CONSULTANCY CONTRACT DOCUMENTS
(CONSTRUCTION SUPERVISION)

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

POWAI, MUMBAI 400076

NIT NO: IITB/Dean IPS/DESE-CESE/CM&S/Tender/2015 dt 05-01-2015

NAME OF WORK: Construction Management and Construction Supervision Consultancy for the work of Construction of common building for Department of Energy Science and Engineering (DESE) & Centre for Environmental Science and Engineering (CESE) consisting of Civil, Public Health, Electrical works, Fire fighting, HVAC External Development for Indian Institute of Technology Bombay, Powai, Mumbai 400076

Consultants: M/s.................................
DEAN.IPS

LETTER INVITING OFFER

IITB/DEAN.IPS/DESE-CESE/CM&S/2015                      Date:    January 2015

M/s.

Dear Sir,

NIT NO: IITB/Dean IPS/DESE-CESE/CM&S/Tender/2015 dt 05-01-2015

Proposals are invited from the empanelled agencies in the enclosed prescribed form by Dean(IPS) on behalf of Director Indian Institute of Technology Bombay(IITB) for the Construction Management and Construction Supervision Consultancy for the work of Construction of common building for Department of Energy Science and Engineering(DESE) & Centre for Environmental Science and Engineering (CESE) consisting of Civil, Public Health, Electrical works, Fire fighting, HVAC External Development for Indian Institute of Technology Bombay, Powai, Mumbai 400076

Estimated cost of construction of work on which consultancy is required: Approx. Rs 71.63 Crores

Completion time: 30 months construction + 4 months = total 34 months

Performance guarantee: 5% (five percentage) of total consultancy fees quoted.

Consultants are informed that the construction work shall be awarded shortly and successful bidders shall be ready in position to deploy Project Manager and Senior Engineers (as per tender conditions).

Single Bid documents Technical bid consisting set of terms and conditions of and Financial Bid complied with by the Consultant are to be downloaded from IITB website <www1.iitb.ac.in/deanpl/tender.html from 22-01-2015 to 03-02-2015. COST OF TENDER DOCUMENTS (non refundable) shall be Rs.1000/- to be paid in the form of Demand Draft drawn in favour of Dean I.P.S IIT(B), payable at Mumbai, to be submitted in a separate cover at the time of submission of Tender documents. Application without fee shall not be considered.

Signature of Authorised Signatory with Date & Seal
**Pre bid conference** shall be held in the Conference Hall of Dean(IPS) 1st floor, Main Building, IIT Bombay, Powai, Mumbai 76. at **11.00 AM on 05-02-2015** to clear the doubt of intending tenders if any. The bids will be **received upto 03.00 PM on 10-02-2015** at the office of Dean (IPS) 3rd floor, Main Building, IIT Bombay, Powai, Mumbai 76. shall be opened by the Dean(IPS) or his Authorized representative in his office on the same day at 3.30PM.

In the event of any agency receiving the Consultancy Contract, it will have to submit Performance Guarantee @5% (five percentage) of Consultancy Contract value as stipulated in the tender conditions and in accordance with the form annexed as “Appendix-F “ hereto

Dean IPS does not bind himself to accept the lowest quoted proposal and reserves the right to reject any or all proposals received without assigning any reason. The proposals, which are incomplete and have not addressed or fulfilled the requirements specified in tender Document, are liable for rejection.

Yours is one of the empanelled agencies of Construction Supervision Consultants and hence you are invited for participation for selection You will please inform us by facsimile/speed post:

(i) Your receipt of this Letter Inviting Offer.

(ii) Whether or not you will submit a proposal.

Thanking you,

Yours sincerely,

Prof N.Venkataramanai.
Dean IPS
Indian Institute of Technology Bombay

Note : to be downloaded
Tender document consisting Technical Bid & Financial Bid

Signature of Authorised Signatory with Date & Seal
1.1. **INTRODUCTION**

1.1.1 The INDIAN INSTITUTE OF TECHNOLOGY (BOMBAY) {IITB} proposes will select a firm from among the empanelled consultants.

1.1.2 Consultants are invited to submit a Technical Bid & Financial Bid for consulting services required for the Assignment. The Bid will form the basis for future discussions and ultimately, a contract between the IITB and the selected firm.

1.1.3 Consultants must familiarize themselves with the local conditions and take them into account in preparing the bids.

1.1.4 Consultants may note that the costs incurred in the preparation of the bid and subsequent discussions including a visit to the IITB’s office or proposed location(s) connected with the assignment, are not reimbursable, and for which the IITB is not bound to accept any claim.

1.2 **CLARIFICATION & AMENDMENT OF BID DOCUMENT**

1.2.1 Consultants may request for clarifications on any of the Documents furnished to them before the Bid submission date. Any request for clarification must be sent in writing or by fax or speed post to the IITB’s address. The IITB will respond by fax or speed post to such requests and copies of the response (including an explanation of query but without identifying the source of enquiry) will be sent to all invited Consultants who intend to submit the Bid.

1.2.2 At any time before the submission of Bids, IITB may, for any reason, whether at its own initiative or in response to clarifications sought by an invited consulting firm, modify the documents, furnished with the offer, by amendment. The amendment will be notified in writing by fax or speed post to all invited consulting firms and will be binding on them. The IITB may at its discretion extend the deadline for the submission of Bids.

1.2.3 In the event of any Consultant getting selected for the Consultancy work, the Consultant will have to pay the Performance Security (PS) @5% (Five percentage) of the contract. The consultant shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within 15 (fifteen) days from the date of issue of letter of acceptance. This period can be further extended by IITB up to a maximum period as 7 (seven) days on written request of the consultant stating the reason for delays in procuring the Bank Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of Cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at Call receipt of any scheduled bank / Banker’s Cheque of any scheduled bank / Demand Draft of any scheduled bank / Pay order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. (Appendix ‘F’) In case a fixed deposit receipt of any Bank is furnished by the consultant to IITB as part of the performance guarantee and the Bank is unable to make the payment within the stipulated time, the guarantee will be deemed to be null and void.

Signature of Authorised Signatory with Date & Seal
payment against the said fixed deposit receipt, the loss caused thereby shall fall on the consultant and the consultant shall forthwith on demand furnish additional security to the IITB to make good the deficit.

i) The Performance Guarantee shall be initially valid upto the stipulated date of completion plus 60 days beyond that. In case the time for completion of work gets enlarged, the consultant shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the competent authority, the performance guarantee shall be returned to the consultant, without any interest.

ii) The engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the IITB is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:
   a) Failure by the consultant to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full-amount of the Performance Guarantee.
   b) Failure by the consultant to pay IITB any amount due, either as agreed by the consultant or determined under any of the Clauses/Conditions of the agreement, within 30 days of the services of notice to this effect by Engineer-in-Charge.

iii) In the event of the contract being determined or rescinded on account of default on the part of consultant under provision of any of the Clause/Conditions of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the IITB.

iv) The Consultant throughout the contract period shall perform with due diligence and proper application of mind and good faith all the activities covered under the scope of assignment. Upon determination of any failures/lapses attributable to the Consultant in this regard such as non deployment of technical staff, delay of completion or causes financial or any other damage to the interest of IITB, by breach of any of the terms of consultancy contract. IITB shall after issue of 10 days notice shall encash partly or fully, at its own discretion, the Performance guarantee. Upon the action of IITB the Consultant shall completely or partly forfeit the performance guarantee amount at the sole discretion of Director IITB whose decision shall be final and binding, and the same shall be absolutely at the disposal of IITB.

1.3. PREPARATION OF BID

Consultant shall submit, Section I Technical Bid and Section II Financial Bid, written in English.

1.3.1 Technical BID (Section I)
1.3.1.1 Consultant is expected to examine all terms and instructions included in the documents furnished with offer. Failure to provide requisite information may result in rejection of Bid.

Consultant shall submit the credentials/bio data of the proposed Project Manager, Senior Engineers, Safety Officer conforming their qualifications, experience and working knowledge with Government Depts for scrutiny and interview with IITB and shall be approved by IITB for deployment for Consultancy work prior to issue of Acceptance/Work order and bio data/CV in line with the IITB requirement for other personnels also to be submitted for approval.

i) The key professional staff, listed in the offer, shall be available for the entire duration of the execution of the Assignment. These shall preferably be the permanent employees of the firm.

iii) Proposed staff must have relevant educational qualification and experience, preferably under conditions similar to those prevailing at the locations of the assignment.

iv) No alternative to key professional staff may be proposed and only one curriculum vitae (CV) may be submitted for each position. The firm’s personnel shall have a good working knowledge of English.

1.3.1.2 Technical Bid should provide the following information, but not limited to,

i) A description of the methodology (work place), which the Consultant proposes to employ in performing the Assignment, duly illustrated with bar charts of activities, Critical Path Method (CPM) or Project Evaluation and Review Technique (PERT) or any other type of graphics.

ii) Curricula Vitae (C.V.) recently signed by the proposed key professional staff and countersigned by an authorized officer of the Consultant. Key information should include: years with the firm/entity and degree of responsibility held in various assignments during the last ten years.

iv) Confirmation/submission on salient technical conditions mentioned in Offer Document.

vi) Quality assurance system/ programme proposed to be employed in design, engineering, procurement, inspection, & management activities.

*Note: Description of methodology, Bar chart/CPM, CV as per format in Appendix ‘B’ duly attested by Authorized signatory, Confirmation of Technical conditions and Quality assurance to be proposed shall be enclosed in a separate Annexure indicating the above details. In absence of above details shall be treated as incomplete documents for consideration.*
1.3.1.3 The technical Bid shall not include any financial information.

1.3.2 Financial Bid (Section II)

1.3.2.1 In preparing the Financial Bid, Consultant is expected to take into account, besides technical requirements, commercial conditions specified in the Offer Document.

1.3.2.2 The Financial Bid consisting of:

   a) Part I Progress Dependent payment shall be quoted % (percentage) of work done. The amount/ rates quoted in the Bid shall be both in figures and words. Cost may be expressed in the currency as specified in Summary of Costs (SC).

   b) Total amount quoted shall be sum and the lowest bidder shall be considered for acceptance.

1.3.2.3 The Financial Bid, for the assignment and for additional works shall be all inclusive, and should cover, but not be limited to, remuneration for staff (in the field and at headquarters), gratuity, provident fund, travel assistance, out of pocket expense (per diem), overheads, profits, accommodation (housing), transportation (for mobilization and demobilization), communication, equipment (vehicles, office equipment, furniture, consumable etc.), printing of documents, surveys, training. The Financial Bid shall also include the tax liability and cost of insurance of Consultants’ firm and his personnel specified in Appendix ‘B’.

1.4. SUBMISSION, RECEIPT & OPENING OF BIDS

1.4.1 The original of the Section I Technical Bid and Section II Financial Bid must be prepared in indelible ink. The Bids should contain no inter-lineation or overwriting except as necessary to correct errors made by the Consultants themselves. Any such corrections must be initialed by the person or persons signing the Bids.

1.4.2 An authorized representative of the firm must initial all pages of the Bids. The representative’s authorization shall be confirmed by a written power of attorney accompanying the Bids.

1.4.3 Section I Technical Bid and Section II Financial Bid shall be placed in a single sealed envelope, which will bear the address and information.

1.4.4 The completed Bid must be delivered at the submission address on or before the time and date. Any Bid received after closing time for submission will be returned unopened.

1.4.5 The Bid must be valid for 120 of days from the date of its submission during which you must maintain the availability of the key professional staff proposed for the Assignment. The IITB will make its best effort to conclude the Bid evaluation process within this period.

Signature of Authorised Signatory with Date & Seal
DRAFT CONSULTANCY AGREEMENT (On Rs.100 Stamp Paper)

THIS Consultancy Agreement (hereinafter called the "CA") is made the...... th day of the month of -----, Year Two Thousand fourteen between, on the one hand, Director, Indian Institute of Technology Bombay (IITB) acting through his duly authorised representative, Dean Infrastructure Planning Support, Indian Institute of Technology Mumbai, (Dean IPS) and, on the other hand, M/s. ........................................ hereinafter called the "Consultant" which expression shall, unless repugnant to the context, be deemed to include its successors and assigns).

WHEREAS

(A) IITB has requested the Consultant to provide certain consulting services (hereinafter called the "Services") as defined in the Conditions of Consultancy Contract (CCC) attached to this Document.

(B) Consultant, having represented to the IITB that they have the required professional skills, personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Agreement;

NOW THEREFORE the parties hereto agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

1.1) Offer letter from M/s ........................................

1.2) Letter of Acceptance from IIT Bombay dated ....................

1.3) Section –I: Technical Conditions:

Conditions of Consultancy Contract (hereinafter called “CCC”); including the following Appendices:

Appendix A: Description of the Services and Deliverables by the Consultant.

Appendix B: Key personnel of Consultants

Appendix C: Obligations the IITB

Appendix D: Documents to be maintained at the site office for Inspection.

Appendix E Safety guide for construction executed through Consultancy Contract

Appendix “F” Performa for Performance Guarantee.
1.3) Section – II: Financial Conditions:

A] Financial Bid
B] Milestone for Payment of Consultancy Charges
C] Effecting payment to the architect
D] Reimbursable expenses

2. The mutual rights and obligations of IITB and the Consultant shall be as set forth in the Contract; in particular:

(a) The Consultant shall carry out the Services in accordance with the provisions of the Contract; and

(b) IITB shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as on this day ------- of --------- of the year 2012.

Dean IPS  IIT Bombay
FOR AND ON BEHALF OF
INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

In presence of
Witness:

1. FOR AND ON BEHALF OF
   [ Name of Consultant ]

In presence of
Witness:

1.

