Indian Institute of Technology Bombay

Invites

Request for Proposal (RFP)

for

Comprehensive Architectural Consultancy for the

Proposed Academic Science Block 1

at IIT Bombay

Ref. No.  IITB/DIPS/ASB1/AC/01 dated 26.06.2023

TECHNICAL PROPOSAL

(TO BE SUBMITTED IN ENVELOPE 2)

RFP Invited by

Dean, Infrastructure Planning and Support (IPS)

Indian Institute of Technology Bombay

Powai, Mumbai 400076.
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1 **Background**

Dean (IPS), on behalf of Director, Indian Institute of Technology Bombay (IITB) requests proposals for the Comprehensive Architectural Consultancy Services for the Proposed Academic Science Block 1 at IIT Bombay, Powai, Mumbai-400076 from the interested empaneled Architectural Consultants in two-bid system in accordance with the terms and conditions as set out below.

1.1 **Dates to Remember**

<table>
<thead>
<tr>
<th>Date Description</th>
<th>Date</th>
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<tbody>
<tr>
<td>Intimation for the invitation of RFP document</td>
<td>2023 June 26</td>
</tr>
<tr>
<td>Lab visit Date</td>
<td>2023 July 03</td>
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<td>Last date for receipt of queries</td>
<td>2023 July 08</td>
</tr>
<tr>
<td>Pre-bid meeting (11:30 Hrs, IPS office)</td>
<td>2023 July 10</td>
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<td>RFP queries Response</td>
<td>2023 July 14</td>
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<tr>
<td>Receipt of RFP Proposals (up to 15:00 Hrs)</td>
<td>2023 Aug 04</td>
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<tr>
<td>Presentation to the Evaluation Committee</td>
<td>2023 Aug 08-11 (Any day)</td>
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<tr>
<td>Opening of price bids (At 15:30 Hrs)</td>
<td>2023 Aug 17</td>
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<tr>
<td>Award of the work</td>
<td>2023 Aug 24</td>
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1.2 **Preamble**

**Indian Institute of Technology Bombay (IITB)** set up by an Act of Parliament, was established in 1958, at Powai, a northern suburb of Mumbai. Today the Institute is recognized as one of the centers of academic excellence in the country. Over the years, there has been dynamic progress at IIT Bombay in all academic and research activities. It is planned to have improvements to keep the Institute at par with the best institutions in the world.

**The Dean, Infrastructure Planning and Support (Dean IPS)** is entrusted with the creation of new infrastructure, in the IIT Bombay Campus. The infrastructure includes the construction of new buildings in the academic area, hostels for students, staff accommodation of various types, buildings for general facilities, roads, gardens, and playgrounds, along with related utilities such as watersupply, and electricity supply for the whole campus.

1.3 **Definitions**

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

1. ‘IITB’ means, Indian Institute of Technology Bombay.

2. Consultant means architect/architectural consultant, who is entrusted with the work of providing comprehensive architectural consultancy to IITB.

3. ‘Consultancy Contract’ means the Contract signed by the Parties, to which these Conditions of Consultancy Contract are attached, together with all the documents of such signed Contract.
4. ‘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.

5. ‘Engineer-in-charge’ means Dean Infrastructure Planning & Support (Dean IPS) or his successors appointed by IITB for coordinating with agencies connected with project and interacting with consultants.

6. Dean Infrastructure Planning & Support (Dean IPS) is authorized by Director IIT Bombay to administer this contract.

7. ASB1 means “Academic Science Block 1”.

8. ‘Party’ means IITB or the Consultant(s) who are signatories to this contract, as the case may be, and Parties means both of them.

9. ‘Services’ means the work to be performed by the Consultant pursuant to this Contract.

10. ‘Personnel’ means persons hired by the Consultant(s) or by any Sub-Consultant(s) as employees and assigned to the performance of the Services or any part thereof.

11. ‘Site’ means the whole of the property belonging to IITB on which the Services will need to be performed.

12. ‘Month’ shall mean an English calendar month.

1.4 Brief scope of the work

The scope of work consists of providing comprehensive architectural design and drawings, obtaining all statutory approvals (MCGM, CFO, Tree Authority, AAI, environment etc) for starting the work and occupation both, tender document preparation in entirety, assisting in tender processing as per the requirement, periodic inspection during execution stage, issuing Good for Construction drawings, developing BIM models of required LOD at different stages, assisting IITB/PMC in contract management, close coordination with PMC at all stages of the consultancy etc complete as detailed for various stages at section 3.6.1.

The proposed building has a total built-up area of 28,000 Sqm, in Ground +9 structure, housing Chemical Engineering and Chemistry Departments on different exclusive/shared floors. The building will be an RCC framed structure with masonry work and other general features as required by the users. The building is located towards East of Aero Building and South of TCS Shed and will be constructed after the demolition of the existing 3 nos. Type IIB buildings. A layout map indicating the location of the proposed building and master plan to be developed is attached (Refer figures 01and 02). The exact area may change depending on the actual site condition.

2 Eligibility and Selection Criteria

2.1 Objectives and method of the selection

The objective is to select best architectural consultant for the proposed work based on the highest composite score (Technical and Financial) and enter into an agreement with the winning architect for...
comprehensive architectural consultancy for the subject work.

Consolidated Honorarium of Rs. 1,50,000/- (Rupees one lakh fifty thousand only) shall be paid to all the participants who submit their Conceptual design and secure qualifying marks in technical evaluation.

2.2 Important information

RFP document duly completed in all respect to be submitted in hard copy to Dean (IPS) office, 1st Floor, Main Building, Indian Institute of Technology Bombay (IITB), Powai, Mumbai 400076. For any query/information, below mentioned email addresses are to be used for communication purpose: E-mail: dean.ips@iitb.ac.in with a copy to po.ips@iitb.ac.in, dean.ips.office@iitb.ac.in and pmc.ips@iitb.ac.in.

Intimation regarding the invitation of RFP shall be forwarded to the empaneled architects by email and a link shall be provided for downloading the RFP document from the official website of IITB.

Intending consultants participating in the competition are required to familiarize themselves with the site conditions and study the design inputs given in this document. Architects have the opportunity to visit the existing laboratories to understand the scope and requirements (refer Section 1.1 for the designated date). Queries, if any, related to this RFP must be submitted via e-mail or in writing to Dean (IPS) office, IITB by dates mentioned in section 1.1. No additional queries addressed after this date shall be entertained. A response addendum listing all queries received and IITB’s response will be posted on IITB website (https://www.iitb.ac.in/deanpl/tender.html).

2.3 Deliverables for competition

The agencies shall submit the following deliverables along with the Conceptual design on the due date:

1. Part Master plan showing proposed locations and general disposition of Academic Science Block 1 and other existing buildings including traffic pattern, services etc.
2. Design-basis report
3. Conceptual design and drawings (Architectural, Structural and location)
4. Walk around animation
5. Cost estimates (Broad-based)
6. Proposed brief specifications

2.4 Selection Process Submission Requirements

Intending architects shall submit their duly completed proposals (hard copy/digital format) in response to RFP, so as to reach Dean( IPS) office, IITB on or before dates mentioned in section 1.1 at the following address:

Dean (IPS),
1st Floor, Main Building,
The Concept Design, Technical and Financial proposals for the work shall be placed in three separate envelopes, and clearly superscribed respectively as follows:

Envelope (1)- Concept Design Proposal
Envelope (2)- Technical Proposal (with the name of the building)
Envelope (3)- Financial Proposal (with the name of the building)

In addition, each envelope should clearly indicate name of the work and that of the consultant.

2.5 Design consideration

1. The consultants are required to provide the concept design for the proposed building on the specified location and plot size marked on the enclosed master plan (Refer figures 1 and 2) based on best architectural and engineering practices, also taking into consideration prevalent statutory and codal provisions.
2. The break-up areas specified are for reference only and the consultants are encouraged to develop and demonstrate design that optimizes the room areas, circulation and common space areas.
3. The consultants are free to use any RCC framed structure system suited to their Architectural design.
4. The consultants are requested to adhere to National Building code and local body by laws for providing number of Urinals, baths, WCs, provision of toilets for differently abled persons, fire safety norms etc.
5. The concept design shall conform to green building norms of minimum GRIHA 3-star rating. Any measures suggested by IITB to get a higher rating shall be incorporated by the consultant.
6. The bidder shall take into account the provisions made within the scope of work and work out and submit a preliminary estimate that has to generally conform to PAR of CPWD.
7. The Concept Design proposal should demonstrate that the proposer has developed an understanding of the institute's requirements with reference to the scope of services mentioned in the RFP document. The applicant shall submit a Power point presentation including the entire contents of the technical proposal in a USB drive along with a submission package for the technical proposal. All drawings, designs, and layouts must be submitted in (.dwg) and (.pdf) format.
8. The Concept design proposal should include the following points: (To be submitted in Envelope 1):
   (a) Master plan for the development of proposed construction of Academic Science Block 1 including future buildings and all other existing structures and services within the land parcel marked in the enclosed sketch (Fig.2). Proposed locations of the major facilities such as DG set, pump room within the building foot-print, service block etc should also be clearly brought out, depending upon area availability and statutory requirements etc.
(b) The drawings covering the concept proposal for the proposed construction of Academic Science Block 1, a maximum of three A0 size drawing panels covering the design proposal for each building. There shall be maximum of 3 (three) such drawings.

(c) The concept of Architectural design should be explained in the form of drawings, sketches with plans, sections, layout at a suitable scale, notes and views to show the Architectural character of the building.

(d) USB drives containing soft copies of the design proposals (all drawings in high-resolution PDF format).

(e) Signed copy of RFP document and corrigendum/addendum, replies of Pre-bid queries, if any (Each page signed and stamped) by the consultant as proof of acceptance of all terms and conditions of the selection process.

(f) Approach to design including drawings, sketches, diagrams and any other information that can concisely and yet comprehensively explain the applicants concept psychology and design approach.

(g) Key professionals and consultants proposed to be deployed for the project with their experience and details (not exceeding 10 pages). This must also have details of the lab consultant proposed to be engaged for the project.

2.6 Evaluation of the proposal

The intending architects are required to make a presentation to the Evaluation Committee (constituted by the Institute), along with their laboratory consultant. The Concept Design would be evaluated by the Evaluation Committee on the following broad parameters and any other factors that affect the quality:

1. Aesthetics (10 marks)
2. Functional Suitability and space planning (20 marks)
3. Competence of lab specialists (20 marks)
4. Design Approach (15 marks)
5. Structural modelling (10 marks)
6. MEP Services (HVAC, Electrical, ELV, Fire-fighting, plumbing etc) (10 marks)
7. Cost effective design and green features (15 marks)

The Concept Design proposal shall be allotted weightage of 80 % (Eighty percent) as a quality score while the financial proposals will be allotted weightage of 20 % (Twenty percent) as a cost score. Based on the evaluation criteria specified under the technical proposal, the Evaluation committee shall evaluate the detailed technical proposals separately and award the technical score (TS) and list them in order of merit. Proposals with the highest technical marks (as allotted by the evaluation committee) shall be given a score of 100 (Hundred) and other proposals to be given a technical score that is proportional to their marks with respect to the highest technical marks. Depending upon the marks obtained in the technical evaluation of the RFP, a merit list shall be generated of the applicants as T1, T2, T3 of the participants who score 75 % or more.

