Foundation for Innovative New Diagnostics, India
(FIND India)

Advertised Tender Enquiry (ATE)

Bid Document

For

Partial Renovation, Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period

Bid Ref. No.: SAMS/FIND India/partial renovation/ATE/2022/8/G/2022/0080

(Procurement Agency)
STRATEGIC ALLIANCE
Management Services Pvt. Ltd.
B-18, Sector-6, NOIDA, G.B. Nagar, Uttar Pradesh - 201301
Email: procurement@samsconsult.com
Website:www.samsconsult.com

Advertised Tender Enquiry (ATE)

Bid Document for

Partial Renovation, Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period

Key Bidding Information

Bid Ref No.	**SAMS/FIND India/partial renovation/ATE/2022/8/G/2022/0080**
E-procurement Portal (FIND India)	**https://procurementindia.finddx.org/Account/Login.aspx**
Name of the Project	**Procurement of Equipment, Goods, Works Services and Reagents for Foundation for Innovative New Diagnostics, India (FIND India) for The Global Fund Grant Project under the National Tuberculosis Elimination Program (NTEP), Govt. of India**
Source of Funding	**The Global Fund to Fight AIDS, Tuberculosis and Malaria (The Global Fund)**
Date of Commencement of Download of Bidding Documents	**22/10/2022 from 10:00 AM** (Link https://www.samsconsult.com/FIND.aspx)
Last Date and Time for Receipt of Request for Clarifications	**31/10/2022 till 04:00 PM** (All such request must be submitted through mail to *procurement@samsconsult.com)*
Time and Date for online Pre-Bid Meeting	**11.00 AM on 01/11/2022** The meeting shall be held online. Prospective bidder may use the below link https://join.skype.com/t7jrWX1VLhtM
Last Date & Time for Submission of Bids	**15/11/2022 till 03.00 PM**
Date & Time for Opening of Technical Bids	**15/11/2022 at 03.30 PM** https://join.skype.com/sPyzTBSsj78U
Place of Pre-Bid Meeting	Hybrid Mode (Offline and Online through Skype): https://join.skype.com/t7jrWX1VLhtM
Place of Pre-Bid Meeting (offline)	**M/s Strategic Alliance Management Services Pvt. Ltd.** B-18, Sector-6, Noida, G.B. Nagar Uttar Pradesh – 201301

Advertised Tender Enquiry (ATE)

for

Partial Renovation, Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period

IFB No.: SAMS/FIND India/Partial renovation/ATE/2022/8/G/2022/0080 **Dated: 22/10/2022**

1. Strategic Alliance Management Services Pvt. Ltd. (SAMS) has been engaged by "Foundation for Innovative New Diagnostics" (FIND India), New Delhi, India (a not-for-profit Company created under Section 8 (Indian) Companies Act, 2013) for providing procurement consultancy services for equipment, goods, works and services for TB Laboratories established across India under National Tuberculosis Elimination Program(NTEP), Ministry of Health and Family Welfare, Govt. of India. FIND India has plans for partial renovation of Four (4) TB Containment Laboratories in Medical Colleges/ Govt. Hospitals / Institutions across the India for the NTEP.
2. **SAMS hereby invites e-bids (through E-procurement system of FIND India) from eligible and qualified Bidders for the Partial Renovation of TB Containment Laboratories at 04 sites as given in Schedule of Requirement of the Bid Document.**
3. Bidding will be conducted through **E-procurement system of FIND India** by 'Advertised Tender Enquiry' method and procedures as set out in the 'General Financial Rule – 2017' and Manual of Policies and Procedure for Purchase of Goods and Works issued by Department of Expenditure, Ministry of Finance, Govt. of India.
4. Bidders are required to submit Bid Security Declaration as per format provided in the Bid Documents. Certain class of Bidders are exempted from submission of Bid Security. Details are given in Bid Documents.
5. The Bid Document can be freely downloaded from the website www.samsconsult.com and E-procurement system of FIND India starting from **10.00 AM on 22/10/2022**. Bidders shall be solely responsible for checking the above website for any addendum/amendment issued subsequent to publication of this IFB and take the same into consideration while preparing and submitting their bids.
6. Bidders' representatives are invited to attend an offline/in person (physical) **pre-bid meeting at 11.00 AM on 01/11/2022** at the address mentioned above. Please note that non-attendance at the pre-bid meeting will not be the cause of disqualification of bidders. Bidders can also participate in an online pre-bid meeting through skype link https://join.skype.com/t7jrWX1VLhtM at the scheduled time and date of pre-bid meeting. Bidders who are unable to attend the pre-bid meeting (online or offline) can send their written requests for clarification, if any up to **04.00 PM on 31/10/2022** at email procurement@samsconsult.com.
7. **Bids must be submitted online on or before 03:00 PM on 15/11/2022 by Bidders**, registered as Vendor on the e-Procurement System. All documents required towards submission of bids must be uploaded online.
8. **The Technical Bids will be opened on the same day at 03.30 PM on the e-Procurement System** and the name of bidders who have submitted their bids upto scheduled date and time shall be made

Sanjay Rastogi
Director, SAMS

SECTION– I: INSTRUCTIONS TO BIDDERS (ITB)

A. PREAMBLE

1. INTRODUCTION

1.1 Strategic Alliance Management Services Private Limited (SAMS), acting as Procurement Agent on behalf of Foundation for Innovative New Diagnostics (FIND), New Delhi (hereinafter referred as "Purchaser") has issued this Bid Documents for selection of Contactor(s) to Partial Renovation of TB Containment Laboratories at **FOUR (4) sites** as given in Schedule of Requirement of the Bid Documents.

1.2 This Chapter provides the relevant information as well as instructions to assist the prospective bidders in preparation and submission of bids. It also includes the modeand procedure to be adopted by the Purchaser for receipt and opening as well as scrutiny and evaluation of bids and subsequent placement of award / contract.

1.3 Before preparing the bid and submitting the same to the Purchaser, the bidder should read and examine all the terms & conditions, instructions etc. contained in theBid Documents. Failure to provide required information or to comply with the instructions incorporated in this Bid Documents may result in rejection of bidssubmitted by bidders.

2. AVAILABILITY OF FUNDS

2.1 Expenditure to be incurred for the proposed works will be met from the funds provided by The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM).

3. SITE VISIT

3.1 It is strongly recommended that the Bidders may visit and examine, at their own expense, the Site of Works and its surroundings and obtain all information that may be necessary for preparing the bid and if awarded the work, entering into a contract for successful execution and completion of the work.

4. LANGUAGE OF BID

4.1 The bid submitted by the bidder and all subsequent correspondences and documents relating to the bid exchanged between the bidder and the Employer, shall be written in English language. However, the language of any printed literature furnished by the bidder in connection with its bid may be written in any other language provided, the same is accompanied by an English translation and, for purposes of interpretation of the bid, the English translation shall govern**.**

5. BIDDER'S ELIGIBILITY

5.1 This invitation for bids is open for all Organizations (Proprietorship Firms, PartnershipFirms, Limited Liability Partnership Firms, Companies registered under Companies Act, 1956 or Societies Act, Trusts, Societies registered under respective Act and Jurisdiction in India**). Consortium or Joint Venture are not permitted.**

5.2 This invitation for bids is open to only Class – I Local Suppliers as per the order Ref. No. P-45021/2/2017-PP (BE-II) dated 16 September, 2020[1] issued by Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Govt. of India. A Class-I Local Supplier means a supplier or

service provider, whose goods, services or works offered for procurement has local content equal to or more than 50%. The bidder is required to give an undertaking in the Form TECH-1: Form of Bid (Technical) of section -II of the Bid Document to the above effect. If such an undertaking given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.

5.3 Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. Where applicable, evidence of valid registration by the Competent Authority shall be attached, failing which their bids shall be rejected. The Competent Authority for the purpose of this clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT). More details may be found in the Office Memorandum (O.M.) Ref. F.No.6/18/2019-PPD dated 23/7/2020[2] issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Govt. of India. Further, A contractor shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority in India. Bidders are required to certify about compliance of above requirement in the Form TECH-1: Form of Bid (Technical) of section -II of the Bid Document to the above effect. If such a certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.

6. BIDDING EXPENSES

6.1 The bidder shall bear all costs and expenditure incurred and/or to be incurred by it in connection with its bid including preparation and submission of its bid and subsequently processing the same. The Purchaser will, in no case be responsible or liable for any such cost, expenditure etc. regardless of the conduct or outcome ofthe bidding process.

The Bid Document can be freely downloaded from the website www.samsconsult.com starting from **10.00 AM on 22/10/2022.** Bidders shall be solely responsible for checking the above website for any addendum/amendment issued subsequent to publication of this IFB and take the same into consideration while preparing and submitting their bids.

B. BIDDING DOCUMENTS

7. CONTENT OF BIDDING DOCUMENTS

7.1 The Bid Documents include the following Sections, in addition to the 'Notice Inviting Tenders (NIT):

- Section I – Instructions to Bidders (ITB)
- Section II – Technical Proposal – Standard Forms
- Section III – Financial Proposal – Standard Forms
- Section IV – Schedule of Requirement, Technical Specifications and drawings/Layouts of Laboratories and required works
- Section V – Contract Form and Conditions of Contract
- Section VI – Other Standard Forms

7.2 The relevant details of the required works and services, procedure for bidding, bid evaluation, placement of contract, the applicable contract terms and also thestandard formats to be used for this purpose are incorporated in the above-mentioned chapters. The interested bidders are expected to examine all such details etc. to proceed further.

[2] https://www.doe.gov.in/sites/default/files/OM%20dated%2023.07.2020.pdf

8. AMENDMENTS TO BID DOCUMENTS

8.1 At any time prior to the deadline for submission of bids, the Purchaser may, for anyreason deemed fit by it, modify the Bid Documents by issuing suitable amendment(s) to it.

8.2 Such an amendment will be notified on SAMS website i.e. www.samsconsult.com and FIND India E-Procurement Software, the same shall be binding to all prospective Bidders.

8.3 In order to provide reasonable time to prospective bidders to take necessary actionin preparing their bids as per the amendment, the Purchaser may, at its discretion extend the deadline for the submission of bids and other allied time frames, which are linked with that deadline.

8.4 Any bidder who has downloaded the Bid Documents should watch for amendment, if any, issued on the above website and the Purchaser will not issue separate communication to them. Purchaser shall not be responsible in any manner if prospective Bidders miss any notifications placed on above website.

9. CLARIFICATIONS OF TENDER DOCUMENTS

9.1 A prospective bidder requiring any clarification regarding Scope of Work andTechnical Specifications, conditions of contract, etc. given in the Bid Documents may submit written request for **clarifications to SAMS by email at procurement@samsconsult.com up to 04.00 PM on 31/10/2022**. Copies of the Purchaser's response shall be promptly published at the Purchaser's website, including a description of the inquiry but without identifying itssource.

9.2 All the prospective bidders will be notified of response to clarifications only through websites www.samsconsult.com. Any bidder who has downloaded the Bid Documents should watch for clarifications, if any, issued on the above website and The Purchaser will not issue separate communication to them.

9.3 The Purchaser shall not be responsible in any manner if a prospective bidder fails tonotice any notifications placed on above websites.

10. PRE-BID MEETING

10.1 In order to provide response to any doubt regarding scope of work and technical specifications and conditions of contract etc. given in the Bid Documents, a pre-bid meeting (physical and online) has been scheduled in the office of the purchaser at **11.00 AM on 01/11/2022 and through skype link**: https://join.skype.com/t7jrWX1VLhtM .

10.2 During the pre-bid meeting, the clarification sought by representatives of prospectivebidders shall be responded appropriately. However, they shall be asked to submit their written request by close of office next day. The Purchaser shall upload written response to such requests for clarifications, without identifying its source. In case required, amendments, in terms of Para 7 above shall be issued, which shall be binding on all prospective bidders.

C. PREPARATION OF BIDS

11. DOCUMENTS COMPRISING THE BID

11.1 The bidder can submit the bid online through the **E-procurement system of FIND India** by using Two Bid System i.e. "**Technical Bid**" and "**Financial Bid**". The Bid shall comprise the following:

A) <u>TECHNICAL BID</u>

i) Bid Security furnished in accordance with ITB Para 17;
ii) Documents in support of qualification criteria as stated in ITB Para 27.A.
iii) Technical Bid Forms, duly filled as per formats given in the Bid Documents asunder:

(1) Form TECH-1: Form of Bid (Technical)
(2) Form TECH-2: Bidders' Information Form
(3) Form TECH-3: Proposed Project Team and OrganizationalStructure
(4) Form TECH-3: Proposed Methodology to Execute the Works/ GANTT Chart informing timelines for executing the various stages of work
(5) Form TECH-5: Technical Compliance sheet

i. Power of Attorney in favor of signatory of Bid.
ii. Certificate of Incorporation/ Registration of the bidder.
iii. Supporting Documents showing Qualification of the Bidders for the required Works as per ITB para 25 A (Assessment of Qualification)

B) PRICE BID

Bidder should submit Price Bid **<u>for each quoted Schedule</u>** in accordance with the forms indicated in Section-III:

(1) Form FIN-1: Form of Price Bid (Financial)
(2) Form FIN-2: Lump sum Contract Price
(3) Form FIN-3: Priced Bill of Quantity (item wise)

12. BID CURRENCIES

12.1 The bidder providing services as per the scope of services should quote in Indian Rupees only.

12.2 Bids, where prices are quoted in any other currency shall be treated as non - responsive and rejected.

13. BID PRICES

13.1 Prices shall be quoted as specified in the Bid Document. The format of the Price Bid is included in Section III.

13.2 The Bidder shall indicate on the FIN Forms provided in Section III, total bid prices ofthe Works including goods and services as per Scope of Services given in Bid Documents. Fixed price to be quoted against required works against each Schedule.

13.3 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account. A bid submitted with an adjustableprice quotation will be treated as nonresponsive and will be rejected, pursuant to ITBClause 27.

14. FIRM PRICE

14.1 The Prices quoted by the bidder shall remain firm and fixed during the currency of the contract and not subject to variation on any account. Bidder should include all prices for any unexpected

expenditure that may be foreseen in the BID price itself. The price quoted by the bidder should include expenses towards any exigency (external or internal) that may arise during execution of the contract. No payment, other than the quoted price shall be made to the selected bidder.

15. ALTERNATIVE BIDS

15.1 Alternative bids shall not be accepted. The bidder should not submit more than onebid for any Schedule.

16. DOCUMENTS ESTABLISHING COMPLIANCE OF WORKS AND SERVICES ASPER BID DOCUMENTS

16.1 The bidder must submit Bid Form duly signed by authorized signatory certifying compliance on the Scope of works and technical specifications incorporated in the Bid Documents.

16.2 In case there is any variation and/or deviation between the Scope of works and technical specifications prescribed by the Purchaser and that offered by the bidder,the bidder shall list out the same in the above statement without any ambiguity.

16.3 If a bidder furnishes wrong and/or misguiding/misleading data, statement(s) etc. about the services offered by it, its bid will be liable to be ignored and rejected in addition to other remedies available to the Purchaser in this regard.