2.

Signature of Authorised Signatory with Date & Seal
1] Conditions of Consultancy Contract

1. GENERAL PROVISION

1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Agreement will have the following meanings:

a) "IITB" means the Indian Institute of Technology Bombay Mumbai or its authorised representative.

b) The Project Architect means the Architectural Consultants to whom IITB has entrusted the architectural, structural and services design of the Project.

c) "The Consultancy Agreement" means the Contract by the Parties, to which these Conditions of Consultancy are attached, together with all the documents listed in Appendices of such signed Contract.

d) "Applicable Law" means the laws and any other instruments having the force of law in India, as they may be issued and in force from time to time.

e) "Officer In Charge" means an Officer IITB or Architect so appointed by IITB responsible to direct, supervise and be in charge of the Services to be performed by the Consultant under the Contract.

f) "CCC" means these Conditions of Consultancy Contract.

g) "Party" means the IITB or the Consultant, as the case may be, and Parties means both of them.

h) "Services" means the work to be performed by the Consultant pursuant to this agreement, as described in Appendix –A hereto.

i) "Consultancy cost" means the charges to be paid for the performance of Services under this Agreement.

j) "Personnel" means persons hired by the Consultant as employees and assigned to the performance of the Services or any part thereof. as described in Appendix –B hereto.

k) "Site" means the property belonging to the IITB on which the Services will need to be performed.

l) "Month" shall mean a calendar month.

1.2 Relation between the Parties

The Consultant accepts the relationship of trust and confidence established between him and IIT Bombay by this Agreement. He covenants with IIT Bombay to furnish his best skills and judgement and to co-operate with the ENGINEERS/ARCHITECTS in furthering the interests of IIT Bombay. He agrees to furnish efficient business administration and
Construction Management consultancy DESE-CESE

superintendence and to use his best efforts to complete the project in the best and soundest way and in the most expeditious and economical manner consistent with the interests of the IIT Bombay. The Consultant, subject to this Agreement, has complete charge of Personnel performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

1.3 SCOPE OF WORK:
The assignment consists of Construction Management and Construction Supervision Consultancy Services for the project. The project is to construct common building for DESE-CESE flats consisting of Civil, Public Health, Electrical works, Fire fighting, HVAC External Development for Indian Institute of Technology Bombay, Powai, Mumbai 400076, having an Estimated cost of approx. Rs. 71.63 crore. The services to be provided by Consultants include the following:

The architectural, structural and services design is already entrusted to the Architectural Consultants of the Project. (Herein after called Project Architect) who shall be responsible for Comprehensive Architectural services, occasional overall supervision, certifying the work for architectural & structural integrity. The services under this agreement are for the purpose of detailed supervision, quality assurance and control, monitoring progress vis-a-vis approval program, monitoring & alerting IITB regarding possible time & cost overruns, enforcement of construction safety, enabling intensive Chief Technical Examiner examinations, as complementary to the services of Project Architect. The site supervision services to be provided are in respect of all Civil and Architectural works, Plumbing, Sanitation, Drainage, Interior works, etc., electrical, Communication network etc. as well as all work required for the services within the plot and all other miscellaneous works required to be carried out for the completion of the project. Including testing, commissioning and handing over to IITB. Consultants will provide full time technical staff needed in various disciplines to supervise construction by providing Consultants in house engineers or by appointing specialized services personnel. In case of appointment of specialized personnel, overall responsibility of performance of specialized personnel remains of Consultants. Any services concerning to the furniture and library equipments computers are included in the scope of Consultants. The project execution period shall be 20(twenty months including monsoon period) months.

1.4 Notices
(a) Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing and shall be deemed to have been given or made when delivered in person to an authorised representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram or facsimile to such Party at the address specified in the contract.
(b) Notice will deem to be effective as specified in the contract.

1.5 Authorised Representatives

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Agreement by the IITB or the Consultant may be taken or executed by the officials specified in the contract.

For IITB: Dean(IPS)

For the Consultant:............................... (Enclose Authorisation by Authorised Signatory of the Consultancy Agency)
1.6 Taxes and Duties

The Consultant and their Personnel shall pay all such taxes (Except Service Tax), duties, fees and other impositions as may be levied under the Applicable Law, the amount of which is deemed to have been included in the Consultancy Cost Quoted. Service Tax will be paid extra over the billed amount by IITB as per the prevailing rates.

2. COMMENCEMENT, COMPLETION, MODIFICATION & TERMINATION OF CONTRACT

2.1 Effectiveness of Consultancy Contract

Successful Consultant shall submit with in 07 days of the selection, the credentials/bio data of the proposed Project Manager, Senior Engineers, Safety Officer conforming their qualifications, experience and working knowledge with Government Depts as stipulated “Appendix ‘B’ for scrutiny and interview with IITB and shall be approved by IITB for deployment for Consultancy work prior to issue of Acceptance/Workorder and bio data/CV in line with the IITB requirement for other personnel also to be submitted for approval failing which their bid quoted shall be liable for cancellation.

2.2 Commencement of Services

This Contract shall come into effect from the 15th day of the issue of work order. The Consultant shall begin carrying out the Services immediately on issue of letter of acceptance of the agency for construction work to the concerned consultant.

2.3 Expiration of Consultancy Contract

Unless terminated earlier pursuant to Clause 2.7 hereof, this Contract shall expire when the Services have been completed in all respects at the end of scheduled period of completion 30 (thirty) month of the subject work months plus 4 (four) months after completion of the works with a total period of 34 (thirty four) months. In case of the construction work getting extended, the consultant apply for extension of the consultancy contract. In cases where the extension is not due to the reasons attributable to the consultant IITB shall grant extension on the same existing terms & conditions.

2.4 Entire Agreement

This Consultancy Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

2.5 Modification

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services or Consultancy Contract Price, may only be made by written agreement between the Parties.
2.7 Termination

2.7.1 By IITB

IITB may terminate this Consultancy Contract, by not less than thirty (15) days' written notice of termination to the Consultant, to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause 2.7.1 and sixty (60) days in the case of event referred to in (e) below:

(a) if the Consultant fail to remedy a failure in the performance of their obligations and deployment of technical personnel as stipulated under the Contract within thirty (30) days of receipt after being notified or within such further period as IITB may have subsequently approved in writing; This action is without prejudice to other penal provisions in the agreement.

(b) if the Consultant become insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take- advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) if the Consultant submit to IITB a statement which has a material effect on the rights, obligation or interests of IITB and which the Consultants know to be false;

(d) if, as the result of Force Majeure, the Consultant are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

(e) if IITB, in its sole discretion and for any reason whatsoever, decides to terminate this Consultancy Contract.

2.7.2 By the Consultant

The Consultant may, by not less than thirty (30) days' written notice to IITB, such notice to be given after the occurrence of any of the events specified in paragraphs (a) and (b) of this Clause 2.7.2, terminate this Contract:

(a) if IITB fails to pay any money due to the Consultant pursuant to this Consultancy Contract and not subject to dispute pursuant to Clause 8 hereof within forty-five (45) days after receiving written notice from the Consultant that such payment is overdue;

(b) if, as a result of Force Majeure, the Consultant are unable to perform a material portion of the Services for a period of not less than sixty (60) days.

2.7.3 Payment upon Termination

Upon termination of this Contract pursuant to Clauses 2.7.1 or 2.7.2 hereof, IITB shall make the following payments to the Consultant (after offsetting against these payments any amount that may be due from the Consultant to IITB):
2.7.4 The IITB shall not be liable to pay any bonus, damage or other claims of the Consultant for the loss of expected profit or interest in uncompleted portions of the work and services.

2.7.6 In the event of termination of Contract, the Consultant shall furnish to IITB all the design, drawings, data, documents and details as exist with him on that date.

3. OBLIGATIONS OF THE CONSULTANT

3.1 General

Standard of Performance
The Consultant shall perform the Services and carry out their obligations with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Consultancy Contract or to the Services, as faithful advisers to the IITB, and shall at all times support and safeguard the legitimate interests of IITB in any dealings with sub-Consultant or Third Parties. Safety precautions to be observed is enclosed as Appendix."E". and shall be followed strictly.

3.2 Confidentiality

The Consultant, his Sub-consultants and the Personnel of either of them shall not disclose any information and data furnished to him by IITB to any third party nor shall disclose any drawings, reports, specification, manuals and other information developed and prepared for IITB by the Consultant and his Sub-consultants and the Personnel of either of them, without prior written approval of IITB.

3.3 Insurance to be taken out by the Consultant

The Consultant (i) shall take out and maintain, at his own cost but on terms and conditions approved by the IITB, insurance against the risks, and for the coverage of Employer’s liability and workers’ compensation insurance in respect of the personnel of the Consultant in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel or other insurance as may be appropriate and (ii) copy shall be provided as evidence showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.

3.4 Consultant’s Actions requiring prior Approval of IITB:
The Consultant shall obtain the prior approval of IITB in writing before taking any of the following actions:

(a) Appointing of the Key Personnel.
(b) Any other action that may be specified in the special conditions of contract.
(c) Addl. Financial expenditure of project due to deviations/extra /variations of constructions contract provisions

3.5 Reporting Obligations

The Consultant shall submit to IITB the reports, documents and other deliverables specified in Appendix–A hereto, in the form, in the numbers and within the time periods set forth in the said Appendix.

3.6 Documents prepared by the Consultant to be the Property of IITB:

(a) All plans, drawings, specifications, designs, detailed measurement estimates, reports and other documents prepared by the Consultant in performing the Services shall become and remain the property of the IITB, and the Consultant shall, not later than upon termination or expiration of this Consultancy Contract, deliver all such documents to IITB, together with a detailed inventory thereof. IITB reserves the right of repetitive use of these designs, drawings, specifications etc. without any financial obligation to the Consultant.

(b) The Consultant shall also return, along with the detailed inventory the plans, drawings, specification, reports etc. made available by IITB for performing the Services, upon termination or expiration of the Consultancy Contract.

(c) Copyrights and all proprietary rights of all design, drawings, specifications, software, program, reports, formats, manuals, documents etc. developed and prepared by the Consultant for this assignment shall vest with IITB and shall not use these for any other purpose/assignment without the written permission of IITB. Any deviation to this effect will be dealt with in accordance with law.

3.7 Defect Liability

(a) Should any defect or inadequacy occur in the work carried out or the service performed by the Consultant prior to the date of final acceptance of the work by IITB, the Consultant shall be under a legal obligation to perform, at his own initiatives and free of cost without any additional liability to IITB, all such services as shall be deemed necessary to remedy such defects or inadequacy. The decision of the Officer In Charge regarding ‘defect or inadequacy’ in the work so carried out and service rendered shall be final and binding. Handing over the building to user is the responsibility of the Consultant and till handing over he building to user the all defects to be got rectified by the consultant.

(b) In case, despite the specific request by IITB to the Consultant to rectify or remedy the defect or inadequacy so pointed out and brought to the notice of the Consultant, the Consultant fails and neglects to rectify the same, within the time frame given by IITB for such rectification then IITB shall be within its right to correct such defects of the inadequacy(s) rectified from a third agency at the costs
4. **CONSULTANT’S PERSONNEL**

4.1 **General**

The Consultant shall employ and provide such qualified and experienced Personnel approved and agreed by the IITB, to carry out the Services. The Consultant shall also bond his Personnel to the confidentiality of the Services performed by them under this Consultancy Contract.

4.2 **Description of Personnel**

The titles, agreed job descriptions, minimum qualification and estimated periods of engagement in the carrying out of the Services of each of the Consultant’s Key Personnel are described in Appendix-B. If any of the Key Personnel has already been approved by IITB his/her name is listed as well.

4.3 **Removals and/or Replacement of Personnel**

(a) Except as IITB may otherwise agree no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Consultant, it becomes necessary to replace any of the Personnel, the Consultant shall forthwith provide as a replacement a person of equivalent or better qualifications.

(b) If the Officer-in-charge (i) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action, or (ii) has reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Consultant shall, at the written request of IITB specifying the grounds therefor, forthwith provide as a replacement a person with qualifications and experience acceptable to IITB. Failure to do so shall be construed to be a default for which IITB could terminate the Consultancy Contract.

(c) The Consultant shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

5. **OBLIGATIONS OF THE CLIENT**

5.1 **Assistance and Exemptions**

The IITB shall use its best efforts to:

(a) provide the Consultant, Sub-consultant and Personnel with work permits, pertinent data and such other documents as shall be necessary to enable the Consultant, Sub-consultant or Personnel to perform the Services;

(b) issue of instructions to officials, agents and representatives of IITB all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services;

(c) give decisions on all matters laid before IITB by the Consultant in such a
5.2 **Change in the Applicable Law**

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost or reimbursable expenses incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the contract price.

5.3 **Services & Facilities**

The IITB shall make available to the Consultant the services and facilities as described in Appendix–C.

5.4 **Payment**

In consideration of the Services performed by the Consultant under this Contract, IITB shall make to the Consultant such payments and in such manner as is provided by Section II-B of Financial Bid.

6. **SETTLEMENT OF DISPUTES**

6.1 **Amicable Settlement**

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or the interpretation thereof.

6.2 **Dispute Settlement**

Any dispute between the Parties as to matters arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party’s request for such amicable settlement may be submitted by either Party for settlement by arbitration in accordance with the following provisions: Any dispute or difference at any time arising between IITB and the Consultant as to the construction, meaning or effect of the Consultancy Contract or as to any clause, matter or thing herein contained or as to the rights and liabilities of the parties hereto shall be referred to a Sole Arbitrator to be appointed by the Chairman Board Of Governors Indian Institute of Technology Bombay who will decide the case in accordance with and subject to the provisions of the Indian Arbitration & Reconciliation Act, 1996 or any statutory modifications or re-enactment thereto or thereof for the time being in force and all proceedings in any such Arbitration shall be held in Mumbai.

