 24.3.6 **Balancing valves** with built in measuring Facility with C I body flanged construction with EPDM coated disc with long pitch with protected out Pipe insulation & PN 16 pressure rating complete with companion flanges, nuts, bolts, gaskets and probes for pressure measurement complete with pressure readout points etc. Insulation shall be as per the connected chilled water piping and covered with 300 micron polythene sheet as vapour barrier and finished with GI cladding as per pipe specification. Adequate Balancing valves to be provided wherever required for water balancing purpose.

24.3.7 **BTU METER:** BMS Compatible (should release open protocol BACnet over IP or Modbus) Ultrasonic flow sensing inline BTU meter complete with necessary field devices such as immersion type temperature sensors and wiring etc. Device shall have suitable LCD display for displaying parameters such as instantaneous flow, load and overall BTU reading. BTU meter shall be capable of functioning independently of the BMS also. Insulation shall be as per the connected chilled water piping and covered with 300 micron polythene sheet as vapour barrier and finished with GI cladding as per pipe specification. BTU Meter to be provided in the Chilled water header for measuring the cooling load supplied to the building and to be integrated in the BMS. Cover box suitable for outdoor application for BTU meter installation to be considered with acrylic sheet as front fascia of the cover box for inspection of the BTU meter reading.

24.3.8 Temperature gauges, pressure gauges, auto air vents, test ports, drain valves etc. to be provided in the chilled water pipe line.

24.3.9 Condensate Drain Piping: PVC piping complete with fittings, factory manufactured supports etc. The pipe shall be insulated with 25mm thick closed cell elastomeric nitrile rubber insulation, class "0" with GI Cladding.

24.3.10 Electrical power to FCU / Low side AC equipment: Separate DBs for FCUs / low side AC equipment shall be provided with energy meters, and the same shall be integrated with BMS for monitoring and recording of energy consumption.

24.3.11 BUILDING MANAGEMENT SYSTEM (BMS) WORKS:

The low side HVAC equipments BMS work to be integrated with the Institute existing BMS system (Existing BMS system: Niagara Framework software with JACE controllers).

Scope of BMS works includes Integrators, Network switches, DDC controller (IP based), DDC panels, field devices such as BTU meters, sensors, actuators, cables, programming, graphics development, gateways, complete accessories, other associated works etc. required for low side HVAC BMS system and its integration to the existing Institute BMS system. All BMS equipment, DDC, instrument to be provided with UPS power. FCU shall have dual control from both local / room thermostat and through BMS.

DDC Controller: Programmable and Application specific controllers, field mounted configured. The controller shall be housed in vandal proof lockable MS cabinets including necessary power supply adaptors, relays etc.,and completely factory wired with necessary connector blocks for IO connectivity. Minimum 20% spare capacity in each category of input/output points. The DDC controllers shall be equipped with minimum 32 bit microprocesor and operate on Native BACNET protocol and be BTL certified. The DDC controllers shall also have capability to connect to equipments providing data on Modbus protocol (at least 1 port for Modbus) to integrate devices such as Room Thermostat, BTU meter, Multifunction Digital Electronic Meters etc., communicating on BACNET or Modbus protocol.. In each DDC Panel, the Master DDC controller shall communicate only through BACnet over IP and the add on IO modules inside each DDC panel shall could communicate with the Master DDC on BACNET over MSTP.. The DDC shall be fully configurable and programmable via the BMS Software / GUI web browser being offered without using any proprietary tools. Each controller shall perform all intended control functions in a 'standalone' mode should the unit incur a loss of communications. In case the number of points specified for a particular panel is out of range of the available DDC controller, vendor may add suitable number of DDC's in the panel to achieve the required points. Use of add on IO modules is not allowed.

Network & Supervisory controller as required for connecting all field DDC controllers and 3rd party System Integration Units. The Contollers shall provide fully independent distributed control. All necessary calculations required to achieve supervisory control shall be executed within the Controller independent of any other device. All control strategies performed by the Controller shall be both operator definable and modifiable through the Operator Interfaces. The controller shall also be of the same make as that of DDCs.

System Integration unit consisting of microprocessor based controller units as required to communicate between the Network Controller & the individual 3rd party microprocessor system controllers like Room Thermostat, BTU meter, Multifunction Digital Electronic Meters etc. as per distribution and as per IO points (this item shall be applicable only for dedicated integraters which are used apart from the ones and in addition to the already available option in the individual DDC's and would apply to integrations which does not involve BACNET ).

SENSORS AND FIELD DEVICES: Motorised type actuators, Pipe mounted water temperature sensor, Pipe mounted water pressure sensor, Ambient T+RH sensor, BTU Meter, Room Thermostat with BMS integration. All Sensors / transducers / transmitters shall be calibrated at site using suitable standard equipment whose calibration is traceable to national standards.

Signal & communication cables FRLS insulated, armoured, tinned copper conductor cable in conduit and trays.

CAT-6 LAN cables for BMS Network including suitable Jacks, patch cables etc.,



12 core unarmoured Optical Fibre cables for BMS Network including suitable Jacks, terminations etc.,

12 core armoured Optical Fibre cables for BMS Network laid in trenches to be excavated to a depth of 3 ft using 25 mm dia HDPE pipe PN 2.5 rating including suitable Jacks, terminations etc.,

#### **24.4 Fire Fighting System**

24.4.1 Scope of fire fighting system includes Electric driven Main Fire Pump, Electric driven sprinkler Fire Pump, diesel engine driven main fire pump, electric driven pressurisation pump (Jockey Pump), Electrical control panel, cable, cable tray, pipes & accessories, sprinkler system, other requirements items complete as required etc. Fire NOC to be obtained from the Competent Authority.

#### **24.5 Fire Alarm System & Public Address System**

24.5.1 Scope of fire alarm system & Public Address System includes addressable type fire alarm panel, detector, Response indicator, fault isolator, phone control module, manual call, horn cum strobe, fire control module, flow switch, fire fighter telephone handset, fire fighter phone jack, zone, voice alarm controller with USB, MP4 player (including zone button paging station) with seamless integration facility with main fire alarm panel for voice evacuation complete as required, ceiling speaker, wall speakers, exit point directional sound speaker with voice and integral audio amplifier with selectable sound pulse patterns complete as required, other related equipment / instrument, cables, conduits, cable tray etc. Fire Alarm panel to be provided with UPS power.

24.5.2 Fire alarm panel: Micro processor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics/ LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit ( $230 \pm 5\%V$ , 50 Hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system and shall be complete with all accessories. The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete.

24.5.3 Intelligent analog addressable photothermal detector, Response indicator on surface/recessed MS Box having two LED metallic cover, Addressable manual call point, addressable horn cum strobe complete with mounting base, addressable fire control module complete as required.

24.5.4 Fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.

#### **24.6 Lifts**

Two nos of energy efficient minimum 13 passenger capacity lifts and minimum 1 No 8 passenger capacity shall be considered Machine room less (MRL) lift with regenerative drive as per CPWD

General Specification for Electrical Works. The lift shall be provided with center opening biparting SS doors and with speed not lesser than 1.5 MPS with all standard accessories including ARD. The lift suppliers shall be leading manufacturers and not lower than at least 20 years in the field of lift manufacturing and maintenance. They shall have a service centre in Chennai.

- a) The Lift entrance shall be finished with 18mm (finished) thickness granite wet cladding.
- b) The lift lobby flooring shall be finished with 18mm (finished) thickness granite of honed finish.
- c) The flooring of the lift cabin shall also be finished as mentioned above (b).
- d) The lift shall be physically challenged friendly and switches in the lift shall be braille numbered with background lighting.
- e) Necessary tactile flooring shall be provided in the lift lobby.
- f) Lift license to be to be obtained from the Competent Authority.

#### **24.7 Solar Power System:**

The proposed Solar Power system shall be minimum of suitable capacity of the following specifications. Design, Supply, Installation, Testing and Commissioning of ongrid Solar Photovoltaic Power Plant conforming to MNRE specifications as amended with following specifications:-

- a) The bidder shall install minimum solar capacity of 50 kWp
- b) Solar Photovoltaic Module of capacity 550Wp or above, MONOPERC1BIFACIAL/TOPCON manufactured in India, conforming to IS14286/IEC61215, IS/IEC61730-Part-1, IS/IEC61730-Part-2. Solar Photovoltaic Module conversion efficiency shall not be less than 16.5%. PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. Make: As per latest ALMM list.
- c) Power Conditioning Unit (PCU)/Inverter of String type Grid tie 350-800V DC Input voltage range and 400VAC, three phase, 4 wire, 50Hz +/- 2.5Hz, output voltage suitable to generate AC Power with efficiency not less than 97%, total harmonic distortion less than 3% and suitable for ambient temperature from 0 to 50 degree C. The PCU shall adjust the voltage and frequency level to suit the Grid Voltage Frequency. Inverters shall have RS 485 / GSM and Ethernet provision. Warranty for Inverter shall be minimum 7 years.
- d) Data Monitoring System complete with accessories.
- e) Fixing of Array junction box & Main junction box with IP65 protection and termination arrangement for incoming and outgoing cable along with glands, lugs and other accessories etc. as required.
- e) Lightning and surge voltage protection.
- f) Lightning and surge voltage protection as required.
- g) Connections & Interconnections by supplying & fixing required size XLPE insulated copper conductor 1.1 kV grade armoured power and control cables between solar

modules, main power cable to grid supply PCU unit along with supplying & fixing of necessary channel/ conduit lugs and other accessories etc. as required.