Please note that for the participants who scored 75 % and above, their financial proposals only will be opened. The discretion and decision of the Evaluation committee in respect of technical scores shall be final and binding on all without any Right to appeal. The technical scores (TS) of the applicants
shall be announced before the opening of financial bids.

Financial proposals shall be opened in presence of the consultants or their representatives who choose to attend. Proposals with the lowest cost may be given a financial score of 100 (Hundred) and the other proposals are given financial scores that are inversely proportional to their prices with respect to the lowest offer.

The total score, both technical and financial, shall be obtained by weighing the quality and cost scores and adding them up. On the basis of the combined weighted score for quality and cost, the consultant shall be ranked in terms of the total score obtained. The proposal obtaining the highest total combined score in the evaluation of quality and cost will be ranked as H-1 followed by the proposals securing lesser marks as H-2, H-3, etc. The proposal securing the highest combined marks shall be recommended for the award of contract. In the event two or more bids have the same score in the final ranking, the bid with highest technical score will be H-1.

An Evaluated Bid Score (B) will be calculated for each responsive Bid using the following formula, which permits a comprehensive assessment of the Bid price and the technical merits of each Bid:

$$B = \frac{F_{Low}}{F} W + \frac{T}{T_{High}} (1 - W)$$  (1)

Where, $F$ is the Evaluated Bid price, $F_{Low}$ is the lowest of all Evaluated Bid Prices among responsive Bids, $T$ is the total Technical Score awarded to the Bid, $T_{High}$ is the Technical Score achieved by the Bid that was scored best among all responsive Bids, and $W$ is the Weightage for the Price as specified.

The Bid with the best-evaluated Bid score ($B$) among responsive Bids shall be the Most Advantageous Bid.

**Example:** The following procedure shall be followed. In a particular case of selection of consultant, it was decided to have minimum qualifying marks for technical qualifications as 70 (Seventy) and the weightage of technical bids and financial bids was kept as 80:20 (Eighty: Twenty). In response to the RFP, three proposals, A, B and C were received. The technical evaluation committee awarded the following marks as under: A: 75 Marks, B: 80 Marks, and C: 90 Marks.

The minimum qualifying marks were 70 (Seventy) thus, all the three proposals were found technically suitable. Using the formula $T/T_{High}$, the following technical points are awarded by the evaluation committee: A: 75/90 = 83 points, B: 80/90 = 89 points, and C: 90/90 = 100 points.

The financial proposals of each qualified consultant were opened after notifying the date and time of bid opening. The price evaluation committee examined the financial proposals and evaluated the quoted prices as under: A: Rs. 120, B: Rs. 100, and C: Rs. 110.

Using the formula $F_{Low}/F$, the committee gave them the following points for financial proposals: A: 100/120 = 83 points, B: 100/100 = 100 points, and C: 100/110 = 91 points.

In the combined evaluation, thereafter, the evaluation committee calculated the combined technical and financial score as under: Proposal A: 83*0.20 + 83*0.80 = 83 points, Proposal B: 100*0.20 + 89*0.80 = 91.20 points, and Proposal C: 91*0.20 + 100*0.80 = 98.20 points.

The three proposals in the combined technical and financial evaluation were ranked as under: Proposal A: 83 points H-3; Proposal B: 91.20 points H-2; and Proposal C: 98.20 points H-1.

Proposal C at the evaluated cost of Rs. 110 (Rs. One hundred ten) was, therefore declared as the...
winner and recommended for negotiations/approval, to the competent authority.

2.7 Acceptance of the concept design

The Concept Design as submitted by the successful architect may not be deemed to be the final acceptable design proposal. The consultant must meet and discuss with the institute’s User committee/Users and provide comprehensive architectural services as per the scope of work after duly understanding the requirements of the institute. The actual location for the construction of the proposed building may change depending on the requirement of the institute.

2.8 Award of contract

1. The selection as mentioned above, does not, in any way, automatically confer any right, whatsoever, on any applicant for an award of work.

2. Winning Architect, even though selected based on the quality evaluation of his concept design, shall be contractually obliged to modify or redesign, if found necessary by IITB.

3. IITB shall inform consultants through a ‘Letter of Acceptance of Offer’ by email/Letter that it has been selected to be the consultant for the institute to the extent.

4. The consultant shall thereafter sign the contract agreement within 21 days of the issue of such letter.

5. In the event of the consultant getting selected for the Consultancy work, the consultant will have to deposit an amount equal to 5% of the offered and accepted value of the contract as a Performance Guarantee in the form of an Account payee Demand draft/Fixed Deposit Receipt or in the form of Bank Guarantee from Scheduled commercial bank, before signing the contract agreement.

6. The amount kept under the performance guarantee shall not bear interest and the same shall be returned to the consultant after satisfactory completion of the contract.

7. IITB does not bind itself to award the consultancy work to the selected architect/firm and IITB reserves the right to reject all the offers and no reason for this effect shall be furnished.

2.9 General guidelines

1. Each proposal whether layouts or services system or policy or any other, must be duly supported by clearly referenced data presented in a logical and quantifiable format.

2. All proposals must be based on clearly referenced global best architectural and engineering practices taking into consideration prevalent statutory and codal provisions, and must respect clearly identified and listed local constraints, resources and skills.

3. The institute reserves the right to seek more details regarding the proof of qualifications, experience and capabilities of the key personnel.

4. The institute reserves the right to issue corrigenda and addenda to this RFP document which shall
be binding on all applicants.

5. The institute reserves the right to amend, alter, modify, add and/or delete in part or full any requirements or terms and conditions contained in the RFP document at any other time during the selection process, which shall be binding on all applicants.

6. All dates, places and time are subject to change and the latest information and clarifications, if any, shall be communicated to the applicants over email.

7. The documents and other information provided by IITB or all intellectual property rights of the scheme and proposals submitted during the process of selection submitted by the applicants to IITB shall become and remain the property of the institute.

8. No explanation and/or justification in any aspect relating to the selection process shall be given, and the decision of the institute shall be final and binding on all without any right to appeal.

9. The institute reserves the right to debar the applicant/terminate the agreement with the final applicant selected for award of work, at any period of time, should any of the document/certificates as submitted be found to be fabricated or false, or a material misrepresentation is made or discovered, or the applicant does not provide the requisite information as required by the institute within the stipulated period.

10. All provisions in this document are supplementary and complementary to each other and are not to be read in isolation.
3 General conditions of consultancy contract

The General Conditions of Contract (GCC) are enclosed along with the following sections:

A: Description of Services (see section 3.6 and 3.7).
B: Deliverables by the Consultant (see section 3.8).
C: Guarantee for Performance of Services (see section 3.9).

3.1 General Provisions

3.1.1. Law Governing the Contract

This Contract, its meaning and interpretation, and the relation between the Parties will be governed by the Applicable Law and the jurisdiction shall be Mumbai.

3.1.2 Notices

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 authorized representative of the Party to whom the communication is addressed, or when sent by speed-post or facsimile to such Party at the address:

For IITB: Dean (IPS), Indian Institute of Technology Bombay, 1st floor, Main Building, Powai, Mumbai- 400076.

For ARCHITECTS: Notice will deem to be effective as follows: (i) In the case of personal delivery or registered mail, on delivery. (ii) In the case of Facsimiles, 24 hours following confirmed transmission.

3.1.3 Authorized Representatives

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by IITB or the Consultants may be taken or executed by the officials specified as under: (i) For IITB: Dean (IPS) and (ii) For the Consultant: Person duly authorized by the consultant.

3.1.4 Taxes and Duties

The Consultant shall pay all taxes (other than GST), 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 fees. GST shall be paid by IITB to the consultant, as applicable.

3.2 Commencement, completion, modification and termination

3.2.1. Effectiveness of Contract

This Consultancy Contract shall come into effect on the 15 days after the issue of work order. The Consultant getting selected for the consultancy work will have to provide a Performance Guarantee as detailed below:
3.2.2 Performance Guarantee
An amount equal to 5% of the offered and accepted value of the contract shall be deposited as a Performance Guarantee in the form of an Account payee Demand draft/Fixed Deposit Receipt or in the form of a Bank Guarantee from a Scheduled commercial bank. The Performance Guarantee shall be refunded to the consultant soon after the completion of the work and recording of the completion certificate. The amount kept under the performance guarantee shall not bear interest and the same shall be returned to the consultant after satisfactory completion of the contract.

3.2.3 Commencement of Services
The Consultant shall begin carrying out the Services 15 days from issue of the Work Order.

3.2.4 Expiration of the Consultancy Contract
Unless terminated earlier pursuant to Clause 3.2.5 hereof, this Contract shall expire when the Services have been completed in all respect at the end of such time period after the Effective Date, which may be suitably extended upon mutual agreement to complete the Assignment in all respects.

3.2.5 Termination
A. By IITB
The IITB may terminate this Consultancy Contract, by serving not less than thirty (30) days written notice of termination to the Consultant, to be given after the occurrence of any of the events specified in paragraphs (1) through (4) of this Clause 3.2.5A and sixty (60) days in the case of the event referred to in (5) below.

1. If the Consultant fails to remedy a failure in the performance of their obligations under the Contract within fifteen (15) days of receipt after being notified or within the such further period as IITB may have subsequently approved in writing;

2. If the Consultant becomes insolvent or bankrupt or enters into any agreements with their creditors for relief of debt or takes advantage of any law for the benefit of debtors or goes into liquidation or receivership whether compulsory or voluntary;

3. If the Consultant submits to IITB a statement that has a material effect on the rights, obligation, or interests of IITB and which the consultants know to be false.

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

5. If IITB in its sole discretion and for any reasons whatsoever decides to terminate this Contract.

B: 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 (1) and (2) below, terminate this Consultancy Contract:

1. If IITB fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause 3.2.6 hereof within forty-five (45) days after receiving written notice from the Consultant that such payment is overdue, subject to required certification from PMC towards satisfactory performance of services is available for that payment.
2. If, as a result of Force Majeure, the Design Consultant are unable to perform a material portion of the Services for a period of not less than sixty (60) days.

3.2.6 Payment upon Termination

a) Upon termination of this Contract pursuant to Clause 3.2.5.A or Clause 3.2.5.B hereof, IITB shall make the payment to the Consultant (after offsetting against these payments any amount that may be due from the Consultant to IITB) i.e., for the stage of work performed up to the date of termination.

b) 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.

c) In the event of termination of Contract, after receipt of full payment of sums mentioned in 1 and 2 above, from IITB to the satisfaction of the Consultant, the Consultant shall furnish to all the design, drawings, data, documents and details as per the work completed and being paid for in clause 3.2.6.