7. **Suspension of Services**

IITB may, by written notice of suspension to the Consultant, suspend all payments to the
Consultant hereunder if the Consultant fail to perform any of their obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultant of such notice of suspension.

8. **Foreclosure of the Contract**

It shall be within the authority of IITB, at any time after acceptance of the bid or during the execution of the work, to foreclose or reduce the scope of the work, for any reasons whatsoever, either partly or wholly by giving the written notice not less than 15 days to the Consultant. In such an event, the Consultant shall have not claim whatsoever on account of any profits (s) or advantage (s) which the Consultant might have derived from the execution of work in full but for the reasons of the foreclosure of the whole or part of the work. However, the Consultant shall be paid at the contract rates for the Services performed by him and the amount certified by the ‘IITB’

9. **Abandonment of Work**

In case, the work is abandoned by the Consultant, without good and sufficient justification IITB is at liberty to encash the Performance Guarantee and impound any other amounts due to the consultant at the time of abandonment on account of this contract and engage another agency to complete the balance work without prejudice to any remedies available under this contract of Indian Law

10. **Liability of the Consultant**

(a) Except in case of gross negligence or wilful misconduct on the part of the Consultant or on the part of any person or firm acting on behalf of the Consultant in carrying out the Services, the liability of the Consultant for all guarantees & warranties shall be limited to 5% (Five percent) (to be mentioned by the indenter) consultancy of the Contract Price.

11. **Attendance, Working hours, Overtime, Leave, etc.**

(a) The consultant shall maintain the personnel daily attendance register maintained at site office and shall be signed and countersignature of OSD/representative of IITB obtained before 1030hrs.

(b) The Consultant, Sub-consultant or their Personnel shall not be entitled to any overtime payment and the same deemed to have been included in the Contract Price. Taking of leave by Key Personnel shall be subject to the prior approval by IITB. The Consultant who shall ensure that absence for leave purposes will not delay the progress and adequate supervision of the Services.

(c) The Consultant’s personnel working at the Site shall observe the site construction working hours and declared national holidays. Its the responsibility of the consultant, in the event of works being executed during holidays suitable supervision and safety arrangements shall be made available.
12. **Project Organisation**

The Consultant shall ensure that at all times during the Consultant’s performance of the Services a well-defined project set-up exits at his end. This set-up only will interact with IITB personnel in providing the Services.

13. **Security Rules**

The Consultant will follow the rules and regulations for the security framed by IITB from time to time regarding movement of personnel, materials and equipment to and from office/site, issue of identity cards, control of entry of personnel and all similar matters. The Consultant will also follow all rules and regulations applicable to the area being declared/announced from time to time by the authorities or authority of existing IITB facilities in the vicinity of any other statutory orders. Nothing extra will be payable on account of stoppage/hindrance of the work due to the enforcement of security measures/emergency conditions.

14. **Rights of Other Agencies**

Other agencies may also be simultaneously working within and around the locations/areas designated to carry out the Assignment. No extra claim during the tenure of the work will be entertained by IITB for hindrances on account of such interfaces with other/allied agencies.

17. **Idle Claim**

No claims from the Consultant will be entertained on account of idle work force, non-use of facilities due to stoppage of work, unprecedented rain, storm or any other unforeseen circumstances.

18. **Fairness & Good Faith**

(a) **Good Faith**

The Parties undertake to act in good faith with respect to each other’s rights under this Contract and to adopt all reasonable measures to ensure the realisation of the objectives of this Contract.

(b) **Operation of the Contract**

The Parties recognise that it is impractical in this Contract to provide for every contingency which may arise during the currency of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause 7 of GCC.
Description of Services & Deliverables by the Consultants

Description of Services to be delivered:
As the project is architecturally conceived, designed and going to be certified for the architectural and structural integrity by the Project Architects, the Services to be delivered under this consultancy contract have to be complementary to that of the Project Architect. While the Project Architect shall be responsible for occasional site supervision, certification of contractor's bills etc. the services under this consultancy contract shall comprise following activities. Before commencement of the work, study of site, drawings, contract documents, provision of schedule of quantities and report to IITB in case of any deviations. Scope of work of Construction supervision & Management for Construction of common building for DESE-CESE consisting Civil , Public Health, Electrical, Fire fighting, HVAC External development works including compliance of GRIHA certification at IITB campus, Mumbai 40076 including testing, commissioning and handing over to users.

1. Construction Supervision work: Consultant will supervise the execution of the work so as to ensure that all work is carried out in accordance with the tender/contract specifications and construction drawings. Consultant will maintain check lists for the major items of work which record the observations made during each inspection. Any deviations made from accepted specifications and drawing during constructions will be recorded. For the full time site supervision works, Consultant will provide adequate number of qualified technical staff of different categories for different durations as required at various stages of construction period as stated in Appendix'B'.

2. Construction Material: Consultant will ensure that all the materials to be used in the works are tested as per the requirements given in the specifications. Consultant will also maintain a record of the various test reports.

3. Labour, Machinery, and Equipment requirement: Consultant will monitor the adequacy of executing agencies site establishment in respect of technical and supervisory staff, labour force, machinery and equipment, material procurement, etc., in order to complete the works as per time schedule. Consultant will maintain daily reports on labour, plant, and materials etc.

4. Monitoring progress: Consultant will monitor the progress of various works at site, prepare physical progress reports and suggest ways and means of achieving the target progress of works. Shall weekly/fortnightly Progress Review meetings and the minutes to be circulated.

5. Progressing Report: Consultant will submit monthly progress reports reviewing work done since the last report, and all outstanding problems that are likely to affect either cost or time to completion of the project.

6. Records: Consultant will maintain records of all the meetings that take place at site. Consultant will also maintain a Site Order Book which records all the instructions given to the Contractor by the Architect or by the Consultants during their site visits. Other statutory documents/records as desired by CVC for its inspection at site (List provided in appendix -E) shall be maintained at site by Consultant and made available to client whenever asked for and handed over to client at the end of the project. Enabling assistance during intensive examinations by CTE

7. Site visits of Architects/Consultants: Consultant will co-ordinate site visits by various Consultants as and when required in order to clarify the details given in the drawings and specifications.

8. Defects: In case any defects are found in the work carried out by the Contractor, Consultant will record them in a Defects Register and ensure that the Contractor rectifies these defects immediately and will be reported.

Signature of Authorised Signatory with Date & Seal
9. **Measurement of work:** Consultant will verify all the measurements taken by the Contractor. Consultant will ensure that the Contractor maintains a Measurement Book recording all the measurements. This book will be countersigned by Consultant’s representative.

10. **Certification of Contractors Measurements:** Consultant's site staff will scrutinise, check and certify measurements of all bills submitted by the contractors and forward to Consultant's head office for issuing certificate of payments in favour of contractors. The consultant shall strictly enforce and follow the procedure & sequence of recording measurements, submission of bills by the contractor as envisage in the relevant General conditions of construction contract. The status shall be recorded in every weekly progress review meeting.

12. **Post Construction Stage:** Consultant's essential work in this phase will be assembling of all drawings and essential documentation to be preserved for achieves, so that all information pertaining to the construction is available for subsequent examination at the time of undertaking any future modification or repair.

13. **Maintenance Manual:** Consultant will also draw up and prepare a maintenance manual for the buildings and any plant, machinery, or equipment which has formed part of Consultant's services. A maintenance program of inspection and regular renewal of certain items (such as painting and waterproofing) or replacement of certain items of equipment will be proposed with the maintenance work done to be reviewed annually.
Deliverables by the Consultants:

1. Consultants shall call for meeting with Architect, contractor and client to monitor progress and to discuss difficulties and solutions. Consultants shall draw minutes of the meeting and monitor defect correction and decisions taken during the meeting for remedial action. Regular progress Review meetings shall be conducted at weekly/fortnightly intervals.

2. Consultants shall be required during construction phase to provide the supervision and sufficient technical assistance.

3. Consultants will act as technical representative of the client.

4. The Consultants shall exercise powers and authority as well as perform duly, all the duties, liabilities, functions and obligations as (i) ‘The Engineer’ (ii) ‘The Engineer’s Representative’ as defined in the Agreement between the IIT Bombay and the Contractor for the work.

5. The Consultants shall be required, during the construction phase to provide the field supervision and sufficient technical assistance (staff) for check on quality control of the work at site. Competent technical staff required to be deployed by the Consultants at all levels shall be got approved before commencement of work. The Consultants shall furnish bio-data of each Engineer proposed to be deployed at site. For this purpose, the Consultants shall have to post at the site of work and provide the agreed necessary and adequate technical staff for supervision and exercising adequate and constant day-to-day technical supervision over the construction including giving layout, its checking, checking requirements of materials and their procurement in time, confirming to approved specifications and accepted standards. Submission of weekly or fortnightly progress report as per the directions of the IIT Bombay, submitting recommendations of extra items including maintaining necessary site records containing data in support of the same, carrying out field test, on materials, structures, etc., and maintaining, adequate records thereof and certifying the bills for payment to the Contractors, including recommendations of extension applications, extra items, variation statements, quality control check for final bills, etc., on the forms prescribed or approved by the IIT Bombay.

6. Ensure proper establishment of field laboratories by the Contractors to conduct laboratory tests on materials for construction such as cement, steel, bricks, etc. Essential gauges, instruments etc., should be got calibrated periodically. The Consultants shall maintain necessary site records and obtain data in support of the same. He shall arrange to have field and laboratory tests carried out on materials of constructions as well as partially or completely erected structures etc., and maintain adequate records thereof. Suggesting modifications, if any, due to site conditions and advising regarding cost variations, on account of extra items and excesses. **List of Mandatory Testing of Materials** - Consultant shall ensure that those of all contractors, subcontractors and suppliers employed on the Project comply in full with these objectives and priorities and as
specified in the specifications. Report of test results to be submitted fulfilling the requirements.

7. Ensure close co-ordination with Architects and other concerned professionals appointed directly by the IIT Bombay regarding modifications in designs, if any, as also for regular and timely flow of working drawings/instructions.

8. The Consultants shall record & ensure that all observations made during the periodic visits by the Architects/Engineers about the quality of the work are attended to by the Contractors.

9. The payment shall be made by the IIT Bombay on the basis of certificates issued by the Construction Supervision Consultant.

10. Monitoring progress by using appropriate methods of control such as Computerized PERT/CPM/BARCHARTS, submission of progress reports of work executed monthly. Both financial and physical progress reports with reference to pre-fixed targets will be prepared. Constant review of progress within present time and cost parameters will have to be done. The Consultants will have to suggest improvements from time to time and it will submit monthly progress report during the work.

11. Complete administration and management of contract till handing over to IITB and payment of final dues to the Contractors.

12. Obtaining from Architect two sets of ‘As-built’ drawings for the work and the services on reproducible paper and certifying the same.

13. Obtaining from the Architect ‘Maintenance Manual’ for the buildings and all the services pertaining to the project.

14. Verification of work on completion and issue of completion and issue of completion certificate: The Consultants will prepare this certificate and furnish the same to the IIT Bombay through Architect.

15. Verification by taking and recording joint measurements of the final bill to be submitted by the contractors, preparation and finalization of final bills as per the terms and conditions of Contract agreement for release of final payments by IIT Bombay.

16. Reporting the the Qty of variations in the items likely well in advance Obtaining approval for extra, substituted and extra items before execution/payment and finalizing as per contract provisions.

17. Advising the IIT Bombay with regard to extra claims/disputes, if any and work in hand with the legal department of IIT Bombay/Legal Consultant/Advisor till the expiry of the Defects Liability period.

Signature of Authorised Signatory with Date & Seal
Construction Management consultancy DESE-CESE

18. Rendering generally as Consultant, all technical services as may in any way relate to or arise out of the construction of the said work as have been entrusted to the Consultants by the IIT Bombay.

19. The Consultants shall collect and deliver to the IIT Bombay any specific written warranties or guarantees given by others, including all required trade contractor guarantees and warranties.

20. To work as conciliator in the event of any disputes arising between the parties before the matter goes to legal forum.

21. The consultant shall be liable to client for the performance of services in accordance with the provision of this contract and for loss suffered by client as a result of default of the consultant in such performance.

22. Inspecting the completed works ready for handing over, preparing defect list and get it done and handing over the flats to IITB with all requisite documents.