17. BID SECURITY

17.1 Bidders shall furnish as part of its bid, a Bid Security Declaration as per the format provide in Section VI – Other Standard Forms

17.2 Any bid not accompanied by Bid Security Declaration as specified in ITB Para 17.1 above shall be rejected by the Purchaser as non-responsive.

17.3 Bidder will be suspended and declared ineligible for two years from the date of suspension, to submit bids / proposals against Request for Bids / Request for Proposals issued by the Purchaser, in the following cases:

(a) When the bidder withdraws or modifies its bid during the validity of bids as specified in the Letter of Bid; or

(b) when the bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract; or (ii) fail to furnish the Performance Security, if required in accordance with the Bid Documents.

17.4 The Micro and Small Enterprise (MSE) bidders, registered with MSME or those registered with NSIC are exempted from submission of bid security. In such case, bidder should submit copy of MSME or National small industries corporation (NSIC) registration and documents showing exemption from submission of bid security, in lieu of bid security.

18. BID VALIDITY

18.1 The bids shall remain valid for a period of 120 days after the due date of submissionof bids. Any bid valid for a shorter period shall be treated as nonresponsive and rejected.

18.2 In exceptional situations, the bidders may be requested by the Purchaser to extendthe validity of their bids up to a specified period. Such request(s) and responses thereto shall be conveyed by e-mail.

D. SUBMISSION AND OPENING OF BIDS

19. SUBMISSION OF BIDS

19.1 Bidders are requested to submit their bids online through FIND India e-Procurement system. FIND India has introduced an e-Procurement process for sourcing goods and services for its projects in India. As a part of this initiative, FIND has created a Vendor Portal to provide a platform for various vendors to offer their services. A vendor can be a legally registered business entity or an individual. Broadly speaking, this portal provides the following facilities to the vendors:

- Register with FIND for supplying goods or for providing services.
- Sign up in a secure manner and manage their access password.
- Create and manage profiles online.
- Receive online and email notifications for RFPs for various procurements.
- Submit electronic bids in response to RFPs issued by FIND.

Bidders are requested to submit their proposals through FIND India E-procurement System only.

If bidder is not registered yet on FIND India E-procurement system, kindly go through the attached "USER MANUAL" pdf below the link, for the process of vendor registration which will provide the guidance for using this vendor portal and onward submission of the proposal.

Please find below the link for vendor registration
https://procurementindia.finddx.org/Vendor/VendorRegistration.aspx

FIND_UserManual_V
endorRegsitration.pdf

20. DEADLINE FOR SUBMISSION OF BIDS

20.1 Bids must be submitted online before the no later than the time and date specified in the **Bid i.e., 03.00 PM of 15/11/2022.**

20.2 The date of submission and opening of bids shall not be extended except when –

a) Adequate number of bids have not been received within the given time and the Purchaser is of the opinion that further bids are likely to be submitted if time is extended; or
b) the Bidding Documents are required to be substantially modified because of discussions in pre-bid meeting or otherwise and the time for preparations of bids by the prospective bidders appears to be insufficient for which such extension is required.

20.3 In cases where the time and date of submission of bids is extended, an amendment to the Bidding Documents shall be issued in accordance with ITB Para 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline extended

20.4 If the due date for submission of bids declared as non-working day, the bids shall be received and opened at the same time and hour on the next working day.

21. WITHDRAWAL, SUBSTITUTION AND MODIFICATION OF BIDS

21.1 A bidder may substitute, or modify its bid before the deadline for online submission of bids.

21.2 No bid shall be withdrawn, substituted, or modified after the time and date fixed for submission of online bids.

22. LATE BIDS

22.1 Bidder will not be able to submit bids online after closing of the deadline (date and time) for the submission of the bid as specified in the Bid document.

22.2 Manual submission of bid is also not allowed.

E. BID OPENING

23. OPENING OF BIDS

23.1 The Purchaser will open all bids, online in the presence of Bidders' representatives who choose to attend, at the time, on the date, and at the place specified in the **Key Bidding information.** Bidders' representatives shall sign attendance sheet as proof of their attendance. The Bidders can view the online bid opening after Login as Vendor using username and password. The name of Bidders shall appear to Bidders attending online bid opening**.**

23.2 The Technical Bid shall be opened at the first instance **at 03.30 PM on 15/11/2022**. During the Technical Bid opening, the Bid opening official(s) will read the salient features of the bids like Bid Security Declaration and any other special features of the bids, as deemed fit by the bid opening official(s).

23.3 The Purchaser will prepare minutes of the technical bid opening at the end of the opening session, including, as a minimum: the name of the Bidder; the presence or absence of a bid security etc. The minutes should be distributed to all Bidders who attended the meeting and will also be uploaded on Purchaser's website.

23.4 After the technical evaluation of bids are completed, the Purchaser shall notify thoseBidders whose Bids are found non-responsive at technical evaluation stage, their Financial Bids will not be opened.

23.5 The Purchaser shall simultaneously notify in writing those Bidders that have qualified during technical evaluation stage and inform them of the date, time and location for the opening of the Financial Bids. The opening date should allow the Bidders sufficient time to make arrangements for attending the opening. TheBidder's attendance at the opening of the Financial Bids is optional and is at the Bidder's choice.

23.6 The Financial Bids shall be opened online by the Purchaser in the presence of the representatives of those Bidders found qualified during technical evaluation stage. Financial bids shall be opened only for qualified no. of schedules as per criteria mentioned below at para 23.7. These Financial Bids shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Bidders who submitted Bids.

23.7 In case a bidder is determined as technically qualified for lesser no. of labs / Schedules than quoted by them, than the purchaser shall consider only the qualified no. of labs/ Schedules as per technical evaluation criteria defined at para 28 as valid bids which fall "in the order of natural sequence" and remaining shall be ignored. No representation from Bidders shall be entertained in this regard.

F. SCRUTINY AND EVALUATION OF BIDS

24. BASIC PRINCIPLE

24.1 Bids will be evaluated based on the terms & conditions, instructions, criteria already incorporated in the Bid Documents, based on which bids have beenreceived and the information/documents given by the bidders in their bids. No new condition will be brought in while scrutinizing and evaluating the bids.

25. PRELIMINARY SCRUTINY OF BIDS

25.1 The Purchaser will examine the bids to determine whether they are complete, whether required securities have been furnished, whether the documents have been properly signed stamped and whether the bids are generally in order.

25.2 Prior to detailed evaluation of Bids, the Purchaser will determine the substantial responsiveness of each bid to the Bid Documents. For purposes of these clauses, asubstantially responsive bid is one, which conforms to all the Conditions of Contract given in the Bid Documents without material deviations. Deviations from, or objections or reservations to critical provisions such as those concerning Performance Security, Taxes & Duties, Force Majeure, and Applicable law will be deemed to be a material deviation.

25.3 The Employer's determination of a Bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

25.4 The bids, which do not meet the eligibility and qualification requirements are liable to be treated as non- responsive and will be summarily ignored. In addition, the following are some of the important aspects, for which a bid shall be declared non –responsive and will be summarily ignored.

- Bid validity is shorter than the required period.
- Required Bid Security Declaration has not been submitted.
- Bidder has not agreed to give the required Performance Security.

26. CLARIFICATION OF BIDS

26.1 During evaluation of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be inwriting, and no change in the prices or substance of the bid shall be sought, offered, or permitted, except to correct arithmetic errors identified by the Purchaser in the evaluation of the bids.

27. CONFIDENTIALITY

27.1 Information relating to the examination, clarification, evaluation, and comparison of bids, and recommendations for the award of a Contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the notification of Contract award is made to all Bidders.

27.2 Any effort by the bidder to influence the Purchaser in the Purchaser's bid evaluation, bid comparison, or contract award decisions may result in the rejection of the Bidder's bid.

27.3 From the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to its bid, it should do so in writing

28. TECHNICAL EVALUATION CRITERIA OF BID

A. ASSESSMENT OF QUALIFICATION

After preliminary scrutiny of bids in accordance with ITB Para 25 above, Bidder's shall beassessed for their qualification for the Schedules quoted by them as per criteria given below:

(a) Bidders may submit their response for any ONE or MORE or ALL schedule of requirement as specified below at sl. No. (b)

(b) To qualify **for each Schedule**, the bidder, should have achieved an average annual turnover during last three financial years (i.e., 2018-19, 2019-20 and 2020-21) as per table below:

Sequence No.	Schedule No.	Brief Scope of Works and List of Sites	Average Annual Turnover requirement over last three F.Y. (i.e., 2018-19, 2019-20 and 2020-21) (Rs.)
		Partial Renovation, Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period	
1	(I)	IRL Siliguri	10,00,000
2	(II)	LLRM Meerut	10,00,000
3	(III)	IMS BHU	10,00,000
4	(IV)	IRL Patiala	10,00,000

In case bidder quotes for multiple Schedules, the requirement of turnover shall be cumulative i.e., sum of turnover required for multiple no. of quoted Schedules

In support of the above qualification requirement, bidder should submit Copies of audited financial statements of accounts (including balance sheet, profit and loss account, auditor's reports, and IT returns) certified by the auditor of the Company for last three financial years (i.e., 2018-19, 2019-20 and 2020-21).

(c) (1) In case bidder quotes for one Schedule, Bidder should have experience of successfully executed **at least 1 (one) similar work**s* during last 5 (five) years (as on date of opening of technical bids).

(2) In case bidder quotes for 2 (Two) Schedules, Bidder should have experience of successfully executed **at least 2 (two) similar work**s* during last 5 (five) years (as on date of opening of technical bids) as specified below

(3) In case bidder quotes for 3 (three) Schedules or more, Bidders should have experience of successfully executed **at least 3 (three) similar work**s* during last 5 (five) years (as on date of opening of technical bids) as specified below

***Similar works shall mean successful design, construction, testing, commissioning, and validation of Bio-Safety laboratory (BSL-2/ BSL-3/BSL-4 Laboratories) / AMC of BSL3 Labs /TB Containment laboratories)/ Biomedical research facility/vaccine facility including Internal construction works, electrical works, HVAC works, AccessControl System etc**.

In support of this qualification requirement, bidder should submit name and address of Client, details of similar works executed, duration of work, date of completion, handing over of work, copies of work order / contract, satisfactory completion certificate issued by the Client. Self/Own certification by agencies shallnot be considered for prequalification. The Purchaser will have the discretion to verify the successful and satisfactory work completion. In case performance is found unsatisfactory, the Purchaser shall have discretion to disqualify the bidder.

(d) The bidder shall have followed minimum qualified team of key personnel for successful execution of the work

1. The bidder should have one Project Manager, with minimum 5-years *Similar experience who shall be responsible for all the quoted Schedules.

2. The bidder should have at least one Site supervisor /Mechanical Electrical and Plumbing (MEP engineer) **for each Site under the quoted Schedule.** She/he shall have minimum 3- years' experience (if B. Tech/B. E- Electrical/Mechanical/Biomedical/Electronics) or 5-years' experience (if ITI/Diploma- Electrical/Mechanical/Biomedical/Electronics)

   In support of this requirement, bidder should submit detailed CV of such personnel duly supported with the letter of undertaking from such personnel that they are full-time employee/ consultant of the bidder and shall be ready for deployment at site(s) if contract is awarded to the bidder.

(e) The bidder should submit a detailed work plan for each quoted schedule.

(f) bidder and should not be debarred / blacklisted by MOH&FW, GOI, or any other Central Govt. Department or State Government or UNOPS/UNDP or SAMS as on the date of opening of bid. The bidder should also not be debarred by the Global Fund. In support of this qualification requirement, bidder should submit Notarized Affidavit giving undertaking to the above effect.

Note:

1. *The bidders who meet the qualification criteria specified at para (a) and (b) above, forthe quoted Schedules, shall be considered for further evaluation of qualification as perpara (c) to (f) and also for detailed technical Evaluation.*

2. *Bidders are advised to quote for such number of Schedules for which they are qualified as per requirement given in para (a) and (b) above, as per their own assessment.*

B. TECHNICAL EVALUATION

After preliminary scrutiny of bids in accordance with ITB Para 25 above, the technical evaluation of substantial responsiveness of bids shall be carried out based on the information / documents submitted against Scope of Works and Technical Specifications for each quoted Schedules individually.

The bids determined as technically disqualified / non-responsive shall not beconsidered for opening of financial bids.

In case of Bidder quotes for multiple schedules, the average Annual turnover requirement, similar works, and Manpower requirement would be in multiples of the number of schedules quoted as specified in the evaluation criteria above at para 28 a-d.

Schedule wise technical evaluation shall be carried out and, bidder must meet technical qualification requirement for each schedule as mentioned in the para 28. Above to qualify under each schedule.

C. FINANCIAL EVALUATION:

- The financial evaluation of bids shall be carried out based on the total price for

(a) Partial Renovation, Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period at following sites:

- Financial evaluation shall be carried out only for technically qualified schedules and lowest evaluated responsive bidder under each schedule shall be considered for award of contract.

29. MINOR INFIRMITY/IRREGULARITY/NON-CONFORMITY

29.1 If during the preliminary scrutiny of bids or during technical evaluation of bids, pursuant to ITB Para 25 & 28 above, the Purchaser finds any minor infirmity and/or irregularity and/or

non-conformity in a bid, the Purchaser may waive the same provided it does not constitute any material deviation and financial impact and, also,does not prejudice or affect the ranking order of the bidders. Wherever necessary, the Purchaser will convey its observation on such 'minor' issues to the bidder by speed post/e-mail asking the bidder to respond by a specified date. If the bidder does not reply by the specified date or gives evasive reply without clarifying the pointat issue in clear terms, that bid will not be evaluated further.

30. FINAL EVALUATION OF BIDDERS' CAPABILITY TO PERFORM THE CONTRACT

30.1 The Employer, through the above process of bid scrutiny and evaluation will determine to its satisfaction whether the bidder, whose bid has been determined as the lowest evaluated responsive bid, is eligible, qualified, and capable in all respectsto perform the contract satisfactorily.

30.2 To adjudge bidders' capability to perform the contract, the Purchaser may ask bidders to make detailed presentation on implementation plan of project.

31. CONTACTING THE EMPLOYER

31.1 From the time of submission of bid to the time of awarding the contract, if a bidder needs to contact the Purchaser for any reason relating to its bid, it should do so onlyin writing.

31.2 In case a bidder attempts to influence the Purchaser in the Employer's decision on scrutiny, comparison & evaluation of bid and awarding the contract, the bid of the bidder shall be liable for rejection in addition to appropriate administrative and coercive actions being taken against that bidder, as deemed fit by the Employer.

G. AWARD OF CONTRACT

32. EMPLOYER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALLBIDS

32.1 The Purchaser reserves the right to accept in part or in full any bid or reject any bid(s) without assigning any reason or to cancel the bidding process and reject all bids at any time prior to award of contract, without incurring any liability, whatsoeverto the affected bidder(s).

33. AWARD CRITERIA

33.1 The contract will be awarded to the lowest priced evaluated responsive bidder for each schedule, decided by the Employer.