3.2.7 Dispute Settlement Mechanism

Amicable settlement of Disputes: 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.

Any dispute between the Parties as to matters arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt of a notice by one Party, the request for such amicable settlement may be submitted by either Party for settlement 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 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, IITB, who shall decide the case in accordance with the contract provisions and subject to the provisions of the Indian Arbitration and 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.

3.2.8 Fairness and Good Faith

1. 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 realization of the objectives of this Contract.

2. Operation of the Contract:
   The Parties recognize 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 above.
3.3 Obligations of the consultant

3.3.1 General

**Standard of Performance:** The Consultant shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to IITB, and shall at all times support and safeguard IITB’s legitimate interests in any dealings with Sub-Consultants or Third Parties.

1. **Design Base:** Specific attention has to be paid to ensuring flawless, technically sound, sustainable design provisions. Minute attention shall be paid to providing a maintenance-free robust structure, free from the adverse effect of changes in weather and maintenance issues like leakage of water, fragile components, etc. Specific write up shall be provided by the Architects towards these goals. Architect should assume professional responsibility for any defective design provisions.

2. **Duties shall include performance of all the Architects stages enumerated in stages of work.**

3. **Making visits by Principal Architect or his/her competent representative to site and IITB office as required till finalization from Stage 1 to 5. Similarly, regular site visits during stage 6 for inspection and Progress Review Meetings with a frequency not less than one a week.**

4. **Visit of Structural designer for pre-concreting inspection of all major pours and site visit of other MEP designers and laboratory consultants for clearances as and when felt necessary by IITB.**

3.3.2 Confidentiality

The Consultant, and the Personnel or either of them shall not disclose any information and data furnished to him by 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 or either of them, without prior written approval of IITB.

3.3.3 Design Consultant’s Actions requiring prior approval

The Consultant shall obtain IITB’s prior approval in writing before entering into a subcontract for the performance of any part of the Services, it being understood (i) that the selection of the sub-consultant other than those coming under the main contract and the terms and conditions of the subcontract shall have been approved in writing by the prior to the execution of the subcontract, and (ii) that the Consultant shall remain fully liable for the performance of the Services by the sub-consultant and its personnel pursuant to this Contract.

3.3.4 Reporting Obligations

The Consultant shall submit to IITB/PMC the reports, documents, digital models and other deliverables, in the form, in the number, and within the time periods set forth in the technical conditions.
3.3.5 Copyright

Copyright conditions shall be as per the prevailing law and Council of Architecture norms 2014.(Clause 12 of Comprehensive Architectural Services).

3.3.6 Responsibility for Data and Designs

1. The final responsibility for the correctness, adequacy and accuracy of the designs, drawings, setting-out plan, detailed measurements, bill of quantities, technical specifications, etc. furnished by the Consultant, shall lie with the Consultant. Vetting of the same by PMC/IITB does not dilute any of the responsibilities of the architect. The Consultant shall ensure that all designs and services rendered by him, under this Agreement, meet the requirements of IITB and are in compliance with the existing statutory regulations of bodies.

2. To submit all required drawings / documents /area calculations statement undertaking at various stages to liaising consultant to obtain completion/occupancy certificate, CFO, Tree permissions, GRIHA etc.

3. Periodic visits to the project site for inspection of works and regular visits to IITB office to attend Project Review Meetings.

3.4 Obligations of IITB

3.4.1 Assistance and Exemptions

The IITB shall:

1. 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;

2. issue 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;

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

3.4.2 Payment

1. 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 Milestone of deliverables for Payments.

2. GST will be paid by IITB to the consultant as per applicable law.
3.5 Payments to the consultant

3.5.1 Fees

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

3.5.2 Mode of Billing and Payment

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

1. The payment to the Consultant will be made periodically as per the schedule of payment agreed upon in the Financial Bid: Milestones for payment of Consultancy Charges. The Consultant shall submit his bill in triplicate along with supporting documents. IITB shall cause the payment to the Consultant within thirty (30) days of receipt of the bill.

2. The final payment under this Contract shall be made only after the final report and a final statement identified as such shall have been submitted by the Consultant and approved as satisfactory by the Engineer-in-charge. The Services shall be deemed completed and finally accepted by the Engineer-in-charge and the final report and final statement shall be deemed approved by IITB as satisfactory within ninety (90) days after receipt of the final report and final statement by IITB un- less IITB, within such ninety (90) day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final statement. The Consultant shall thereupon promptly make any necessary corrections, and upon completion of such corrections, the foregoing process shall be repeated.

3.5.3 Terms and conditions of payment

Payments will be made to the account of the Consultant and according to the payment schedule stated in the Milestones of deliverables for Payments of Financial Bid.

3.6 Description of the services

3.6.1 Scope of work

The stages of work and broad activities therein are as under:

1. Concept Stage:
   a) Prepare conceptual architectural drawings for the proposed facility including landscaping, Part Master Plan and submission of the same to IITB
   b) Seeking views of the users on the conceptual architectural drawings and gathering detailed requirements / special requirements / facilities / services / occupancies / etc. to modify the floor plans
   c) Preparation and submission of the revised architectural drawings based on the inputs received from the users and finalization of the architectural lay-out drawings
   d) Provide a preliminary cost estimate on area basis
   e) submission of architectural design basis report and finalized lay-out drawings for approval
2. **Preliminary Design and Drawings stage:**
   a) Detailed Site survey including tree demarcation, contours, existing storm water drains, manholes, open/covered nallahs and other existing features/services etc., complete as required for design and execution. Agency will be engaged with the prior approval of IITB, based on its credentials.
   b) Geo-technical soil investigation as required for structural design. Agency will be engaged with the prior approval of IITB, based on its credentials.
   c) Submission of preliminary design basis report for structure, MEP services including external service connections and external development within the plot.
   d) Identification of experts for peer-review for proof-checking of HVAC and structural designs
   e) Develop LOD 200 BIM model incorporating the above said features to facilitate coordinated conceptual design, and obtaining IITB’s approval on the model.

3. **Design development and statutory approval filing Stage:**
   a) Preparation of drawings/ documents/ area statements, etc. for statutory approvals from state authorities- MCGM, AAI, CFO, Tree and environmental authority etc.
   b) Submission of revised Design basis report for Structure, MEP services, interiors and Landscape based on the observations from proof-checkers and IITB and finalization of the same
   c) Transfer of finalized building foot-print on actual location through grouted peg stays, ropes etc. sturdy enough to last till finalization of execution contract, immediately after actual freezing of location.
   d) Submission of drawings/ documents/ area statements etc. for statutory approvals from state authorities- MCGM, AAI, CFO, Tree authority, etc for work commencement and also environmental clearance for the building
   e) Registration for GRIHA.
   f) Submission of GA drawings, analytical model and structural analysis to proof checking consultant and revising the same based on observations till compliance in entirety
   g) Submission of design, drawings and documents of structure (including reinforcement drawings) and HVAC to Proof checking Consultants and revising the same, based on the observations of latter, till compliance with all the observations in entirety
   h) Completion of all engineering designs and drawings for civil and MEP (in BIM LOD 300) and submission of proof-checked design and drawings to IITB in hard and soft copy

4. **Working drawings and documents for tendering stage:**
   a) Development of all the project related working drawings and LOD350 coordinated clash-free BIM models to enable development of documents and drawings mentioned in this section
   b) Preparation of draft tender papers in a standard format as required by IITB, including tender drawings, particular specifications, conditions of contract, design brief, and any other documents required for tendering process
   c) Detailed item-wise bill of quantities of civil and all services including measurement sheets, along with rate analysis and supporting documents for non-SOR items, approved brands list for civil and MEP, samples of selected granite and other such finishing items, as required
d) Complying to the observations of statutory authorities and achieving different stages of approvals required for commencement of work, through constant follow-up

e) Preparation and submission of all Good for Construction (GFC) drawings including Architectural, Structural, MEP Services, external development, Setting-out Plan, finalized BIM LOD 350 model etc

5. **Tender processing and statutory approvals stage:**
a) Assisting IITB in processing of execution tender, clarifications to pre-bid meeting queries, recommendations at various stages, as required by IITB.
b) Obtaining all the required statutory approvals from MCGM/Chief Fire Officer/ Tree Authority/AAI/environmental clearance etc for commencement of work. (In this regard, Architect will be required to submit weekly status report in agreed format to IITB and PMC on all the statutory approvals required for a particular project, beginning with stage 3 above, till conclusion of this stage. Participate in regular review meetings in this regard at IITB, along with liasioning consultant and make all efforts to obtain the approvals in given timeframe to the satisfaction of IITB).
c) Notification to GRIHA for site inspection prior to construction.

6. **Construction Stage:**
a) Issue of good for construction drawings and BIM Model for Civil works, structural and other associated services such as public health, Electrical, HVAC, site development, etc. with minor revisions, if any.
b) Attending all weekly progress review meetings at site/office.
c) Periodic inspection of work by the principal architect or by a suitable architect from their team as well as by structural consultants, MEP consultants, and other specialists during execution at required intervals as per the requirement of the work, as required by IITB and assisting in solving any issues of technical nature.
d) Approve samples of various elements and components.
e) Check and approve shop drawings submitted by the contractor/ vendors within 7 days, after submission to the Architect.
f) Scrutiny and justification in case of large variation in quantities vis-à-vis tendered quantities and advising IITB on further line of action.
g) Periodic supervision of ongoing construction works to ensure that quality of the work and materials is as per the design intent of the architect (detailed day-to-day supervision and monitoring of the work shall be carried out by a separate agency, appointed by IITB).
h) Structural consultant will be required to visit and inspect work before all major pours.
i) Advising IITB on any other technical matter connected with the Construction of the said building or the installation of equipment etc which may emerge during construction stage.
j) Co-ordination with PMC in all technical and commercial matters related to payment of running bills to the Contractor.
k) Obtaining revised/amended statutory approvals, as applicable, in case of any changes from the originally approved plans.
l) During execution, for any revisions necessitated by ground conditions, the revised construction drawings must be issued within 7 working days. Further, any clarification or issues arising during the construction stage must be resolved within 7 working days.

7. **Completion stage**
a) Certification of final Contractor’s bills in coordination with appointed Project Management
b) Obtaining Final Statutory Clearance from BMC, Chief Fire Officer, Tree Authority including obtaining Occupancy Certificate, environmental clearance for the building, and final certification from GRIHA.

c) Final checking of the submitted ‘As built ‘drawings, making required corrections, if any, in coordination with PMC and issuing 5 sets in hard copies (same or higher size as of respective GFC drawings) and soft copies to IITB.

d) Preparation of Finishing Schedule for the project

e) Issuance of certificate of virtual completion of works after getting the entire work approved by the Institute.

f) Checking, providing remarks and certifying as-built LOD 400 BIM model prepared by the Contractor along with as-built drawings.

g) Indicating the defects in the work, if any, for prompt rectification by the Contractor during the construction and defect liability periods.

h) Issue of Finishing Schedule in hard and soft copies to IITB.

i) The Consultant to perform his duties promptly and diligently and to do everything in his power and authority to coordinate with PMC to ensure that the Contractor/Contractors complete the construction of the building and of installation of such fitting as may be entrusted to them according to the proper quality, specification and schedule of time given to them and that no unnecessary delay is caused by reason of the Consultants not furnishing decisions, details in regard to designs etc. to the Contractor, provided that such delay is not caused by IITB.