23. IITB has established a number of objectives and priorities to guide Consultant and other contractors in implementation of the Project. These are set out in provisions of Contract Agreement, such as:
   - Safety in construction and operations;
   - Governing laws and regulations;
   - Completion schedule;
   - Labour regulations;

25. Review and recommend safety and labour relations procedures prepared by other contractors in line with all applicable codes, regulations and IITB requirements. Monitor safety and labour relations and take action on behalf of IITB on all problems, violations and inquiries;
Consultant shall provide following minimum skilled manpower for the project

**TECHNICAL : Key Personnel STAFF TO BE DEPLOYED**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Designation</th>
<th>Qualification</th>
<th>Minimum Experience(Years)</th>
<th>Period of deployment (months)</th>
<th>Nature of Duties &amp; Responsibilities</th>
<th>Rate of Recovery in case of non deployment @ pro rata basis</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td>During Construction period Of completion from commencement (0-30 months)</td>
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<td></td>
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<td></td>
<td></td>
<td>During Construction period Of completion from Intermittent t period to completion period -</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Post construction period after completion 4 months</td>
<td></td>
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<tr>
<td>2</td>
<td>Quantity Surveyor Billing Reporting to Project Manager</td>
<td>Degree /Diploma In Civil Engg</td>
<td>6 Years for Degree holders and 10yrs for Diploma Minimum Five yrs experience as quantity surveyor composite works more than 20 crores. With computer knowledge in MS word &amp;</td>
<td>1 (one)</td>
<td>1 (one)</td>
<td>1. Preparing Detailed measurement of work done for payment of Running/Final Bills.2. Preparation of RA bills of the work-checking-certification for payment in time. 3. Preparation of Rate analysis, Extra items/deviation items 4. Monthly checking of items of BOQ and reporting in advance for likely exceeding BOQ quantities 5. Submission of Reports &amp; Returns as specified in the contract. 6 Maintaining all Files &amp; Registers stipulated for inspection &amp; CVC</td>
</tr>
<tr>
<td>Sr. No</td>
<td>Position</td>
<td>Experience/Qualifications</td>
<td>Responsibilities</td>
<td>Location</td>
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<tr>
<td>3</td>
<td>Senior Engineer- (Civil &amp; PH) Execution/Quality Reporting to Project Manager</td>
<td>Degree/Diploma in Civil Engg 5 Years Degree holders and 10 yrs for Diploma With computer knowledge Experience as execution of composite works more than 20 crores.</td>
<td>1. Responsible for advance planning &amp; execution and quality assurance 2. Coordination with Electrical &amp; Fire fighting on Day to day basis 3. Progress Monitoring 4. Quality Assurance and Testing of materials as per specifications 5. Maintaining daily quality assurance and material activity submitting. IITB. Monthly. 6. Commissioning and handing over 8. shall be available full time at site till work being executed.</td>
<td>Rs.50,000 /- per month</td>
<td></td>
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<tr>
<td>4</td>
<td>Senior Engineer- Electrical &amp; Fire Fighting Reporting to Project Manager</td>
<td>Degree/Diploma in Elec/ 5 Years Degree holders and 10 yrs for Diploma -Experience in Internal/external electrical in composite works s more than 20 crores With computer knowledge With computer knowledge in MS word &amp; EXCEL</td>
<td>1. Responsible for planning &amp; execution all Electrical &amp; Fire fighting. 2. Coordination with civil PH works on Day to day basis. 3. Checking all schematic /shop drgs &amp; reporting &amp; coordinating with the Progress of civil works. 4. Quality Assurance and Testing of materials as per specifications. 5. Maintaining daily quality assurance and material activity submitting. IITB. Monthly. 7. Testing, commissioning and handing over 8. shall be available full time at site of work being executed.</td>
<td>Rs.50,000 /- per month</td>
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<tr>
<td>5</td>
<td>Senior Engineer- Mechanical &amp; HVAC Reporting to Project Manager</td>
<td>Degree/Diploma in Mech Engg 5 Years Degree holders and 10 yrs for Diploma -Experience in HVAC works of min 100 TR With computer knowledge With computer knowledge in MS word &amp; EXCEL</td>
<td>1. (one) from the 11th month to completion of work (for 20months) 1. (one) Responsible for planning &amp; execution HVAC, Elevator &amp; other mechanical works in coordination with civil PH Electrical works on Day to day basis, Checking all schematic /shop drgs &amp; reporting &amp; coordinating with the Progress of civil works, Quality Assurance, Testing, commissioning and handing over shall be available full time at site of work being executed /supervising</td>
<td>Rs.50,000 /- per month</td>
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<tr>
<td>6</td>
<td>a) Junior Engineer-Execution (Civil &amp; PH)</td>
<td>Diplom a In Civil Eng</td>
<td>6 Years In major civil works more than 20 crores.</td>
<td>1 (one)</td>
<td>1 (one) from 6th month till completion of work (for 24 months)</td>
<td>Nil</td>
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<tr>
<td>7</td>
<td>Junior Engineer-Execution (Electrical) Reporting to Senior Engineer - Execution (Elec &amp; FF)</td>
<td>Diplom a In Elec/Mech Engg</td>
<td>6 Years in -Experience in Internal/external electrical in composite works more than 20 crores.</td>
<td>NIL</td>
<td>1 (one) from the 11th month of commencement of work till completion of work (for 20 months)</td>
<td>Assisting all works assigned Senior Engineer Elec &amp; FF Civil and Supervision and shall be available full time at site of work being executed /supervising</td>
</tr>
<tr>
<td>7</td>
<td>Junior Engineer-Execution (Mechanical) Reporting to Senior Engineer - Execution (Mech)</td>
<td>Diplom a In Mech Engg</td>
<td>5 Years in HVAC &amp; mechanical in composite works more than 20 crores.</td>
<td>NIL</td>
<td>1 (one) from the 16th month of commencement of work till completion of work for 15 months</td>
<td>Assisting all works assigned Senior Engineer Elec &amp; FF Civil and Supervision and shall be available full time at site of work being executed /supervising</td>
</tr>
<tr>
<td>8</td>
<td>Safety &amp; Labour Welfare Officer Reporting to Project Manager</td>
<td>Degree with Certificate of Safety with labour regulations/</td>
<td>6 years in Major manufacturing/construction on unit labour strength more than 100 Nos in experience In Central/State Govt works /PSU/Autonomous body or equivalent</td>
<td>1 (one)</td>
<td>NIL</td>
<td>1 (one)</td>
</tr>
</tbody>
</table>
### Terms & Conditions

1. All Personnel mentioned above shall be available full time at site of work/office and daily attendance register shall be maintained signed to be sent to OSD IITB at 10.30 Am for counter sign. Monthly Payment Part shall be paid on submission of original attendance register.

2. Except Sundays & declared National holidays all personnel to be present for the duty and necessary arrangements shall be made in case of works being executed and shall conform to clause 11of conditions of consultancy contract.

3. In case of any persons absent continuously more than 8 days including suffix and prefix prior approval of IITB to be taken and suitable alternate arrangement of substitution shall be made failing which recovery for the absent period shall be made in their payment as per the rate mentioned against each. Recovery of the amount shown against each shall be retained till deployment in addition to non payment for the absent period and shall be released only after deploying such personnel.

4. Consultant shall submit details of the personnel along with their CV to be employed and to be enclosed along with the Technical Bid. IITB shall scrutiny and give approval after conducting personal interview as per terms and conditions.

5. In the event of consultant fails to deploy manpower mentioned here in above in Appendix B for performance of this contract, and shifting/transferring the personnel without approval of IITB shall be treated as deficiency of service and shall
be terminated as per provisions of Clause 1.2 of Information to Consultants and clause 2.7.1 of conditions of consultancy contract.

7. In the event of the construction work getting suspended or slowed down and if at the discretion of IITB it is assessed that there is a need to reduce the personnel by the agency, the same shall be complied with by the construction supervision agency and time scale payment for this period shall be proportionately reduce with mutually agreed rate.

8. TIME DEPENDENT PAYMENT (0-TO 30MONTHS)

Following payment shall be made as monthly advance payment for the personnel deployed as per Appendix B and shall be adjusted against Progress dependent payment sum become due payable.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Period of payment</th>
<th>Advance Time dependent payment paid monthly against Progress dependent payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From commencement to completion of 10th month</td>
<td>Rs.2,50,000/- (Rs. Two Lakh fifty thousand)</td>
</tr>
<tr>
<td>2</td>
<td>From 11th month to completion of 20th month</td>
<td>Rs.3,00,000/- (Rs. Three Lakh)</td>
</tr>
<tr>
<td>3</td>
<td>From 21st to completion of 10th month</td>
<td>Rs.3,50,000/- (Rs. Three Lakh fifty thousand)</td>
</tr>
</tbody>
</table>
FORMAT OF CURRICULUM VITAE (CV) OF PROPOSED KEY STAFF (to be submitted as per this format only)
(to be submitted for Project Manager, Senior Engineers and safety Officer each separately)

1. Personal details:
   1. Proposed Position (DESE-CESE) ____________________________________________________________
   2. Name:_________________________________________________________________________________
   3. Present position: _______________________________________________________________________
   4. Date of Birth: _________________________________________________________________________
   5. Years with Firm: __________
   6. Nationality: _____________________________________________
   7. Experience in similar nature of work Central/State/Semi Government /PSU (specify the organisation)
   8. Membership of professional societies: _____________________________________________________

2. Educational Qualifications:
   i. Name of Course: (Degree/Diploma):
   ii. Name of University/Board:
   iii. Year of Passing
   iv. Grade/percentage of Marks

(Photo self attested copies degree/Diploma marks sheets to be attached)
3. EXPERIENCE

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Description</th>
<th>Employer 1</th>
<th>Employer 2</th>
<th>Employer 3</th>
<th>Present Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Name of Employer</td>
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<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Period</td>
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<tr>
<td>3</td>
<td>Position Held</td>
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<tr>
<td>4</td>
<td>Value of work</td>
<td></td>
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<tr>
<td>5</td>
<td>Details Similar Nature DESE-CESE work supervised Indicate Cost of Civil, PH, Electrical, Fire fighting &amp; HVAC()</td>
<td>Enclose brief note for the each work seperately</td>
<td></td>
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</tbody>
</table>

4. Details of working Knowledge of works procedure of Central Public Works Department /PSU;

- furnish the details of the work dealt:
  I. CPWD /central/ PSU Works procedure Manual;
  II. Contract Conditions:
  III. Estimate preparation based on Schedule of Ratss;
  IV. Rate Analysis base on CPWD Rate analysis;
  V. Processing of variation statement/Deviations/Extra items/extension of time:
  VI. Inspection by the Central Vigilance commission carried out for the work executed:
  VII. List of Documents maintained; Furnish the detailed list of documents maintained
  VIII. GRIHA work executed: Furnish the list of works

(Safety /Labour Welfare Officer relevant details to be furnish Employment Record with Nature of work done.)
5. Present assignment:
Expected date of completion of present assignment, if applicable.
Languages:
(Indicate proficiency in speaking, reading and writing of each language by “excellent” “good”, “fair” or “poor”)

…………………………………………………………………………………………

6. Certificate:
I, undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications and my experience are true.

---------------------------------- Date ----------------- (Day /Month/Year)

(Signature of the Candidate)

I, undersigned, certify that to the best of my knowledge and belief, that details furnished by the candidates was verified fulfilling the requirement and as per Appendix ‘B’

Signature of Authorised representative of the firm with seal and date 

Note: CV shall be submitted as per the above format only failing which shall be treated in complete:

Signature of Authorised Signatory with Date & Seal
1.1 **Assistance and Exemptions**

The IITB shall use its best efforts to:

(a) provide the Consultant, and his Personnel with work permits, pertinent data and such other documents as shall be necessary to enable the Consultant, and his Personnel to perform the Services;

(b) issue to officials, agents and representatives of the IITB all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services;

(c) give decisions on all matters laid before the IITB by the Consultant in such a reasonable time as not to delay the work of the Consultant.

1.2 **Payment**

In consideration of the Services performed by the Consultant under this Contract, the IITB shall make to the Consultant such payments and in such manner as is provided by Milestones of deliverables for Payments and as per provisions and compliance of Appendix 'B'.

Service tax will be paid by IITB as / if applicable.

2. **PAYMENTS TO THE CONSULTANT**

2.1 **Fees:**

The fees for the Services payable is set forth in the Financial Bid.

2.2 **Mode of Billing & Payment**

Billing and payments in respect of the Services shall be made as follows:

(a) The payment to the Consultant will be made periodically as per the schedule of payment agreed upon in Section II-B Milestones for payment of Consultancy Charges and IIC Effecting Payment to Consultant. Consultant shall submit his periodical bill in triplicate along with supporting documents. IITB shall cause the payment to the Consultant to the amount indicated in the bill within thirty (30) days of receipt of the bill.

(b) The final bill of the consultant under this Contract shall be raised only after the final report and a final statement identified as such, shall have been submitted by the Project Architect and consultant has completed verification of the final bill of contractor and the same is approved as satisfactory by the IITB. IITB shall cause the payment to the Consultant to the amount indicated in the bill within thirty (30) days of receipt of the bill.
Appendix – D

Documents to be maintained at the site office for Inspection.

1. a) Press cuttings (including extended dates, if any) for pre-qualification of Architects/Consultants, for Pre-qualification of Contractors, for Call of tenders.
   — b) Register of sale of tenders
   — c) Register of opening of tenders.

2. File giving reference to Financial Sanction and approval of competent administrative authority—Preliminary estimate.

3. Copy of detailed estimate and its Technical Sanction by competent technical authority.

4. Approval of NIT (Notice inviting tenders) in original

5. Rejected tenders and comparative statements for:
   — a) Selection of architects/Consultants
   — b) Short listing or pre-qualification of tenders.
   — c) Other tenders.

6. Justification statement and corresponding nothings in support of tenders/offer accepted.

7. Details of negotiations, if any, made before acceptance of tenders.

8. Original contract with consultant / contractor.

9. Guarantee Bond etc. towards security for work, machinery/ mobilization advance etc. including extension of validity.

10. Insurance policies for work, materials equipment, men etc. including extension of validity.

11. Guarantee for water tightness, termite proofing etc.


15. All connected measurement book, level books field books and lead charts.

16. All running account bills with all connected statements / vouchers.

17. Statements showing details of check of measurements by superior officers—copies of order laying down such requirements.

18. Materials at site accounts/cement, steel, bitumen, paints, water proofing compound, pig lead, anti termite chemical etc.