- h) Construction of pedestal for solar panel - the rate inclusive of providing and laying in position specified grade of reinforced cement concrete, including the cost of centering and shuttering using film coated plywood, finishing and reinforcement - All work up to terrace level of G+11 floors : using 1:1.5:3 (1 cement : 1.5 coarse manufactured sand (zone-III): 3 graded stone aggregate 20 mm nominal size). The rate also inclusive of providing a box type reinforcement using 8 mm Thermo-Mechanically Treated bars of grade Fe-415 or higher grade at a spacing of 15cm c/c. Before laying the concrete a layer of LDPE sheet of 400 micron or higher thickness shall be laid over the existing surface. The existing weathering tiles / waterproofing treatment shall not be damaged. The rate also inclusive charges towards lead and lifting of materials, necessary scaffolding, fixing charges of foundation bolts, de-shuttering, curing, finishing the surface and applying two coats of paint with exterior emulsion paint etc., complete.
- i) System shall be installed by a Electrical A Grade Licensed Contractor. If the vendor is possessing Electrical A Grade License, they shall carry out the installation work on their own. The Contractor shall obtain CEA Approval for the plants installed.

#### **24.8 Others**

- The water and electricity required for the execution of the work shall be arranged by the contractor. Drilling bore wells inside IIT-M for getting water is not allowed. The contractor shall arrange to obtain temporary electrical connections in coordination with IIT-M.
- The water supply mains, Power and sewage connection to the nearest place of the construction site will be provided by IIT-M. The contractor should make site visit to assess the existing nearest points of the above services and utilities.
- Before execution of work all the coordinated and shop drawings shall be vetted by TPQAS to be appointed by IIT-M.
- The contractor shall provide necessary barricade around the site for a minimum height of 6m and the thickness of barricading sheet shall be not less than 0.5mm
- Approval of barricading layout should be obtained from Engineer-in-charge before commencement of work.
- The contractor during the execution of work shall install a minimum of three-time lapse cameras with high resolution as per the approval of Engineer-In charge. IITM shall have exclusive right on the data captured by such system.
- The contractor shall co-ordinate with the Architectural consultant /TPQAS agency for the testing, commissioning and preparation of all as-built drawings.
- The contractor shall submit the commissioning reports, warranty / guarantee certificates and operation Manuals for all MEP services post completion of work for issue of Completion certificate.
- Meetings / Site visits / attendance in project review meetings as and when needed. No extra cost shall be paid for the same.

- Any other details not mentioned above but required for satisfactory completion of the project.
- Five sets of “As built” drawings for the building and all MEP, HVAC services with soft copy, CAD drawings in editable form, the editable software models of all designs to be handed over
- Structural design and detailing: The Contractor shall carry out the structural design for the proposed construction by abiding with the relevant Codes and standards. The contractor shall submit all the duly proof checked designs, ETABS/SAFE/STAAD/SAP Model, BIM model and AutoCAD drawing files in editable form and not in PDF to IIT-M. The proof checking of the structural drawings shall be done from IIT Madras.
- MEP drawings: The contractor shall prepare and submit the detailed Mechanical, Electrical and Plumbing drawings and execute the work after approval from IIT-M.
- The contractor shall co-ordinate and share all drawings with the Engineer-in-charge for approval and issue of necessary sets of drawings (Hard copies and softcopies in editable form not in PDF).
- The contractor shall submit BIM execution plan highlighting the strategy for adopting Level 2 BIM implementation. Building Information Model (BIM) shall be prepared with BIM software compatible with AutoCAD such as Revit Architecture / Structure / MEP. The level of detail for the BIM model should be LOD 400 within permissible tolerance as specified by the American Institute of Architects (AIA). The model should contain the geometric, visual and material details of the Architectural, structural, and MEP elements. The model shall incorporate interior as well as exterior Architectural details of the building for visualization with finishing and joinery details in true texture and colours as far as possible. The contractor should prepare an execution schedule and as-built drawings for the above activities related to BIM such that the BIM model is effectively used for project coordination and not delivered at the end of the design activity. The contractor shall coordinate with the architect and facilitate a workshop among all the stake holders to work out the BIM implementation plan for effective use of the BIM model in all the subsequent stages. All BIM data shall be submitted in their native format along with IFC files.
- All ‘Good for construction’ drawings and details including MEP, finishes and services connected with the project should be made available and get approved before commencement of the work. Detailed ‘Good for Construction’ structural drawings should be submitted with clarity on detailing of reinforcements / joints of structural elements including bar bending schedule. All details and shop drawings submitted by the contractor will be vetted by the structural vetting authority. The contractor shall account for the same in the Program chart.
- The Contractor shall submit the concrete mix designs of the concrete intended to be used in the work for the approval of Engineer-in-charge at least 10 working days prior to the commencement of concreting works. The mix design report shall consist of all parameters mentioned in the Durability requirement section

- The contractor shall submit a detailed method statement for executing all the major activities at least 7 days prior to commencement of the execution which describes all the details such as the equipment to be used, methodology, specifications of the workmanship involved etc. The Method statement shall also contain the EHS (Environment, Health, and Safety) risk assessment/ risk matrix pertaining to the activity.
- The contractor shall plan and execute the work as per the milestone indicated in this document.
- Any other details not mentioned above but required for satisfactory completion of the project.
- The work shall not be sublet without written permission of the Engineer In-charge nor shall transfer be made to power of Attorney authorizing others to receive payment.
- The Contractor whose bid is accepted shall comply with the provisions of all Acts, Statutes, Rules, Regulations etc. of the Central and State Government/ Local body and applicable codes as the case may be and as may be applicable in this case and if necessary, get himself duly registered as required by the said Acts, Statues, Rules, Regulations etc.
- All taxes and duties as per Govt. rules shall be deducted from the bills.
- The contractor shall arrange to deliver the MIVAN shuttering with required components as per the erection sequence. No additional space will be provided for stacking any elements/components outside the designated work area. Should the Contractor require additional space, the same shall be arranged outside of campus with out any additional cost. Should the Contractor require additional space, the same shall be arranged outside of campus with out any additional cost.

**24.10 Annexure-A (Detailed Architectural Drawings)**

<b>SL. NO.</b>	<b>Drawing No</b>	<b>Date</b>	<b>DESCRIPTION</b>
1	TD-01	12.05.2026	Site plan
2	TD-02	12.05.2026	Basement floor plan
3	TD-03	12.05.2026	Ground floor plan
4	TD-04	12.05.2026	First floor plan
5	TD-05	12.05.2026	Second floor plan
6	TD-06	12.05.2026	Typical Floor (3,5,7) plan
7	TD-07	12.05.2026	Typical Floor (4,6,8,10) plan
8	TD-08	12.05.2026	Nineth floor plan
9	TD-09	12.05.2026	Eleventh floor plan
10	TD-10	12.05.2026	Terrace floor plan
11	TD-10-1	12.05.2026	Upper terrace floor plan
12	TD-11(1-3)	12.05.2026	Section A
13	TD-11(2-3)	12.05.2026	Section B
14	TD-11(3-3)	12.05.2026	Section C
15	TD-12	12.05.2026	East side elevation
16	TD-13	12.05.2026	South side elevation
17	TD-14	12.05.2026	North side elevation
18	TD-15	12.05.2026	West side elevation
19	TD-17(1OF4)	12.05.2026	Ground Floor – False Ceiling Layout
20	TD-17(2OF4)	12.05.2026	Typical Floor – False Ceiling Layout
21	TD-17(3OF4)	12.05.2026	Lobby Core – False Ceiling Layout
22	TD-17(4OF4)	12.05.2026	Typical Lobby – False Ceiling Layout
23	TD-18	12.05.2026	Door Shutters and Frame Details
24	TD-18(A)	12.05.2026	Fire & Shaft Doors Shutters and Frame Detail
25	TD-19	12.05.2026	Alumnium Window & Glazing Details
26	TD-20(1OF5)	12.05.2026	Main Staircase Details
27	TD-20(2OF5)	12.05.2026	Fire Staircase Details
28	TD-20(3OF5)	12.05.2026	Fire Lift Lobby Details
29	TD-20(4OF5)	12.05.2026	Lift Lobby details
30	TD-20(5 of 5)	12.05.2026	Handrail Details

<b>SL. NO.</b>	<b>Drawing No</b>	<b>Date</b>	<b>DESCRIPTION</b>
31	TD-21(1OF4)	12.05.2026	Basement Floor – Flooring Layout
32	TD-21(2OF4)	12.05.2026	Ground Floor – Flooring Layout
33	TD-21(3OF4)	12.05.2026	Typical Floor – Flooring Layout
34	TD-21(4OF4)	12.05.2026	Terrace Floor – Flooring Layout
35	TD-22	12.05.2026	Typical Toilet Details
36	TD-23	12.05.2026	Parking Layout
37	TD-24(1OF7)	12.05.2026	Ground Floor – Furniture Layout
38	TD-24(2OF7)	12.05.2026	First Floor – Furniture Layout
39	TD-24(3OF7))	12.05.2026	Second Floor – Furniture Layout
40	TD-24(4OF7)	12.05.2026	Typical Floor (3,5,7)– Furniture Layout
41	TD-24(5OF7)	12.05.2026	Typical Floor (4,6,8,10)– Furniture Layout
42	TD-24(6OF7)	12.05.2026	Nineth Floor – Furniture Layout
43	TD-24(7OF7)	12.05.2026	Eleventh Floor – Furniture Layout
44	TD-25	12.05.2026	Typical Room Details with Wall Elevations
45		12.05.2026	Proposed 3D Views (7 Sheets)