**Note:**

i. Prior to approval of BOQ, Cost of work and its scope shall be obtained before engaging the agency for Detail survey and Geo-Technical soil investigation. The contract cost involved shall be reimbursed by on submission of reports, drawings and original documents of payment, etc.

ii. Proof checking of structural design to be carried out with directly contacting the concerned department authorities. Fees paid to proof checking shall be reimbursed by IITB on submission of original documents of clearance and fees paid.

iii. Obtaining “GRIHA” certification is in the scope of the Architect including creation/scrutiny of documents, as applicable, payment of all incidental charges etc. Actual certification fee paid to TERI related to “GRIHA” certification will however be reimbursed to the architect upon production of original receipt and related correspondence.

iv. The broad activities under any stage as mentioned above are not exhaustive. Any other related consultancy works, not specifically mentioned herein above, but required for successful completion of the project will also have to be undertaken by the architect within the quoted rates.
3.7 Services required to be provided by the architect consultant

3.7.1 Architectural System

a. Master plan for the development of Academic Science Block 1 including future buildings and all other existing structures and services within the land parcel marked in the attached layout map. (Refer figures 1 & 2 on page 41 and 42). Preparation of preliminary conceptual drawings which includes preparation of various floor plans, sections, elevations, perspectives etc., and Preliminary cost Estimates based on areas including Landscape and Interior Architecture Services. Development/vetting of various LODs of BIM as per detailed scope of work.

b. Incorporation of revisions, and comments offered by IITB

c. Preparation and submission of drawings for obtaining statutory clearance/No Objection from State/Central Statutory Authorities for commencement of work.

d. Registration with GRIHA and obtaining GRIHA rating (inclusive of all expenses. Fees paid to TERI shall be reimbursed)

3.7.2 Detailed Survey and Geo-Technical Soil Investigation

a) Detailed site survey including tree demarcation, existing features, contours etc complete required for Design and Execution.

b) Geo Technical Soil investigation as required for structural design. No. of bores and their locations should be proposed based on building foot-print and to be got approved from PMC before starting any physical work at site.

c) Note: Prior approval for the investigation parameters, cost of work and its scope shall be obtained before engaging the agency for detailed site survey and Geo-Technical soil investigation. The contract cost involved shall be reimbursed on submission of reports, drawings and original documents of payment, etc.

3.7.3 Structural System

a) Preparation of DBRs (Design Basis Report), GA drawings, Analytical Model, detailed structural analysis of the total building, detailed design as per relevant Indian codes of practice of recent revisions, and submission for review and approval. On approval of the design details, detailed construction drawings shall be prepared and submitted.

b) Proof checking of structural design to be carried out with directly contacting the concerned authorities of IITB or prior approval should be taken from IITB for engagement of the experts outside IITB for carrying out proof checking.

c) Fees paid to proof checking shall be reimbursed by on submission of original documents of clearance and fees paid.

d) Consultant has to embed provision of advanced formwork systems in the BOQ (aluminum, FRP, engineered plastic etc) to expedite RCC structure work, along with necessary specifications, item description, drawings etc, as per the requirement of the project
3.7.4 Public Health Engineering System

Scope includes Preparation of DBR for providing both internal (double plumbing) and external water supply and sewage system, storm water dispersal and rain water harvesting system, etc., for the said buildings. Detailed DBR shall be submitted for review and approval. Entire design shall be as per latest IS code provisions.

3.7.5 Electrical System

Scheme for Preparation of DBR, providing internal and external electrification system with necessary electrical rooms, cabling, power supply network including sub-station, street lighting etc. Detailed DBR shall be submitted for review and approval. Entire design shall be as per latest IS codal provisions and recommended Manufacturers.

3.7.6 ELV System

Scope of work includes preparation of conduit layouts for provision of telephone, computer cable, LAN, TV, CCTV, Wi-Fi, AV, ACS, ATS, digital signage and other IT driven services, as per the project requirement. Entire design of active and passive systems shall be as per latest national/international applicable codal provisions and recommended Manufacturers.

3.7.7 Fire Fighting System

Scheme for fire-fighting system shall be as per relevant Indian Standards and as per the statutory authorities’ requirements. Detailed DBR shall be submitted for review and approval by IITB.

3.7.8 HVAC and other mechanical works

Scheme for the HVAC shall be as per Client’s requirement and as per relevant IS including HVAC proof checking. This has to be carried out by directly contacting the concerned department. Authorities of IITB or prior approval should be taken from IITB for engagement of the experts outside IITB for carrying out proof checking. Note: Fees paid to proof checking shall be reimbursed by on submission of original documents of clearance and fees paid.

3.7.9 Interior Architecture

Scheme for Design of fixed and loose furniture and interior related civil works shall be as per the Clients requirements. Detailed DBR shall be submitted for review and approval by IITB. Preparation of Finishing Schedule.
3.7.10 Landscape Architecture

Scheme for open space Design, hard and soft areas and Planting design to be provided. Detailed DBR’s shall be submitted for review and approval by IITB.

3.7.11 Specialist laboratory consultants

Proposed building will house state-of-art specialized laboratories of Chemistry and Chemical Engineering Departments at different floors. Being highly specialized work, architects are required to engage one of the suitable specialized laboratory consultants for providing design details and coordination pertaining to all the laboratories, with prior approval of IITB. Specialized lab consultant should have handled approx. 4000 Sqm of similar lab area in a single project and 8000 Sqm in total for similar assignments of specialized labs.

The architect consultant can appoint any of the specialized laboratory consultants, preferably Mumbai-based, as their sub-consultant who should have the above expertise at the time of submission of their bid. If at the submission of this bid work is to be handled in-house, then proof of relevant in-house expertise will have to be submitted, for approval of IITB.

The laboratory Scheme submitted by the architect will also be peer reviewed by the user groups or their appointed lab consultant and necessary changes in scheme (civil works, MEP or any other specialized services) will have to be made, to the satisfaction of peer-reviewing consultant/IITB.

3.7.12 Liaisoning and any other service not mentioned in 3.7.1 to 3.7.11 above, incidental to full achievement of scope of work given at 3.6.1

3.8 Deliverables by the architecture design consultant

For all disciplines of Engineering, the Consultant shall submit a Design Basis Report (DBR) and preliminary drawings for review and approval from the authority of IITB, incorporate the comments provided by the authority of IITB, provide detailed drawings, Bill of Quantities (BOQ), cost estimates, Rate Analysis, Technical specifications etc. The detailed construction drawings shall be issued for all the disciplines. Following sub-sections indicates the number of prints of drawings in hard copy and reports/design calculations required at each stage for Comprehensive Architecture and Design, along with soft copy in required format-

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Stage No. (refer Cl. 2.6.1)</th>
<th>Submissions required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stage 1</td>
<td>3 hard copies and soft copy of the source along with pdf</td>
</tr>
<tr>
<td>2</td>
<td>Stage 2</td>
<td>BIM LOD 200, 3 hard copies and soft copy of the source along with pdf</td>
</tr>
</tbody>
</table>

Table 1: Stage-wise deliverables
<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>BIM LOD 300, 3 hard copies and soft copy of the source along with pdf for design document/drawings. Also, two hard copies and soft copy of each submittals made to various statutory authorities at different stages, and to GRIHA authorities to be submitted to IITB for record purposes.</td>
</tr>
<tr>
<td>4</td>
<td>Clash-free Integrated BIM LOD 350, 3 hard copies of total tender set (documents and drawings) and soft copy of the source along with pdf. Also, all drawings in AutoCAD will also be shared with IITB and PMC, before award of work.</td>
</tr>
<tr>
<td>5</td>
<td>For all statutory approvals, one original and 3 additional hard copies of full bunch of all the approvals/NOCs received for commencement of the work</td>
</tr>
</tbody>
</table>
| 6     | • 6 hard copies and soft copy of the source along with pdf and AutoCAD for all GFC Drawings  
• 6 hard copies and soft copy of the source along with pdf and AutoCAD for all revised GFC Drawings  
• Site inspection reports, quantity monitoring and any other construction related reports etc to be submitted in the format indicated by IITB/PMC and in required mode and quantity |
| 7     | • 1 original and 3 additional hard copies of full bunch of all the statutory approvals received upon completion of the work/ occupancy certificate, and certification from GRIHA  
• Any other deliverables such as rate analysis, delay analysis, claims scrutiny etc, in hard and soft copy both  
• Soft copy (AutoCAD and PDF both) of updated/corrected as-built LOD 400 BIM model and all the as-built drawings |

### 3.8.1 General Note

1. Persons to receive and review requirements: Dean (IPS) or his authorized representatives from IITB and PMC.

2. All drawings/documents specified are included in the cost of Fees payable and if revisions are carried out revised GFC to be issued without extra cost.

3. Technical Sanction: The detailed estimate for Technical Sanction shall be based on the detailed drawings. The item descriptions shall be generally in line with the provisions of CPWD schedule of Rates enhancing w.r.t Cost Index and its latest specifications. In case of non-scheduled/special works the item description shall be framed as per good engineering practice supported with specifications and rate analysis as per reasonable market rates. Financial implications of quantity of variations/deviations of individual items exceeding beyond the Deviation limit as specified in works contract shall not be considered for working out Design Consultant’s fees unless change attributed to IITB.

4. Periodic visit by consultant: The Key Personnel from consultant and sub-consultant, specialized lab consultant shall periodically visit project site for inspection of works and also attend Project Review Meetings held at Dean (IPS) Office, IITB on regular basis as decided by IITB.

5. All materials to be incorporated shall be suitably recommended by the architect.
3.9 Form of Performance Security (Guarantee)

FORM OF BANK GUARANTEE BOND FOR PERFORMANCE SECURITY

1. In consideration of the Dean (IPS), Indian Institute of Technology Bombay (hereinafter called IITB) having agreed under the terms and conditions of Letter of Intent/ Work order/ Agreement No. . . dated . . . made between Indian Institute of Technology Bombay and (hereinafter called “the said Consultants”) for the work for Indian Institute of Technology Bombay (IITB)

2. (hereinafter called the said Letter of Intent/ Work order/ 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 IITB an amount not exceeding Rs. . . (Rupees . . only) on demand by IITB.

3. We . . . (indicate the name of Bank) do hereby undertake to pay the amount 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)

4. 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.

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

6. 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 are 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.

7. We . . . (indicate the name of Bank) further agree 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 by 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.

https://ams.iitb.ac.in/d/110085-OWIXEMVBUFZP2EI4
11. This guarantee will not be discharged due to the change in the constitution of the Bank or the Consultant(s).