34. VARIATION IN SCOPE OF SERVICES AT THE TIME OF AWARD AND/ORDURING VALIDITY OF CONTRACT

34.1 The Purchaser reserves the right at the time of Contract award and/or during validityof contract, to increase or decrease the scope of services to the extent of 25% basedon mutually agreed terms and conditions.

35. INTIMATION LETTER TO SUCCESSFUL BIDDER / NOTIFICATION OFAWARD

35.1 Before expiry of the bid validity period, the Purchaser will notify the successful bidder(s) in writing, only by speed post or by e-mail that its bid has been accepted, briefly indicating therein the essential details like description of services and corresponding prices accepted. The successful bidder must furnish to the Purchaserthe required Performance Security within 21 days along with the contract agreementfrom the date of this notification, failing which the awardwill be cancelled.

35.2 The Notification of Award shall constitute the formation of the Contract.

36. SIGNING OF CONTRACT

36.1 Promptly after notification of award, the Purchaser will send the contract form as per Format given in the Bid Documents duly completed and signed, in duplicate, to the successful bidder by speed post.

36.2 Within twenty-one days from the date of the Notification of Award as above, the successful bidder shall return the original copy of the contract, duly signed, and dated, to the Purchaser by registered / speed post.

SECTION– II: TECHNICAL PROPOSAL- STANDARD FORMS

TECHNICAL PROPOSAL- STANDARD FORMS

Form TECH-1: Form of Bid (Technical)

To,
The Director
M/s Strategic Alliance Management Services Pvt.
Ltd. B-18, Sector-6,
Noida, G.B. Nagar
Uttar Pradesh - 201301

Dear Sir,

Subject: Bid for Partial Renovation, Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period at following sites:

Bid Ref. No. SAMS/FIND India/Partial renovation/ATE/2022/8/G/2022/0080

1. We, [***Name of Bidder***], hereby submit a bid for the above-referenced works inresponse to the above-referenced Bid Document for following Schedules:

Seq. No.	Sch. No.	Name of Laboratory

2. We warrant that in preparing and submitting this bid, we have complied with, and are willing to be bound by, all of the requirements and provisions of the above- referenced Bid Document, including the terms and conditions of the Contract as set out in Bid Documents

3. Our bid shall remain valid for SAMS' acceptance until **120 *days*** from the Closing Date.

4. We acknowledge and agree that:

- SAMS is not bound to accept the lowest bid or any other bid it may receive in response to the above-referenced ITB.
- no liability of SAMS and no binding contract exists until the Contract is executedby both parties.
- each party constituting the bidder is bound jointly and severally by this bid; and

5. If we visit a site for inspection, we agree to release SAMS/FIND from all, and indemnifyin respect of any damage, expense, loss or liability of any nature suffered or incurred by SAMS/ FIND because of.

(i) loss of or damage to any real or personal property.
(ii) personal injury, disease, or illness to, or death of, any person.
(iii) financial loss or expense, arising out of the carrying out of that site inspection;and
(iv) transportation to the site (if provided) because of any accidents or maliciousacts by third parties

6. We shall ensure compliance of The Global Fund's Code of Conduct for Suppliers (https://www.theglobalfund.org/media/3275/corporate_codeofconductforsuppliers_policy_en.pdf), as amended from time to time.

7. I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.

8. Enclosed is a bid security declaration as per format provided in the Bid Documents.

I, the undersigned, certify that I am duly authorized by [***insert name of bidder***] to sign this bid

Name:_____

Title:_____

Date:_____

Signature: _____

[***Stamp form of bid with official stamp of the bidder***]

TECHNICAL PROPOSAL- STANDARD FORMS

Form TECH-2: Bidders' Information Form

[Bidders are required to provide the information sought below]

1. Name, Address, phone / email of the Bidder:

2. Expertise of Organization: [In brief, not more than 500 words]

- Organization structure (e.g., service provider, hospital owner)
- Years of experience in executing similar assignments
- Core areas of expertise of the organization

3. Details of staff under permanent rolls of the Bidder

a. technical
b. skilled
c. unskilled

4. Financial data of the organization

Annual Turnover of Last 3 Financial Years

F.Y. 2018-19 - Rs._____

F.Y. 2019-20 - Rs._____

F.Y. 2020-21 - Rs._____

P.S. Please attach Audited financial statement, including Profit & Loss Statement, Income &Expenditure statements etc. (for the last three years as above)

- Name and Address of Banker

5. Client Reference List:

[Please provide references such as customer's details, tel. nos. etc.]

Name of client/customer:	Description of service rendered	Client's Contact person name, telephone, and e-mail Id.
1.		
2.		
3.		

a. Please provide client list of the bidder as perabove table
b. Please attach self-attested copy of Work Order / MOU / Contract or any otherdocument in support of above experience.

6. Contact details of persons who may contacted for requests for clarificationduring bid evaluation:

-Name/Surname:

- Tel Number (direct): Landline and Mobile no.
- Email address (direct):

Signature and seal of the Bidder

TECHNICAL PROPOSAL- STANDARD FORMS

Form TECH-3: Proposed Project Team and Organizational Structure

<u>Note to bidders</u>: Bidders shall submit a details of Project team and Organizational Structure

TECHNICAL PROPOSAL- STANDARD FORMS

Form TECH-4: Proposed Methodology to Execute the Works/ GANTT Chart informing timelines for executing the various stages of work

(Use as much space as required for completing this section)

I. PROPOSED METHODOLOGY

II. SCHEDULE OF EXECUTION OF WORKS (FOR EACH QUOTED SCHEDULE SEPARATELY)

TECHNICAL PROPOSAL- STANDARD FORMS

Form TECH-5: Technical Compliance sheet

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
NBMCH Siliguri	**1**	BSL-3 lab (before renovation work): securing the uninstalled equipment and accessories in the room identified for storage with appropriate safety packing such as using bubble wrap and wooden box etc.		
		a. Uninstallation of 2units of split AC of capacity 1.5 Tons with its parts such as copper line, electrical points from the BSL 3 room.		
		b. Uninstallation of 3 units of Biosafety Cabinet with its ducting.		
		c. Uninstallation of 5 units of Refrigerated centrifuge and its accessories.		
		d. Uninstallation of 2 units of Microliter centrifuge and its accessories.		
		e. Uninstallation of 2 units of MGIT 960 system and its accessories.		
		f. Uninstallation of 2 units of Hot air oven/universal oven and its accessories.		
		g. Uninstallation of 1 unit of Refrigerator and its accessories.		
	2	BSL 3 (after renovation work): reinstallation of equipment from the stored location, unpack from previously packed materials at it designated place.		
		a. Relocation of Split AC at the proposed location which is above the existing pass boxes with necessary wiring. supply, and installation 16 AMP switch sockets for installation of 1.5 TR Split ACs.		
		b. Ducting of Biosafety cabinet at identified space.		
		c. Reinstallation of refrigerated centrifuge, microliter centrifuge, refrigerator and MGIT 960 system with their respective accessories.		
	3	Supply and deployment 6 feet (length) by 3 feet (breadth) by 2feet 6 inches (height) workbench made of stainless steel. Frame shall be made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection. It should be strong to hold the granite top/workbench as well as equipment places on the workbench. There shall be no drawers or safe in the workstation and shall have arrangement for placing the UPS below the work bench.		
	4	For Epoxy flooring in BSL3:		
		a. Removal of epoxy flooring of area 672 sq. Ft that includes Change room (5 feet 1 inches by 16 feet 6 inches) and Anteroom (5 feet 1 inches by 7 feet 2 inches).		
		b. Reconditioning of flooring if found not as per recommendations for epoxy.		
		c. Epoxy flooring of entire area 672 sq. Ft. Flooring shall be of 5 mm (3 mm + 2mm) of self-levelling industrial epoxy including screed compound for adhesion, 3 mm semisolid cladding of EPOXY will be applied over a uniform cemented flooring and 2 mm semi-liquid epoxy over 3 mm hardened surface with bubble free perfect smooth finishing completed in three steps: Cementing (Uniform Flooring), Hardening (3 mm epoxy) and smoothening (2mm epoxy).		

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
	5	RTV silicon sealant for the entire TB Containment lab.		
	6	For AHU Placement:		
		a. Before renovation:		
		i. Dismantle duct and AHU component.		
		ii. Duct length of supply approx. 60 ft and exhaust approx. 66 ft		
		iii. Including filters		
		iv. Shifting of existing supply & exhaust AHU Component		
		1. Supply motor blower assembly of rating RPM 3500		
		a. Make: Nicotra Gebhardt		
		b. Model: RDH-315 R		
		c. Serial number: 1310015856		
		2. Exhaust motor blower assembly of rating RPM 3500		
		a. Make: Nicotra Gebhardt		
		b. Model: RDH-315 R		
		c. Serial number: 1307009641		
		3. Condensing unit of rating 8.5 tr (2 units)		
		v. Commissioning of AHU after shifting including electrical wiring and conduct work and refrigerant refilling.		
		vi. AHU Shed as per specification: It will be required at sites where AHU is installed on roof/ outside the lab building. AHU shed with provision for fencing, door with lock-key arrangement.		
		1. Framework vertically made of M S Square Pipe frame: 2 Inches X 2 Inches, 16 Gauge		
		2. M S Fencing with wire mesh: ½ inch X ½ inch		
		3. Supporting Structure M S Angle: 50 X 5 mm		
		4. GI pre-coated corrugated profile roof sheet: 0.5 mm thick duly supported with J Hook.		
		5. 10 SWG with provision of door with lock and key		
		6. AHU Shed with fencing should be duly enamel painted and with anti-rust coating from both sides. The height covered shall be at least 8 feet. There should be no gap between roof sheet and wire mesh, if any angle creates gap, it should be covered with iron bars and wire mesh in between.		
		b. During renovation: Space for AHU placement identified at the roof top adjacent to the northern wall as per annexure 1(b) of TB Containment Lab across. Area of new identified AHU is 20 feet length and 20 feet width with proper wire mesh and with lock & key facility.		
		Technical requirement:		
		a. Ducting approximately 50 feet run of supply and 40 feet run of exhaust:		
		i. Material: GI sheet Up to 750mm 0.63 mm (24 G)		

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		ii. Hanger Rods for duct support: up to 2250 mm ducts - Min. 10 mm dia.		
		iii. Nuts and Bolts		
		iv. Gaskets: Gasket (min. 3 mm) should be provided between flanged joints		
		v. Painting: Primer coating on all MS components supports and flanges should be provided		
		vi. Duct Collars and Droppers		
		vii. Bird Screen for fresh air intake		
		viii. Sealing of Joints		
		ix. Fire and Smoke dampers: Size as per duct size.		
		x. Dampers: Size as per duct size (2 units; supply and exhaust each)		
		b. Duct Insulation Work, 50 feet run of supply and 40 feet run of exhaust:		
		i. Thickness of Material used for Duct Insulation: Nitrile Rubber (Supply: 19 mm thick & Return: 13 mm thick)		
		ii. Joints: All joints shall be overlapped and properly sealed		
		c. Supply, installation, and commissioning of one Containment HEPA Housing assembly with 2 HEPA Filter of size(610mmx610mm) cascaded manner for supply duct as per specification mentioned below:		
		i. Material of construction: SS 304 (14 gauge) with leak proof.		
		ii. Isolation dampers at Inlet & Outlet		
		iii. Facility for on-site HEPA Filter scanning and testing		
		iv. Fumigation Ports		
		v. Bag-In-Bag-Out facility for filter replacement		
		vi. Magnehelic Gauge for monitoring pressure drop across HEPA Filter		
		vii. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.		
		d. Return duct (Bag in bag out) Containment as per specification mentioned below:		
		i. HEPA filter with efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size).		
		ii. Material of construction: SS 304 (14 gauge) with leak proof.		
		iii. Isolation dampers at Inlet & Outlet		
		iv. Facility for on-site HEPA Filter scanning and testing		
		v. Fumigation Ports		
		vi. Bag-In-Bag-Out facility for filter replacement		
		vii. Magnehelic Gauge for monitoring pressure drop across HEPA Filter		
		viii. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.		
		e. Validation of Laboratory and BSC:		

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		i. For TB Containment Lab- The installation as a whole shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution		
		i. Pressure in each room/zone as per the design, differential pressure readings including across filters.		
		ii. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design		
		iii. Smoke pattern test for directional airflow should be performed during validation including for Passbox.		
		iv. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10%		
		v. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications		
		vi. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels		
		vii. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity		
		viii. Operational performance testing for		
		1. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit		
		2. Ducting for any potential leakages and insulation breakage		
		3. Dampers including variable control, leak proof and fire control (only verification)		
		4. Magnehelic Gauges		
		5. Temperature control sensors; pressures control sensors,		
		6. Passbox		
		7. Split Acs		
		8. Fire Detection system		
		9. EPABX System		
		10. Access Control System		
		11. CCTV System		
		12. UPS Back up system		
		13. Emergency Shower and eye wash station		
		14. Interlocking of supply blower motor and exhaust blower motor		
		ix. Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval.		
		ii. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.		
		i. The contractor shall arrange to do a mandatory third-party validation		
		ii. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency. For Bio Safety Cabinet:		

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		iii. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity		
		iv. Maintenance of the BSC to be carried out if existing one to be used (and not covered under warranty) i.e., complete, and thorough cleaning of working Area of cabinet, cleaning of exhaust filter from the top to eliminate and external clogging or disturbance and inspection of ducting, cleaning and oiling of sliding sash movement system, checking of switches, tube lights and UV light fittings, checking of airflow and exhaust system, calibration and validation of Magnehelic Gauges if existing, etc.		
		v. HEPA Filter (in BIBO) integrity test based on EN1822 at MPPS (Maximum Penetrating Particle Size) through particle count test and PAO test and manufacturer's certifications		
LLRMC Meerut		**Inside TB containment Lab and AHU control Panel**		
	1	Removal of Existing Epoxy Flooring of approx. area of 400 sq. Ft including (Change Room: 14' X 5', Ante Room: 6' X 5', TB containment Room: 15' X 20'.).		
	2	Proper levelling and rework of existing cemented flooring before applying new epoxy flooring.		
	3	For Epoxy flooring in TB Containment Laboratory:		
		a. Removal of epoxy flooring of area 400 sq. Ft that includes (Change Room: 14' X 5', Ante Room: 6' X 5', TB containment Room: 15' X 20'.).		
		b. Reconditioning of flooring if found not as per recommended for epoxy.		
		c. Epoxy flooring of entire area 400 sq. Ft. (Change Room: 14' X 5', Ante Room: 6' X 5', TB containment Room: 15' X 20'.). Flooring shall be of 5 mm (3 mm + 2mm) of self-levelling industrial epoxy including screed compound for adhesion, 3 mm semisolid cladding of Epoxy will be applied over a uniform cemented flooring and 2 mm semi-liquid Epoxy over 3 mm hardened surface with bubble free perfect smooth finishing completed in three steps: Cementing (Uniform Flooring), Hardening (3 mm Epoxy) and smoothening (2mm Epoxy).		
	4	Removal of Existing Rusted Wash Basin in the Ante Room		
	5	Installation of a new Modular standalone hand washing sinks made of SS 304 with elbow or foot operated mechanism to be provided. Wall hanging soap dispenser to be provided along with the wash basin unit. A Tissue paper rack with a mechanism to pull out tissue papers, to be provided near the wash basin to dry hands. Water lines that penetrate the Ante Room Space to be equipped with back-flow prevention devices. Outlet pipes should be made of PVC with closure outside lab		
	6	Supply and installation of Workbench of size (4'(L)x3'(W)x3'(H) with Frame made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection and with a Granite Top. It should be strong to hold the granite top as well as equipment placed on the workbench. It should be stable and vibration free. 1 Storage cabinet made up of SS 304 to be installed below the granite top of Workbench to store usable Lab Items.		
	7	Coat Hangers to be provide in the Ante Room for placing of used Lab Coats		