**Drawings attached separately**

#### 24.11 Annexure B - Finishing schedule and material price range

Area	Flooring & Skirting	Wall Finishes	Ceiling Finish	Others
Faculty Rooms	Granite	2 Coats Acrylic putty +1 coat primer + 2 Coats of Premium emulsion	2 Coats Acrylic putty +1 coat primer + 2 Coats of Premium emulsion	<ol style="list-style-type: none"> <li>1. Door : System Aluminium with 12mm Glass Doors + Frosted film</li> <li>2. Windows : System Aluminium with Double Glazing with drip bands</li> </ol>
Toilets	Anti-Skid rectified tile 300mm X 300mm Ledges are granite	Vitrified Tile 600x1200mm up to false ceiling	2 Coats Acrylic putty +1 coat primer + 2 Coats of Premium emulsion	<ol style="list-style-type: none"> <li>1. Modular Cubicle partition system for toilet partitions – 2.1m height,</li> <li>2. Main door - 35mm thick flush door with 450mm X 150mm aluminium louver at the bottom.</li> <li>3. Sliding Aluminium doors with Frosted Glass panel at the PWD toilets</li> <li>4. Wall mounted closet with ledge wall</li> <li>5. Counter sunk washbasin with granite top</li> <li>6. Water saving CP fixtures</li> <li>7. Mechanical ventilation</li> <li>8. Metal false ceiling</li> </ol>
Common Areas - Lobby/ Lounge -Corridors	Granite	Acrylic putty +1 coat primer + 2 Coats of Premium emulsion	Baffle false Ceiling	Parapet - 1350mm high 150thick concrete work with SS handrail



Area	Flooring & Skirting	Wall Finishes	Ceiling Finish	Others
Lift Lobby	Granite	Granite Wall Cladding	Baffle false Ceiling	
Lift shaft		1 coat primer + 2 Coats of interior emulsion	1 coat primer + 2 Coats of interior emulsion	
Staircase/ Fire Staircase	Granite	Acrylic putty +1 coat primer + 2 Coats of Premium emulsion	Acrylic putty +1 coat primer + 2 Coats of Premium emulsion	SS Handrails 304 Matte finish
Service Areas -Electrical Room	Industrial heavy duty tile	Acrylic putty +1 coat primer + 2 Coats of interior emulsion	Acrylic putty +1 coat primer + 2 Coats of interior emulsion	Fire Rated steel doors
Exterior walls		10yrs waterproof paint		
Others	Terrace: 1. Waterproofing + Overdeck insulation with minimum 100mm light weight poly Sterne concrete + Solar reflective tiles 2. Basement parking and ramps – Granno flooring			

Area	Flooring & Skirting	Wall Finishes	Ceiling Finish	Others
	3. Main door - Automatic glass sliding door 4. Electrical room - Fire door 5. Plinth protection - 600mm wide, 300mm above road level. Top shall be fished with 50mm M25 concrete over 50mm PCC 6. Entracne Ramp – Flamed Granite finish with SS Handrail			

<b>Civil Material Price Range</b>		
<b>S.No</b>	<b>Material Schedule</b>	<b>Price Range / No's</b>
1	Anti-Skid rectified tile 300mm X 300mm	Rs 50 - 80 /Sft
2	Vitrified Tile 600x1200mm	Rs 70 - 100 /Sft
3	18mm thick granite	Rs 180 - 250 /Sft
4	Industrial Heavy duty tile 600mm X 600mm	Rs 100- 140 /Sft
5	1mm thick decorative laminate	Rs.80-100/Sft

## 24.12 Annexure – C : The list of approved make of materials

IITM reserves the right to select any of the make/brand shown below and only those makes/brands will be allowed to be used in the work. Nothing extra is payable even if there is cost difference between one make/brand and another.

### 24.12.1 List of painting products and their coverage

Application		Exterior Paint for External walls / External Ceiling / Corridor wall above Lintel level										
		Base Coat or Primer				Topcoat				Expected Coverage in sqm per litre of paint		Tolerance
S. No	Manufacturer	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Base Coat or Primer	Topcoat	Plus 5%
1	Asian	Apex Ultima Protek Dura life Base Coat	Undiluted 1 base coat	1 or more coats	4 to 6	Apex Ultima Protek	400 ml potable water for 1000 ml paint	2 or more coats	4 to 6	2.5 to 3 sqm per ltr for 1 coat	5 to 6 sqm per ltr for 2 coats	
2	Berger	Dampstop Elasto	25% to 30% (maximum) with potable water	1 or more coats	4 to 6	Weather coat Long Life10	400ml potable water to 1000ml paint	2 or more coats	4 to 6	5.11 to 5.37 sqm per ltr per coat	6.5 to 7 sqm per ltr for 2 Coats	
3	Nippon	Hydroshield Dampseal	Diluted up to 30% with water as 1st base	1 or More coats	4 to 6	Maxx Weather bond with lamination and Heat ban technology	400ml potable water to 1000ml paint	2 or more coats	4 to 6	6 to 7 sqm per ltr for 1 coat	5.11 to 6.04 sqm per ltr for 2 coats	

Application		Water based Enamel Paint for Corridor (Minimum up to Lintel Level)										
		Base Coat or Primer				Topcoat				Expected Coverage in sqm per litre of paint		Tolerance
S.No	Manufacturer	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Base Coat or Primer	Topcoat	Plus 5%
1	Asian	Decopri me (ST) Primer	1000ml potable water to 1000ml primer	1 or more coats	4 to 6	Apcolite Premium Satin Emulsion	250ml potable water for 1000ml paint	2 or more coats / 1 or more coats	4 to 6	19.97 to 25.08 sqm per ltr for 1 coat	8.83 to 10.68 sqm per ltr for 2 coats / 16.72 to 20.44 sqm per ltr for 1 coat	
2	Berger	BP White Primer (WT)	1000ml potable water to 1000ml primer	1 or more coats	4 to 6	Easy clean -Water Based Emulsion	400ml potable water to 1000ml paint	2 or more coats / 1 or more coats	4 to 6	7.43 to 9.29 per ltr for 1 sqm	11.14-12.07 sqm per ltr for 2 coats / 16 to 20 sqm per ltr for 1 coat	
3	Nippon	Nippon Multipurpose wall Sealer	1000ml potable water to 1000ml Sealer	1 or more coats	4 to 6	Aqua Bodelac	50ml potable water to 1000ml paint	2 or more coats / 1 or more coats	4 to 6	12.08 to 13.94 sqm per ltr for 1 coat	7.89 to 8.95 sqm per ltr for 2 coats / 15 to 17 sqm per ltr for 1 coat	

Application		Interior Paint for walls & ceiling in rooms (Matt finish)										
		Base Coat or Primer				Topcoat				Expected Coverage in sqm per litre of paint		Tolerance
S.No	Manufacturer	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Base Coat or Primer	Topcoat	Plus 5%
1	Asian	Interior Primer Suprema	1000 ml potable water for 1000 ml primer	1 or more coats	4 to 6	Premium Emulsion Suprema	500 ml potable water for 1000 ml paint	2 or more coats	4 to 6	19.9 to 25 sq mt per lt for 1 coat	11.1 to 13 sq mt per ltr for 2 coats / 18.5 to 26 sq mt per ltr for 1 coat	
2	Berger	BP White Primer (WT)	1000ml potable water to 1000ml primer	1 or more coats	4 to 6	Rangoli Total Care	400ml potable water to 1000ml paint	2 or more coats	4 to 6	7.43 to 9.29 Sqm per ltr for 1coat	9.29 to 11.14 sqm per ltr for 2 coats. / 22.30 Sqm per ltr for 1 coat	
3	Nippon	Maxx Interior Primer	Up to 50% with potable water	One coat	4 to 6 hrs	Maxx Easy Wash Matt.	Up to 40% with potable water.	2 or more coats	6 to 8 hrs	16.75 Sqm per coat	9.15 sq mtr for 2 coats/ 18.3 to 20.43 Sqm per ltr for 1 coat	

Application		Synthetic Enamel Paint for Wooden & Steel Joineries										
		Base Coat or Primer				Topcoat				Expected Coverage in sqm per litre of paint		Tolerance
S. No	Manufacturer	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Base Coat or Primer	Topcoat	Plus 5%
1	Asian	Trucare Yellow Metal Primer	60 to 80 ml MTO for 1000ml Metal primer	1 or more coats	8	Apcolite premium satin Enamel	150 to 200 ml MTO for 1000 ml Enamel paint	2 or more coats	6 to 8	16.7 to 18.5 sq mt per ltr for 1 Coats	8.8 to 10.2 sq mt per ltr for 2 coats / 17.1 to 18.5 sq mt per Ltr for 1 coat	
2	Berger	BP white primer (ST) for wooden surface/ Zinc chromate yellow primer for steel surface	15-20% per ltr	1 or more coats	4 to 6	Luxol Satin enamel	10-15% per ltr	2 or more coats	SD:3-4 hrs HD-Overnight depending on ambient	7.43 to 9.29 sqm/ltr/ coat & 8-12 sqm /ltr/coat	8.36 to 11.14 sqm per ltr for 2 coats./ 20.45 Sqm per ltr for 1 coat	
3	Nippon	Multi purpose wall primer	Up to 15%	1	8 to 10 hrs	Bodelac Enamel	Up to 20%	2 or more coats	8 to 10 hrs	12 to 14 sq mtr	9.29 to 10.22 Sqm for 2 coats/ 17 to 18 sqm per ltr for one coat	