19. Stage Passing Register, Site order book, test records/ log books, working out Standard

Signature of Authorised Signatory with Date & Seal
Deviation

20. Details of extra / substituted items and of deviated quantities being executed / considered for execution in the work along with analysis of rates.


22. Office, correspondence files and inspection note, if any, issued by inspection officer.

24. Any other documents relevant the works.

25. The following details will form part of contract that will be submitted by Consultants:

A: Daily in soft copy (to be submitted immediate next day)
   a. Daily Labour report employed by contractor and the activities of work
   b. Daily Safety report of the labour employed

B. Weekly: (to be submitted after immediate next day of the PRM)
   a) Progress Review meeting Minutes (both soft/Hard copy)

B: Fortnightly: (To be submitted in Hard copy on 17th and 2nd of the month)
   i. Receipt of Drgs
   ii. Approval of Construction/Service materials
   iii. Site Hindrance
   iv. Statement of payment of wages to contract labour (Ref General conditions of contract)
   v. Status of GRIHA compilation

C. MONTHLY (hard copy to be submitted every 7th of the month)
   A: Monthly Progress report Shall consist of
   i) Details of Project
   ii) Project Report a) Physical during the period B) Financial during the period c) Details payment made
   iii) Milestone achievements.
   iv) Hindrance
   v) Cost control & Planning a) Variation approved /proposed b) Extra/Subsitute/Deviation items
   vi) RA Bill/Mobilisation/Secured Advance details:
   vii) Quality Assurance/Safety measure a) Tests results during month) b) mandatory test carried out, sample/agency approved
   viii) Status of drgs
   ix) Labour Welfare
   x) Safety Measures at site
   xi) Manpower deployed
   xii) Site Inspection
   xiii) GRIHA POINTS
   xiv) IMPORTANT POINT’S AFFECTIONG PROGRESS AND ACTION TAKEN
Construction Management consultancy DESE-CESE

xv) Misc Points a) PRM Minutes, b) excavated Hardrock statement

B: CVC documents & Registers to be submitted to IITB for countersignature. & monthly report for maintenance & updating of documents.

Specimen Formats

A] Details of payments to be enclosed in Monthly report):

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>CR.No</th>
<th>Account payable</th>
<th>Total</th>
<th>Cheque</th>
<th>Details of disbursemen and recoveries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On A/c Adv. Payme Secure Mobилиzation I.Tax Cost of</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ce</td>
</tr>
</tbody>
</table>

Name: Signature:

B] Cement consumption statement (to be enclosed each RA Bill)

Last date of measurement Theoretically required Actually consumed Recovered Remarks

Name: Signature:

C] Steel consumption statement in proforma to be enclosed each RA Bill)

<table>
<thead>
<tr>
<th>Tor Steel</th>
<th>Dia in mm</th>
<th>Qty procured</th>
<th>Qty measured for payment</th>
<th>Qty balance at site</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>10</td>
<td>12</td>
<td>16</td>
<td>20</td>
</tr>
</tbody>
</table>

Note: If mild steel, structural steel is used, information may be furnished in similar fashion for various sections

Name: Signature:

D] Statement of Tests of Materials (Register and report to be maintained at site duly countersigned by Project Manager /IITB)

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Material</th>
<th>Qty used in the description of ncy of</th>
<th>No. of tests</th>
<th>Lab where er lab of test</th>
<th>If failed Recovery</th>
</tr>
</thead>
</table>

Signature of Authorised Signatory with Date & Seal
Construction Management consultancy DESE-CESE

work test as test as tests approving Pass/ action proposed
during per per conducted ed failed taken for shortfall/
the BIS/ BIS/ ed govt. failed failed
day BIS/ agreement agreement

Reqd Conducted

E) Key Personnel provided during month for the project

<table>
<thead>
<tr>
<th>Description of Job</th>
<th>Qualification &amp; Experience</th>
<th>No of Personnel to be Deployed as per Contract during the month</th>
<th>No of Personnel actually Deployed during the month</th>
<th>If less whether Recovery effected as per CC</th>
<th>Remarks</th>
</tr>
</thead>
</table>

Name: 
Signature:

F) Variation in Workorder qty

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>W.O Item No</th>
<th>Brief Description</th>
<th>Unit</th>
<th>W.O Qty</th>
<th>Executed qty upto date</th>
<th>% of variation</th>
<th>Reason</th>
<th>Action Taken</th>
</tr>
</thead>
</table>

G) SAFETY REPORT

<table>
<thead>
<tr>
<th>Description of Activity</th>
<th>Type of Safety preventive measures to be compiled</th>
<th>Type of Safety measures complied by contractor</th>
<th>Whether any lapses observed during the period &amp; Measures taken by the Contractor</th>
<th>Action taken for non compliance</th>
<th>Any Accident reported during the period &amp; action taken</th>
<th>Remarks</th>
</tr>
</thead>
</table>

Name: 
Signature of Safety Officer of Contacter

Name: 
Signature of Safety Officer of PMC

Name: 
Signature of Project Manager

Signature of Authorised Signatory with Date & Seal
H) LABOUR WELFARE

1. Report for the protection of health and sanitary arrangements for workers employed as per Model Rules of General Conditions.
2. Certificate of payment of wages as per Contract labor Regulations of General Conditions

Other formats as per requirement and procedure followed by IITB
SECTION – II
FINANCIAL BID

II - A: Financial Bid

II – B: Milestone for Payment of Consultancy Charges

II – C: Effecting payment

II – D: Reimbursable Expenses
## II – A: FINANCIAL BID

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item Description</th>
<th>unit</th>
<th>Percentage quoted) Over estimated cost of Rs. 73.18 Crores</th>
<th>Amount quoted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PROGRESS DEPENDENT PAYMENT</td>
<td></td>
<td>% (Percentage of actual cost done)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fees payable for Providing Construction Management &amp; Construction Supervision Services for Construction of common building for Department of Energy Science and Engineering (DESE) &amp; Centre for Environmental Science and Engineering (CESE) consisting of Civil, Public Health, Electrical works, Fire fighting, HVAC External Development as per scope of work enumerated in Technical Conditions &amp; Personnel employed as per Appendix B</td>
<td></td>
<td>In words (……….………… point……….</td>
<td></td>
</tr>
<tr>
<td>Note:</td>
<td>The amount payable will be restricted to the percentage of the actual cost executed thorough contract as per the certified bills of the contractor/s as given in the milestones for payment in (II-B).</td>
<td></td>
<td>In words (……….………… point……….</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

**TIME DEPENDENT PAYMENT - CONSTRUCTION STAGE**

As per Sl.No 8 of Terms & Conditions of Appendix B - conditions of consultancy

<table>
<thead>
<tr>
<th>Total amount</th>
</tr>
</thead>
</table>

Signature ____________________________

(Authorized Signatory of Consultants)

Full Name ____________________________

Designation ____________________________

Signature of Authorised Signatory with Date & Seal
## II – B: MILE STONES FOR PAYMENT OF CONSULTANCY CHARGES

The Consultant shall be paid professional fee in the following stages consistent with the work done:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Activity</th>
<th>Fees Payable</th>
</tr>
</thead>
</table>
| 1     | TIME DEPENDENT PAYMENT - CONSTRUCTION STAGE | Advance against Progress dependent payment  
  a) Stage 1- From commencement to 10 month Rs.2,50,000/-  
  b) Stage 2 From 11th to 20 month sRs.3,00,000/-  
  c) Stage 3 From 21st to 30 month sRs.3,50,000/-  |
| 2     | TIME DEPENDENT PAYMENT - AFTER DATE OF COMPLETION | No monthly payment shall be paid.  |
| 3     | PROGRESS DEPENDENT PAYMENT - | 95% x Percentage rate for fees accepted consultancy tender x Progress for the month valued as per IITB certified bills minus recovery of monthly payment made as advance payment.  |

**Final Stage:** Handingover & verification of the final bill of construction work and submission of the final report and a final statement by the Project Architect and the same being approved as satisfactory by the IITB.

### Fees Payable:
The balance 5% fees and the performance guarantee will be released on obtaining Architects certification for finalization of contractors final bill.

## II – C: EFFECTING PAYMENT TO THE CONSULTANT:

IIT Bombay shall make progressive on account payments to the Consultant against the stages based on the quantum of work done during that stage and time period, as may be mutually agreed.
Non deployment of key personnel as per Appendix B shall be dealt as per the provisions of Clause 1.2 of Information to Consultants and Clause 2.7.1 conditions of Consultancy contract.

The actual cost of the completed works shall include cost of execution of assigned works, referred to in Scope of Work and also the cost of equipment & machinery such as Transformers, DG Sets, Sub-stations, Lifts, Air Conditioning Machines, Pumps & Motors, etc., but excluding the cost of land.

Payment shall be released only after achieving defined deliverables. Payment will be released upon completion of the ‘activity/sub-activity’. An activity/sub-activity will be considered ‘complete’ when the same is checked, reviewed, and accepted / approved by the competent authority.

II – D: REIMBURSABLE EXPENSES:

1. Cost of travelling for inspection of equipments/goods on instructions from IITB and pre-approved by IITB.
SAFETY GUIDE FOR WORKS CONTRACT
executed through consultancy contract.

1. INTRODUCTION
Many of the works of Indian Institute of Technology Bombay (IITB) at its various sites are executed by the contractors. During these works, contractors personnel are likely to the exposed to different types of hazards. Similarly, unsafe acts of contractors personnel may generate hazards for Departmental staff and/or workmen of other contractors working at the site. Such unsafe acts may also pose danger to the existing installations and even to members of public. This guide is prepared to facilitate safe working during execution of contract works. IITB issued this guide as a part of consultancy contract documents while awarding contracts.

2. GENERAL SAFETY PROVISIONS
The Contractor shall take all safety precautions during the execution of awarded work and shall maintain and leave the site safe at all times. At the end of each working day and at all times when the work is temporarily suspended, he shall ensure that all materials, equipment and facilities will not, cause damage to existing property, personal injury or interfere with the other works of the project or Station. The contractor shall comply with all applicable provisions of the safety regulations, clean up programme and other measures that are in force at the site.

The Contractor shall provide and maintain all lights, guards, fencing, warning signs, caution boards and other safety measures and provide for vigilance as and where necessary or as required by the Engineer-in-charge or by any duly constituted authority for the protection of workers or for the safety of others. The caution boards shall also have appropriate symbols.

Adequate lighting facilities such as flood lights, hand lights and area lighting shall be provided by the Contractor at the site of work, storage area of materials and equipment and temporary access roads within his working area.

The contractor shall obtain written approval of the Engineer-in-charge to the lighting scheme and place of tapping prior to its installation.

The contractor shall plan his operations so as to avoid interference with the other Departmental works, other contractors or Sub-Contractors at the site. In case of any interference, necessary coordination shall be sought by the contractor from the Department for safe and smooth working.

The Contractor and his sub-contractor, if any shall comply with the instructions given by the Safety Engineer or his authorized nominee regarding safety precautions, protective measures, house keeping requirements, etc. The Safety Engineer with due intimation to Engineer-in-Charge shall have the right to stop the work of the Contractor, if in his opinion proceeding with the work will lead to an unsafe and dangerous condition. Engineer-in-Charge shall get the unsafe condition removed or provide protective equipment at the contractors cost. The contractor can

Signature of Authorised Signatory with Date & Seal
employ his own safety Engineer or nominate one of his officers for liaison with Departmental Safety Engineer for ensuring compliance of all safety rules. Contractor shall ensure that all his workmen are aware about the nature of risk involved in their work and have adequate training for carrying out their work safely.

The contractor shall be held responsible for non-compliance of any of the safety measures and delays, implications, injuries, fatalities and compensation arising out of such situations of incidents.

3. TRAFFIC

The contractor shall conduct his operations so as to interfere as little as possible with the use of existing roads at or near locations where the work is being performed.

When interference to traffic is inevitable, notice of such interference shall be given to the Engineer-in-charge well in advance (at least 48 hours) with the details of start of the work and time required, storage of materials, and details of the proposed methods of providing the required facilities for safe and continuous use of roads and obtain his clearance.

The contractor shall, at his own expense, make such approved temporary provisions as are required to maintain at least one lane of traffic by bridging the excavation, providing ramps over surface obstructions or providing suitable temporary bye-pass around the obstructions. The Contractor shall exercise full care to ensure that no damage is caused by him or his workmen, during the operation, to the existing water supply, sewerages, power or telecommunication lines or any other services or works. The contractor shall be required to provide and erect before construction, substantial barricades, guard-rails, and warning signs. He shall furnish, place and maintain adequate warning lights, signals, etc., as required by Engineer-in-charge.

4. SAFE MEANS OF ACCESS

Adequate and safe means of access and exit shall be provided for all work places, at all elevations. Using of scaffolding members (avoiding a ladder) for approach to high elevations shall not be permitted.

STEEL SCAFFOLDINGS CONFORMING TO IS : 2750 – (LATEST REVISION) shall be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except for such short duration work as can be done safely from ladders. Ladder shall be of rigid construction having sufficient strength for the intended loads and made either of good quality wood or metal and all ladders shall be maintained well for safe working condition. An extra mazdoor shall be engaged for holding the ladder if ladder is not securely fixed. If the ladder is used for carrying materials as well, suitable foot holds and hand holds shall be provided on the ladder. The ladder shall be given an inclination not steeper than 1 in 4 (1 horizontal and 4 vertical). Ladders shall not be used for climbing carrying materials in hands. While climbing both the hands shall be free.