<table>
<tr><th>Site Name</th><th>Sl. No.</th><th>Bid Technical Specification (Main)</th><th>Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)</th><th>Proposed make/ Manufacturer</th></tr>
<tr><td></td><td>8</td><td>Both the Split ACs to be connected to alternator (Timer Control cut-off and start) for changeover every 4 hours between them so that run load is equally distributed between both the ACs.</td><td></td><td></td></tr>
<tr><td></td><td>9</td><td>Total 5 new 5/15 Amp switch socket along with dedicated MCB in the Distribution Box to be installed inside the TB containment Lab with discussion with Microbiologist of the Lab as the Switch and Socket are not sufficient for Existing Equipment placed inside the TB Containment Laboratory.</td><td></td><td></td></tr>
<tr><td></td><td>10</td><td>Clean room Monitor (Pressure, Temperature and RH monitoring) to be installed inside the Proposed TB containment lab for monitoring, humidity, temperature, and pressure of the Lab</td><td></td><td></td></tr>
<tr><td></td><td>11</td><td>The Existing Light assembly along with Lights (8 Nos., Flush Type, 18 watts each) to be replaced with new ones with proper sealing to prevent any damage to lights</td><td></td><td></td></tr>
<tr><td></td><td>12</td><td>3 Nos. of UPS along with External batteries (details mentioned below) to be removed from the TB containment Lab and needs to be placed outside in the corridor with connection to the dedicated switch socket inside the lab. Necessary wiring to be done to connect the switch socket inside TB Containment Lab to the UPS kept outside in the corridor/ the passage in front of the Existing Autoclave Room as per site’s feasibility</td><td></td><td></td></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Equipment Description</th><th>Make</th><th>Model</th><th>Serial Number</th></tr>
<tr><td>UPS WITH 6 BATTERIES</td><td>APC</td><td>SRC3KUXI</td><td>B2173001003 6</td></tr>
<tr><td>UPS WITH 6 BATTERIES</td><td>NUMERIC ONFINIT</td><td>ONFINIT 3KVA-72FMC</td><td>V170704835</td></tr>
<tr><td>UPS WITH 6 BATTERIES</td><td>NUMERIC ONFINIT</td><td>ONFINIT 3KVA-72FMC</td><td>V170704841</td></tr>
</table>
</td><td></td><td></td></tr>
<tr><td></td><td>13</td><td>Currently the motors are not controlled trough any VFD. Additional Control Panel with VFD for both supply and Exhaust Motors and required electrical wiring to be installed near to the Existing Main AHU Control Panel.</td><td></td><td></td></tr>
<tr><td></td><td>14</td><td>Installation of Single-phase protector in the Existing AHU control Panel</td><td></td><td></td></tr>
<tr><td></td><td>15</td><td>All Equipment (Details mentioned below) inside the TB containment Laboratory to be removed with all its accessories and place them in a safe and secure temporary space provided by Site before Epoxy Flooring work to be carried out</td><td></td><td></td></tr>
<tr><td></td><td>16</td><td>MGIT-960 to be shifted and installed by BD in BSL-3 Container based Lab around which is around 500 meter in the same campus of Lab along with Accessories for 3 months of the Renovation works.</td><td></td><td></td></tr>
<tr><td></td><td>17</td><td>Supply and Installation of 1 additional camera with necessary wiring to be done and connected to the existing 8 channel DVR as no camera has been installed in the AHU shed.</td><td></td><td></td></tr>
<tr><td></td><td>18</td><td>Re-Installation of the Equipment (Details mentioned below) along with all accessories inside the TB containment Laboratory after the Interior work of TB containment Lab is completed.</td><td></td><td></td></tr>
</table>

<table>
<tr><th>Site Name</th><th>Sl. No.</th><th>Bid Technical Specification (Main)</th><th>Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)</th><th>Proposed make/ Manufacturer</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Equipment Description</th><th>Make</th><th>Model</th><th>Serial Number</th></tr>
<tr><td>Refrigerated centrifuge</td><td>Thermo scientific</td><td>Sorvall legend XIR</td><td>42235464</td></tr>
<tr><td>Refrigerated centrifuge</td><td>Thermo scientific</td><td>Sorvall legend XIR</td><td>42235463</td></tr>
<tr><td>Biosafety cabinet class II A2</td><td>Heal force</td><td>Hf safe 1200 lc</td><td>061712LCJ3039K</td></tr>
<tr><td>Biosafety cabinet class II A2</td><td>Heal force</td><td>hf safe 1200 lc</td><td>061712LCJ3050K</td></tr>
<tr><td>Microliter centrifuge</td><td>Remi Elektrotechnik Limited.</td><td>Remi Elektrotechnik Limited.</td><td>9578</td></tr>
<tr><td>Microliter centrifuge</td><td>Remi Elektrotechnik Limited.</td><td>Remi Elektrotechnik Limited.</td><td>9577</td></tr>
<tr><td>Deep freezer (-20 c)</td><td>Thermo scientific</td><td>151faev-tsc</td><td>8.02817E+16</td></tr>
<tr><td>BACTEC MGIT 960 SYSTEM along with Lexmark Printer</td><td>BD</td><td>445870 Bactec MGIT 960</td><td>MG-4179</td></tr>
<tr><td>Hot Air Oven(260Litres)</td><td>Jindal</td><td>C SMI-118</td><td>SMSI/1718/10/HAO 010</td></tr>
</table>
</td><td></td><td></td></tr>
<tr><td></td><td>19</td><td>Proper sealing of Modular panels to prevent any seepage of water inside the Lab after re-installation of BSC inside the TB Containment Lab</td><td></td><td></td></tr>
<tr><td></td><td>20</td><td>All the materials /parts removed during partial renovation for TB containment Lab, or the AHU will be handed over to the site for further action</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>FOR AHU and HVAC Unit:</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>21</td><td>The size of the AHU shed (13’(L) x15’(W) needs to be extended to at least (20’(L)X20’(W)) with New AHU Shed to accommodate all the HVAC and AHU Components within shed and have enough space for servicing as the current space is too congested for Service and maintenance</td><td></td><td></td></tr>
<tr><td></td><td>22</td><td>As an even surface not available for AHU, the same must be levelled through (masonry work) for the entire surface area which will be enclosed within AHU shed and the AHU will be raised to a height of 1-2 feet from the base to prevent water logging and also provide vibration pads to reduce noise and Vibration.</td><td></td><td></td></tr>
<tr><td></td><td>23</td><td>AHU Shed to be made as per specification: It will be required at sites where AHU is installed on roof/ outside the lab building. AHU shed with provision for fencing, door with lock-key arrangement.</td><td></td><td></td></tr>
<tr><td></td><td></td><td>a. Framework vertically made of M S Square Pipe frame: 2 Inches X 2 Inches, 16 Gauge</td><td></td><td></td></tr>
</table>

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		b. M S Fencing with wire mesh: ½ inch X ½ inch		
		c. Supporting Structure M S Angle: 50 X 5 mm		
		d. GI pre-coated corrugated profile roof sheet: 0.5 mm thick duly supported with J Hook.		
		e. 10 SWG with provision of door with lock and key		
		f. AHU Shed with fencing should be duly enamel painted and with anti-rust coating from both sides. The height covered shall be at least 8 feet. There should be no gap between roof sheet and wire mesh, if any angle creates gap, it should be covered with iron bars and wire mesh in between.		
	24	Dismantling and Removal of AHU and HVAC component and Replacement with New AHU components mentioned below		
		a. Complete Supply and Exhaust Ducting with insulation of approx. length of 30-35 Feet's each		
		b. Set of Filters		
		i. Pre-Filter: (Qty-1, Size(610mmx610mmx610mm) Flange Type) Coarse filter will be in outside fresh air pre-filter section and will be G4 washable filter (50 mm deep) class having average arrestance of 85-98% for 10 microns size as per EN779 2002		
		ii. Fine Filter: (Qty-1, Size(610mmx610mmx305mm) Flange Type) Fine filters will be F7 filter (300 mm deep) Average Efficiency 85-95% for 1-micron size as per EN 779 2002 standards.		
		iii. Removal of existing HEPA filters along with BIBO housing		
		iv. Supply, installation, and commissioning of one Containment HEPA Housing assembly with 2 HEPA Filter of size(610mmx610mmx305mm) cascaded manner for supply duct as per specification mentioned below:		
		a. Material of construction: SS 304 (14 gauge) with leak proof.		
		b. Isolation dampers at Inlet & Outlet		
		c. Facility for on-site HEPA Filter scanning and testing		
		d. Fumigation Ports		
		e. Bag-In-Bag-Out facility for filter replacement		
		f. Magnehelic Gauge for monitoring pressure drop across HEPA Filter		
		g. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.		
		v) Return duct (Bag in bag out) Containment as per specification mentioned below:		
		h. HEPA filter with efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size).		
		i. Material of construction: SS 304 (14 gauge) with leak proof.		
		j. Isolation dampers at Inlet & Outlet		
		k. Facility for on-site HEPA Filter scanning and testing		
		l. Fumigation Ports		
		m. Bag-In-Bag-Out facility for filter replacement		
		n. Magnehelic Gauge for monitoring pressure drop across HEPA Filter		

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		2. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.		
		c. AHU Casing: Air Handling Units shall be of sectionalized constructions with an under frame of extruded heavy aluminium profiles. The under frame shall be mechanically strong and shall take double skinned insulated panels. The powder coated panels shall consist of 0.8 mm galvanized iron outer skin and 0.63 mm galvanized iron inner skin with 23 mm thick injected PUF insulation in between two panels. The AHUs shall be with true thermal break. There should not be any projections inside the AHUs and the covings has to flush with the side panels. Airtight access panel with suitable neoprene gaskets shall be provided in the fan section, coil and filter section. Similar gaskets should be used at all other joints of the AHU and its ducting. Units meant for indoor locations shall be specially designed to meet the arduous and corrosive atmosphere.		
		d. Dampers (Volume control and Fire Dampers)		
	24	Shifting, Re-Installation and Commissioning of AHU Component after shifting including electrical wiring and refrigerant refilling		
	25	Supply motor blower assembly (Make: Nicotra, Dia: 250mm)		
	26	Exhaust motor blower assembly (Make: Nicotra, Dia: 315mm)		
	27	Condensing unit of rating 8.5 tr (2 units) but the filter dryer assembly to be replaced and additional copper piping with insulation to be laid as per new location of Condensing unit along with Refrigerant Filling of approx. 17 Kgs		
	28	Validation of Laboratory and BSC:		
		a. For TB Containment Lab- The installation shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution		
		i. Pressure in each room/zone as per the design, differential pressure readings including across filters.		
		ii. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design		
		iii. Smoke pattern test for directional airflow should be performed during validation including for Pass box.		
		iv. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10%		
		v. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications		
		vi. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels		
		vii. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity		
		viii. Operational performance testing for		

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		1. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit		
		2. Ducting for any potential leakages and insulation breakage		
		3. Dampers including variable control, leak proof and fire control (only verification)		
		4. Magnehelic Gauges		
		5. Temperature control sensors; pressures control sensors,		
		6. Passbox		
		7. Split Acs		
		8. Fire Detection system		
		9. EPABX System		
		10. Access Control System		
		11. CCTV System		
		12. UPS Back up system		
		13. Emergency Shower and eye wash station		
		14. Interlocking of supply blower motor and exhaust blower motor		
		ix. Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval.		
		b. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.		
		i. The contractor shall arrange to do a mandatory third-party validation		
		ii. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency.		
		For Bio Safety Cabinet:		
		iii. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity		
		c. Dedicated earthing to be carried out for the TB containment lab		
IMS BHU Varanasi		**Inside TB containment Lab and AHU control Panel:**		
	1	**Flooring of TB Containment Lab:**		
		a. Removal of Existing Epoxy Flooring of approx. area of 556 sq. Ft including (Change Room: 8' X 8', Ante Room: 8' X 7'9", TB containment Room: 19'6" X 22'.)		
		b. Proper levelling and rework of existing cemented flooring before applying new epoxy flooring.		
		c. New Epoxy flooring to be laid in an area of (Change Room: 8' X 8', Ante Room: 8' X 7'9", TB containment Room: 19'6" X 22').		
	2	**Wash Basin**		
		a. Removal of Existing Rusted Wash Basin in the Change Room and TB Containment Laboratory		

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		b. Installation of a new Modular standalone hand washing sinks made of SS 304 with elbow or foot operated mechanism to be provided. Wall hanging soap dispenser to be provided along with the wash basin unit. A Tissue paper rack with a mechanism to pull out tissue papers, to be provided near the wash basin to dry hands. Water lines to be equipped with back-flow prevention devices. Outlet pipes should be made of PVC with closure outside lab.		
	3	**Dismantling of the Split AC:**		
		a. Removal of 3 numbers of existing split AC installed in the TB Containment Lab of capacity 2TR1.5TRand 1TR.		
		b. Removal of 2 numbers of existing Split AC installed in the BSL-2 Lab of capacity 2 TR.		
	4	Re-Installation of Split AC in BSL-2 Lab:		
		a. Two Numbers of Split AC of Capacity 2 TR and 1.5TR removed from TB containment Lab needs to be re-installed at BSL-2 Lab at the same location where the existing Non-Functional Split AC are installed. The exiting electrical connection available to be used for installation of Split ACs with proper refilling of Refrigerant Gas Charging (Including Pressure test/Leak Test/LN2 Flushing), copper piping and other accessories. The outdoor of the Split AC to be installed at the terrace just above the Existing BSL-2 Lab.		
	5	Installation of New Split AC in Renovated TB containment Lab:		
		a. Supply and Installation with 2 numbers of Split AC of capacity 2 TR and 1 number of capacity 1 TR. These will be inverter ACs (minimum three star) of Hitachi/ Bluestar/ Carrier/ Lloyd/ Godrej or equivalent OEM with suitable voltage stabilizer. The outdoor unit will be suitably placed outside the lab with easy access and adequate protection from theft. Drainage pipe of ACs will be adequately long and connected into the drainage system of the institute. The Split ACs would be connected to an alternator (Timer Control cut-off and start) for changeover every 4 hours in such a way that at any given time 3TR cooling is provided to the TB Containment area as well as load is properly distributed between both the ACs. These will be used at the end of the day when main HVAC system is not operating to provide ambient temperature for MGIT.		
		b. Location of the New Split ACs:		
		i. 1 number of Split AC of capacity 2TR along with 1 Number of Split AC of capacity 1TR to be installed just behind the existing MGIT 960 Machines with their outdoor units installed Inside the AHU Shed along with drainage pipe that to be taken out near the AHU Shed.		
		ii. 1 Number of Split AC of Capacity 2TR to be installed behind the existing Hot Air Oven with its outdoor unit mounted on the outer wall adjacent to it and the drainage for the same to be taken from the adjoining wall to outside in the corridor.		