Application		PU Enamel Paint for Wooden & Steel Joineries										
		Base Coat or Primer				Topcoat				Expected Coverage in sqm per litre of paint		Tolerance
S. No	Manufacturer	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Brand	Maximum Dilution	No of Coats to be applied	Recoating period in hrs.	Base Coat or Primer	Topcoat	Plus 5%
1	Asian	Primer Not required				Apcolite Rust Shield Enamel	3 Coats Undiluted	3 Coats	6 to 8		4.46 to 5.10 Sq mt per Ltr for 3 Coats	
2	Berger	BP white primer (ST) for wooden surface/ Zinc chromate yellow primer for steel surface	15-20% per ltr	1 or more coats	4 to 6	Luxol PU Enamel	8-10%	2 or more coats	SD:3-4 hrs HD-Overnight depending on ambient	7.43 to 9.29 sqm/ltr/coat & 8-12 sqm /ltr/coat	7.89 to 8.82 sqm per ltr for 2 coats.	
3	Nippon	Nippodur TU Epoxy Zinc Phosphate Primer	Nippon Epoxy Thinner dilution up to 15%	One or 2 coats as per DFT requirement	Overnight	Nippothane 50 TU Finish	Dilute with Multi purpose Thinner up to 15%	2 coats	Overnight	Avg 6 to 7 sq mtr per coat	Avg 7 to 8 Sq mtr per coat after dilution	



#### 24.12.2 Civil works

Sl. No.	Material	Approved Makes
1	Ordinary Portland GREY Cement, 53 & 43 Grade	UltraTech, ACC, Birla, Ambuja, Zuari, Chettinad, Dalmia
2	Plain Portland Pozzolana Cement (PPC)	UltraTech, ACC, Birla, Ambuja, Zuari, Chettinad
3	Ready Mix Concrete	ACC, UltraTech, Lafarge, Prism Johnson Ltd. (RMC India Division)
4	Waterproofing Compound & Concrete Admixture	BASF, Fosroc, Sika, CIPY, JSW
5	HYSD (TMT) Bars	TISCO, SAIL, RINL, JSW Neosteel
6	Structural Steel	TISCO, SAIL, Jindal
7	Aluminium Sections	Hindalco, INDAL, Jindal
8	Paints	Asian Paints, Berger, Nippon
9	PVC Water Bars	Fixopan, Sintex, BASF
10	MS Pipe & Tubular Sections	TISCO, SAIL, Jindal
11	Precast Cement Concrete Tiles	Nitco, Ultra, Johnson, Dura Crete
12	Glazed Ceramic Tiles	Johnson, Nitco, Somany, Euro, RAK
13	Glazed Ceramic Designer Tiles	Johnson, Nitco, Somany, Euro, RAK
14	Vitrified Tiles – Full Body / Double Charge	Johnson, Euro, Somany, Nitco, RAK
15	Vitrified Tiles	Johnson, Euro, Somany, Nitco, RAK
16	Heat Resistant Tiles	Somany, Johnson Endura
17	Waterproof Cement Paint	Snowcem India Ltd., Asian Paints, ICI
18	Hardware	Hafele, Ozone, Hettich, Dormakaba
19	Flush Doors	Century Ply, Greenply, Archidply
20	Texture Finish (External)	Bakelite Hylam, Acro Paints, Unistone, UltraTech, Asian Paints, Nippon
21	Acrylic Emulsion Finish (Internal)	Asian Paints, Berger, Nippon
22	Laminates	Century Ply, Archidply, Merino, Greenply

Sl. No.	Material	Approved Makes
23	Veneer	Greenply, Archidply, Century Ply
24	BWR Ply Boards	Century Ply, Greenply, Archidply
25	Fasteners	Hilti, Fischer
26	Fire Doors / Steel Doors	Sukri, Navair, Shakti Hormann
27	XPS Boards	BASF, Supreme, Owens Corning
28	Lifts	Kone, Otis, Schindler, Mitsubishi, Johnson
29	Polycarbonate Sheets	SABIC, PolyClad, Danpalon
30	Roof Insulation	BASF, Sika, Henkel System (Green Tech Engineers), Lloyds
31	Concrete Pavers	Basant Beton, Astana, Dalal Tiles
32	External Modular Drain	ACO
33	Tile Adhesive	MYK Laticrete, Cera Bond
34	Tile Grout (Epoxy)	MYK Laticrete
35	Acrylic Solid Surface	LG, Luxor, Corian, Aspiro
36	Gypsum Board	Saint-Gobain, Lafarge, USG Boral
37	Mineral Fibre Ceiling	Armstrong, AMF, USG
38	Metallic Ceiling	Armstrong, Hunter Douglas, Daikin, Intertouch
39	Glass Film	3M
40	Modular Partition for Toilets (HPL)	Merino, Stelatex, Maica Laminates, Greenlam, Stylam
41	Adhesives	Fevicol SH, Araldite (Hindustan CIBA-Geigy Ltd.), Vamicol
42	Vinyl Floor	Armstrong, LG, Tarkett, Polyflor
43	Glazed Partition	JEB Asia, Raumplus, Clestra
44	Dry Wall Partition	Ramco Hilux, Gyproc, Everest, Saint-Gobain, Aerocon
45	Clean Room Modular System	Rinac, Clestra
46	UPVC Windows / Mosquito Mesh	Fenesta, Saint-Gobain, Aluplast, AMD, Duriplast, Qute
47	Stainless Steel Railings	Ozone, Jindal, Saint-Gobain

Sl. No.	Material	Approved Makes
48	Door Fittings / Door Closer / Floor Spring / Door Eye / Safety Chain	Hafele, Ozone, Hettich, Dormakaba
49	WPC Door Frames / Doors	Alstone, ReynoArch, Archidply
50	WPC Louvers	Alstone, ReynoArch, Archidply
51	Float / Toughened / DGU / Lacquered / Fire Rated Glass	Modi Guard, Saint-Gobain, Asahi
52	Silicon Sealant	Dow Corning, Alstone, McCoy
53	GRC Interlock Tiles / Grass Paver Blocks / Kerb Stone / Screens / Designer Floors / Wall Panels / Formliners / Tiles / Columns / Mouldings / Wall Claddings	Unistone, Shenisha GRC, Dalal Tiles
54	Clay Façade Panel (Dry Cladding)	Unistone or equivalent
55	Expanded Aluminium Metal Mesh	Pepl, Jassco, Purvansh Metals
56	Factory-Made Above/Below Counter Cabinets / Kitchen Units / Wardrobes	Costawood, Uflix, Spacewood
57	Authorised Installers for Artwork	Ingenuity India, Rubal Nagi Arts, B&G Sourcing
58	PT strands	DP wires, USHA MARTIN, JSW, TATA.
59	System Aluminium	Schuco, Tostem, vitrum and AluK
60	Water proofing compounds	Sika, Alchimica, FABChem, Asian paints MBT, Fosroc, Maris Polymers, MAPEI, MYK

### 24.12.3Plumbing and Sanitary

Sl. No.	Description	Approved Make
1	SANITARYWARE	HINDWARE / KOHLER /PARRYWARE/METRO
2	STAINLESS STEEL SINK	PARRYWARE/DIAMOND /NIROLI
3	LAB SINK	JAQUAR/HINDWARE / KOHLER /PARRYWARE/METRO
4	SENSOR	AOS SYSTEM / JAQUAR
5	WATER HEATER	ELAC/VENUS/TATA BPL
6	CP FITTINGS	JAQUAR/HINDWARE / KOHLER /PARRYWARE/METRO
7	CONCEALED FLUSH VALVE	JAQUAR/HINDWARE / KOHLER /PARRYWARE/METRO
8	U PVC SWR PIPE/FITTINGS	SUPREME/FINOLEX /PRINCE
9	CPVC PIPES AND FITTINGS	ASTRAL / ASHIRVAD / SUPREME
10	BALL VALVE	RB / LEADER / ZOLOTO
11	BUTTER FLY VALVE/CHECKVALE	LEADER / NORMEX /RB / ZOLOTO
12	Y' STRAINER	LEADER/NORMEX / RB
13	AIR RELEASE VALVES	VB / RB
14	NON RETURN VALVE	LEADER / NORMEX /RB / ZOLOTO
15	WATER SUPPLY PUMPS / SEWAGE PUMPS/DEWATERING PUMPS	GRUNDFOS/ KIRLOSKAR/TEXMO /ITT/KSB
16	SFRC COVER	GPI
17	CI GRATING	NECO
18	CP GRATING	SYSCRAFT GLOBAL ENTERPRISES (SGE) /AQUA
19	STONE WARE PIPES & GULLY TRAPS	PERFECT/ ANAND/ PARRY
20	BEVELLED EDGE MIRROR	ATUL/ MODI GUARD
21	SOLAR WATER HEATER	TATA BP, VENUS,GOOD SUN