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

13. This guarantee shall be valid up to . . . , unless extended on demand by IITB. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees

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

Signed and sealed

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

(Note: The Letter of Intent shall form part of the Agreement)
4 Technical Proposal

The intending architects shall submit Technical Proposal for the assignment as per the details provided in the Data Sheet.

4.1 Design brief

A Ground+9 floor building with RCC framed structure has been considered in the conceptual plan. The proposed buildings to be designed keeping in view overall permissible height ceiling of 45 meters, following norms for vertical construction as permitted by local authorities, and ensuring optimum utilization of space and building footprint. Total built up area envisaged is 28000 sqm approx. Ground floor will be shared by Chemistry and Chemical Engineering Departments, mainly for heavy equipment. Upper floors will house different facilities of these departments like laboratories, offices, student sitting rooms, instrument rooms, storage rooms, conference rooms, faculty lounge, seminar rooms, computer labs, students activity center, break-out areas etc. Services like staircase, lifts, toilets, electrical panel room, AHU rooms etc as required to be provided.

Facility includes toilets at each floor (double plumbing system), firefighting system with wet riser and sprinkler system, automatic fire alarm system, separate UG tank for fire fighting with pumping arrangement, VRV/ VRF/ Centralized Air conditioning system, AV and CCTV, back up UPS system, access control, data and voice, fume extraction, waste segregation and safe disposal, pantry room in each floor etc. The concept part Master Plan shall have location of the Academic Science Block 1 and other surrounding existing buildings and locating future buildings.

Note: The floor-wise break-up of built-up area and facilities are given in Annexure 1 as per the end users’ requirements. Consultants have to consider the data provided in the Table in their conceptual design and closely adhere to the special requirements mentioned in remark.

4.2 Technical Proposal Preparation

1. Consultant is expected to examine all terms and instructions included in the documents furnished with offer.

2. The estimated cost of construction or work for which the consultancy assignment is sought as well as the time to complete the assignment is stated in Data Sheet (Section 4.4). Financial Proposal may be in accordance with this.

3. The key professional staff, listed in the offer, shall be made available for the entire duration of the execution of assignment. This shall preferably be the permanent employees of the firm.

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

5. No alternative to key professional staff may be proposed and only one CV may be submitted to each position.
4.3 Information to be provided

Technical Proposal should provide the following information, but not limited to,

1. Any comments or suggestions on the scope of work and services, documents and details made available with this offer, as well as on the facilities to be provided by IITB.

2. A description of methodology which the consultant proposes to employ in performing the assignment, duly illustrated with bar charts of graphics or any other type of Graphics.

3. Provide a table consisting of the manpower to be deployed into this project including those from the sub-consultants, if any, engaged by the consultant along with the percentage time to be devoted to this project. This Table should be supported with Brief CVs of the Key Architect, Designer and sub-consultants 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 responsibilities held in various assignments during last ten years.

4. Estimates of the total time effort (person x months) to be provided for the services for each stage or phase of assignment, supported by breakdown of effort proposed (person x months) for major items of work and services.

5. Details of specific experience/expertise/information asked for in the Data sheet (Section 4.4).

6. Confirmation/Submission on salient technical conditions mentioned in the offer document.

7. Quality assurance system/ program proposed to be employed in design, engineering, procurement, inspection and management activities.

Note: The technical proposal shall not include any financial information.

4.4 Data sheet A: Information to Consultants

Name of Employer: Director, Indian Institute of Technology Bombay, 1st Floor, Main Building, Powai, Mumbai 400076

Name of the work: Comprehensive Architectural Consultancy Services for the Proposed Academic Science Block 1 at IIT Bombay, Powai, Mumbai-400076

Area: Total area to be developed is about 28,000 sqm BUA as per the attached layout plan (Refer figures 1 and 2).

Duration: The Assignment to be completed within 40 Months or as may be necessary to complete the assignment in all respects.

Schedule for completion of major activities: See details in Table 2.
**Financial liabilities:** Conditions related to Tax Liability, Insurance, description or reference to documents:

4.4.1 The consultant and his personnel shall pay taxes and other impositions levied under existing, amended or enacted laws during life of assignment.

4.4.2 The consultant shall cover employer’s compensation insurance for his or his sub-Consultant (if applicable) personnel in accordance with the provisions of relevant applicable laws.

4.4.3 GST shall be paid to the consultant as applicable along with the professional fee as per Financial Bid.
Table 2: Schedule of completion of major activities

<table>
<thead>
<tr>
<th>No.</th>
<th>Description of Activity</th>
<th>Period of Activity in months</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stage 1-Concept stage: (Refer section 2.6.1.1 for details)</td>
<td>From 0-2 (Two months)</td>
</tr>
<tr>
<td>2</td>
<td>Stage 2-Preliminary Design and drawings stage (Refer section 2.6.1.2 for details)</td>
<td>From 2-3 (One month)</td>
</tr>
<tr>
<td>3</td>
<td>Stage 3- Design development and statutory approval filing stage (Refer section 2.6.1.3 for details)</td>
<td>From 3-5 (Two months)</td>
</tr>
<tr>
<td>4</td>
<td>Stage 4-Working drawings and documents for tendering stage (Refer section 2.6.1.4 for details)</td>
<td>From 5-7 (Two months)</td>
</tr>
<tr>
<td>5</td>
<td>Stage 5- Tender processing and statutory approval stage (Refer section 2.6.1.5 for details)</td>
<td>From 7-10 (3 months)</td>
</tr>
<tr>
<td>6</td>
<td>Stage 6- Construction stage (Refer section 2.6.1.6 for details)</td>
<td>From 10-38 (28 months)</td>
</tr>
<tr>
<td>7</td>
<td>Stage 7-Completion stage (Refer section 2.6.1.7 for details)</td>
<td>From 38-40 (Two months)</td>
</tr>
</tbody>
</table>

4.5 Form of consultancy contract (Draft)

This Contract (hereinafter called the Contract) is made the . . . day of the month of . . . Two thousand . . . between, on one hand, Dean (I.P.S.) (hereinafter called the . . . which expression shall include his successors and permitted assigns), Indian Institute of Technology Bombay, Powai, Mumbai and, on the other hand, M/s . . . having its Registered office at . . . hereinafter called Consultant which expression shall, unless repugnant to the context, be deemed to include its successors and assigns).

WHEREAS

(A) The . . . has requested the consultant to provide certain consulting services as defined in the General Conditions of the Contract attached to this Contract (hereinafter called the Services);

(B) The consultant, having represented to the . . . 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 the contract;

Now therefore the parties hereto agree as follows:

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

Part I. Technical bid consisting of
(a) General Conditions of the Contract (hereinafter called GCC);

(b) The following sections:
   i. A: Description of the Services
   ii. B: Deliverables by the Consultant
   iii. C: Guarantee for Performance of Services

Part II. Financial bid consisting of:

   (a) Financial bid
   (b) Milestone for Payment of Consultancy Charges
   (c) Effecting payment of consultant
   (d) Details of Reimbursable expenses

The mutual rights and obligations of the Consultant shall be as set forth in the Contract, in particular:

1. The consultant shall carry out the Services in accordance with the provisions of the Contract;
   and
2. 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 of the day and year first above written.

FOR AND ON BEHALF, I.I.T. (B)

Dean (I.P.S.)

In presence of

Witness

1.
2.

FOR AND ON BEHALF OF (CONSULTANT)

(Authorized Representative)

In presence of

Witness

1.
2.
4.6 INTEGRITY PACT

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

INTEGRITY AGREEMENT

This Integrity Agreement is made at _____ on this ________ day of ___________, 2023

BETWEEN

Director IITB represented through Dean (IPS) (Hereinafter referred as the Principal/Owner, which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

________________________________________________________ (Herein referred to as the Bidder/Architect and which expression shall unless repugnant to the meaning or context hereof includes its successor and permitted assigns)

Preamble

WHEREAS the Principal/Owner has floated the Tender (NIT No ) (hereinafter referred to as “Tender/Bid”) and intends to award, under laid down organizational procedure, contract for______________________________

_____ (Name of work)
hereinafter referred to as the “Contract”.

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as “Integrity Pact” or “Pact”), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:
Article 1: Commitment of the Principal/Owner

1. The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

   a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

   b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

   c) The Principal/Owner shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

2. If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

1. It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the IITB / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2. The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

   a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner’s employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

   b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

   c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contract(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical
proposals and business details, including information contained or transmitted electronically.

d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/ representatives in India, if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.

5. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/Contractor accepts and undertakes to respect and uphold the Principal/Owner’s absolute right:

1. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days’ notice to the contractor shall have power to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. Such exclusion may be forever or for a limited period as decided by the Principal/Owner.

2. Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract, the Contractor has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal
rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

3. Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1. The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.

3. If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/sub-vendors.

2. The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

3. The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

1. This Pact begins when both the parties have legally signed it. It expires for the Bidder with the tenure of the Contract.

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

Article 7- Other Provisions

1. This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Division of the Principal/Owner, who has floated the Tender.

2. Changes and supplements need to be made in writing.
3. If the Bidder is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

4. Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

5. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

**Article 8- Legal and Prior Rights**

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

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

.....................................................
(For and on behalf of Principal/Owner)

.....................................................
(For and on behalf of Bidder/Contractor)

WITNESSES:

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

2. .............................................
(Signature, name and address)
Place:

Dated:
4.7 Design requirements

Total BUA of the building in G+9 structure is approx. 28000 sqm. The design requirements and the suggested space distribution provided by the proposed users are given in Annexure 1. Note that the equipment and specialized accessories are not part of the construction contract, however the building design should consider such equipment and specialized accessories. Also note that according to the space allocation norms at IITB, the office of the Head of Department (HOD) should have a space of 200 square feet, while Faculty members should be allocated 120 square feet and students should be provided with a space of 25 square feet. These norms must be taken into consideration in the design.

<table>
<thead>
<tr>
<th>Floor No.</th>
<th>ASB1</th>
<th>Approx Floor Height (m)</th>
<th>Approx User area (Sqm)</th>
<th>Area for Services (Sqm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GF</td>
<td>50% of area for Chemical and 50% area for Chemistry</td>
<td>5.00</td>
<td>1428</td>
<td>1380</td>
</tr>
<tr>
<td>1F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>4.00</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>2F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>4.00</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>3F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>4.00</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>4F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>4.00</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>5F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>4.00</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>6F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>4.00</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>7F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>3.85</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>8F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>3.85</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>9F</td>
<td>Chemical &amp; Chemistry Departments</td>
<td>3.85</td>
<td>1740</td>
<td>1068</td>
</tr>
<tr>
<td>Total including plinth height</td>
<td><strong>45.00</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:

4.7.1 The users’ requirements of various facilities, special requirements and preliminary design of different floors as indicated above must be referred to by consultants in the preparation of a conceptual design of Academic Science Block 1. Minor changes in the area are permitted to accommodate the efficient design and use of structure.

4.7.2 Exact allocation of space between two user groups is tentative and may undergo change. However, general requirements will remain the same.