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		c. Electrical Connection: Supply and provision of 2 numbers of 32 AMPMCB/Industrial type switch and socket including necessary wiring for installation of 2 new 2TR Split AC and provision of 15 Amp switch and socket for 1 new 1TR Split AC inside the Renovated TB Containment Lab		
	6	**Furniture:**		
		a. Supply of additional 4 numbers of Laboratory grade hydraulic SS stools with back support, footrest, rotating type with castor wheels at the base		
		b. Supply and Installation of 8 numbers of Coat Hangers in the Ante Room of TB containment Lab for hanging of used Laboratory Coats		
		c. Workbenches for Renovated TB containment Laboratory		
		i. Removal of existing 4 numbers of existing workbenches of Stainless steel which are not sturdy enough.		
		ii. Supply and Installation of 3 numbers of workbenches of size (5'(L)x2'6" (W)x3'(H)) and 2 Numbers. of Stainless-steel workbench of size (4'(L)x2'6" (W)x3'(H) with Frame made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection and granite top. It should be strong to hold the granite top as well as equipment placed on the workbench. It should be stable and vibration free. 1 Storage cabinet made up of SS 304 to be installed below the granite top of each Workbench of dimension (4'(L)x3'(W)x3'(H)) to store usable		
	7	**EPABX System:**		
		a. Supply and Installation of New EPABX system along with 5 Phones and complete wiring to be done for the Lab. The 5 new phones to be located (1 inside TB Containment Lab, 1 inside Change Room, 1 in Corridor adjoining the TB containment Lab, 1 inside Microbiologist Room and 1 inside Media Room).		
	8	**CCTV Monitoring System:**		
		a. Supply and Installation of New CCTV Monitoring system along with 6 cameras and necessary wiring to be done. The CCTV Cameras are to be located (3 inside TB Containment Lab,2 in the adjoining corridor, 1 inside the AHU Shed).		
	9	**Electrical works:**		
		a. The 5 Numbers of UPS (3 Numbers for Refrigerated Centrifuges, 2 Numbers of MGIT Machine) along with External batteries to be removed from the TB containment Lab and needs to be placed outside in the corridor on suitable racks with provision of dedicated switch and socket inside the lab. Necessary wiring to be done to connect the switch and socket inside TB Containment Lab to the UPS kept outside in the corridor.		

<table>
<tr><th>Site Name</th><th>Sl. No.</th><th>Bid Technical Specification (Main)</th><th>Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)</th><th>Proposed make/ Manufacturer</th></tr>
<tr><td></td><td></td><td>b. Supply and Installation of 5 numbers of additional 5/15 Amp Modular switch and socket to be installed inside the TB containment Lab including necessary wiring. The installation of the electrical points to be done in consultation with the Microbiologist of the Lab as the existing Switch and Socket are not sufficient for the Existing Equipment placed inside the TB Containment Laboratory</td><td></td><td></td></tr>
<tr><td></td><td></td><td>c. Supply and installation of 1 number of clean rooms Monitor to be installed inside the renovated TB containment lab for monitoring parameters (humidity, temperature, and pressure) of the Lab</td><td></td><td></td></tr>
<tr><td></td><td></td><td>d. Supply and Installation of new Light assembly along with 8 numbers Lights of 36 watts each with proper sealing to prevent any damage to lights in future</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>10</td><td>Equipment Shifting and Re-installation:</td><td></td><td></td></tr>
<tr><td></td><td></td><td>a. All Equipment (Details mentioned below) inside the TB containment Laboratory to be removed with all its accessories and to be placed in a safe and secure temporary location (corridor area) identified by the site before Epoxy Flooring work to be carried out.</td><td></td><td></td></tr>
<tr><td></td><td></td><td>b. Re-Installation of the Equipment (Details mentioned below) along with all accessories inside the TB containment Laboratory after the Interior work of TB containment Lab is completed.</td><td></td><td></td></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>S. No.</th><th>Equipment Name</th><th>Make</th><th>Model</th><th>Serial Number</th></tr>
<tr><td>1</td><td>Biosafety Cabinet</td><td>ESCO</td><td>AC2-4S8</td><td>2014-92311</td></tr>
<tr><td>2</td><td>Biosafety Cabinet</td><td>ESCO</td><td>AC2-4S8</td><td>2014-92313</td></tr>
<tr><td>3</td><td>Biosafety Cabinet</td><td>ESCO</td><td>AC2-4S8</td><td>2014-92332</td></tr>
<tr><td>4</td><td>Refrigerated Centrifuge</td><td>Hettich</td><td>Rotina 380R</td><td>0001335-01-00</td></tr>
<tr><td>5</td><td>Refrigerated Centrifuge</td><td>Hettich</td><td>Rotina 380R</td><td>0001394-01-00</td></tr>
<tr><td>6</td><td>Microlitre Centrifuge</td><td>Hettich</td><td>Micro 200</td><td>41030300</td></tr>
<tr><td>8</td><td>MGIT 960</td><td>BD</td><td>BD 960</td><td>MG3459</td></tr>
<tr><td>9</td><td>MGIT 960</td><td>BD</td><td>BD 960</td><td>MG4147</td></tr>
<tr><td>10</td><td>Hot Air Oven</td><td>Memmert</td><td>UNB 200</td><td>214.0186</td></tr>
<tr><td>11</td><td>Refrigerator</td><td>Elanpro</td><td>EFGV 450</td><td>81.286.135.7</td></tr>
</table>
</td><td></td><td></td></tr>
<tr><td></td><td>11</td><td>Other Interior Works:</td><td></td><td></td></tr>
<tr><td></td><td></td><td>a. Removal, Cleaning and Re-Fixing with proper sealing of the exiting 2 numbers of View glass in TB containment Lab for preventing any seepage of water or dust into the View panel in future</td><td></td><td></td></tr>
<tr><td></td><td></td><td>b. Proper silicon sealing to be done for the entire TB containment Lab including the Ante and Change Room of the Lab.</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
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		FOR AHU and HVAC Unit:		
	1	**AHU Shed:**		
		a. Dismantling and Removal of the Existing AHU Shed of dimensions (22'6" (L) x19'5"(W))		
		b. Removal of Existing Vegetation in and around the exiting AHU Shed for Installation of New AHU Shed.		
		c. Masonry works to be done to create a concrete platform for installation of Supply and Exhaust AHU.		
		d. Supply and Installation of new AHU shed of dimension (25'(L)X19'5"(W)) of below mentioned specification , to accommodate all the HVAC and AHU Components within shed and have enough space for servicing as the current space is too congested for Service and maintenance.		
		I. Specification of AHU Shed: AHU Shed to be made as per specification: It will be required at sites where AHU is installed on roof/ outside the lab building. AHU shed with provision for fencing, door with lock-key arrangement.		
		i. Framework vertically made of M S Square Pipe frame: 2 Inches X 2 Inches, 16 Gauge.		
		ii. M S Fencing with wire mesh: ½ inch X ½ inch.		
		iii. Supporting Structure M S Angle: 50 X 5 mm.		
		iv. GI pre-coated corrugated profile roof sheet: 0.5 mm thick duly supported with J Hook.		
		v. 10 SWG with provision of door with lock and key.		
		vi. AHU Shed with fencing should be duly enamel painted and with anti-rust coating from both sides. The height covered shall be at least 8 feet. There should be no gap between roof sheet and wire mesh, if any angle creates gap, it should be covered with iron bars and wire mesh in between.		
	2	Dismantling, Removal of Existing AHU and HVAC component and Reinstallation of Existing AHU Components / Installation of New AHU components		
		a. Dismantling Works:		
		i. Removal of External Supply Ducting with Insulation for both supply ducting ((approx. 30 R. ft) and Exhaust Ducting (approx. 40 R. ft.).		
		ii. Removal of Ducting (approx. 12 ft. each) along with 3 numbers External Motor Blower for exiting 3 numbers Biosafety Cabinet (BSC).		
		iii. Removal of 2 numbers Supply pre- filters of dimensions of 23"×23" and 12"×23".		
		iv. Removal of Exhaust Bag in bag out (BIBO) assembly along with its HEPA Filters.		
		v. Removal of any Existing Dampers present in Supply and Exhaust unit		
		vi. Removal of Existing Condensing unit of capacity 8.5 TR along with Cooling coil and accessories.		
		b. Re-Installation:		

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		i. Relocation and Installation of existing Supply and Exhaust AHU casing along with the motor blower sections		
		ii. Relocation and Re-Installation of existing 8.5 TR Condensing unit with proper refilling of Refrigerant Gas Charging (Including Pressure test/Leak Test/LN2 Flushing), copper piping and other accessories.		
		c. New Installation		
		I. Ducting: Complete External Supply (~30 R. feet) and Exhaust Ducting (~ 40 R. feet) with insulation		
		i. Supply Ducting: Supply and installation of Ventilation ducting shall be made from minimum 24-gauge GI sheet, all the ventilation ducting shall be leak proof and with thermal insulation (the colour of insulation material will not be black). This insulation is made of aluminium foil nitrile rubber (19mm) or glass wool (50mm) thick. The GI duct should be fabricated as per SMACNA standards. To prevent air leakage, all the lateral joints and flanged joints of GI ducting should be sealed using silicone sealant.		
		ii. Exhaust Ducting: Supply and Installation of Exhaust ducting (like supply) shall be made from minimum 24-gauge GI sheet. The GI duct should be fabricated as per SMACNA standards. To prevent air leakage, all the lateral joints and flanged joints of GI ducting should be sealed using silicone sealant. All the ventilation ducting shall be leak proof and with thermal insulation (the colour of insulation material will not be black). This insulation is made of aluminium foil nitrile rubber of thickness 13 mm or glass wool of thickness 25mm.		
		iii. BSC Ducting: Supply and installation of ducting of approx. 10 Feet each for all 3 BSC's with suitable capacity External Blower: The exhaust from the Biological Safety Cabinets shall be thimble connected and individually ducted out. The external extraction fan installed at the end of the ducting should exceed the volumetric flow rate of each BSC by 30–50%, and should be controllable, provided with easily accessible dampers and connected to an uninterrupted power supply. The air from the BSC should be ducted with ventilation pipes that have a diameter exceed 20 cm.		
		II. Supply AHU		
		a. Filters:		
		1. Pre-Filters: Supply and Installation of 1 set Pre-filter for the Existing supply AHU of dimensions (11'5" (L) x 5'11" (W)) to be placed at the mouth of supply AHU which will be G4 washable filter (50 mm deep) class having average efficiency of 85-98% for 10 microns size as per EN779 2002		
		2. Fine Filters: Supply and Installation of 1 set of Fine filters for the Existing supply AHU of dimensions (11'5" (L) x 5'11" (W)) to be placed after the Pre-filter which will be F7 filter (300 mm deep) Average Efficiency 85-95% for 1 micron size as per EN 779 2002 standards		
		3. HEPA Filters: Supply and Installation of 1 set of HEPA filter in the Containment HEPA Housing connected to the supply ducting. The supply HEPA filter plenums (Containment Housing) shall be made in SS 304 (14 gauge) with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation dampers at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters. The quantity of HEPA filter should be provided based on supply air room volume, length of duct.		

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		b. Air Conditioning unit: Supply and Installation of New additional Air Conditioning unit of capacity 8.5 TR including Refrigerant Gas Charging (Pressure test/Leak Test/LN2 Flushing works) along with necessary wiring and piping.		
		i. Cooling Coil Section: Supply and Installation of two circuit cooling coil with 8 row deep DX coil, necessary component which is compatible to the Supply AHU of dimensions (11'5" (L)x5'11" (W)).		
		III. Exhaust AHU		
		a. Filter:		
		i. HEPA Filters: Supply and Installation of 1 set of HEPA filter in the BIBO HEPA Housing connected to the Exhaust ducting. The exhaust air filter handling systems shall be provided with HEPA Filters such that it protects the maintenance staff from acquiring any infections while handling/replacing the filters -Bag in Bag out system (BIBO). It is essential that the maintenance person wears PPE while doing so. The HEPA filters will be located prior to exhaust unit at a place which is easily accessible and has adequate space for BIBO to function effectively. The HEPA filter housed in BIBO should have efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size). The HEPA filter plenums (Containment Housing) shall be made in SS 304 (14 gauge) with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation damper at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters. HEPA Filters of 99.99% efficiency would be used in all exhaust. All the HEPA filters should have 0.3µm filtration.		
		IV. Installation of New set of dampers		
		a. Volume Control Dampers: Supply and Installation of 1 number of Volume control damper at the supply ducting.		
		b. Fire Dampers for supply and exhaust air: Supply and Installation of 2 numbers of Fire dampers in both supply and Exhaust ducting. As a safety feature, fire dampers shall be provided in both supply as well as exhaust duct. In supply system it will be in between variable damper and inlet (but at an accessible point from outside). In the exhaust system it will be located at exhaust ducting coming out of the building and prior to BIBO assembly at an accessible point from outside. These dampers are curtain type made of SS interlocking blades with fusible link which melts at 74°C.		
		c. Leak proof dampers: supply and Installation of 2 numbers of Leak proof damper in both Supply and Exhaust ducting with provision to prevent backflow of air shall be provided in supply unit (after blower motor and before volume control damper) and in exhaust unit (in between blower motor and volume control damper). It is made of SS blades with neoprene gasket.		
		V. AHU Control Panel		
		a. Provision of controls for additional condensing units to be installed with necessary wiring in the existing AHU control Panel (e.g.: Push buttons, indicators, contactors, etc.).		
		b. Installation of phase protector in the Existing AHU control Panel.		
		c. Dedicated earthing to be connected to the AHU control panel and HVAC system for the Lab.		
		3. Validation of Renovated TB Containment Laboratory and BSC:		

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		A. For TB Containment Lab- The installation shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution		
		a. Pressure in each room/zone as per the design, differential pressure readings including across filters.		
		b. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design.		
		c. Smoke pattern test for directional airflow should be performed during validation including for Pass box.		
		d. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10%.		
		e. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications.		
		f. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels.		
		g. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity.		
		h. Operational performance testing for		
		i. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit		
		ii. Ducting for any potential leakages and insulation breakage		
		iii. Dampers including variable control, leak proof and fire control (only verification)		
		iv. Magnehelic Gauges		
		v. Temperature control sensors; pressures control sensors,		
		vi. Pass box		
		vii. Split ACs		
		viii. Fire Detection system		
		ix. EPABX System		
		x. Access Control System		
		xi. CCTV System		
		xii. UPS Back up system		
		xiii. Emergency Shower and eye wash station		
		xiv. Interlocking of supply blower motor and exhaust blower motor		
		Note: "Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval"		
		i. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.		
		a. The contractor shall arrange to do a mandatory third-party validation		
		b. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency.		
		B. For Bio Safety Cabinet:		