24.12.4Electrical /Voice/Data

Sl. No.	Description	Make
1	Copper Conductor Single Core wire-1100v Grade (Multi Stranded) FRLS	Finolex/ RR Kabel / Polycab / KEI / MESCAB/ Power flex/
2	PVC Pipe – Medium class & its accessories	Avonplast / Vasavi / Essorke / Bajaj Plast/ Javeri
3	MS conduit pipes - 1.6mm thick	Gupta / Kalinga
4	GI Pipes	Tata / Jindal / Kalinga
5	Modular type switches, sockets, regulators, RJ-11 & RJ 45 (any model & any colour)	MK-Honeywall / Legrand
6	MCCB / MCB Distribution Boards & Accessories	Legrand / Hager / Siemens / Indo Asian / ABB / Schneider / LK
7	MCCBs up to 160A- Thermomagnetic Release	Legrand / Hager / Siemens / Indo Asian / ABB / Schneider / LK
8	MCCBs above 160A-Electronic Release/ Microprocessor Release	Legrand / Hager / Siemens / Indo Asian / ABB / Schneider / LK
9	Main Switches (AC 23 rating) SFU / FSU	Legrand / Hager / Siemens / Indo Asian / ABB / Schneider / LK
10	Change Over Switches	Legrand / Hager / Siemens / Indo Asian / ABB / Schneider / LK
11	Motor Starters	L&T / Siemens / Crompton
12	Single Phase/Three Phase kWh meter (Static/ Digital)	Conserve / AEL / LK / HPL / Rishab/ ICD / SECURE
13	MV panels	CPRI approved panel manufacturers-Chennai
14	Digital Meters (Ammeters / Voltmeters)	ENERCON / IMP / AE / RISHAB/ SECURE / CONZERVE/ICD / SELEC
15	Selector Switches	RISHAB / VAISHNAV / GE / L&T
16	LED Light fittings	Philips / Crompton / SURYA / BAJAJ

Sl. No.	Description	Make
17	Lamps and accessories	Philips / Osram/ Bajaj / Crompton/ Havells / SURYA
18	Aviation Lamp	Binay / Aviads / Supernova / K-Lite
19	Call Bell/Buzzer	Anchor / MK-Honeywell
20	ACBs	L&T / GE / Siemens / ABB/ Legrand / Schneider
21	LT UG Armored PVC XLPE Power cables & Control Cables - up to 1100 Volt (copper & Aluminium)	Universal / CCI / Gloster / Polycab / KEI / NICCO
22	HTUG Armored PVC XLPE Power cables (11 kV and above-copper or Aluminium)	CCI/ Gloster/ Polycab/KEI
23	Cable Glands, lugs, sockets (copper &aluminium)	Dowells / Cabend / Jainson
24	Current Transformers	Kappa / Scientific / AE/ Pragati / Rishab/ Kalpa / Secure
25	Indication Lamp-LED	RAAS / Rishab / L&T / Siemens
26	Contactors	LK / Siemens/ Legrand / BCH
27	Time Switch	LK / Legrand/ GE / MK /
28	Control fuses & HRC fuses with base	GE / L&T / Siemens / Standard / C&S
29	Geysers	Racold / Bajaj / Venus / Crompton
30	Inverter /UPS	APC / Numeric / Microtek/Numax
31	Super Efficiency BLDC fans	Orient / Crompton Greaves/ Usha/ Atomberg
32	Exhaust fan (Metal Blade) / Fresh air fan (Plastic Body)	Almonard / Orient / Crompton Greaves
33	Wall mounting/pedestal mounting fans	Orient PSPO/Rallis / Almonard / Crompton
34	Air Circulator	Almonard / Crompton Greaves / Orient
35	Cable management system	MK-Honeywell / Legrand/ Schneider / OBO

Sl. No.	Description	Make
36	PVC Telephone Cable	Delton / Finolex / FSC
37	Jelly filled telephone cables	Delton / Finolex / HCL / NICCO
38	Disconnection Modules (Telephone)	Krone
39	PVC/FRP Telephone Junction Box	Krone / Sintex
40	Optical Fiber Cable and accessories	Molex
41	Telephone instrument	Panasonic
42	Cat6 / Cat6A Cable, I/O and all accessories	Molex
43	Network switch	CISCO
43	Time Switch (PV)	MK-Honeywell / Legrand/ L&T
44	Rising Main sandwich-BBT / Air insulated	GE / C&S / Godrej / Schneider / Legrand/ L&T
45	Casing & Caping	Modi / Maruti / Pressfit
46	Paint	Nerolac / Asian Paints / Nippon / Berger
47	Street lighting and Decorative fittings	Philips / Crompton / K-Lite / SURYA / BAJAJ
48	Chemical earthing	Recommended by CEA/ CEIG
49	Lifts	Mitsubishi/OTIS/Toshiba/KONE/Johnson

#### 24.12.5 Fire Alarm System

Sl.No.	Description	Make
1	Analog Addressable	Notifier, Siemens, Honeywell, Tyco
2	Addressable Heat Detector	Notifier, Siemens, Honeywell, Tyco
3	Short Circuit Isolator	Notifier, Siemens, Honeywell, Tyco
4	Addressable Control Module	Notifier, Siemens, Honeywell, Tyco
5	Addressable Input Module	Notifier, Siemens, Honeywell, Tyco
6	Station / Call point	Notifier, Siemens, Honeywell, Tyco
7	Sounder cum strobe	Notifier, Siemens, Honeywell, Tyco
8	Panic bar	Assaabloy, Europlex, Dorma, SDC, Honeywell, Tyco
9	Panic bar Door Contacts	Sentrol, Ademco, Europlex, Honeywell, SDC, Tyco
10	Cables	Polycab, Varsha
11	Batteries	CSB, Exide, Amar Raja



24.12.6List of approved makes / brand - CCTV & DATA

<b>Sl.No</b>	<b>Description</b>	<b>Make</b>
1	CCTV- Cameras	Bosch/Honeywell/Pelco/Siemens/Sony/Panasonic
2	Lenses	Bosch/Honeywell/Pelco/Siemens/Sony/Panasonic
3	Weatherproof Housing	Bosch/Honeywell/Pelco/Siemens/Sony/Panasonic
4	L2 & L3 Switches	Cisco
5	LAN Cable/OFC	Molex
6	Personal Computer	Dell/Hewlet Packard/IBM/Wipro
7	Color Monitor	LG/Panasonic/Samsung
8	Printer	Hewlet Packard/Cannon
9	Mouse	Dell/Microtek

## 24.12.7 Transformers

Sl.No.	DESCRIPTION	NAME
1	Main switches/MCCB's/ACB's	L & T/Siemens/Schneider Electric/ABB
2	LT UG Cables-1100 volt grade	Polycab/KEI/Havells/Gloster
3	Cable glands	Dowells/Cabend/Jainson/Comet
4	Lugs/sockets (copper & Aluminium)	Dowells/Jainson/Comet
5	Current Transformers	Kappa/Scientific/Jothi/Pragati
6	HRC Fuse bases & links	L&T/GE/SIEMENS
7	Control fuses &HRC fuses	GE/ L & T/Standard/C & S
8	Insulation tape-PVC	Steel grip/Deer
9	Cable joint	RPG heat shrinkable/Delton heat shrinkable
10	GI Pipes	TATA/JINDAL(Class-B – Medium)
11	HT vacuum circuit breaker	Siemens
12	Distribution transformer	Volt amp/Siemens/Alstom/Crompton Greaves/ Essennar
13	Battery & Battery chargers	CSB ,Exide,Amarraja
14	HTUG cable	Universal/NICCO/CCI
15	MV Panels	CPRI approved panel builders-Chennai based

Sl.No.	DESCRIPTION	NAME
1	Engine	Cummins/Caterpillar/Kirloskar/Mahindra
2	Alternator	Stamford/Kirloskar
3	Relays	LK / Siemens / Telemecanique
4	Contactors	LK /Siemens/Telemecanique
5	MS pipes	TATA/JINDAL
6	Anti Vibration mountings	Dunlop
7	Batteries	Exide
8	Control cables & other cables	Finolex/Polycab/RR Kabel
9	Power cables	CCI-Tropodure/Universal/Polycab/Gloster
10	ACBs	L&T/Siemens(Germany)/GE/Schneider/Legrand
11	Ammeters	AE/Scientific/L & T/Conzerve
12	Voltmeters	AE/Scientific/L & T/Conzerve
13	kwh meter	AE/Scientific/L & T/Conzerve
14	Current Transformer	Kappa/Scientific/Prokdvs
15	Glass wool	TWIGA

## 24.12.9 Fire Fighting

Sl. No.	Particulars	Make
1	Pipes (M S / G I)	Tata / Jindal (Hisar) / SAIL
2	Pipe Fittings	Unique / RM / Kirti / Saint / VS
3	Gun metal valves	Leader / Sant / Zoloto
4	Single headed/Double headed internal/external Hydrant valves, four-way Fire Brigade inlet & shut off nozzle of Gun Metal	Newage Bombay / Minimax / Superex
5	Rubber Hose for hose reel	Jyoti / Padmini / Bharat / Eversafe / Kesra / Sri (LPCB)
6	Sluice & non return valves	Kirloskar / Kalpana / Sant / Audco / Zolota
7	Pressure switch	Indfoss / Switzer / System Sensor / Danfoss
8	Pressure Gauges	Fiebig / H-Guru / Bell / Wika
9	Pump	Mather & Platt / Kirloskar / KSB
10	Motor	ABB / Siemens / Crompton Greaves / Kirloskar
11	Mechanical Seal	Durametallic / Sealol / Burgmann / Dunlop
12	Diesel Engine	Cummins / Caterpillar / Kirloskar / Leyland
13	Enamel Painting of pipes etc	Asian / Goodlas Nerolac / ICI / Berger
14	Paint Primer	Asian / Jenson Nicholson / Berger
15	Fasteners	Hilti / Fischer / Canon
16	Weld Rods	Advani / Mangalam / Esab
17	Ball Valves	RB (Italy) / Bugatti / Zoloto / Audco / Sant / Kirlosker
18	Butterfly Valve Bronze/Gun Metal	Advance / Audco / Sant / Zoloto / Kirlosker
19	RRL Hose	Newage Premier Bombay / Padmini / Eversafe / Indian Rayon (Jayashree) / Fire Marshal / Tyco
20	Rubber Gaskets	C I C / Varuna
21	Neulite Branch pipe Gun Metal	Newage Bombay / Superex / Minimax / Tyco
22	SS Strainer	Emerald / Grandprix / Leader / Hammer / Honeywell
23	Wafer type Non Return Valves	C & R / Advance / Kirloskar / Audco
24	Sprinklers (all types) (including rosette plate)	Tyco / HD / Viking / Newage Bombay / Eversafe / Getech
25	Installation Control Valve	Tyco / HD / Viking / CD
26	Passive Fire Protection Materials	Promat / Hilti / 3M
27	First Aid Hose Drum	Ashok / Newage Bombay / Eversafe / Safex
28	Flow Switch	System Sensor / Switzer / Honeywell
29	Pipe fittings	Unik / Saint / VS
30	Nuts & Bolts	Lakshmi / Unbrako
31	Sprinkler Hanger Supports	Chilly / Hitech