4.7.3 The Architect will be responsible for the comprehensive engineering and design, encompassing all aspects required for a building height of 45m. In the event that the Mumbai Development Control Regulations (DCR) do not permit construction up to a height of 45m, the Architect shall submit the tender documents for a reduced height of 30m and the quoted rate in the financial bid remains the same.
Figure 1: Building foot-print and user area allocation
(Left two squares for Chemical Engineering and right two squares for Chemistry, for all floors)
Figure 2: Layout map of the ASB1 for Chemistry and Chemical Engineering Departments
Indian Institute of Technology Bombay

Comprehensive Architectural Consultancy Services
for Construction of Academic Science Block 1 at
IIT Bombay, Powai, Mumbai-400076

Ref. No. IITB/DIPS/ASB1/AC/01 dated 26.06.2023

FINANCIAL PROPOSAL
(TO BE SUBMITTED IN ENVELOPE 3)

Dean, Infrastructure Planning and Support
Indian Institute of Technology Bombay,
Powai, Mumbai 400076.
5. Financial Proposal

The Financial proposal should be submitted on the consultant’s letterhead and should be duly completed in all aspects, without any additional conditions except those mentioned in the RFP (Request for Proposal) and free from any computational errors. In preparing the Financial Proposal, the Consultant is expected to consider, besides technical requirements, commercial conditions specified in the offer document.

The Financial Proposal for the assignment and for additional works shall be all-inclusive, and should cover, but not limited to, remuneration of staff (in the field and at headquarters), gratuity, Provident fund, travel assistance, out-of-pocket expenses (per diem), Overheads, Profits, Accommodation (housing), transportation (for mobilization and demobilization), Communication, Equipment (vehicles, office equipment, furniture, consumables etc.), the printing of documents, Surveys, training. The Financial Proposal shall also include the tax liability and cost of Insurance of the Consultant’s firm and his personnel specified in the Data sheet. The fee shall be quoted in Percentage only.

5.1 Schedule of financial proposal

1. Financial Bid (Details in section 5.2)
2. Milestone for Payment of Consultancy Charges (Details in section 5.3)
3. Effecting Payment to the Design Consultant (Details in section 5.3)
4. Reimbursable expenses (Details in section 5.4)
5.2 The Financial Bid

Note

1. The bidders should quote its percentage fee in the table given below. It shall be in terms of percentage of value of work based on the approved design.

2. The value of work to be considered for calculation of fee shall be lower of (i) Technically Sanctioned Cost and (ii) Actual executed corresponding construction cost. In case of IITB asking for additional works to be included over and above the technically sanctioned one, this component will also be taken into consideration for calculation of architectural fee.

3. Until the actual cost is known, the fee for interim payments from Stage 1 to Stage 5 shall be provisionally calculated based on preliminary cost estimate of Rs 129.28 Crores.

4. All the interim payments made shall be treated as advance payments against Final Bill.

5. Fee for stage 6 shall be provisionally calculated on the basis of lower of Technically Sanctioned Cost and Work Order value.

6. Fee for Stage 7 including Final Bill will be paid on Value of Work (refer “2” above)

7. Quoted percentage shall include all the taxes applicable except GST which shall be added separately. Percentage quoted shall be written in figure and words both.

8. In case of any anomaly between percentage quoted in figure and words, percentage quoted in words will be taken into consideration for evaluation and award.

Table 4. Financial Bid

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Description</th>
<th>Percentage of fee in figures</th>
<th>Percentage of fee in words</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Comprehensive Architectural Consultancy for the Proposed Construction of Academic Science Block 1 at IIT Bombay, Powai, Mumbai-400076 consisting of providing design, drawings, cost estimate, specifications, DBRs, reports, etc. consisting of Architectural, Civil, Structural, Public Health, Electrical, Mechanical, Fire Fighting System, Acoustic, etc. including Landscape Architecture and Interior Architecture, obtaining all required statutory approvals for commencement, completion and occupancy &amp; GRIHA certification etc. complete. The % (Percentage) of Fees shall be quoted as per the scope of work defined in Technical Proposal, subject to aforesaid note.</td>
<td>% (Percentage in figures)</td>
<td>(Percentage in words)</td>
</tr>
</tbody>
</table>

Signature of authorized signatory with designation, date and office seal
### 5.3 Milestones payment of consultancy charges

**Table 5: Milestones payment of consultancy charges**

<table>
<thead>
<tr>
<th>No.</th>
<th>Stages of payment and activity</th>
<th>Cumulative Fees payable upon completion of that stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Stage 1. Concept stage</strong>&lt;br&gt;(Refer 3.6.1.1 of Technical Proposal for detailed scope of work under this stage)</td>
<td>10 %</td>
</tr>
<tr>
<td>2</td>
<td><strong>Stage 2. Preliminary Design and Drawings stage</strong>&lt;br&gt;(Refer 3.6.1.2 of Technical Proposal for detailed scope of work under this stage)</td>
<td>20 %</td>
</tr>
<tr>
<td>3</td>
<td><strong>Stage 3. Design Development and Statutory Approval filing stage</strong>&lt;br&gt;(Refer 3.6.1.3 of Technical Proposal for detailed scope of work under this stage)</td>
<td>30 %</td>
</tr>
<tr>
<td>4</td>
<td><strong>Stage 4: Working Drawings and documents for tendering stage</strong>&lt;br&gt;(Refer 3.6.1.4 of Technical Proposal for detailed scope of work under this stage)</td>
<td>45 %</td>
</tr>
<tr>
<td>5</td>
<td><strong>Stage 5: Tender processing and statutory approval stage</strong>&lt;br&gt;(Refer 3.6.1.5 of Technical Proposal for detailed scope of work under this stage)</td>
<td>50 %</td>
</tr>
<tr>
<td>6</td>
<td><strong>Stage 6: Construction Stage</strong>&lt;br&gt;(Refer 3.6.1.6 of Technical Proposal for detailed scope of work under this stage). Refer Table 6 for the payment schedule</td>
<td>90 %</td>
</tr>
<tr>
<td>7</td>
<td><strong>Stage 7: Completion Stage</strong>&lt;br&gt;(Refer 3.6.1.7 of Technical Proposal for detailed scope of work under this stage)</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Note:**

(i) No deductions shall be made from the fee of the Design Consultant on account of penalty, liquidated damages, partial rates or for the sums withheld from payment or recovered from Contractors / suppliers.

(ii) The actual cost of the completed works shall include cost of execution of assigned works, referred to in Scope of Work

(iii) Design Consultant may list out the deliverables and numbers thereof, in case progressive payment
is desired under any activity, to quantify the progress vis-a-vis the milestone. For stage 6 (construction stage), fees will be paid in stages proportionate to the quantum of work executed as per the Contractor’s certified bill value as under-

Table 6. The construction stage payment schedule

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Value of completed work (as a percentage of awarded cost)</th>
<th>Cumulative fees payable (refer Stage 6 of Table 5 above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20%</td>
<td>60%</td>
</tr>
<tr>
<td>2</td>
<td>40%</td>
<td>70%</td>
</tr>
<tr>
<td>3</td>
<td>60%</td>
<td>75%</td>
</tr>
<tr>
<td>4</td>
<td>80%</td>
<td>85%</td>
</tr>
<tr>
<td>5</td>
<td>100%</td>
<td>90%</td>
</tr>
</tbody>
</table>

5.4 Reimbursable expenses (with prior approval)

1. Proof Checking of Structural Design and HVAC
2. Fees payable to Statutory Authorities such as Chief Fire Officer, MCGM, environment authorities, AAI etc
3. GRIHA Registration Fees
4. Detailed site survey
5. Geotechnical soil investigation

Note: The payment for the reimbursable expenses to the Design Consultant shall be paid within fifteen (15) days from the date of submission of the original invoice (received from the concerned agencies) to the Client.