<table>
<tr><th>Site Name</th><th>Sl. No.</th><th>Bid Technical Specification (Main)</th><th>Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)</th><th>Proposed make/ Manufacturer</th></tr>
<tr><td></td><td></td><td>a. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49 and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity</td><td></td><td></td></tr>
<tr><td></td><td></td><td>b. HEPA Filter (in BIBO) integrity test based on EN1822 at MPPS (Maximum Penetrating Particle Size) through particle count test and PAO test and manufacturer’s certifications</td><td></td><td></td></tr>
<tr><td colspan="5"></td></tr>
<tr><td rowspan="30">IRL Patiala</td><td></td><td>Inside TB containment Lab, BSL-2 and AHU control Panel:</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td>Uninstallation, Packaging & Shifting of Equipment:</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>The following equipment from the TB Containment Lab needs to be uninstalled, packed, and shifted to BSL2 Lab / corridor on the same floor as TB Lab (identified by the site):</td><td></td><td></td></tr>
<tr><td></td><td>· two BSC</td><td></td><td></td></tr>
<tr><td></td><td>· three refrigerated centrifuges</td><td></td><td></td></tr>
<tr><td></td><td>· two microliter centrifuges</td><td></td><td></td></tr>
<tr><td></td><td>· one universal oven</td><td></td><td></td></tr>
<tr><td></td><td>· one -20 Freezer</td><td></td><td></td></tr>
<tr><td></td><td>· two MGIT 960 system</td><td></td><td></td></tr>
<tr><td></td><td>· All UPS of these equipment</td><td></td><td></td></tr>
<tr><td></td><td>All these equipment should be adequately packed (bubble wrapping & cardboard boxing). These activities should be carried out under supervision of OEM/service provider in coordination with FIND BME.</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td>Shifting & Reinstallation of Equipment:</td><td></td><td></td></tr>
<tr><td></td><td>a) BSC:</td><td></td><td></td></tr>
<tr><td></td><td>· Reinstallation of two BSC (ESCO make) in the renovated TB Containment lab connecting the existing duct.</td><td></td><td></td></tr>
<tr><td></td><td>b) Other remaining equipment: All remaining equipment planned for TB containment lab need to be reinstalled under supervision of OEM/service provider in coordination with FIND BME. Details of the equipment are shown in table below:</td><td></td><td></td></tr>
<tr><td></td><td colspan="2">
<table>
<tr><th>S. No</th><th>Equipment Name</th><th>Make</th><th>Model</th><th>Serial Number</th><th>Last Date of PM and Calibration</th><th>Shifted from Exiting TB Containment Facility to Location</th></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Biosafety Cabinet</td><td rowspan="2">ESCO Biotech India Pvt.Ltd.</td><td rowspan="2">LA2-4A1</td><td>2013-81168</td><td>14-08-2021</td><td></td></tr>
<tr><td>2013-81248</td><td>14-08-2021</td><td>Corridor</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Refrigerated Centrifuge</td><td>1- Hettich</td><td>1- Rotina 380R</td><td>0001333-01-00</td><td>18-09-2021</td><td rowspan="2">BSL2 Lab</td></tr>
<tr><td>2- Hettich</td><td>2- Rotina 380R</td><td>0001400-01-06</td><td>18-09-2021</td></tr>
</table>
</td><td></td><td></td></tr>
</table>

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer

		3- Eppendorff	3- 5810R	5811Cl469423	20-07-2021		
3	MGIT 960	Becton & Dickinson	Bactec MGIT 960	MG4132	NA	BSL2 Lab	
				MG3347			
4	Hot Air Oven	Memmert	UNB-200	C212.0931	20-01-2021	BSL2 Lab	
5	Microlitre Centrifuge	Hettich	Mikro 200	0004133-03-00	18-09-2021	BSL2 Lab	
				0004134-03-00	18-09-2021		
6	Refrigerator	Deep freezer(-20)	NA	NA	NA	Corridor	

	3	**Civil Work:**	
		Existing TB Containment Lab:	
		a) Flooring:	
		· Existing vinyl flooring need to be removed from TB Containment lab area 25 ft (L) X 15 ft (W) approximately.	
		· Floor Levelling work required for existing area 25 ft (L)X 15 ft (W) approximately for TB Containment lab. Floor of lab has uneven surface.	
		· Epoxy flooring work required in existing area 25 ft(L) X15 ft (W) approximately for TB Containment lab.	
		Epoxy Flooring shall be of 5 mm (3 mm + 2mm) of self-levelling industrial epoxy including screed compound for adhesion, 3 mm semisolid cladding of EPOXY will be applied over a uniform cemented flooring and 2 mm semi-liquid epoxy over 3 mm hardened surface with bubble free perfect smooth finishing completed in three steps: Cementing (Uniform Flooring), Hardening (3 mm epoxy) and smoothening (2mm epoxy). Epoxy used for this application will be self-levelling and clean room compatible	
		Existing BSL2 Lab:	
		· Damp proof treatment of existing visible walls inside the BSL2 lab by applying appropriate cementing and putty work.	
		· Paining of entire wall and ceiling inside the BSL2 lab.	
	4	**Furniture Supply:**	
		· **Laboratory chair**: supply and installation of 3 numbers of Ergonomic laboratory chair to work for Biosafety Cabinets, designed for infectious laboratory areas as below	
		a. adjustable height to suit different users	
		b. adjustable-angle back rest (no arm rest)	
		c. caster wheels	
		d. all metal parts chrome plated	
		e. dis-infectable with alcohol-containing disinfectants	
		· **Laboratory stool**: supply and installation of 2 numbers of Laboratory stools. These stools will be of Laboratory grade hydraulic SS stools with back support, footrest, rotating type with castor wheels at the base.	

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		· **Laboratory workstation:** Supply and installation of 2 work benches with 2.6 ft (L) x 2.6 ft (W) x 2.6 ft (H) size are required for TB Containment lab. The work bench frame shall be made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection. It should be strong to hold the granite top/workbench as well as equipment places on the workbench. It should be stable and vibration free. There shall be no drawers or safe in the workstation and shall have arrangement for placing the UPS below the work bench.		
		· **consumable racks:** Supply and installation of slotted angled racks (10 units)		
		o Dimension: 3'6" (L)x 1'6" (W) x 6'(H)		
		o Material:18 Gauge Iron with anti-rusting coating		
		o Adjustable 4 shelves for each rack		
		o Plastic/ Rubber/ Neoprene Shoes		
		o Bolts and nuts as required for fitting of shelves		
		o Scratch resistance smooth finish		
	5	UPS: Supply and installation of one 3 KVA online UPS to cater to the extreme essential power requirement of the laboratory. All critical components like lights, Door Interlocks, exhaust blowers of BSCs, Fire alarm sensor, CCTV camera & monitoring shall be provided with uninterrupted power supply for 30 minutes.		
	6	Digital clean room Monitor (Pressure, Temperature and RH monitoring) to be installed inside the Proposed TB containment lab for monitoring, humidity, temperature, and pressure of the Lab.		
	7	Appropriate silicon sealant of entire wall and ceiling panel for TB Containment lab area 25 ft (L) x 15 ft (W) approximately.		
	8	Suitable painting for wall and ceiling panel of area approx. 60 Sqft.		
	9	Installation of Single-phase protector in the Existing AHU control Panel		
	10	HVAC related Works:		
		a) **AHU shade:** One GI pre-coated corrugated profile roof sheet of 0.5 mm thick duly supported with J Hook tin Shed of size 2.5 ft W X 6 ft L need to replace which got damage.		
		b) **Exhaust Duct insulation:** supply and installation of Thermal insulation of 50 running feet for exhaust ducting. This insulation is made of aluminium foil nitrile rubber of thickness 13 mm.		
		c) **Containment HEPA housing with HEPA filters:** the existing HEPA housing is rusted and need to be replace.		
		· Supply and installation of one HEPA housing of suitable size along with suitable numbers of HEPA filters for the supply duct system.		

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		· The HEPA filter plenums (Containment Housing) shall be made up of MS with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation dampers at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters.		
		· The HEPA filter housed in BIBO should have efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size). All the HEPA filters should have 0.3µm filtration.		
		d) **BIBO HEPA housing with HEPA filters:** the existing BIBO HEPA housing is rusted and need to be replace.		
		· Supply and installation of one BIBO HEPA housing of suitable size along with suitable numbers of HEPA filters for the exhaust duct system.		
		· The HEPA filter plenums (BIBO Housing) shall be made in MS steel with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation dampers at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters. HEPA Filters of 99.99% efficiency would be used in all exhaust.		
		· The HEPA filter housed in BIBO should have efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size). All the HEPA filters should have 0.3µm filtration.		
	11	**Validation of Laboratory and BSC:**		
		a. For TB Containment Lab- The installation shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution		
		i. Pressure in each room/zone as per the design, differential pressure readings including across filters.		
		ii. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design		
		iii. Smoke pattern test for directional airflow should be performed during validation including for Pass box.		
		iv. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10%		
		v. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications		
		vi. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels		
		vii. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity		

Site Name	Sl. No.	Bid Technical Specification (Main)	Specifications Compliance /Deviation, if any (kindly specify Quantity of items, technical specifications, Make and model of the quoted items)	Proposed make/ Manufacturer
		viii. Operational performance testing for		
		1. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit		
		2. Ducting for any potential leakages and insulation breakage		
		3. Dampers including variable control, leak proof and fire control (only verification)		
		4. Magnehelic Gauges		
		5. Temperature control sensors; pressures control sensors,		
		6. Passbox		
		7. Split ACs		
		8. Fire Detection system		
		9. EPABX System		
		10. Access Control System		
		11. CCTV System		
		12. UPS Back up system		
		13. Emergency Shower and eye wash station		
		14. Interlocking of supply blower motor and exhaust blower motor		
		ix. Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval.		
		a. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.		
		i. The contractor shall arrange to do a mandatory third-party validation		
		ii. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency.		
		For Bio Safety Cabinet:		
		iii. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity		

CHAPTER III – FINACIAL PROPOSAL - PRICE BID FORM (STANDARD FORMS)

(TO BE FILLED BY BIDDERS FOR QUOTING THEIR PRICES -SCHEDULEWISE.)

Form FIN I - Price Bid Form

[to be submitted with Price Bid only]

To,
Director
M/s Strategic Alliance Management Services Pvt. Ltd.
(SAMS)B-18, Sector-6, Noida,
G.B. Nagar – 201301 (U.P.)

Dear Sir,

Subject: Partial Renovation ,Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period

Bid Ref. No. SAMS/FIND India/Partial renovation/ATE/2022/8/G/2022/0080

1. We, [***Name of Bidder***], hereby submit a bid for the construction of the above- referenced works in response to the above-referenced ITB for following Schedule:

Seq. No. (as many as quoted by the Bidder)	**Schedule No. (as many as quoted by the Bidder)**	**Name of Laboratory**

2. We warrant that in preparing and submitting this bid, we have complied with, and are willing to be bound by, any and all of the requirements and provisions of the above- referenced ITB, including the terms and conditions of the Contract as set out in the Bid Documents.

3. Based on the above, our proposed **Total Contract Price is Rs. _____ inclusive of all applicable taxes i.e. GST for……. schedules** (amount in words) and as per FIN-2 and FIN-3 Forms attached

4. I, the undersigned, certify that I am duly authorized by [***insert name of bidder***] to signthis bid and bind [***insert name of bidder***]:

Name:_____

Title:_____

Date:_____

Signature: _____

FINANCIAL PROPOSAL- STANDARD FORMS

Form FIN-2 : Lump sum Contract Price

(To be submitted for each quoted Schedules individually)

Schedule No.___

Description	Name of Lab / Site	Costs (inclusive of all applicable taxes i.e.. GST)	Total Cost (inclusive of all applicable taxes (i.e. GST)
A. Cost of Financial Bid for Partial Renovation ,Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty period **Note: Cost quoted should match with the total Cost as per Form FIN-3: Priced Bill of Quantity**		_____	_____
TOTAL BID PRICE =			_____

[1] Please provide spare part price list (as Annexure-A to FIN-2) as may be required (and valid) during entire duration of annual maintenance services. Please use Tech Form 9 as a reference while preparing spare part price list.

FINANCIAL PROPOSAL- STANDARD FORMS

Form FIN-3 Cost of Works

(To be submitted for each quoted Schedule with Price bid only)

Bidders shall submit detailed workings of Lump Sum Contract Price (Component-A as given in FIN-2) for Design, Construction, Testing, Commissioning and Validation of TB Containment Laboratory and associated works on 'Turnkey Basis' including cost of additional works, if any. The total price mentionedin the table below should coincide with the Price Component A as given in FIN-2 for eachSchedule.