<b>Sl. No.</b>	<b>Particulars</b>	<b>Make</b>
32	Gun Metal Branch Pipe/ Globe valve & Nozzle	Newage Bombay / Minimax / Superex
33	Hume Pipe	NP2 Class
34	Power Cables/Wires/ Fire Survival Cables	Finolex / Polycab / Gloster / Universal (SATNA) / RPG
35	G.I. Conduit (ISI marked)	BEC / AKG / NIC / RMCON
36	Contactors & Overload Relays	L&T / Siemens / GE
37	Fuse link	Siemens / L&T / GE
38	Voltmeter/Ammeter	L&T / AE / IMP
39	CT/PT Transformer	AE / Kappa / C & S
40	S.F. Unit	L&T / Siemens / GE
41	Cable Trays	PILCO / Stealways / Slotco / Apex / Indiana / Skyto
42	Indicating Lamps	L&T / Siemens / GE / AE / IMP
43	Electrical Pump Panels	Adlec / Milestone / BSPL / Advance Switchgears
44	MCCB / STARTERS	Schneider / L&T / Legrand / Siemens / ABB

#### 24.12.10 BMS

<b>Sl. No.</b>	<b>Description of Item</b>	<b>Makes</b>
1	BMS Server	HP / DELL / Lenovo
2	Printers	HP / Epson / Canon / Samsung
3	Building Management System Software	Tridium Niagara
4	DDC Controllers	Tridium / Honeywell / Easy IO
5	Network & Supervisory Controllers	Tridium / Honeywell
6	Integrators for Third Party Devices	Honeywell / JCI / Siemens / Santel equipment
7	Network Switches	Cisco / Netgear / D Link
8	Immersion type temperature sensors	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Greystone / Omicron
9	Outside air, duct mounted, room temperature & RH sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Greystone / Omicron / Dwyer
10	Current Relay for On / Off status	Minilec / Situ / Kele / Sontay / Veris / Sentry / Greystone / Omicron
11	Water Level Switches	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veksler / Greystone / Omicron

<b>Sl. No.</b>	<b>Description of Item</b>	<b>Makes</b>
12	Differential Pressure Switch (blowers & filters)	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Greystone / Omicron / Dwyer
13	Pressure sensor for measuring line pressure	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Greystone / Omicron / Dwyer
14	Digital type Temperature & RH sensor with display (Indoor mounted, Duct mounted, Ambient)	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
15	Differential pressure sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron / Dwyer
16	Velocity sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
17	Duct Mounted CO2 sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
18	Room mounted CO2 sensor, Ambient CO2 sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
19	Hydrogen sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
20	Hooter	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
21	Oxygen sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
22	PM 2.5, PM 10, VOC sensor	Siemens / Honeywell / Johnson Controls / ALC / Kele / Sontay / Veris / Greystone / Omicron
23	Variable Frequency Drives	ABB / Danfoss / Fuji / Schneider / Siemens
24	Motorised Butterfly Valves	Advance / Audco / Belimo / Honeywell / L&T
25	BTU Meter	Kamstrup / Shenitech / Landis & Gyr
26	Damper Actuators	Siemens / Belimo / Honeywell
27	Thermostat	Honeywell / Johnson Controls / Siemens

Sl. No.	Description of Item	Makes
28	Two way Modulating / On-Off Valves	Siemens / Belimo / Honeywell / Johnson / Anergv
29	PIBC Valves	Flowcon / Danfoss / Belimo / Anergv

#### WIRING & CONDUITING

Sl. No.	Item	Approved Makes
a	Signal cables (2 core 1.0 mm <sup>2</sup> ), FRLS insulated, tinned armoured copper conductor cable	Finolex / Skytone / Milan Electrical / BonTon / Delton / Fusion Polymers / Varsha / Deepanjan
b	Communication cables (3 core 1.0 mm <sup>2</sup> ), FRLS insulated, tinned armoured copper conductor cable	Finolex / Skytone / Milan Electrical / BonTon / Delton / Fusion Polymers / Varsha / Deepanjan
c	Cat 6 Cables	D Link / Havells / V Guard / Equivalent
d	Optical Fibre Cables	D Link / Equivalent
e	MS / GI Conduits	BEC / Steel Craft / Gupta Brothers
f	Cable Trays	OBO Bettermann / Profab / Patny / Elins / Pushpak / Equivalent with Sample Approval
g	Anchor Fastener	Canon / Fisher / TKS / Hilti
h	Lugs & Glands	Comet / Dowells / SMI
i	Type B,C,D MCB/ELCB/ELMCB	Legrand / Schneider / ABB
j	Protection Relays	ABB / CSPCL / Schneider / L&T
k	Instrument Transformers	KAPPA / KALPA / Siemens
l	Terminal Blocks	Elmex / Connectwell

#### 24.12.11 HVAC

S.No	Description of Equipment / System	Makes
1	MS / GI ERW Pipes	Jindal(Star), Jindal(Hissar), Tata for all pipes as per IS1239 / IS3589
2	PUF Pipe Sections	Beardsell, Lloyds, Sree Venus
3	Pre-Insulated Pipes	Seven Star, Sree Venus, Perma Pipes
4	Leak Detection Cable, Controller & Software	CWA, Rapmon, Logstar
5	Motorised Butterfly Valves, Butterfly Valves	Advance, Audco, Belimo, Honeywell, L&T
6	Ball Valves, Ball valves with & without strainer	L&T, RB, Audco, Sant, Emerald
7	Balancing Valves	Advance, Flowcon, Honeywell, Belimo

S.No	Description of Equipment / System	Makes
8	Y Strainers	Honeywell, Sant, Emerald, Rapidcool
9	Pipe Flexible Bellows	Resistoflex, Cori, Easyflex
10	BTU Meter	Kamstrup, Shenitech, Landis & Gyr
11	Pressure Gauges	Baumer, Forbes Marshall, Waaree, Wika
12	Thermometers	Baumer, Forbes Marshall, Waaree, Wika
13	Air Vents	Anergy, Honeywell
14	Test Points	Anergy, Binder
15	Sound Attenuators & Cross Talk Silencers	Cosmos, Seven Star, System Air, Shree Venus, Airmaster
16	Cabinet Type & Inline Fans	Cabinet -Citizen, Edgetech, Luftek, Zeco Fans - Caryaire, Nicotra, Kruger, Ostberg
17	Factory Fabricated Ducting	Radiant, Seven Star, Sree Venus, Vedha, Western Air Duct, Zeco, Ductofab
18	Air Handling Units, CSU'S, FCU'S	Zeco / Edgetech / Citizen / VTS / Caryaire / Nutech / Luftech
19	Cassette unit & Hi-wall units.	Caryaire / Bhutoria / Midea / Sinco
20	Fans for Air Handling Units	Centrifugal Fans – Nicotra / Kruger /Greenheck / Ostberg .EC Plug Fans – Ziehl-Abegg, EBM / Approved Equivalent
21	Drain pump	Aspen /Siccom
22	Double skin plenum	Any local manufacturer after prior approval from Consultant.
23	GI Sheets	Tata / Jindal / SAIL
24	Grilles, Diffusers, Dampers & Louvers	Caryaire / Air Master /Cosmos/ Cosmic/ Systemair
25	Fibre Glass Insulation	UP Twiga / Owens Corning / Kimmco
26	Closed cell Nitrile Rubber (Class 'O')	Armacell/ K-Flex / A-Flex
27	Open cell Nitrile Rubber (Class '1')	ArmaSound / K-flex /A-Flex
28	Damper Actuators	Siemens/Belimo/Honeywell
29	Ventilation Fans	Kruger / Nictora /Greenheck/Ostberg/Caryaire
30	Fire Sealant	3M / Promat / Hilti
31	Duct Flexible Connectors	Sree Venus / Resistoflex / Easyflex
32	Flexible Ducts	Atco / Supaflex / Caryaire /Sree Venus / Seven Star
33	Expanded Polystyrene	Lloyd / Beardsell/Approved Equivalent
34	Sound Attenuators	Caryaire / Ravistar / Cosmos / System Air
35	Starter Panels	Thittanix / Power Master /Equivalent
36	Copper Pipe (Soft & Hard)	Nippon / Mandev /Rajco / Uniflow.
37	Thermostat	Honeywell / Johnson Controls / Siemens
38	T+RH Indicator	Polaman/Thittanix/ Equivalent.
39	Two way Modulating / On-Off Valves	Siemens/Belimo/Honeywell/Johnson/Anergy
40	PIBC Valves	Flowcon/Danfoss/Belimo/Anergy
41	Water Leak Detection Tape	C System/Equivalent