Signature
(Authorized Signatory)
Full Name:
Designation:
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>FLOOR</th>
<th>DEPT.</th>
<th>SPACE DISTRIBUTION</th>
<th>Area (SqM)</th>
<th>BASIC REQUIREMENTS</th>
<th>ADDITIONAL INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GF</td>
<td>Chemistry</td>
<td>Computer Server Room</td>
<td>64</td>
<td>Computer servers will be housed here. Cooling requirements and temperature as appropriate for computer servers (22±1 degC)</td>
<td>No offices; No seating space for students. Can be clubbed with Chemical Engineering's server space; but some partition between Chemistry and Chemical.</td>
</tr>
<tr>
<td>2</td>
<td>GF</td>
<td>Chemistry</td>
<td>Dry instrumentation Facilities</td>
<td>604</td>
<td>Heavy Equipment, High Loading Capacity, High Ground Clearance for Tall instruments; Epoxy Flooring, Single and Triple Phase Power, High Current Outlets; Fire Extinguishers (All classes), Proper Earthing. This facility will house 8 NMR machines, 1 EPR, 1 SEM, 1 TEM, BET, 5 XRD machines.</td>
<td>At least 14 ft Ground to Ceiling Clearance; Loading dock with a large sized gate (roughly 12 feet width) with shutter on the North Side of the Building for Loading instruments; Service Lift near the loading dock that goes up to all the floors to transport instrument shipments to higher floors; &gt;300 kVA UPS backup. Each instrument weighs approximately 1-2 tons in a 10 ft² area. Vibrational Isolation for the entire facility. DG backup minimum of one hour. Special earthing requirements for high-end equipment (Up to 10 labs up to 2nd floor will need to use this dedicated earthing)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Chemistry</td>
<td>Workshop space</td>
<td>46</td>
<td>Workshop and Glass Blowing Facility</td>
<td>Fire safety, proper ventilation</td>
</tr>
<tr>
<td>4</td>
<td>1F</td>
<td>Chemistry</td>
<td>Dry lab space</td>
<td>435</td>
<td>Fume hood for sample prep, Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets. Safety shower/eye washes, Overhead gas lines (N2, Ar and Air). Gas bank to be provided for each floor.</td>
<td>Analytical Instrumentation Facility. Will also house at least 170 kVA of power backup. Provision to be provided for a 15 sq. m. cleanroom within this space.</td>
</tr>
<tr>
<td>5</td>
<td>1F</td>
<td>Chemistry</td>
<td>Seminar Hall</td>
<td>116</td>
<td>Seminar room and conference room to have soft removable partitions so that seminar hall can be expanded too 116+58 SQM</td>
<td>Air-conditioned spaces.</td>
</tr>
<tr>
<td>6</td>
<td>1F</td>
<td>Chemistry</td>
<td>Conference Room</td>
<td>58</td>
<td>Seminar room and conference room to have soft removable partitions so that seminar hall can be expanded too 116+58 SQM</td>
<td>Air-conditioned spaces.</td>
</tr>
<tr>
<td>7</td>
<td>1F</td>
<td>Chemistry</td>
<td>Office spaces</td>
<td>261</td>
<td>Air-conditioned spaces</td>
<td>Includes HoD office, dept. office, computer/student activity room, Faculty lounge</td>
</tr>
<tr>
<td>8</td>
<td>2F</td>
<td>Chemistry</td>
<td>Wet Laboratory Spaces</td>
<td>289.9</td>
<td>4 wet labs: 3 of 87 sq. m, and 1 of 29 sq. m Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets Safety shower/eye washes, Overhead gas lines (N2, Ar and Air).</td>
<td>Laminar Flow hoods, Cold Room, Autoclave Room,</td>
</tr>
<tr>
<td>9</td>
<td>2F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>89.2</td>
<td>6 Air-conditioned spaces</td>
<td>The walls and ceiling should be completely dust-free. It is best if we can have a 10000 level clean room (provision only). Central AC does not work for ultrafast spectroscopy lab. The equipment and laser table are heavy (1 ton, 40 sq. ft. table, six such tables.). The floor should have sufficient load bearing capacity. 20 KVA UPS is required. There should be no window in the dry lab. Large doors (6 ft wide) on corridor side are required for getting equipment in. We need a smaller door, preferably with air shower, for regular access. The computer room should be contiguous with computer rooms of Lab 43A and Lab 44A and can have central AC.</td>
</tr>
<tr>
<td>10</td>
<td>2F</td>
<td>Chemistry</td>
<td>Dry Laboratory Spaces/Instrumentation rooms</td>
<td>348</td>
<td>6 spaces in total (3 of 87 sq. m. and 3 of 29 sq. m.) 3 out of these (the 87 sq. m spaces) should have separate AC. Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets Safety shower/eye washes, Overhead gas lines (N2, Ar and Air).</td>
<td></td>
</tr>
<tr>
<td>Sl. No</td>
<td>FLOOR</td>
<td>DEPT.</td>
<td>SPACE DISTRIBUTION</td>
<td>Area (SqM)</td>
<td>BASIC REQUIREMENTS</td>
<td>ADDITIONAL INSTRUCTIONS</td>
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</tr>
<tr>
<td>11</td>
<td>2F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>85</td>
<td>6 Air-conditioned spaces</td>
<td>The conference room equipment will be procured by the department</td>
</tr>
<tr>
<td>12</td>
<td>2F</td>
<td>Chemistry</td>
<td>Conference Room</td>
<td>58</td>
<td>Projector screen on one wall, HDTV on the other wall with mic and camera. Glass boards throughout the two opposite walls. 40-50 seater</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>3F</td>
<td>Chemistry</td>
<td>Computational Work Space</td>
<td>504.8</td>
<td>7 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>3F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>134</td>
<td>9 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>3F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>14.2</td>
<td>1 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>3F</td>
<td>Chemistry</td>
<td>Instrumentation Room</td>
<td>29</td>
<td>1 Air conditioned lab with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets, Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td>Laminar Flow hoods, Cold Room, Autoclave Room, 6 ft wide doors</td>
</tr>
<tr>
<td>17</td>
<td>3F</td>
<td>Chemistry</td>
<td>Wet Laboratory Space</td>
<td>188</td>
<td>3 wet labs (87 sq. m, 29 sq. m. and 72 sq. m.) Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets, Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td>Cleanroom space (105 sq.ft.). Gas cylinder room in common utility area on all floors. Interconnecting doors for the wet labs, 4 ft door on the main corridor side, Proper Earthing</td>
</tr>
<tr>
<td>18</td>
<td>4F</td>
<td>Chemistry</td>
<td>Wet Laboratory Spaces</td>
<td>521.74</td>
<td>4 wet labs of 109 sq. m, 1 wet lab of 86 sq.m. At least 30 Fume hoods. Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets, Safety shower/eye washes, Overhead gas lines (N2, Ar and Air), Provision for a 15 sq. m. cleanroom within this space.</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>4F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>74.3</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>4F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>70.6</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>4F</td>
<td>Chemistry</td>
<td>Instrumentation Rooms</td>
<td>145</td>
<td>5 Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets, Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td>The conference room equipment will be procured by the department</td>
</tr>
<tr>
<td>22</td>
<td>4F</td>
<td>Chemistry</td>
<td>Conference Room</td>
<td>58</td>
<td>Projector screen on one wall, HDTV on the other wall with mic and camera. Glass boards throughout the two opposite walls. 40-50 seater</td>
<td>Gas cylinder storage area in common utility area on all floors. Interconnecting doors for the wet labs, 4 ft door on the main corridor side, Proper Earthing</td>
</tr>
<tr>
<td>23</td>
<td>5F</td>
<td>Chemistry</td>
<td>Wet Laboratory Spaces</td>
<td>522</td>
<td>4 wet labs of 109 sq. m, 1 wet lab of 86 sq.m. At least 40 Fume hoods. Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets, Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>5F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>75</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>5F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>71</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>5F</td>
<td>Chemistry</td>
<td>Instrumentation Rooms</td>
<td>145</td>
<td>5 Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring, Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets, Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td></td>
</tr>
<tr>
<td>Sl. No</td>
<td>FLOOR</td>
<td>DEPT.</td>
<td>SPACE DISTRIBUTION</td>
<td>Area (SqM)</td>
<td>BASIC REQUIREMENTS</td>
<td>ADDITIONAL INSTRUCTIONS</td>
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<tr>
<td>27</td>
<td>5F</td>
<td>Chemistry</td>
<td>Chemical Storage Room</td>
<td>58</td>
<td>Well-ventilated space for Chemicals/Acids/Solvents storage racks. Need ducts for ~18-25 chemical/acid/solvent storage cabinets</td>
<td>Epoxy flooring and fire extinguishers</td>
</tr>
<tr>
<td>28</td>
<td>6F</td>
<td>Chemistry</td>
<td>Wet Laboratory Spaces</td>
<td>522</td>
<td>4 wet labs of 109 sq. m, 1 wet lab of 86 sq.m.</td>
<td>Gas cylinder storage area in common utility area on all floors. Interconnecting doors for the wet labs, 4 ft door on the main corridor side, Proper Earthing</td>
</tr>
<tr>
<td>29</td>
<td>6F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>75</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>6F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>71</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>6F</td>
<td>Chemistry</td>
<td>Instrumentation Rooms</td>
<td>145</td>
<td>5 Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets. Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>6F</td>
<td>Chemistry</td>
<td>Conference Room</td>
<td>58</td>
<td>Projector screen on one wall, HDTV on the other wall with mic and camera. Glass boards throughout the two opposite walls. 40-50 seater</td>
<td>The conference room equipment will be procured by the department</td>
</tr>
<tr>
<td>33</td>
<td>7F</td>
<td>Chemistry</td>
<td>Wet Laboratory Spaces</td>
<td>522</td>
<td>4 wet labs of 109 sq. m, 1 wet lab of 86 sq.m.</td>
<td>Gas cylinder storage area in common utility area on all floors. Interconnecting doors for the wet labs, 4 ft door on the main corridor side, Proper Earthing</td>
</tr>
<tr>
<td>34</td>
<td>7F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>75</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>7F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>71</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>7F</td>
<td>Chemistry</td>
<td>Instrumentation Rooms</td>
<td>145</td>
<td>5 Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets. Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>7F</td>
<td>Chemistry</td>
<td>Chemical Storage Room</td>
<td>58</td>
<td>Well-ventilated space for Chemicals/Acids/Solvents storage racks. Need ducts for ~18-25 chemical/acid/solvent storage cabinets</td>
<td>Epoxy flooring and fire extinguishers</td>
</tr>
<tr>
<td>38</td>
<td>8F</td>
<td>Chemistry</td>
<td>Wet Laboratory Spaces</td>
<td>522</td>
<td>4 wet labs of 109 sq. m, 1 wet lab of 86 sq.m.</td>
<td>Gas cylinder storage area in common utility area on all floors. Interconnecting doors for the wet labs, 4 ft door on the main corridor side, Proper Earthing</td>
</tr>
<tr>
<td>39</td>
<td>8F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>75</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>8F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>71</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>8F</td>
<td>Chemistry</td>
<td>Instrumentation Rooms</td>
<td>145</td>
<td>5 Air conditioned labs with false ceiling, Epoxy (Chemical resistant) flooring Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets. Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td></td>
</tr>
<tr>
<td>Sl. No</td>
<td>FLOOR</td>
<td>DEPT.</td>
<td>SPACE DISTRIBUTION</td>
<td>Area (SqM)</td>
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<td>ADDITIONAL INSTRUCTIONS</td>
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</tr>
<tr>
<td>42</td>
<td>8F</td>
<td>Chemistry</td>
<td>Conference Room</td>
<td>58</td>
<td>Projector screen on one wall, HDTV on the other wall with mic and camera. Glass boards throughout the two opposite walls. 40-50 seater</td>
<td>The conference room equipment will be procured by the department</td>
</tr>
<tr>
<td>43</td>
<td>9F</td>
<td>Chemistry</td>
<td>Wet Laboratory Spaces</td>
<td>522</td>
<td>4 wet labs of 109 sq. m, 1 wet lab of 86 sq.m. At least 40 Fume hoods. Air conditioned labs with false ceiling. Epoxy (Chemical resistant) flooring. Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets. Safety shower/eye washes, Overhead gas lines (N2, Ar and Air)</td>
<td>Gas cylinder storage area in common utility area on all floors. Interconnecting doors for the wet labs, 4 ft door on the main corridor side, Proper Earthing</td>
</tr>
<tr>
<td>44</td>
<td>9F</td>
<td>Chemistry</td>
<td>Faculty Offices</td>
<td>75</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>9F</td>
<td>Chemistry</td>
<td>Student Sitting Spaces</td>
<td>71</td>
<td>5 Air-conditioned spaces</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>9F</td>
<td>Chemistry</td>
<td>Instrumentation Rooms</td>
<td>145</td>
<td>5 Air conditioned labs with false ceiling. Epoxy (Chemical resistant) flooring Dry scrubber with blower, Fire extinguishers (ABC+D dry powder), Variable air volume system for hoods, Single and three-phase power outlets. High current outlets. Safety shower/eye washes, Overhead gas lines (N2, Ar, Air)</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>9F</td>
<td>Chemistry</td>
<td>Chemical Storage Room</td>
<td>58</td>
<td>Well-ventilated space for Chemicals/Acids/Solvents storage racks. Need ducts for ~18-25 chemical/acid/solvent storage cabinets</td>
<td>Epoxy flooring and fire extinguishers</td>
</tr>
<tr>
<td>48</td>
<td>GF</td>
<td>Chemical</td>
<td>Lab: Biochemical Engineering</td>
<td>164</td>
<td>Laboratory will house equipment such as LCMS. Will also need electrical connections suitable for such equipment. Detailed power requirements can be provided later. Lab sink as appropriate for chemistry labs are required. Compressors, autoclaves, gas bank, gas connections</td>
<td>No faculty offices; Seating arrangement for five people using the equipment and operators is required.</td>
</tr>
<tr>
<td>49</td>
<td>GF</td>
<td>Chemical</td>
<td>Lab: Soft Matter</td>
<td>164</td>
<td>This laboratory will house 4 high end microscopes, such as HRSEM and HRTEM. Each microscope weighs approximately 2000kg. Need 3-4 separate fumehoods for sample preparation. Equipments need to be isolated from external vibration and sound. We would also need independent earthing. Temperature control (AC) will be essential (within 22+/−1 degC, RH 40+/−10%). Lab sink as appropriate for chemistry labs is required. Ventilation as required for chemistry labs for the sample preparation areas. Regular electrical outlets and three phase supply will be required, as well as dedicated backup for these high end machines. Compressors, autoclaves, gas bank, gas connections will be needed. In addition to the above, Polymer Extrusion machine, weighing 3000 kg, will need to be grouted to the floor.</td>
<td>No faculty offices, Seating arrangement for five people using the equipment and operators is required.</td>
</tr>
<tr>
<td>Sl. No</td>
<td>FLOOR</td>
<td>DEPT.</td>
<td>SPACE DISTRIBUTION</td>
<td>Area (SqM)</td>
<td>BASIC REQUIREMENTS</td>
<td>ADDITIONAL INSTRUCTIONS</td>
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<tr>
<td>50</td>
<td>GF</td>
<td>Chemical</td>
<td>Lab: Reaction Engineering</td>
<td>164</td>
<td>6m high (includes clearance needed) for Distillation column, footprint area of 15m2. &quot;A&quot; This will be a laboratory for process chemistry, electrochemistry and materials chemistry. Therefore, laboratory rigs might be installed that require a high ceiling. Lab sink as appropriate for chemistry labs are required. Ventilation as required for chemistry labs. Dry scrubber with blower, Overhead gas lines (N2, Ar and Air). Fire extinguishers (ABC-D dry powder). Variable air volume system for hoods. Regular electrical outlets (5, 15 A) and three phase supply might be required. Compressors, autoclaves, gas bank, gas connections. Safety shower/eye washes. Multiple exits for safety.</td>
<td>No faculty offices; Seating arrangement for five people using the equipment and operators is required.</td>
</tr>
<tr>
<td>51</td>
<td>GF</td>
<td>Chemical</td>
<td>Lab: Process Systems Engineering and Molecular Dynamics and Simulations</td>
<td>221</td>
<td>Computer servers will be house here. Cooling requirements and temperature as appropriate for computer servers (22+/-1 degC)</td>
<td>No faculty offices; No seating space for students</td>
</tr>
<tr>
<td>52</td>
<td>1F</td>
<td>Chemical</td>
<td>Department office</td>
<td>20</td>
<td>Office of Departmental Heads</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>1F</td>
<td>Chemical</td>
<td>Department office</td>
<td>76</td>
<td>storage space for office furniture such as photocopiers, almirahs, etc.; server room with UPS, 10 m²</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>1F</td>
<td>Chemical</td>
<td>Department office</td>
<td>78</td>
<td>Seating space for ten office staff, 78 m²</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>1F</td>
<td>Chemical</td>
<td>Womens' Resting Area</td>
<td>87</td>
<td>Washroom is needed; amenities for women who need rest.</td>
<td>One bathroom is needed inside this area</td>
</tr>
<tr>
<td>56</td>
<td>1F</td>
<td>Chemical</td>
<td>Meeting room and library</td>
<td>87</td>
<td>Room for 60 people; racks may be placed along walls to store books</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>1F</td>
<td>Chemical</td>
<td>One meeting room</td>
<td>22</td>
<td>Room for 15 people</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>1F</td>
<td>Chemical</td>
<td>Faculty Lounge</td>
<td>31</td>
<td>Coffee machine; seating space for 10-15 people</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>1F</td>
<td>Chemical</td>
<td>Adjunct Faculty offices</td>
<td>34</td>
<td>Three adjunct faculty offices, each of 11m²</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>1F</td>
<td>Chemical</td>
<td>Chemical Engineering Café</td>
<td>77</td>
<td>Café + seating place for 30 people</td>
<td>Cafe location, entrance and exit should be designed to ensure that the neighbouring labs and offices are not disturbed</td>
</tr>
<tr>
<td>61</td>
<td>1F</td>
<td>Chemical</td>
<td>Lab: Process Systems Engineering</td>
<td>358</td>
<td>Faculty office windows should face westward (toward Powai lake). Office space for seven faculty, 98 m²; seating space for students, 153 m²; space for labs, 107 m²;</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>2F</td>
<td>Chemical</td>
<td>One seminar room (150 people)</td>
<td>174</td>
<td>Flexible and sound-proof partitions that gives 2-3 smaller rooms; Can be used as small classrooms with black boards</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>2F</td>
<td>Chemical</td>
<td>One computer room (75 computers and 100 people)</td>
<td>174</td>
<td>Tables with retractable screens; Flexible and sound-proof partitions that gives 2-3 smaller rooms; Can be used as small classrooms with black boards</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>2F</td>
<td>Chemical</td>
<td>Lab: Process Systems Engineering and Molecular Dynamics</td>
<td>87</td>
<td>Air conditioned labs with false ceiling. Single (5A/15A) and three-phase power outlets. High current outlets. All power outlets should be well earthed. Multiple data ports/WiFi access. Modular seating for students and workstations, servers. Server rooms will require significant cooling (AC). This cooling load needs to be accounted for. (Precision cooling 22+/-1 degC)</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>2F</td>
<td>Chemical</td>
<td>Lab: Molecular Dynamics and Simulations</td>
<td>435</td>
<td>Air conditioned labs with false ceiling. Single (5A/15A) and three-phase power outlets. High current outlets. All power outlets should be well earthed. Multiple data ports/WiFi access. Modular seating for students and workstations, servers. Server rooms will require significant cooling (AC). This cooling load needs to be accounted for. (Precision cooling 22+/-1 degC)</td>
<td>Faculty office windows should face westward (toward Powai lake). Office space for eight faculty, 112 m²; seating space for 56 students, 258 m²; space for labs, 65 m²;</td>
</tr>
<tr>
<td>Sl. No</td>
<td>FLOOR</td>
<td>DEPT.</td>
<td>SPACE DISTRIBUTION</td>
<td>Area (SqM)</td>
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</tr>
<tr>
<td>66</td>
<td>3F</td>
<td>Chemical + Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>“B”</td>
<td>Labs should allow the possibility of setting up table top experiments with laboratory benches, regular laboratory sinks and drainage. Normal electrical supply as for experimental chemistry/biochemical engineering labs with table top equipment. Gas banks and gas connections are needed. Provision should be made for gas banks in corridors, gas connections and compressors. Dry scrubber with blower, Overhead gas lines (N2, Ar and Air). Fire extinguishers (ABC+D dry powder). Variable air volume system for hoods. Bio labs should have separate air conditioning, not connected to building HVAC for isolation. These laboratories will be equipped with a 6’ hood and a laminar flow hood. Chemical hoods should come with power, water/gas connections, fire retardant solvent storage underneath. Soft matter laboratories should have the option to house a 6’ hood. Hoods should come with fire retardant solvent storage underneath. There should be central granite top tables, on which heavy analytical equipment can be placed. These should have access from all 4 sides.</td>
<td>Faculty office windows should face westward (toward Powai lake). All faculty offices and student sitting should be in the west block while all lab facilities should be in the east block. Office space for two faculty, 28 m²; office space for one adjunct faculty, 11 m²; seating space for 14 students, 65 m²; one meeting room, 22 m²; space for labs, 309 m²; Provision should be made for a GMP facility that will require special air handling unit</td>
</tr>
<tr>
<td>67</td>
<td>3F</td>
<td>Chemical + Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as “B” above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>4F</td>
<td>Chemical + Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as “B” above</td>
<td>Faculty office windows should face westward (toward Powai lake). All faculty offices and student sitting should be in the west block while all lab facilities should be in the east block. Office space for four faculty, 42 m²; seating space for 21 students, 97 m²; space for labs, 296 m²; NOTE: There is a total of 296+309=605m² lab space on this floor, which should be divided equally among 5 faculty members.</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>4F</td>
<td>Chemical + Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as “B” above</td>
<td>Lab space should be continuous in this block. Space for labs, 435 m². Two biochemical labs, each 120m² + remaining for five SM+FM labs shared equally.</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>5F</td>
<td>Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as “B” above</td>
<td>Faculty office windows should face westward (toward Powai lake). All faculty offices and student sitting should be in the west block while all lab facilities should be in the east block. Office space for five faculty, 70 m²; office space for one adjunct faculty, 11 m²; seating space for 35 students, 161 m²; one meeting room, 22 m²; space for labs, 171m²</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>5F</td>
<td>Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as “B” above</td>
<td>Lab space should be continuous in this block. Space for labs, 435 m². Two biochemical labs, each 120m² + remaining for five SM+FM labs shared equally.</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>6F</td>
<td>Chemical + Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as “B” above</td>
<td>Faculty office windows should face westward (toward Powai lake). All faculty offices and student sitting should be in the west block while all lab facilities should be in the east block. Office space for five faculty, 70 m²; office space for one adjunct faculty, 11 m²; seating space for 35 students, 161 m²; one meeting room, 22 m²; space for labs, 171m²</td>
<td></td>
</tr>
</tbody>
</table>