Schedule No.	**I**
Name of Site	**Siliguri**

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
	Interior				
1	Uninstallation, packaging & shifting of equipment from the existing facility to the space identified by the site and reinstallation of shifted equipment inside the renovated TB Containment laboratory: i) 3 nos. of biosafety cabinets ii)5 nos. refrigerated centrifuges iii)2 nos. microliter centrifuge iv)2 nos. hot air oven v)1 no. of refrigerator vi)2 nos. MGIT 960 system All above mentioned to be uninstalled, packed, shifted along with UPS to a safe location in the corridor area or as identified by the site with appropriate bubble packaging as well reinstallation of the entire set after renovation of the lab	Job	13		
2	Reinstallation of 3 Nos. of biosafety cabinet with new individual ducting and external blower for each of them with necessary foundation works	Job	3		
3	Uninstallation, packaging and shifting of split AC to the space identified by the site for storage (both indoor and outdoor unit) - 2 numbers of split AC of 1.5TR each	Job	2		
4	Reinstallation of the exiting 2 numbers of split AC of capacity 1.5 TR inside the renovated TB containment Lab at the new proposed location which is above the existing pass boxes with necessary wiring and below mentioned items i)Refrigerant refilling((Including Pressure test/Leak Test/LN2 Flushing) for condensing unit of 5 Kgs to the split ac ii)Replacement of 2 nos. filter dryer assembly for the 2 nos of split ac iii) Replacement of filter suction and discharge valve for the 2 nos of split ac iv)supply and installation of additional copper piping with insulation	Job	1		
5	Supply and installation 2 nos. of 16 Amp switch socket including wiring for reinstallation of 1.5 TR split Acs inside the TB containment lab	Nos.	2		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
6	Removal of existing damaged epoxy flooring of area 672 sq. ft that includes change room (5'1"x 16'6") and Anteroom (5'1"x7'2")	Sqft	672		
7	Proper levelling of the floor and laying of new epoxy flooring for an area of 672sq.ft along with new coving(wall to floor) that includes Change room (5'1"x 16'6") and Anteroom (5'1"x7'2")	Sqft	672		
8	Supply and Installation of 1 number of workbenches of size (6'(L)x2'6" (W)x2'6"(H)) with frame made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection and granite top. It should be strong to hold the granite top as well as equipment placed on the workbench. It should be stable and vibration free.	Nos.	1		
	Subtotal				
Air handling and HVAC unit					
1	Dismantling and removal of the following items and handover the site for scrap: i) existing ducting with insulation length of supply approx. 60 Rft ii) exhaust ducting with insulation length of approx. 66 Rft iii) filters (Pre-filters, fine filters, and HEPA filters)	Job	1		
2	Dismantling, shifting, and recommissioning of the AHU (supply and exhaust) including the condensing unit 8.5 tr (2 units) to the new identified location *Note: Refer the layout for better understanding*	Job	1		
3	Construction of uniform platform and new AHU shed of dimensions 20'(L)X20'(W) with to accommodate all the HVAC and AHU Components within shed.	Job	1		
4	Supply and installation of GI ducting for supply and exhaust system with required duct support, nut & bolts, gasketing and sealing.	Sqft	750		
5	Supply and installation of insulation (nitrile rubber) of supply (19 mm) and exhaust (13 mm) ducting system	Sqft	750		
6	supply and installation of Pre-Filter for the existing supply AHU (Qty-1, Size(610mmx610mmx610mm) Flange Type) and fine filter for the existing supply AHU: (Qty-1, Size(610mmx610mmx305mm) Flange Type)	Set	2		
7	Supply, installation, and commissioning of HEPA Filter(H14) with containment HEPA Housing with Test elbow port and pressure gauge for supply AHU	Nos.	1		
8	Supply, installation, and commissioning of HEPA filter with BIBO Indigenous with Test elbow port and pressure gauge for exhaust AHU	Nos.	1		
9	Supply and installation of variable volume control dampers for both supply and exhaust AHU	Nos.	2		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
10	Supply and installation of leak proof dampers for both supply and exhaust AHU	Nos.	2		
11	Supply and installation of isolation dampers for both supply and exhaust containment and BIBO HEPA housing	Nos.	4		
12	Supply and installation of fire dampers for both supply and exhaust AHU	Nos.	2		
13	Reinstallation of the below mentioned supply and exhaust motor and blower assembly in the AHU with necessary wiring and conduit work from the AHU control panel 1. Supply motor blower assembly of rating RPM 3500 2. Exhaust motor blower assembly of rating RPM 3500	Job	1		
14	Reinstallation of 2 nos. of existing 8.5 TR condensing unit with the below mentioned parts with necessary wiring and below mentioned items i)Refrigerant refilling((Including Pressure test/Leak Test/LN2 Flushing) for condensing unit of 20 Kgs to the existing 2 nos of 8.5 TR ii)Replacement of filter dryer assembly for the 2 nos of 8.5TR condensing unit iii) Replacement of filter suction and discharge valve for the 2 nos of 8.5TR condensing unit iv)supply and installation of additional copper piping with insulation	Job	1		
15	RTV silicon sealant for entire TB Containment Lab	Job	1		
			Subtotal		
Performance testing and validation					
1	Performance testing and validation of TB containment facility and 3 nos of Biosafety cabinet and submission of required validation documents along with traceability reports	Job	1		
				Subtotal	
Any other items as per scope of work					
Total estimated cost for partial renovation at IRL Siliguri					

Schedule No.	II
Name of Site	Meerut

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
	Interior				
1	Uninstallation, packaging & shifting of equipment from the existing facility to the space identified by the site and reinstallation of shifted equipment inside the renovated TB Containment laboratory: i)2 nos. of biosafety cabinets ii)2 nos. refrigerated centrifuges iii)2 nos. microliter centrifuge iv)1 nos. hot air oven v)1 no. of deep freezer vi)1 no. MGIT 960 system All above mentioned to be uninstalled, packed, shifted along with UPS to to a safe location as identified by the site with appropriate bubble packaging as well reinstallation of the entire set after renovation of the lab	Nos.	7		
2	Removal of existing epoxy flooring of approx. area of 400 sq. ft including (change Room: 14' x 5', Ante Room: 6' x 5', TB containment Room: 15' x 20')	Sqft	400		
3	Proper levelling off the floor and laying of new epoxy flooring approx. 400 sqft. along with new coving (wall to floor) that includes (Change Room: 14' x 5', Ante Room: 6' x 5', TB containment Room: 15' x 20')	Sqft	400		
4	Removal of existing rusted wash basin and provision of one new Modular standalone hand washing sinks including associated plumbing work as well as supply and Installation of a new modular standalone hand washing sinks made of SS 304 with elbow or foot operated mechanism to be provided. Wall hanging soap dispenser to be provided along with the wash basin unit. A Tissue paper rack with a mechanism to pull out tissue papers, to be provided near the wash basin to dry hands. Water lines that penetrate the Ante Room Space to be equipped with back-flow prevention devices	Nos	1		
5	Supply and installation of a workbench made of stainless-steel grade 304 with a granite top of dimensions (4'(L) x 3'(W) x 2'6"(H)	Nos	1		
6	Supply and installation of stainless-steel grade 304 coat gangers	Set	1		
7	Supply and installation of alternator (Timer Control cut-off and start) for changeover every 4 hours between the two existing installed split ACs inside the TB Containment lab	Nos	1		
8	Supply and Installation of 1 additional camera with necessary wiring to be done and connected to the existing 8 channel DVR as no camera has been installed in the AHU shed	Job	1		
9	Supply and installation of one clean room monitor (Pressure, Temperature and RH monitoring)	Nos.	1		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
10	Supply and installation of additional 5 new 5/15 Amp switch socket along with dedicated MCB in the distribution box along with necessary wiring	Job	1		
11	Light assembly along with Lights (8 Nos., flush Type, 18 watts each) to be replaced with new ones of same specifications and proper sealing	Nos.	8		
12	RTV silicon sealant for entire TB Containment Lab	Job	1		
Subtotal					
AHU and HVAC					
1	Dismantling and removal of existing AHU Shed and its components and handed over to the site	Job	1		
1	Construction of new AHU shed and uniform AHU platform of dimensions 20'(L)X20'(W) with to accommodate all the HVAC and AHU Components within shed.	Job	1		
2	Supply and installation of GI ducting for supply and exhaust system	Sqft	600		
3	Supply and installation of insulation (nitrile rubber) of supply (19 mm) and exhaust(13 mm) ducting system	Sqft	600		
4	Supply and installation of new AHU and ventilation casing for supply and exhaust as well as reinstallation of the below mentioned existing supply and exhaust motor and blower assembly in the AHU with necessary wiring i) Supply motor blower assembly (Make: Nicotra, Día: 250mm) ii) Exhaust motor blower assembly (Make: Nicotra, Día: 315mm)	Set	2		
5	supply and installation of Pre-filter for the existing supply AHU (Qty-1, Size(610mmx610mmx610mm) flange Type) and fine filter for the existing supply AHU: (Qty-1, Size(610mmx610mmx305mm) Flange Type)	Set	2		
6	Supply, installation, and commissioning of HEPA Filter(H14) with containment HEPA Housing with Test elbow port and pressure gauge for supply AHU	Nos.	1		
7	Supply, installation, and commissioning of HEPA filter with BIBO Indigenous with Test elbow port and pressure gauge for exhaust AHU	Nos.	1		
8	Supply and installation of variable volume control dampers for both supply and exhaust AHU	Nos.	2		
9	Supply and installation of leak proof dampers for both supply and exhaust AHU	Nos.	2		
10	Supply and installation of isolation dampers for both supply and exhaust containment and BIBO HEPA housing (2 -for supply and 2 - for exhaust)	Nos.	4		
11	Supply and installation of fire dampers for both supply and exhaust AHU	Nos.	2		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
12	Reinstallation of 2 nos. of existing 8.5 TR condensing unit with the below mentioned parts including necessary wiring and below mentioned items i)Refrigerant refilling((Including Pressure test/Leak Test/LN2 Flushing) for condensing unit of 20 Kgs to the existing 2 nos of 8.5 TR ii)Replacement of filter dryer assembly for the 2 nos of 8.5TR condensing unit iii) Replacement of filter suction and discharge valve for the 2 nos of 8.5TR condensing unit iv)supply and installation of additional copper piping with insulation	Job	1		
Subtotal					
Additional electrical work					
1	3 Nos. of UPS along with external batteries (as mentioned in the scope of work) to be removed from the TB containment Lab and needs to be placed outside in the corridor with connection to the dedicated switch socket inside the lab	Job	1		
2	Supply and installation of one additional VFD control panel for both supply and exhaust motors and required electrical wiring to be installed near to the existing main AHU control Panel.	Nos.	2		
3	Supply and Installation of phase preventor in the existing AHU control Panel	Nos.	1		
4	Dedicated earthing to be connected to the AHU control panel and HVAC system for the Lab	Job	1		
Subtotal					
Performance testing, validation					
1	Performance testing and validation of TB containment facility and 2 nos of Biosafety cabinet and submission of required validation documents along with traceability reports	Job	1		
Subtotal					
Any other items as per scope of work					
Total estimated cost for partial renovation at LLRM Meerut					

Schedule No.	III
Name of Site	IMS BHU

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
	Interior				
1	Uninstallation, packaging & shifting of equipment from the existing facility to the space identified by the site and reinstallation of shifted equipment inside the renovated TB Containment laboratory: i)3 nos. of biosafety cabinets ii)2 nos. refrigerated centrifuges iii)1 no. microliter centrifuge iv)1 nos. hot air oven v)1 no. of refrigerator vi)2 no. MGIT 960 system All above mentioned to be uninstalled, packed, shifted along with UPS to a safe location as identified by the site with appropriate bubble packaging as well reinstallation of the entire set after renovation of the lab	Nos.	9		
2	Supply and installation of BSC ducting with exhaust blower (Damper, Pipe, other ducting accessories material and foundation work for exhaust blower) The exhaust from the biological safety cabinets shall be thimble connected and individually	Job	3		
3	Removal of existing epoxy flooring of approx. area of 556 sq. ft including (change Room: 14' x 5', Ante Room: 6' x 5', TB containment Room: 15' x 20')	Sqft	556		
4	Proper levelling off the floor and laying of new epoxy flooring approx. area of 556 sq. ft along with new coving (wall to floor) that includes (Change Room: 14' x 5', Ante Room: 6' x 5', TB containment Room: 15' x 20')	Sqft	556		
5	Uninstallation and removal of split AC (both indoor and outdoor unit) a. 3 numbers of 2TR,1.5TR and 1TR split AC installed in the existing TB containment lab b. 2 numbers of 2 TR split AC installed in the existing BSL-2 Lab	Job	5		
6	Reinstallation of the split AC of capacity 2 TR and 1.5TR removed from TB containment Lab needs to be re-installed at BSL-2 Lab at the same location where the existing non-functional split AC are installed with the below mentioned parts i)Refrigerant refilling((Including Pressure test/Leak Test/LN2 Flushing) for condensing unit of 5 Kgs to the split ac ii)Replacement of 2 nos. filter dryer assembly for the 2 nos of split ac iii) Replacement of filter suction and discharge valve for the 2 nos of split ac iv)supply and installation of additional copper piping with insulation	Job	1		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
7	supply and Installation with 2 numbers of new split AC of capacity 2 TR each. These will be inverter ACs (minimum three star) of Hitachi/ Bluestar/ Carrier/ Lloyd/ Godrej or equivalent OEM with suitable voltage stabilizer and with changeover timer of 4 hours The outdoor unit will be suitably placed outside the lab with easy access and adequate protection from theft. drainage pipe of ACs will be adequately long and connected into the drainage system of the institute	Nos.	2		
8	supply and Installation with 1 number of new split AC of capacity of capacity 1 TR. This will be inverter ACs (minimum three star) of Hitachi/ Bluestar/ Carrier/ Lloyd/ Godrej or equivalent OEM with suitable voltage stabilizer. The outdoor unit will be suitably placed outside the lab with easy access and adequate protection from theft. drainage pipe of ACs will be adequately long and connected into the drainage system of the institute	Nos.	1		
9	Installation of 2 nos. of 32-amp MCB industrial type for installation of 2TR split ac	Nos.	2		
10	Installation of 1 no. of 16-amp switch and socket for installation of 1TR split ac	Nos.	1		
11	Wiring of 3 core 4sqmm to be done for 3 nos. of new split AC to be installed inside the renovated TB containment Lab of	Job	1		
12	Removal, cleaning and re-fixing with proper sealing of the exiting 2 numbers of view glass in TB containment Lab for preventing any seepage of water or dust into the View panel in future	Job	1		
13	supply and installation of new EPABX Box & Telephone set, Co-axial wires & cables to be done for the Lab. The 5 new phones to be located at i) 1 inside TB Containment Lab ii)1 inside Change Room iii)1 in Corridor adjoining the TB containment Lab iv) 1 inside Microbiologist Room v) 1 inside Media Room)	Set	1		
14	supply and installation of new CCTV monitoring system along with 6 cameras and necessary wiring to be done. The CCTV Cameras are to be located at i)3 inside TB Containment Lab ii)2 in the adjoining corridor iii)1 inside the AHU Shed	Set	1		
15	Removal of 2 nos. existing rusted wash basin and provision of 2 nos. new modular standalone hand washing sinks including associated plumbing work. Installation of a new modular standalone hand washing sinks made of SS 304 with elbow or foot operated mechanism to be provided in the TB containment lab and change room. Wall hanging soap dispenser to be provided along with the wash basin unit. A Tissue paper rack with a mechanism to pull out tissue papers, to be provided near the wash basin to dry	Nos	2		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
	hands to be equipped with back-flow prevention devices				
16	i) Removal of existing 4 numbers of existing workbenches of Stainless steel which are not sturdy enough. ii) Supply and Installation of 3 numbers of new workbenches of size (5'(L)x2'6" (W)x2'6"(H)) and 2 numbers of stainless-steel workbench of size (4'(L)x2'6" (W)x2'6"(H) with frame made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection and granite top. It should be strong to hold the granite top as well as equipment placed on the workbench. It should be stable and vibration free. 1 Storage cabinet made up of SS 304 to be installed below the granite top of each workbench of dimension(4'(L)x3'(W)x3'(H)) to store usable	Nos	5		
17	Supply and Installation of 8 numbers of Coat Hangers in the Ante Room of TB containment Lab	Set	2		
18	supply of additional 4 numbers of Laboratory grade hydraulic SS stools with back support, footrest, rotating type with castor wheels at the base	Nos.	4		
19	Supply and installation of one clean room monitor (Pressure, Temperature and RH monitoring)	Nos.	1		
20	Supply and Installation of new Light assembly along with 8 numbers Lights of 36 watts each with proper sealing	Nos.	8		
21	RTV Silicon Sealant for entire TB Containment Lab	Job	1		
Subtotal					
AHU and HVAC					
1	Dismantling and removal of the following items i) existing ducting with insulation length of supply approx. 30 Rft ii) exhaust ducting with insulation length of approx. 40 Rft iii) filters (Pre-filters, fine filters and HEPA filters)	Job	1		
2	Dismantling and shifting of the following items i) Existing supply & exhaust AHU component (including condensing units (8.5 TR-1), supply and exhaust motor blower assembly, etc.)	Job	1		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
3	For construction of new AHU i) Dismantling and Removal of the Existing AHU Shed of dimensions (22'6" (L) x19'5"(W)) ii) Removal of Existing Vegetation in and around the exiting AHU Shed for Installation of New AHU Shed. iii) Masonry works to be done to create a concrete platform for installation of Supply and Exhaust AHU iv) Supply and Installation of new AHU shed of dimension (25'(L)X19'5"(W)) of below mentioned specification , to accommodate all the HVAC and AHU Components within shed and have enough space for servicing as the current space is too congested for Service and maintenance.	Job	1		
4	Commissioning of AHU casing with components (Existing supply & exhaust AHU component (including condensing units (8.5 TR-2), supply and exhaust motor blower assembly, etc.)) including wiring and conduit work	Job	1		
2	Supply and installation of GI ducting for external supply and exhaust system	Sqft	500		
3	Supply and installation of insulation (nitrile rubber) of supply (19 mm) and exhaust (13 mm) ducting system	Sqft	500		
4	supply and installation of Pre-Filter for the existing supply AHU (Qty-1, Size(610mmx610mmx610mm) Flange Type) and fine filter for the existing supply AHU: (Qty-1, Size(610mmx610mmx305mm) Flange Type)	Set	2		
5	Supply, installation, and commissioning of HEPA Filter(H14) with containment HEPA Housing with Test elbow port and pressure gauge for supply AHU	Nos.	1		
6	Supply, installation, and commissioning of HEPA filter with BIBO Indigenous with Test elbow port and pressure gauge for exhaust AHU	Nos.	1		
7	Supply and installation of variable volume control dampers for both supply and exhaust AHU	Nos.	2		
8	Supply and installation of leak proof dampers for both supply and exhaust AHU	Nos.	2		
9	Supply and installation of isolation dampers for both supply and exhaust containment and BIBO HEPA housing	Nos.	4		
10	Supply and installation of fire dampers for both supply and exhaust AHU	Nos.	2		
11	Reinstallation of 1 nos. of existing 8.5 TR condensing unit with the below mentioned parts i)Refrigerant refilling((Including Pressure test/Leak Test/LN2 Flushing) for condensing unit of 10 Kgs to the existing 1 no of 8.5 TR ii)Replacement of filter dryer assembly for the 1 nos of 8.5TR condensing unit iii) Replacement of filter suction and discharge valve for the 1 nos of 8.5TR condensing unit iv)supply and installation of additional copper piping with insulation	Job	1		