S.No	Description of Equipment / System	Makes
42	Electronic Air Cleaners	Honeywell, Johnson Controls (Trion), Espair, Trane
43	Vibration Isolation Mountings	Dunlop, Resistoflex
44	Temperature Sensors	ALC, Honeywell, Siemens, JCI, Greystone, Omicron
45	Variable Frequency Drives	ABB, Danfoss, Fuji, Schneider, Siemens
46	PVC Drain piping	Supreme/Finolex/Prince
47	Paints	ICI/Berger
48	Welding rods	Advani / L&T
49	Anchor Fastener	Canon/Fisher/TKS / Hilti
50	Air curtains	Mitsubishi / VTS / Euronics
51	Aluminium Sheets	Jindal / Hindalco
52	Power Cables	Polycab, KEI, Finolex, Havells, <del>RR</del>
53	FRLS Wires	Polycab, KEI, Finolex, Havells, Powerflex
54	MS / GI Conduits	BEC/Steel Craft/Gupta Brothers
55	Lugs & Glands	Comet, Dowells, SMI
56	MCCB	ABB, Schneider, Siemens, L&T
57	ACB	ABB, Schneider, Siemens, L&T
58	Type B,C, D MCB/ELCB / ELMCB	Legrand, Schneider, ABB
59	Protection Relays	ABB, CSPCL, Schneider, L&T
60	SPD	OBO Bettermann, Schneider, Siemens, Emerson
61	Contactors	ABB, Schneider, L&T
62	Push Button, Indication lamps	Vaishno, Schneider, Siemens
63	ELR / EFR Relays	CSPCL, ABB, Schneider
64	Instrument Transformers	KAPPA, KALPA, Siemens
65	Terminal Blocks	Elmex, Connectwell
66	Cable Trays	OBO Bettermann, Profab, Patny, Elins, Pushpak, , Equivalent with Sample Approval
67	Rubber Mats	Jyoti
68	First Aid Box	Thadani

#### 24.13 Annexure D (Geotechnical Investigation Reports)

**Attached separately**

24.14 Annexure E (List of documents and drawings to be submitted by contractor while execution of the work)

Sl. No.	Description	To be submitted by	Approval after award of work
STRUCTURAL DRAWINGS			
1	Design Basis report for the structural design of the building	The Contractor shall submit the Schematic drawings during the Bid submission.  The detailed and Good for construction drawings shall be submitted after the award of work by the Contractor	1. Approval by third-party proof check agency as per tender conditions  -
2	Structural General arrangement drawings		
3	Foundation excavation and setting out plan		
4	Foundation section and Reinforcement details		
5	Column/wall plan and sectional details for all floors		
6	Drawing details for MIVAN shuttering		
8	Beam layout and structural details		
9	Slab reinforcement details		
10	Floor framing plan and sectional details		
11	Wall reinforcement details		
12	Parapet reinforcement details		
13	Column reinforcement details		
14	Head room slab and reinforcement details		
15	Staircase and ramps and steps reinforcement and connection details		
16	Lift pit and shaft drawings		
17	Lift machine room plan and section details with access ladders		
18	Overhead tank sectional details		
19	Sump reinforcement details		
CONSTRUCTION PLANNING DRAWINGS			
1	Site layout plan including equipment location, site material and bar bending yard, site office toilets for workmen, drinking water and temporary sump location other temporary amenities	The Contractor shall submit the Schematic drawings during the Bid submission.	Engineer-in-charge
2	Construction / erection sequence drawings including temporary structure and supporting arrangements.	The detailed and Good for construction	
3	Site emergency evacuation plan		

Sl. No.	Description	To be submitted by	Approval after award of work
4	Fire safety plan	drawings shall be submitted after the award of work by the Contractor	
5	Storm water drains and culvert		
6	All external developments including pathway, parking etc.		
7	Waterproofing of open terrace, water storage structure, and sunken portion in toilets		
8	Joineries layout, type and finishes		
ELECTRIFICATION DRAWINGS			
1	Electrical Legend	The Contractor shall submit the Schematic drawings during the Bid submission.	Engineer-in-charge
2	Floor Lighting / ceiling fan Plan		
3	Floor Power Plan		
4	Single Line Diagram		
5	Fire Alarm Layout		
6	CCTV Camera	The detailed and Good for construction drawings shall be submitted after the award of work by the Contractor	
7	Data / Telephone network		
8	External lighting including streetlight and other decorative lights		
9	Earthing Details		
10	Service connection at nearest service point including cabling		
11	Lift		
PLUMBING & SANITARY DRAWINGS			
1	Sewerage and rainwater layout plan	The detailed and Good for construction drawings shall be submitted after the award of work by the Contractor	Engineer-in-charge
2	Manhole and chamber schedule		
3	Plumbing construction details		
4	Water Supply layout		
5	Dual water pipeline for pumping and delivery system		
6	RO water supply system including water fountain		
7	Sanitary fixture layout		
8	Drainage pipeline layout		
FIRE FIGHTING DRAWINGS			

Sl. No.	Description	To be submitted by	Approval after award of work
1	Firefighting layout plan	The detailed and Good for construction drawings shall be submitted after the award of work by the Contractor	Engineer-in-charge
HVAC DRAWINGS			
1	Mechanical ventilation in restrooms	The detailed and Good for construction drawings shall be submitted after the award of work by the Contractor	Engineer-in-charge
2	HAVC -		

***PART -IV***

***Schedule of Quantities, Schedule of Stage Payments & Price Bid***  
***(Will be filled upon receipt of details from engineers)***

## 25 Schedule of Quantitates

S.n o	Description	Qty	Unit	Estimated Cost in Lakhs
1	<p>Construction of Faculty complex by replacing the existing MFL building at IIT Madras</p> <ul style="list-style-type: none"> <li>• Basement + Ground + 11 Floors building</li> <li>• Fast track construction using Aluminum formwork system (Including the basement portion)</li> </ul> <p>The scope of work includes internal water supply, sanitary installation, Firefighting system with wet raiser and sprinkler system, Automatic fire alarm system, Pressurized ventilation in the basement, Internal &amp; external Electrical Installation, Lightening conductors, Lifts, over head water tanks, sumps, UPS, Air conditioning, Installation of solar panel, CCTV, LAN, WiFi, Emergency lights with illuminated signage, IP based EPBAX system, External roads, Sewerage connections to the near by man hole, Obtaining GRIHA 4 Star rating for the Building along with all Services (Civil and E&amp;M) as per NBC-2016/CPWD Specifications, Relocation of existing Services, Demolition of existing Structures including removal of foundation etc. complete as per Scope of work Architectural Drawings, Specification, Terms and conditions provided in this Tender document</p> <p><b>All Works &amp; Services complete in all respect as per Scope of work and Specification: Total plinth Area – 10764 Sqm</b></p> <p>A. Planning, Design &amp; Approvals : Site Survey, Site Barricading, detailed Structural design, planning and design of required Services (as required) Obtaining necessary vetting from IIT Madras on structural</p>	1 job	Lumpsum	5689

	<p>drawings, on completion plans, as per GRIHA 4 Star Certification and preparation &amp; submission of all 'As built drawings' (on completion of entire work as per scope of work, conditions and other details provided in this document and as per direction of Engineer-in-Charge.</p> <p>B. Construction of basement including approach ramps, Sumps, waterproofing of the basement, Mechanical ventilation in the basement, etc</p> <p>C. Superstructure with Built-up Plinth Area as per the area statement enclosed: Design &amp; Constructions of Super Structure along with Services, Finishes, fitting &amp; Fixtures i/c Architectural Features, Overhead Water Tanks etc. complete as shown in Architectural Drawings complete in all respects as per Scope of work &amp; Specifications.</p> <p>Planning, Design, Supply, Installation, Testing and commissioning of all E&amp;M Services &amp; Equipment to be designed as per NBC-2016/CPWD Specifications/ GRIHA 4 Star requirements as given in the detailed scope of work.</p> <p>The scope of work includes the following also.</p> <ol style="list-style-type: none"> <li>1. Demolition of existing Structures including removal of foundation etc. complete as per Scope of work</li> <li>2. Relocation of existing Services,</li> <li>3. Internal water supply, sanitary installation,</li> <li>4. Firefighting system with wet raiser and sprinkler system,</li> <li>5. Automatic fire alarm system</li> <li>6. Pressurized ventilation in the basement,</li> <li>7. Internal &amp; external Electrical Installation,</li> <li>8. Lightening conductors,</li> <li>9. Lifts,</li> <li>10. over head water tanks, sumps,</li> <li>11. UPS,</li> </ol>			
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	12. Air conditioning, 13. Installation of solar panel, 14. CCTV, 15. LAN network 16. WiFi, 17. Emergency lights with illuminated signage, 18. IP based EPBAX system, 19. External roads, 20. Sewerage connections to the near by man hole, 21. Obtaining GRIHA 4 Star rating for the Building along with all Services (Civil and E&M) as per NBC-2016/CPWD Specifications,			
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## 26 PAYMENT SCHEDULE

The payment will be made to the contractor as per the actual physical progress of the work.