Scaffolding or staging more than 3.5m above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a standard guard rail properly attached, bolted, braced or otherwise secured at least 1.0m high above the floor or platform of such scaffolding or staging. The guard rail shall extend along the entire exposed length of the scaffolding with only such opening as may be
necessary for the delivery of materials. Standard railing shall have posts not more than 2m apart and an intermediate rail halfway between the floor or platform of the scaffolding and the top rail. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure. Scaffolding and ladder shall conform to relevant IS specification (IS:3696-1966). Timber/Bamboo scaffolding shall not be used.

Working platforms of scaffolds shall have toe boards at least 15cm in height to prevent materials from falling down.

A sketch of the scaffolding proposed to be used shall be prepared and approval of the Engineer-in-Charge obtained prior to start of erection of scaffolding. All scaffolds shall be examined by Engineer-In-Charge before use.

Working platform, gangways and stairways shall be so constructed that they shall not sag unduly or unequally and if the height of the platform or gangway or stairway is more than 3.5m above ground level or floor level, they shall be closely boarded, shall have adequate width for easy movement of persons and materials and shall be suitably guarded as described in 3.3 above.

The Planks used for working platform shall not project beyond the end supports to a distance exceeding four times the thickness of the planks used. The planks shall be rigidly tied at both ends to prevent sliding and slippage. The thickness of the planks shall be adequate to take load of men and materials and shall not collapse.

Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing, the minimum height of which shall be 1.0m, along with 15 cm high sheet obstruction at floor level along the railing.

Safe means of access shall be provided to all working platforms and other elevated working places. Every ladder shall be securely fixed. No single portable ladder shall be over 9m in length. For ladders upto 3m in length the width between side rails in the ladder shall in no case be less than 300mm. For longer ladders this width shall be increased by at least 20mm for each additional metre of length. Step spacing shall be uniform and shall not exceed 300 mm.

Adequate precautions shall be taken to prevent danger from electrical lines and equipment. No scaffolding, ladder, working platform, gangway runs, etc. shall exist within 3 metres of any uninsulated electric wire. Whenever electric power and lighting cables are required to run through, (pass on) the scaffolding or electrical equipments are used, such scaffolding structures shall have minimum two earth connections with earth continuity conforming to IS code of practice.

5. EXCAVATION, TRENCHING AND EARTH REMOVAL

All Trenches 1.2 m or more in depth shall at all times be supplied with at least one ladder for each spacing of 30m in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 1m above the surface of the ground.

The sides of the trench which are 1.2m or more in depth shall be stepped back to give suitable slope (angle of repose) or securely held by timber bracing, so as to avoid the danger of sides from collapsing. The excavated material shall not be placed within 1.5m of the edges of the trench or half of the depth of the trench, whichever is more.
Cutting shall be done from top to bottom. Under no circumstances mining or under-cutting shall be done.

The Contractor shall ensure the stability and safety of the excavation, adjacent structures, services and the works.

Open excavations shall be fenced off by suitable railings and warning signals installed at night at well lit places so as to prevent persons slipping or falling into the excavations.

All works in this connection shall be carried out as per IS code of Practice. Barricades, Warning Signs etc. shall be placed on the roads/open area. Prior approval of such operation shall be obtained from Safety Engineer Engineer-In-Charge of works.

a) For removal of earth from an earth mound a written permission shall be obtained from the Engineer- In-Charge of the work and the Engineer-In-Charge of the earth mound.
b) As far as practical, earth shall be removed mechanically.
c) Wherever manual removal of earth is involved, earth shall be removed from the top by maintaining the proper slope equal to the angle of re- pose of the earth.
d) Such work shall be constantly supervised by the contractor’s responsible person and frequently inspected by the departmental representative to ensure that no under-cutting is done.

6. CONCRETING

Shuttering and supporting structures shall be of adequate strength and approved by Engineer-in-Charge. This shall be ensured before concrete is poured.

The procedure approved by Engineer-in-Charge shall be followed for mixing, transporting and pouring of concrete.

7. DEMOLITION

Before any demolition work is commenced and also during the progress of the work:

a) All roads and open area adjacent to the work site shall either be closed or suitably protected. Appropriate warning signs shall be displayed for cautioning approaching persons.
b) Before demolition operations begin, the Contractor shall ensure that the power on all electric service lines is shut off and the lines cut or disconnected at or outside the demolition site. If it is necessary to maintain electric power during demolition operation, the required service lines shall be adequately protected against damage. Persons handling heavy materials/equipments shall wear safety shoes.
c) No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.
d) Entries to the demolition area shall be restricted to authorized persons only.
8. PERSONAL PROTECTIVE EQUIPMENT:

All necessary personal protective equipment as considered necessary by the Engineer-in-charge shall be kept available by contractor for the use of the persons employed on the site and maintained in a condition suitable for immediate use. Also the contractor shall take adequate steps to ensure proper use of equipment by those concerned. The personal protective equipments are to be provided by the contractor.

a) All persons employed at the construction site shall use safety helmets.
   For other types of works, persons working in that area shall also use safety helmets, if advised by safety Engineer/Engineer-in-charge.

b) Workers employed on mixing asphaltic materials, cement and lime mortars shall use protective goggles, protective foot wear and hand gloves.
   Use of proper respirators shall be an advantage.

c) Persons engaged in welding and gas cutting works shall use suitable welding face shields. The persons who assist the welders shall use suitable goggles. Protective goggles shall be worn while chipping and grinding.

d) Stone breakers shall use protective goggles. They shall be seated at sufficiently safe intervals of distance.

   e) Persons engaged in or assisting in shot blasting operations and cleaning the blasting chamber shall use suitable gauntlets, overalls, dust-proof goggles, boots and protective hood supplied with fresh air at the minimum rate of 9 m³/hr.

f) All persons working at heights more than 4.5m above ground or floor and exposed to risk of falling down shall use safety belts, unless otherwise protected by cages, guard railings, etc. In places where the use of safety belts is impractical, suitable net of adequate strength fastened to substantial supports shall be employed.

g) All powered two-wheeler motorcycle and scooter drivers and their pillion riders shall wear crash helmets inside the project/plant sites.

h) When workers are employed in sewers and inside manholes which are in use, the contractor shall ensure that the man-holes are opened and are adequately ventilated at least for an hour. After it has been well-ventilated, the atmosphere inside the space shall be checked for the presence of any toxic gas or oxygen deficiency and recorded in the get register before the workers are allowed to into the man-holes. The man-holes opened shall be cordoned off with suitable railing and provided with warning signals or caution boards to prevent accidents. There shall be proper illumination in the night.

9. PAINTING

The Contractor shall not employ women on the work of painting with products containing lead in any form. Only men above the age of 18 years shall be employed on the work with lead paint. The following precautions shall be taken during the work.

☑️ Supplied air respirators shall be provided for use by the workers when paint is applied in the form of spray, or a surface having lead paint is dry rubbed.
or scraped.

- Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the painters to wash at the cessation of work.

- All painting jobs, especially those in which lead paints are used shall be kept under industrial hygiene surveillance.

- Smoking, open flames or sources of ignition shall not be allowed in places where paints and other flammable substances are stored, mixed or used.

  A caution board, with the instructions written in national/regional language, “SMOKING IS STRICTLY PROHIBITED” shall be displayed in the vicinity where painting is in progress or where paints are stored. Symbols shall also be used for caution boards.

- Suitable fire extinguishers/sand buckets shall be kept available at places where flammable paints are stored, handled or used.

- When painting work is done in a closed room or in a confirmed space, adequate ventilation shall be provided. If adequate ventilation cannot be provided, workers shall wear suitable respirators.

- Epoxy resins and their formulations used for painting shall not be allowed to come in contact with the skin. The workers shall use plastic gloves and/or suitable barrier creams.

- Adequate ventilation shall be provided especially when working with hot resin mixes.

- Increased personal hygiene shall be practiced to control inadvertent contract with the resin and eliminate its effects.

- Workers shall thoroughly wash hands and feet before leaving the work. Work clothes be changed and laundered frequently.

10. LIFTING MACHINES AND TACKLES

Use of lifting machines and tackles including their attachments, anchorage and supports shall conform to the following standards or conditions.

a) Lifting machines and tackles shall be of good mechanical construction, sound material and adequate strength and free from any defects and shall be kept in good repair and in good working order. Every rope used in hoisting or lowering materials or as a means of suspension shall be of good quality and adequate strength and free from any defect.

b) Every crane operator or lifting appliance operator shall be properly qualified.

No person under the age of 21 years shall be in charge of any hoisting machine or give signal to operator of such machine.

- In case of every lifting machine (and of every chain, ring, hook, shackle, swivel and pulley block used in hoisting or as means suspension) the safe working load shall be ascertained and clearly marked. In case of a lifting machine having a variable safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working
load except for the purpose of testing. This shall be approved by the Safety Engineer.

d) In case of departmental machines, the safe working load shall be notified by the Engineer-in-charge. As regards Contractor’s machines, the contractor 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 Engineer-in-charge, supported by a valid test certificate by the competent person.

e) Thorough inspection and load testing of lifting machines and tackles shall be done by a competent person at least once every 12 months and records of such inspection and testing shall be maintained.

Motors, gearing transmission, couplings, belts, chain drives and other moving parts of hoisting appliances shall be provided with adequate safeguards. Hoisting appliances shall be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced or lowered.

11. WELDING AND GAS CUTTING

Welding and gas cutting operations shall be done only by qualified and authorized persons and as per IS Specifications and code of Practice.

Welding and gas cutting shall not be carried out in places where flammable or combustible materials are kept and where there is danger of explosion due to presence of gaseous mixtures.

Welding and gas cutting equipment including hoses and cables shall be maintained in good condition.

Barriers shall be erected to protect other persons from harmful rays from the work. When welding or gas cutting is done in elevated positions, precautions shall be taken to prevent sparks or hot metal falling on persons or flammable materials.

Suitable type of protective clothing consisting of fire resistant gauntlet gloves, leggings, boots and aprons shall be provided to workers as protection from heat and hot metal splashes. Welding shields with filter glasses of appropriate shade shall be worn as face protection.

Adequate ventilation shall be provided while welding in confined space or while brazing, cutting or welding zinc, brass, bronze, galvanized or lead coated materials.

Welding and gas cutting shall not be done on drums, barrels, tanks or other containers unless they have been emptied, cleaned thoroughly and it is made certain that no flammable material is present.

Fire extinguisher shall be available near the location of welding operations. Fire safety permit shall be obtained for working at volatilizable areas and operating areas before flame cutting/welding is taken up. For electric (Arc) welding the following additional safety precautions shall be taken:

1) When electrical welding is undertaken near pipe lines carrying
flamables, such pipe lines shall not be used as part of earth conductor but a separate earth conductor shall be connected to the machine directly from the job.

II) Personnel contact with the electrode or other live parts of electric welding equipment shall be avoided.

III) Extreme caution shall be exercised to prevent accidental contact of electrodes with ground.

IV) The welding cables shall not be allowed to get entangled with power cables. It shall be ensured that the cables are not damaged by movement of materials.

12. GRINDING:

All portable grinders shall be used only with their wheel guards in position to reduce the danger from flying fragments should the wheel break during the use.

Grinding wheels of specified diameter only shall be used on a grinder-portable or pedestal-in order not to exceed the prescribed peripheral speed.

Goggles shall be used during grinding operation.

13. ELECTRICITY

Guide lines for providing temporary power supply at the site and general safety procedures for using electricity are given in the enclosed Annexure.

14. HOUSE KEEPING

The contractor shall at all times keep his work spot, site office and surroundings clean and tidy from rubbish, scrap, surplus materials and unwanted tools and equipment.

Welding and other electrical cables shall be so routed as to allow safe traffic by all concerned.

No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The Engineer-in-charge may require the contractor to remove any materials which are considered to be of danger or cause inconvenience to the public. If necessary, the Engineer-in-charge may cause them to be removed at the contractor’s cost.

At the completion of the work, the Contractor shall have removed from the work premises all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements used/installed for his workmen on the site.

The Engineer-in-charge has the right to stop work if the Contractor fails to improve upon the housekeeping after having been notified.

15. FIRE SAFETY

All necessary precautions shall be taken to prevent outbreak of fires at the construction site. Adequate provisions shall be made to extinguish fires should they still break out.

a) Quantities of combustible materials like timber, bamboos, coal, paints, etc., shall be the minimum required in order to avoid unnecessary accumulation of combustibles at site.
b) Containers of paints, thinners and allied materials shall be stored in a separate room which shall be well ventilated and free from excessive heat, sparks, flame or direct rays of the sun. The containers of paint shall be kept covered or properly fitted with lid and shall not be kept open except while using.

c) Fire extinguishers as approved by the Engineer-in-charge shall be located at the construction site at appropriate places.

d) Adequate number of contract workmen shall be given education and training in fire fighting and extinguishing methods.

16. SAFETY WORK PERMIT

In order to ensure safety of work for hazardous operation (such as entry into confined spaces, welding/cutting on equipment/pipes where explosion hazard is present, works on high voltage and main medium voltage lines, blasting etc.,)

Special Safety work permits (SWP) shall be raised. The SWP’s shall also to be obtained for any other work as recommended by Safety Engineer.

The Contractor shall strictly ensure all the safety conditions and requirements stipulated in the Safety work permit. The decision of the Safety Engineer shall be final in this regard.

17. WORK IN RADIATION AREA

The contractor shall follow the stipulated procedure regarding work in the radiation area and other works related with radiography.

18. WORK IN AND AROUND WATER BODIES

When the work is done near any place where there is risk of drowning, all necessary rescue equipment such as life buoys and life jackets shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision shall be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work.

Persons who do not know swimming shall not be engaged alone for any work where risk of drowning exists. Sufficient number of life buoys or life jackets shall be provided.