IITB/DIPS/ASB1/AC/01 Dated 2023 June 26 Annexure I - Design Requirements 6/7

https://ams.iitb.ac.in/d/110085-OWIXEMVBUFZP2EI4
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>FLOOR</th>
<th>DEPT.</th>
<th>SPACE DISTRIBUTION</th>
<th>Area (SqM)</th>
<th>BASIC REQUIREMENTS</th>
<th>ADDITIONAL INSTRUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>73</td>
<td>6F</td>
<td>Chemical</td>
<td>Lab: Biochemical Engineering + Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as &quot;B&quot; above</td>
<td>Lab space should be continuous in this block. Space for labs, 435 m². NOTE: There is a total of 171+435=606m² lab space on this floor, which should be divided equally among 5 faculty members.</td>
</tr>
<tr>
<td>74</td>
<td>7F</td>
<td>Chemical</td>
<td>Lab: Reaction Engineering+ Soft Matter and Fluid Mechanics</td>
<td>435</td>
<td>Same as &quot;A&quot; above</td>
<td>Faculty office windows should face westward (toward Powai lake). All faculty offices and student sitting should be in the west block while all lab facilities should be in the east block. Office space for five faculty, 70 m²; office space for one adjunct faculty, 11 m²; seating space for 35 students, 161 m²; one meeting room, 22 m²; space for labs, 171 m²</td>
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<td>7F</td>
<td>Chemical</td>
<td>Lab: Reaction Engineering+ Soft Matter and Fluid Mechanics</td>
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<td>Same as &quot;A&quot; above</td>
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<td>76</td>
<td>8F</td>
<td>Chemical</td>
<td>Lab: Reaction Engineering+ Soft Matter and Fluid Mechanics</td>
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<td>Lab: Reaction Engineering</td>
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<td>Chemical</td>
<td>Lab: Reaction Engineering</td>
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