Mile stone	Time Allowed	Details of Works covered under mile stone	Financial value per floor (As a percentage of tendered value)	No of floors	Total financial value (As a percentage of tendered value)	Financial value works covered in the mile stone (As a percentage of tendered value)
1	D+1 Month	- Construction of site offices & material stores	0.998%		0.998%	0.998%
		- Shifting of services to commence work				
		- Barricading around work site				
		- Demolition of existing building & debris removal				
		- Submission of Site Management Plan				
		- Submission of proof-checked structural design & drawings				
		- Submission of proof-checked MEP design & drawings				
		- Supply of drawings/documents to IIT-M for statutory approvals (Local bodies & CMDA)				
		- Submission of QA & QC plan - Mobilization of complete technical manpower				
2	D+3 Months	Completion of foundation work	3.117%	1	3.117%	5.966%
		Completion of retaining walls in basement	2.761%	1	2.761%	
		Registering project with GRIHA	0.088%		0.088%	
3	D+5 Months	- RCC works: All RCC works up to 1st floor				6.781%
		Finishing of ground floor slab	2.485%	1	2.485%	

<b>Mile stone</b>	<b>Time Allowed</b>	<b>Details of Works covered under mile stone</b>	<b>Financial value per floor (As a percentage of tendered value)</b>	<b>No of floors</b>	<b>Total financial value (As a percentage of tendered value)</b>	<b>Financial value works covered in the mile stone (As a percentage of tendered value)</b>
		RCC works from Ground to First floor	3.377%	1	3.377%	
		- Construction of under ground sump	0.643%		0.643%	
		- Completion of waterproofing works at substructure	0.276%		0.276%	
<b>4</b>	<b>D+7 Months</b>	- RCC works: All RCC works up to 4th floor	3.377%	3	10.131%	<b>10.547%</b>
		- Flooring: All flooring works up to 1st floor	0.416%	1	0.416%	
<b>5</b>	<b>D+9 Months</b>	- RCC works: All RCC works up to 7th floor	3.377%	3	10.131%	<b>17.085%</b>
		- Flooring: All flooring works up to 4th floor	0.416%	4	1.662%	
		- Restrooms: Floor & wall tiling up to 4th floor	0.026%	4	0.104%	
		- Joineries: All doors up to 4th floor	0.128%	4	0.511%	
		- Electrical/Data/LAN/CCTV: Wiring up to 4th floor	0.421%	5	2.107%	
		- Fire fighting & Fire alarm system : Fire alarm cable, Sprinkler, fire hydrant pipe laying upto 4 <sup>th</sup> floor. Installation of fire pumps in the fire pump room.	0.246%	5	1.232%	
		- HVAC : Completion of chilled water vertical and horizontal headers, tapping from headers to individual FCU, Fixing FCU with all concealed wirings, sensors, etc upto 4th floor level.	0.176%	4	0.702%	

<b>Mile stone</b>	<b>Time Allowed</b>	<b>Details of Works covered under mile stone</b>	<b>Financial value per floor (As a percentage of tendered value)</b>	<b>No of floors</b>	<b>Total financial value (As a percentage of tendered value)</b>	<b>Financial value works covered in the mile stone (As a percentage of tendered value)</b>
		- Ventilation : Basement ventilation	0.215%	1	0.215%	
		Toilet ventilation, electrical room ventilation upto 4th floor	0.002%	4	0.008%	
		- Painting: Wall putty & 1st coat interior painting up to 4th floor	0.072%	5	0.360%	
		- Others: Interior partitions up to 4th floor	0.013%	4	0.052%	
<b>6</b>	<b>D+11 Months</b>	- RCC works: All RCC works up to 10th floor	3.377%	3	10.131%	<b>19.815%</b>
		- Flooring: All flooring works up to 7th floor	0.416%	3	1.247%	
		- Restrooms: Floor & wall tiling up to 7th floor	0.026%	3	0.078%	
		- Restrooms: Fittings up to 4th floor	0.151%	4	0.606%	
		- Joineries: All doors up to 7th floor	0.128%	3	0.383%	
		- Electrical/Data/LAN/CCTV: Wiring & up to 7th floor	0.421%	3	1.264%	
		- Electrical/Data/LAN/CCTV: Fixtures up to 7th floor	0.562%	8	4.492%	
		- Fire fighting & Fire alarm system : Fire alarm cable, Sprinkler, fire hydrant pipe laying upto 7 <sup>th</sup> floor	0.246%	3	0.739%	

Mile stone	Time Allowed	Details of Works covered under mile stone	Financial value per floor (As a percentage of tendered value)	No of floors	Total financial value (As a percentage of tendered value)	Financial value works covered in the mile stone (As a percentage of tendered value)
		- HVAC : Completion of chilled water vertical and horizontal headers, tapping from headers to individual FCU, Fixing FCU with all concealed wirings, sensors, etc upto 7 <sup>th</sup> floor level.	0.176%	3	0.527%	
		- Ventilation :Toilet ventilation, electrical room ventilation upto 7 <sup>th</sup> floor	0.002%	4	0.008%	
		- Painting: Wall putty & 1st coat interior painting up to 7th floor	0.072%	4	0.288%	
		- Others: Interior partitions up to 7th floor	0.013%	4	0.052%	
7	D+13 Months	- All RCC works up to Terrace floor	3.377%	2	6.754%	26.384%
		- RCC works: water tanks & terrace parapet walls	0.183%	1	0.183%	
		- Flooring: All flooring works up to Terrace floor,	0.416%	5	2.078%	
		- Flooring Granite works at staircase, lift lobby, lift facia	0.048%	13	0.624%	
		- Restrooms: Floor & wall tiling for all rooms	0.026%	5	0.130%	
		- Restrooms: Fittings for all floors	0.151%	8	1.211%	
		- Joineries: All doors up to terrace floor	0.128%	5	0.639%	

<b>Mile stone</b>	<b>Time Allowed</b>	<b>Details of Works covered under mile stone</b>	<b>Financial value per floor (As a percentage of tendered value)</b>	<b>No of floors</b>	<b>Total financial value (As a percentage of tendered value)</b>	<b>Financial value works covered in the mile stone (As a percentage of tendered value)</b>
		- Joineries: All windows, ventilators, sill works up to terrace floor	0.260%	12	3.118%	
		- Electrical/Data/LAN/CCTV: For complete building	0.421%	5	2.107%	
		- Electrical/Data/LAN/CCTV: Fixtures for complete building	0.562%	5	2.808%	
		- Fire fighting & Fire alarm system : Fire alarm cable, Sprinkler, fire hydrant pipe laying upto terrace floor	0.246%	5	1.232%	
		- Fire fighting & Fire alarm system : Laying of header line upto terrace floor	0.513%		0.513%	
		- HVAC : Completion of chilled water vertical and horizontal headers, tapping from headers to individual FCU, Fixing FCU with all concealed wirings, sensors, etc upto terrace floor level.	0.176%	5	0.878%	
		- BMS : Installation of BMS cable, field devices, DDC panel and all associated works.	0.351%		0.351%	
		- Ventilation : Toilet ventilation, electrical room ventilation upto terrace floor	0.002%	5	0.010%	
		- Painting: Wall putty & 1 coat interior painting up to Terrace floor	0.072%	5	0.360%	
		- Painting: Wall putty & 2 coats interior painting up to Terrace floor	0.048%	13	0.624%	
		- External Development: Circulation roads & approach roads till DLC level, culvert construction, storm water drain	0.311%		0.311%	

<b>Mile stone</b>	<b>Time Allowed</b>	<b>Details of Works covered under mile stone</b>	<b>Financial value per floor (As a percentage of tendered value)</b>	<b>No of floors</b>	<b>Total financial value (As a percentage of tendered value)</b>	<b>Financial value works covered in the mile stone (As a percentage of tendered value)</b>
		- Interior partitions up to Terrace floor	0.013%	5	0.065%	
		- Plumbing lines in ducts, FRP platforms	0.519%		0.519%	
		- SS Handrails at staircase	0.024%	13	0.312%	
		-Finishing of the false ceiling works at all floors	0.130%	12	1.559%	
<b>8</b>	<b>D+14 Months</b>	- Flooring: Terrace waterproofing, testing & tiling	0.062%	1	0.062%	<b>4.306%</b>
		- Joineries: All doors, windows, ventilators, sill works for the entire building	0.026%	1	0.026%	
		- Painting: Completion of interior painting for entire building, 1 coat external painting	1.029%	1	1.029%	
		- External Development: Completion of circulation & approach roads	0.311%		0.311%	
		- Lift : Installation of all lifts	1.876%		1.876%	
		- Others: Installation of solar panels	0.580%		0.580%	
		- Others: Installation of lightning conductor	0.162%		0.162%	
		- Others: Commissioning of the water supply and sewerage system	0.260%		0.260%	

<b>Mile stone</b>	<b>Time Allowed</b>	<b>Details of Works covered under mile stone</b>	<b>Financial value per floor (As a percentage of tendered value)</b>	<b>No of floors</b>	<b>Total financial value (As a percentage of tendered value)</b>	<b>Financial value works covered in the mile stone (As a percentage of tendered value)</b>
<b>9</b>	<b>D+15 Months</b>	- Completion of the entire project, commissioning of all MEP works, attending to snags and handing over the site, Obtaining GRIHA 4 Star rating, Submission of as built drawings and finishing of all deliverables as per the agreement	8.119%		8.119%	<b>8.119%</b>

**During the execution of each milestone, proportionate payment may be released as a percentage of the tendered value for the work already completed, subject to certification by the Engineer-in-Charge**

**Signature of the Contractor**

**Superintending Engineer**