19. MEDICAL FACILITIES

The contractor shall arrange adequate facilities for medical aid and treatment for his staff and workers engaged on the work site including the first-aid facilities if they are not available at the project site.

First-aid appliances including sterilized dressing, cotton wool and antiseptic cream shall be made available at a readily accessible places at every work site. These shall be maintained in good order under the charge of a responsible person.

At large work places where hospital facilities are not available within easy reach of the works, first-aid posts shall be established and be manned by a trained compounder. An ambulance shall be available during the entire period of work for attending to injury cases.
20. SAFETY OFFICER/SAFETY COORDINATOR

The contractor shall have a Safety Officer or a supervisor to be designated as a Safety Coordinator in order to specifically look into the implementation of different safety requirements of the contract work. The person thus designated will in general co-ordinate with the Engineer-in-charge on matters of safety and in particular ensure that the Safety Guide is complied with fully. His name shall be displayed on the Notice Board at a prominent place at the work site.

21. REPORTING OF ACCIDENT

All accidents leading to property damage and/or personnel injuries shall be reported to the Engineer-in-charge immediately who shall inform IITB- to be followed up with detailed accident reports in prescribed form. Contractor shall also submit a monthly statement of accidents to Engineer-in-charge by 4th of every month showing details of accident, nature of injury including disability, days lost, treatment required, etc., and the extent of property damage.

22. PUBLIC PROTECTION

The Contractor shall make all necessary provisions to protect the public. He shall be bound to bear the expenses for defence of every action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of any precaution required to be taken to protect the public. He shall pay any damage and cost which may be awarded in any such suit, action or proceeding to any such person, or the amount which may be fixed as a compromise by any such person.

23. OTHER STATUTORY PROVISIONS

Notwithstanding the above clauses from 1 to 21 there is nothing in these to exempt the Contractor from the provisions of any other Act or Rules in force in the Republic of India. In particular all operations involving the transport, handling, storage and use of explosives shall be as per the standing instructions and conform with the Indian Explosives Act, 1884 and the explosive Rules, 1983. Handling, transport, storage and use of compressed gas cylinders and pressure vessels shall conform with the Gas Cylinder Rules 1981 and Static and Mobile Pressure Vessels (Unfired) Rules 1981. In addition, The Indian Electricity act 1910 and Indian Electricity Rules 1956, and various rules and Act related to mining shall also be strictly complied with.

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GUIDELINES AND GENERAL PROCEDURES FOR SUPPLY AND USE OF ELECTRICITY AT SITE

1. GENERAL
Following safety requirements shall be complied with before the contractor uses the power supply.

1.1 The Contractor shall submit a list of licenced electrical staff to be posted at site.

1.2 It shall be the responsibility of the Contractor to provide and maintain complete installation on the load side of the supply point with regard to the safety requirements at site. All cabling and installation shall comply with the appropriate statutory requirements given below and shall be subject to approval of the Departmental Engineer-in-charge/Electrical Engineer.

   a) Indian Electricity Act, 1910.
   e) Other relevant rules of Local Bodies and Electricity Boards.

After installation of the electrical power wiring works by the contractor, form of completion certificate as per IS:732 (Form SGCW-1) shall be submitted by the contractor duly signed by the authorized valid licenced electrical contractor and/or supervisor along with one copy of the contractor’s license and/or competency certificate of supervisor issued by the Electricity Board/Government Electricity Organisations as per the enclosure.

The power supply shall be regulated as per the terms and conditions of the supply of the respective electricity boards.

1.3 (a) For purposes of electrical load and power planning by the electrical section, the contractor shall furnish along with the tender, the estimated load requirement of electric power for the execution of the contract works in terms of maximum Kilo Watt or KVA demand during various periods/months of the contract period along with the details of the construction electrical equipment/machinery with their individual load details and location/locations of power supply required for availing temporary electric power supply in the standard proforma enclosed (form SGCW -2).

   (b) The electric power supply will be generally made available at one point in the works site of the Contractor by the department.

   (c) Where distribution boards are located at different places the Contractor shall submit schematic drawing indicating all details like size of wires, Over Head or cable feeders, earthing etc., The position and location of all equipments and switches shall be given.

1.4 The Contractor shall make his own arrangements for main earth electrode and tappings
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thereof. The existing earth points available at site can be used at the discretion of the Departmental Electrical Engineer with prior permission. Method of earthing, installation and earth testing results shall conform to relevant I.S. Specifications (IS-3043).

1.5 All three phase equipment shall be provided with double earthing. All light fixtures and portable equipment shall be effectively earthed to main earthing.

1.6 All earth terminals shall be visible. No gas pipes and water pipes shall be used for earth connection. Neutral conductor shall not be treated as earth wire.

1.7 The Contractor shall not connect any additional load without prior permission of Departmental Electrical Engineer. For obtaining additional power required, test reports of the tests mentioned in (d) of Form SGCW-1 shall be submitted.

1.8 Joints in earthing conductors shall be avoided. Loop earthing of equipment shall not be allowed. However tappings from an earth bus may be done.

1.9 The entire installation shall be subjected to the following tests before energisation of installation including portable equipment.

   a) Insulation resistance test. b) Polarity test of switches. c) Earth continuity test. d) Earth electrode resistance.

The test procedures and their results shall conform to relevant IS Specifications. The contractor shall submit a test report for his complete installation every 2 months or after rectifying any faulty section in the specimen test report. One such test report for the complete installation shall be submitted before onset of monsoon.

2. The following are provided for general guidance of the Contractor and shall be read as specific requirement, in addition to complying with Indian Electricity Act, Indian Electricity Rules and IS Specifications.

2.1 Installation

   a) Only persons having valid wireman’s licence/competency certificate shall be employed for carrying out electrical work and repair of electrical equipment, installation and maintenance at site. The job shall be supervised by a qualified licenced Supervisor.

   b) Electrical equipment and installations shall be installed and maintained as to prevent danger from contact with live conductors and to prevent fires originating from electrical causes like short circuits, overheating etc. Installation shall not cause any hindrance to movement of men and materials.

   c) Materials for all electrical equipment shall be selected with regard to working voltage,
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load and working environment. Such equipment shall conform to the relevant standards.

d) The minimum clearance to be maintained for all overhead lines along roads and across roads shall be as per the statutory requirements as listed in clause 1.2 of Annexure.

e) Grounding conductor of wiring system shall be of copper or other corrosion-resistant material. An extra grounding connection shall be made in appliances/equipment where chances of electric shock is high.

f) Electric fuses and/or circuit breakers installed in equipment circuits for short circuit protection shall be of proper rating. It is also recommended that high rupturing capacity (HRC) fuses be used in all circuits. For load of 5 KW or more earth leakage circuit breaker shall be provided in the circuits.

g) Wherever cables or wires are laid on poles, a guard wire of adequate size shall be run along the cables/wires and earthed effectively. Metallic poles as a general rule shall be avoided and if used shall be earthed individually. Anticlimbing guards and danger notices shall be provided on poles. Each equipment shall have individual isolating switches.

h) Wires and cables shall be properly supported and an approved method of fixing shall be adopted. Loose hanging of wires & cables shall be avoided. Lighting and power circuits shall be kept distinct and separate.

i) Reinforcement rods or any metallic part of structure shall not be used for supporting wires and cables, fixtures, equipment, earthing etc.

j) All cables and wires shall be adequately protected mechanically against damages. In case the cable is required to be laid under ground, it shall be adequately protected by covering the same with bricks. Plain cement Concrete (PCC) tile or any other approved means.

k) All armoured cables shall be properly terminated by using suitable cable glands. Multistranded conductor cables shall be connected by using cable lugs/sockets. Cable lugs shall preferably be crimped. They shall be of proper size and shall correspond to the current rating and size of the cable. Twisted connections will not be allowed.

l) All cable glands, armouring and sheathing of electric cables, metal circuits and their fittings, metallic fittings and other non-current carrying parts of electrical equipment and apparatus shall be effectively grounded.

m) All the Distribution Boards, Switch Fuse units, Bus bar chambers, ducts, cubicles etc. shall have MS enclosures and shall be dust, vermin and water proof. The Distribution Boards, switches etc. shall be so fixed that they shall be easily accessible. Changes shall be done only after the approval of the Departmental Electrical Engineer.

n) The contractor shall provide proper enclosures/covers of approved size and shape for protection of all the switch board, equipment etc. against rain. Exposed live parts of all electrical circuits & equipment shall be enclosed permanently. Crane trolley wires and other conductors which cannot be completely insulated shall be placed such that they are
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inaccessible under normal working conditions.

o) Iron clad industrial type plug outlets are preferred for additional safety.

p) Open type Distribution Boards shall be placed only in dry and ventilated rooms; they shall not be placed in the vicinity of storage batteries or otherwise exposed to chemical fumes.

q) Isolating switches shall be provided close to equipment for easy disconnection of electrical equipment or conductors from the source of supply when repair or maintenance work has to be done on them.

r) In front of distribution boards a clear space of 90 cm shall be maintained in order to have easy access during an emergency.

s) Adequate working space shall be provided around electrical equipment which require adjustment or examination during operation.

t) As far as possible electrical switches shall be excluded from a place where there is danger of explosion. All electrical equipment such as motors, switches and lighting fittings installed in work room where there is possibility of explosion hazard shall be explosion proof.

u) All connections to lighting fixtures, starters or other power supplies shall be provided with PVC insulated, PVC sheathed twin/three/four core wires to have better mechanical protection for preventing possible damage to equipment or injury to personnel. Taped joints shall not be allowed and the connections may be made in looping system. Electric starter of motors, Switches shall not be mounted on wooden boards. Only sheet steel mounting or iron frame work shall be used.

v) All the lighting fixtures and lamp holders shall be of good quality and in good condition. Badly repaired or broken holders, etc. shall not be used.

w) Only PVC insulated and PVC sheathed wires or armoured PVC insulated and sheathed cables shall be used for external power supply connections of temporary nature. Weather proof rubber wires shall not be used for any temporary power supply connections. Taped joints in the wires shall not be used.

x) The bulbs/lamps used for illumination and testing purpose shall have cover or guard to protect them from accidental breakages. Only 24 V supply system shall be used for hand lamps etc, while working inside metallic tanks or conducting vessels.

y) After installation of new electric system and or other extensive alterations to existing installations, thorough inspection shall be made by Departmental Electrical Engineer before the new system or new extension is put in use.

z) Contractor shall ensure that power factor for their loads shall be maintained at 0.85. In case the power factor falls below 0.85, necessary capacitor units shall be provided by the contractor.
2.2 Operation & Maintenance

a) All persons who work with electrical installation/equipment shall be aware of the electrical hazards, use of protective devices and safe operational procedures. They shall be given training in fire fighting, first aid and artificial resuscitation techniques.

b) The supervisor shall instruct the proper procedure, specify and enforce the use of necessary protective equipment such as adequately insulated pliers, screw drivers, fuse pullers, testing lamps and similar hand tools. Only wooden ladders shall be used to reach the heights in electrical work.

c) No material or earth work shall be allowed to be dumped below or in the vicinity of the bare overhead line conductors.

d) Separate work permits shall be issued for individual group leaders working on the same system which shall be returned after the completion of the work to Safety Supervisor and no system shall be energised without the clearance of Safety supervisor.

e) Before any maintenance work is commenced on electrical installations/equipment, the circuits shall be de-energised and ascertained to be dead by positive test with an approved voltage testing device. Switches shall be tagged or the fuse holders withdrawn before starting the work. Adequate precautions shall be taken in two important aspects viz.

   I) That there shall be no danger from any adjacent live parts and
   II) That there shall be no chances of re-energisation of the equipments on which the persons are working

f) While working on or near a circuit, whenever possible the use of one hand may be practiced even though the circuit is supposed to be dead. The other hand may preferably be kept in pocket.

g) When it is necessary to touch electrical equipment (for example when checking for overload of motors) back of the hand may be used. Thus, if accidental shock were to cause muscular contractions one would not ‘freeze’ to the conductor.

h) Operation of electrical equipment shall be avoided when standing on wet floor or when hands are wet.

i) Before blown fuses are replaced, the circuit shall be locked out and an investigation shall be made for the cause of the short circuit or overload.

j) When two persons are working within reach of each other, they shall never work on different phases of the supply.

k) When structural repairs, modification or painting work are to be undertaken, appropriate measures shall be taken for the protection of persons whose work may bring them into the proximity of live equipment/circuit.

l) It shall be ensured that the insulation and wire size of extension cords are adequate for the voltage and current to be carried.
m) While tapping electricity from the socket, plug top must be used. It shall be ensured that no extension boards are over loaded while tapping. Only standard three pin plugs shall be used for tapping electricity. Broken sockets/plugs shall be replaced immediately with good ones. Only joint free cables shall be used for connecting equipment/apparatus.

n) Floors shall be kept free from trailing electrical cables to avoid tripping hazard.

o) Power supply to all the machines and lighting fixture shall be switched off when not in use.

p) Temporary electrical connections shall be removed as soon as the stipulated work is over. After completion of the works, the contractor shall dismantle the distribution boards and the other facilities he may have erected.

q) Unauthorised tapping of power by others from distribution boards under the control of the contractor shall be prohibited at all circumstances.

r) No flammable materials shall be stored in any working area near the switch boards.

s) Safety work permits shall be used for switching off the main feeder and equipment by the contractor.

t) “MEN ON LINE” “DO NOT SWITCH ON” “DANGER” or “CAUTION” board as applicable shall be used during maintenance works on the electrical equipment.

2.3 Portable electrical equipment

a) Portable electrical equipment shall be regularly examined, tested and maintained to ensure that the equipment and its leads are in good order. Register shall be maintained for inspection recording, the testing dates and results of the equipments.

b) All portable appliances shall be provided with three core cable and three pin plug. The third pin of the plug shall invariably be earthed. It shall be ensured that the metal part of the equipment shall be effectively earthed.

c) All connections to portable equipment or machines from the panel/distribution board/extension board shall be taken using 3 core double insulated PVC flexible copper wire in one length. No joints shall be allowed in this flexible wire. In case single length of wire is not sufficient for a particular location then the supply can be tapped by providing another extension board comprising of switch and socket.

d) Flexible cables for portable lamps, tools, and apparatus shall be regularly examined, tested periodically and maintained to ensure safety.

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**
I/We certify that the installation detailed below has been installed by me/us and tested and that to the best of my/our knowledge and belief, it complies with Indian Electricity Rules, 1956 as well as IS:732-963 code of practice for Electrical Wiring Installations. (System voltage at exceeding 650 Volts (Revised).

Electric Installation at ................................................................. Voltage and system of supply ..............................................................

<table>
<thead>
<tr>
<th>Particulars of work</th>
<th>Number</th>
<th>Total Load</th>
<th>Type of system of wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Light Points</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii) Fan Points</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii) Plug points (3 pin)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv) Motors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the work involves installation of overhead lines and/or underground cable Earthing:
Description of earthing electrode, size of earth wire and number of electrodes provided:
Test results:
1. Insulation resistance for the whole installation.
   I) Between conductors
   II) Between each conductor and earth
2. Resistance of earthing electrode or earthing system.
3. Maximum earthing resistance of installation ________________________________

Signature of Supervisor
Name and address of Supervisor.

Signature of Contractor Name and address of Contractor.

Signature of Authorised Signatory with Date & Seal
**FORM NO.SGCW-2**

‘A’ APPLICATION FOR SERVICE CONNECTION BY CONTRACTOR (Prescribed under Cl.1.3 of Annexure)
(to be filled in triplicate)

1. Name & Address of Contractor : 
2. Reference to Tender & Work Order : 
3. Completion period : 
4. Connected load details (please attach Details in a separate sheet) : 
5. Max. demand anticipated : 
6. Nature of service connection required (Whether single or three phase) : 
7. Place where service required
   a) Works : 
   b) Colony : 
8. If supply of electricity is free or chargeable : 
   (Please enclose extract of conditions from the tender) : 
9. Details of meter provided
   a) If meter required from the Department whether SD is paid : 
   b) Details of SD (Security Deposit) : 
   c) Whether meter is tested or not, if tested, attach test report, if not, Details of testing fee deposited : 
10. Name of Supervisor/Electrician in Charge of installation and maintenance : 
11. Electrical licence No. of person mentioned Against col.10 : 
12. Electrical safety appliances available for use : 
13. Fire extinguishers available for use : 
14. First Aid facility/box available for use, if any : 

(Signature of the Contractor)

Date: 
Name: 

Signature of Authorised Signatory with Date & Seal
‘B’ CERTIFICATE BY THE CONTRACTOR
Certified that my/our installations have been carried out in accordance with I.E. Rules and that I/We have employed competent persons to handle the installations.
I/we am/are agreeable to the bills, in respect of this service connections being raised on the basis the connected load furnished above, in case the actual consumption falls below the one stipulated by the tender conditions.

(Signature of the contractors)
Name:
Address:
Date:

‘C’ CERTIFICATE BY THE CONTRACT CONTROL ENGINEER
Verified the particulars and forwarded to the Engineer In Charge.

(Signature of Contract control Engineer)
Name:
Section: Civil/Electrical/Mechanical

‘D’ CERTIFICATE BY THE ENGINEER IN CHARGE
Certified that the particulars furnished by the contractor are true to the best of my knowledge and belief and that I have satisfied myself as to the safe conditions of electrical installations for which the service connection is applied for.

Signature:
Name:
Designation with section:
Date:

Signature of Authorised Signatory with Date & Seal
‘E’ CERTIFICATE BY THE SAFETY ENGINEER

Certified that I have inspected the electrical installations referred herein and after satisfying myself about the safe conditions of the installation, I hereby recommended that the service connection be given to the contractor.

Signature of Safety Engineer.
Name:
Date:

.................................................................
Service connection may be/may not be given for the reasons noted hereunder.

Signature of Electrical Engineer.
Name:
Designation:
Date:

‘G’ ‘REPORT OF COMPLIANCE’

Service connection is give by me on
a) Meter Nos.
   1.
   2.
   3.

b) Initial readings:
   1.
   2.
   3.

c) Locations:
   1.
   2.
   3.

d) Mater sealings

Signature of Electrical Engineer
(Metering and Billing)
Name:
Designation:
Date:

Note:
1st copy to Contract Control Engineer
2nd copy to Safety Engineer
and 3rd copy to Electrical Engineer

After all the formalities are completed and Report of Compliance(G) are filled up by the Electrical Engineer after power supply is given

********

Signature of Authorised Signatory with Date & Seal
Procedure for Safe Working at heights

1.0 SCOPE:

1.1 For work at height of 3.5mts. and above from the ground floor, where a person is likely to fall from a height of 3.5mtrs., unless otherwise protected by rail or other means.

2.0 OBJECTIVE:

2.1 To ensure personnel working at heights are fit to work at such hazardous locations.
2.2 Safe working conditions at height exist i.e. strong working platform, handrail, toe guard, etc.
2.3 Personnel not to adopt unsafe practice while working at heights.
2.4 To ensure use of appropriate personal protective equipment for safe working.

3.0 APPLICABILITY:

3.1 This procedure is applicable for work at height of 3.5mts and above from the ground floor, where a person is likely to fall from a height of 3.5mts unless otherwise protected by rail other means; this procedure shall be adopted by all the department staffs and all the contract workers executing works at IGCAR.

4.0 RESPONSIBILITY:

4.1 Responsibility for implementation of this procedure lies with the concerned person executing the work.

5.0 PRE-REQUISITE:

5.1 The concerned person executing the work and his supervisor shall check the entire work place (height more than 3.5mtrs.) with respect to safety. He shall take necessary guidance from Environmental & Industrial Safety Section (E&ISS) for ensuring the applicability and implementation of the procedure.

6.0 EQUIPMENTS AND ACCESSORIES:

6.1 Ladder, Safety Belts, Safety net and other PPE’s.

7.0 IMPORTANT DEFINITION:

Fall Protection – It means items, which can;

7.1 Prevent a person form falling i.e. guard, railing, etc.
7.2 Arrest the falling of person i.e. safety belt.
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7.3 Hold the falling person above the ground i.e. safety net.

8. Blank

9.0 SAFETY PRACTICE WHILE WORKING AT HEIGHT:

9.1 The concerned supervisor shall ensure that safe work environment exists, safe work methods followed and personnel working at height have valid height pass certificate.

9.2 Concerned Engineer in charge or contractor as applicable shall provide all necessary resources to achieve all objects as stated above.

9.3 Access to work area at height shall be ensured by providing portable ladders (Refer annexure-3 - ladder safety).

9.4 Safety net shall be fixed under the work spot so as to prevent fall of material and personnel to ground /floor to cause damage/injury if other fall protection means are not practicable.

9.5 Safety training of fall prevention shall be given to all workmen involved in such operations.

9.6 Hand tools used by the workmen at height shall be secured with static line / with body of the user (tool bag).
Annexure-2
FILLED BY USER

HEIGHT WORK PERMIT (More than 3.5 m)

Permit No.: ___________________ Date of issue: ________________ Validity: ________________

Location: ___________________ Date: ______________________

Name of contractor: ___________________ Work Order No.: ________________

Name of Dept. Engineer In-charge:

Ladder for access and safe working platform

Check tightness of scaffolds and lending Yes / No

Check for handrails Yes / No

All openings protected / guarded against fall hazard Yes / No

Check for the need of safety net at all openings Yes / No

Personnel working at height has obtained height pass certificate and provided with safety belt. Option to tie belt exist Yes / No

Fire Safety measures, if hot work is carried out at height Yes / No

Area lighting for height works Yes / No

Safe work procedure is available or not Yes / No

Supervisor is available to supervise the job Yes / No

Contractor Supervisor/ Engineer ___________________ Contractor Safety Supervisor / Officer ___________________

Contractor Site / Engineer In- charge ___________________

Industrial Safety

The work is permitted / Not Permitted : ___________________

Reason for rejection ___________________

: Consultant Sr.Engineer ___________________ : Consultant Safety Supervisor / Officer ___________________
LADDER SAFETY

LADDER.- (1) Every ladder shall be of good construction, sound material and of adequate strength for the purpose for which it is used. The rungs shall be parallel, level and uniformly spaced at 30 cm.

(2) Ladders shall be inspected regularly and repaired immediately. No ladder with defective or missing rungs shall be used. Wooden ladders shall not be painted. For preserving the material from deterioration linseed oil or clear varnish shall be

(3) No portable single ladder shall be over 9 m in length the width between side rails in rung ladder shall in no case be less than 28 cm for ladder upto and including 3 m in length. For longer ladders this width shall be increased atleast 20mm for each additional metre of length. Uniform step spacing shall not exceed 30 cm.

(4) All ladders with spreading bases such as step and trestle ladders shall be equipped with rigid spreads or some other means to prevent their premature opening or closing.

(5) Ladders shall be in a safe position before being climbed. The best angle for a ladder is 75 with the horizontal ie the distance of the base of the ladder from the wall, pole structure etc., as the case may be shall be ⅓ th its length.

(6) A ladder shall be stored upon brackets and in sheltered locations.

(7) A ladder shall not be placed upon a box, barrel, or other moveable insecure object and against a round or annular pillar such as pipe or narrow steel section etc.

(8) Two ladders must not be spliced together as far as possible. When it is inevitable they shall be tied together properly to ensure rigidity. Extra parallel members at the point of splicing may be added to each of the main members of the ladders. Two ladders shall not be spliced together to provide access to greater height than when a single ladder is used.

(9) Bamboo ladders shall be provided with twisted wire loops enclosing both longitudinal members to prevent them from opening outwards. However, such ladders where longitudinal members are reinforced with metal/wire loops shall not be used when working on electrical circuits.

(10) Metal ladders with insulating rubber shoes shall only be used for working with electrical lines or in places where they may come in contact with such wires.

(11) No worker shall work from a plank placed on the rungs of ladders.

(12) All permanently installed vertical ladders above a height of 3m shall have manguards provided.
WORKING AT HEIGHT

- All open side of a structure above a height of 3.5 m from which worker might fall and openings into which a worker might fall should be adequately covered or barricaded. Every opening in the floor of a building, or in a working platform shall be provided with suitable fencing/railing of 1 m.

- Where barricades cannot be installed, a safety net should be installed close to the level at which there is a danger of a fall. During erection of tall buildings/structures, above 3.5 m height nylon nets shall be provided to ensure safety of men if there is a fall from height in case it is not possible to provide barricades.

- Where a secure foothold is impracticable, safety belts or harnesses with secure anchorage points should be provided at the working place as well as access to the access path to the working spot. All persons working at heights more than 3.5 m above ground or floor and exposed to the hazard of falling down shall use safety belts.

- At elevated places, secure access and foothold should be provided. Adequate and safe means of access shall be provided at all work places for all elevations. Means of access may be portable or fixed ladder, ramp or a stairway. The use of cross braces or framework a means of access to the working surface shall not be permitted.

- Scaffolding or staging 3.5m above the ground floor shall have guardrail properly attached, bolted, braced or otherwise secured at least 1m height above the floor and platform.

- Where the platform is more than 3.5 m above ground floor for working standing on the platform, the width should be minimum 1 m.

Appendix ‘F’ : Form of Guarantee for Performance of Services

Signature Date & Seal of Authorised signatory
FORM OF BANK GUARANTEE BOND FOR PERFORMANCE SECURITY

In consideration of the Director Indian Institute of Technology Bombay (hereinafter called “IITB”) having agreed under the terms and conditions of Letter of Intent/Workorder/Agreement No……………… dated…………………… made between ………………………..and ………………………………………. (hereinafter called “the said Consultant(s)”) for the work ……………………. ……………………. ……………………. (hereinafter called “the said Letter of Intent/Workorder/Agreement”) having agreed to production of an irrevocable bank Guarantee for Rs. …………………. (Rupees……………………………………………….. only), as a security/guarantee from the consultant(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement, we ………………………………………………………………………………………………. ……………………..(Indicate the name of the Bank) (hereinafter referred to as “the Bank”) hereby undertake to pay to IITB an amount not exceeding Rs. …………………. (Rs…………………. only) on demand by IITB.

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

3. We, the said bank, further undertake to pay to IITB any money so demanded notwithstanding any dispute or disputes raised by the Consultant(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

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

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

5. We …………………………………………………….. (indicate the name of Bank) further agree with IITB that IITB shall have the fullest liberty without our consent and without affecting 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 Consultant(s) from time to time or to postpone for any time or from time to time any of the powers exercisable IITB against the said Consultant(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Consultant(s) or for any forbearance, act of omission on the part of IITB or any indulgence by IITB to the said Consultant(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 Consultant(s).

7. We, …………………………………………………….. (indicate the name of Bank) lastly undertake not to revoke this guarantee except with the previous consent of IITB in writing.

8. This guarantee shall be valid up to ……………………. unless extended on demand.

Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. 69

Signature Date & Seal of Authorised signatory
and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Signed and sealed

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

(Note: The Letter of Intent/workorder shall form part of the Agreement)