Sl. No.	Description of work	Unit of Measurement	Quantity(number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
12	Supply, testing and commissioning of an additional 8.5 TR condensing unit for the TB containment lab along with its accessories and Provision of controls for additional condensing units to be installed with necessary wiring in the existing AHU control Panel (e.g.: Push buttons, indicators, contactors, etc.)	Nos.	1		
13	Supply and Installation of 2 circuit cooling coil with 8 row deep DX coil compatible to the existing supply AHU size (11'5"(L)x5'11"(W))	Set	1		
Subtotal					
Additional civil and electrical work					
1	The 5 Numbers of UPS (3 Numbers for Refrigerated Centrifuges, 2 Numbers of MGIT Machine) along with External batteries to be removed from the TB containment Lab and needs to be placed outside in the corridor on suitable racks with provision of dedicated switch and socket inside the lab. Necessary wiring to be done to connect the switch and socket inside TB Containment Lab to the UPS kept outside in the corridor.	Job	1		
2	Supply and Installation of phase preventor in the existing AHU control Panel	Nos.	1		
3	Supply and installation of 5 numbers of additional 5/15 Amp modular switch socket including necessary wiring	Nos.	5		
Subtotal					
Performance testing, validation					
1	Performance testing and validation of TB containment facility and 3 nos of Biosafety cabinet and submission of required validation documents along with traceability reports	Job	1		
Subtotal					
Any other items as per scope of work					
Total estimated cost for partial renovation at IMS BHU					

Schedule No.	IV
Name of Site	IRL Patiala

Sl. No.	Description of work	Unit of Measurement	Quantity (number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
	Interior				
1	Uninstallation, packaging & shifting of equipment from the existing facility to the space identified by the site and reinstallation of shifted equipment inside the renovated TB Containment laboratory: i)2 nos. of biosafety cabinets ii)3 nos. refrigerated centrifuges iii)2 no. microliter centrifuge iv)1 nos. hot air oven v)1 no. of -20 freezer vi)2 no. MGIT 960 system All above mentioned to be uninstalled, packed, shifted along with UPS to to a safe location as identified by the site with appropriate bubble packaging as well reinstallation of the entire set after renovation of the lab	Nos.	10		
2	Removal of existing vinyl flooring of approx. area of 375 sq. ft from the TB containment lab	Sqft	375		
3	Proper levelling off the floor and laying of new epoxy flooring approx. area of 556 sq. ft that includes (Change Room: 14' x 5', Ante Room: 6' x 5', TB containment Room: 15' x 20')	Sqft	375		
4	supply of additional 3 numbers of ergonomic laboratory chairs for biosafety cabinet and 2 nos. of Laboratory stools	Nos.	5		
5	Supply and installation of slotted angled racks (10 units) i. Dimension: 3'6" (L)x 1'6" (W) x 6'(H) ii. Material:18 Gauge Iron with anti-rusting coating iii. Adjustable 4 shelves for each rack iv. Plastic/ Rubber/ Neoprene Shoes v. Bolts and nuts as required for fitting of shelves vi. Scratch resistance smooth finish	Nos.	10		
6	Supply and installation of 2 work benches with 2.6 ft (L) x 2.6 ft (W) x 2.6 ft (H) size are required for TB Containment lab. The work bench frame shall be made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection. It should be strong to hold the granite top/workbench as well as equipment places on the workbench. It should be stable and vibration free. There shall be no drawers or safe in the workstation and shall have arrangement for placing the UPS below the work bench	Nos.	2		
7	Supply and installation of one clean room monitor (Pressure, Temperature and RH monitoring)	Nos.	1		
8	Suitable painting for modular wall and ceilings panels of TB containment lab	Sqft	60		
9	RTV Silicon Sealant for entire TB Containment Lab	Job	1		
Subtotal					

Sl. No.	Description of work	Unit of Measurement	Quantity (number/lot/job) approx.	Unit Price (inclusive of all applicable taxes)	Total Price (inclusive of all applicable taxes)
AHU and HVAC					
1	Supply and installation of tin shed sheet of size 2'6"x6' for AHU shed	Sqft	13		
2	Supply and installation of insulation for exhaust (13 mm) ducting system	Sqft	408		
3	Supply, installation, and commissioning of HEPA Filter(H14) with containment HEPA Housing with Test elbow port and pressure gauge for supply AHU	Nos.	1		
4	Supply, installation, and commissioning of HEPA filter with BIBO Indigenous with Test elbow port and pressure gauge for exhaust AHU	Nos.	1		
5	Supply and installation of isolation dampers for both supply and exhaust containment and BIBO HEPA housing	Nos.	4		
Subtotal					
Additional civil and electrical work					
1	For existing BSL-2 Lab: i) damp/water proof treatment of existing visible walls inside the BSL2 lab by applying appropriate cementing and putty work. ii) Painting of entire wall and ceiling inside the BSL2 lab.	Job	1		
2	Supply and installation of one 3 KVA online UPS to cater to the extreme essential power requirement of the laboratory. All critical components like lights, Door Interlocks, exhaust blowers of BSCs, Fire alarm sensor, CCTV camera & monitoring shall be provided with uninterrupted power supply for 30 minutes.	Nos.	1		
3	Supply and Installation of phase preventor in the existing AHU control Panel	Nos.	1		
Subtotal					
Performance testing, validation					
1	Performance testing and validation of TB containment facility and 2 nos of Biosafety cabinet and submission of required validation documents along with traceability reports	Job	1		
Subtotal					
Any other items as per scope of work					
Total estimated cost for partial renovation at IRL Patiala					

Chapter IV

SCHEDULE OF REQUIREMENT, TECHNICAL SPECIFICATIONS ANDDRAWINGS/ LAYOUTS OF LABORATORIES AND REQUIRED WORKS

A. SCHEDULE OF REQUIREMENT

Sequence No.	Sch. No.	Brief Scope of Works and List of Sites
		Partial Renovation ,Performance testing and validation of existing TB Containment/ BSL3 Laboratory, in compliance with the National Tuberculosis Elimination Programme (NTEP), Central TB Division (CTD), Govt. of India (GoI) for one year warranty at following sites:
I		IRL Siliguri
II		LLRM Meerut
III		IMS BHU
IV		IRL Patiala

B. Schedule for Completion and Handover of Works:

Within 120 days of issuance of Notification of Award (NOA) for each quoted Schedules.

C. Detailed address of sites:

Consignee Name	Address	Pin Code	Contact Name	Email Id	Phone No
Siliguri, NBMC, West Bengal	Culture & DST Laboratory, (Dept. of Microbiology),North Bengal Medical College, Govt. of West Bengal, Sushrutanagar	734012	Dr. Champa Chakraverty		9434019868
LLRM Medical College, Garh Road, Meerut	Department of Microbiology, LLRM Medical College, Garh Road, Meerut, Uttar Pradesh	250004	Dr. Amit Garg	amitdrgarg@ rediffmail.com	9412802533
Varanasi, UP	Department Of Microbiology, Institute of Medical Sciences,Banaras Hindu University	221005	Prof. Shampa Anupurba		9415396353
Patiala, Punjab	State TB Training & Demonstration Centre, TB Hospital, Near Sherawala Gate,	147001	Mr. Harinder Singh		964365891

D. SCOPE OF WORK, TECHNICAL SPECIFICATIONS ANDDRAWINGS/ LAYOUTS OF LABORATORIES

Site name	Scope of work
NBMCH Siliguri	1. BSL-3 lab (before renovation work): securing the uninstalled equipment and accessories in the room identified for storage with appropriate safety packing such as using bubble wrap and wooden box etc. a. Uninstallation of 2units of split AC of capacity 1.5 Tons with its parts such as copper line, electrical points from the BSL 3 room. b. Uninstallation of 3 units of Biosafety Cabinet with its ducting. c. Uninstallation of 5 units of Refrigerated centrifuge and its accessories. d. Uninstallation of 2 units of Microliter centrifuge and its accessories. e. Uninstallation of 2 units of MGIT 960 system and its accessories. f. Uninstallation of 2 units of Hot air oven/universal oven and its accessories. g. Uninstallation of 1 unit of Refrigerator and its accessories. 2. BSL 3 (after renovation work): reinstallation of equipment from the stored location, unpack from previously packed materials at it designated place. a. Relocation of Split AC at the proposed location which is above the existing pass boxes with necessary wiring. supply, and installation 16 AMP switch sockets for installation of 1.5 TR Split ACs. b. Ducting of Biosafety cabinet at identified space. c. Reinstallation of refrigerated centrifuge, microliter centrifuge, refrigerator and MGIT 960 system with their respective accessories. 3. Supply and deployment 6 feet (length) by 3 feet (breadth) by 2feet 6 inches (height) workbench made of stainless steel. Frame shall be made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection. It should be strong to hold the granite top/workbench as well as equipment places on the workbench. There shall be no drawers or safe in the workstation and shall have arrangement for placing the UPS below the work bench. 4. For Epoxy flooring in BSL3: a. Removal of epoxy flooring of area 672 sq. Ft that includes Change room (5 feet 1 inches by 16 feet 6 inches) and Anteroom (5 feet 1 inches by 7 feet 2 inches). b. Reconditioning of flooring if found not as per recommendations for epoxy. c. Epoxy flooring of entire area 672 sq. Ft. Flooring shall be of 5 mm (3 mm + 2mm) of self-levelling industrial epoxy including screed compound for adhesion, 3 mm semisolid cladding of EPOXY will be applied over a uniform cemented flooring and 2 mm semi-liquid epoxy over 3 mm hardened surface with bubble free perfect smooth finishing completed in three steps: Cementing (Uniform Flooring), Hardening (3 mm epoxy) and smoothening (2mm epoxy). 5. RTV silicon sealant for the entire TB Containment lab. 6. For AHU Placement: a. Before renovation: i. Dismantle duct and AHU component. ii. Duct length of supply approx. 60 ft and exhaust approx. 66 ft iii. Including filters iv. Shifting of existing supply & exhaust AHU Component 1. Supply motor blower assembly of rating RPM 3500 a. Make: Nicotra Gebhardt b. Model: RDH-315 R c. Serial number: 1310015856

2. Exhaust motor blower assembly of rating RPM 3500
    a. Make: Nicotra Gebhardt
    b. Model: RDH-315 R
    c. Serial number: 1307009641

3. Condensing unit of rating 8.5 tr (2 units)

v. Commissioning of AHU after shifting including electrical wiring and conduct work and refrigerant refilling.

vi. AHU Shed as per specification: It will be required at sites where AHU is installed on roof/ outside the lab building. AHU shed with provision for fencing, door with lock-key arrangement.

1. Framework vertically made of M S Square Pipe frame: 2 Inches X 2 Inches, 16 Gauge
2. M S Fencing with wire mesh: ½ inch X ½ inch
3. Supporting Structure M S Angle: 50 X 5 mm
4. GI pre-coated corrugated profile roof sheet: 0.5 mm thick duly supported with J Hook.
5. 10 SWG with provision of door with lock and key
6. AHU Shed with fencing should be duly enamel painted and with anti-rust coating from both sides. The height covered shall be at least 8 feet. There should be no gap between roof sheet and wire mesh, if any angle creates gap, it should be covered with iron bars and wire mesh in between.

b. During renovation: Space for AHU placement identified at the roof top adjacent to the northern wall as per annexure 1(b) of TB Containment Lab across. Area of new identified AHU is 20 feet length and 20 feet width with proper wire mesh and with lock & key facility.

Technical requirement:

a. Ducting approximately 50 feet run of supply and 40 feet run of exhaust:

i. Material: GI sheet Up to 750mm 0.63 mm (24 G)
ii. Hanger Rods for duct support: up to 2250 mm ducts - Min. 10 mm dia.
iii. Nuts and Bolts
iv. Gaskets: Gasket (min. 3 mm) should be provided between flanged joints
v. Painting: Primer coating on all MS components supports and flanges should be provided
vi. Duct Collars and Droppers
vii. Bird Screen for fresh air intake
viii. Sealing of Joints
ix. Fire and Smoke dampers: Size as per duct size.
x. Dampers: Size as per duct size (2 units; supply and exhaust each)

b. Duct Insulation Work, 50 feet run of supply and 40 feet run of exhaust:

i. Thickness of Material used for Duct Insulation: Nitrile Rubber (Supply: 19 mm thick & Return: 13 mm thick)
ii. Joints: All joints shall be overlapped and properly sealed

c. Supply, installation, and commissioning of one Containment HEPA Housing assembly with 2 HEPA Filter of size(610mmx610mm) cascaded manner for supply duct as per specification mentioned below:

i. Material of construction: SS 304 (14 gauge) with leak proof.
ii. Isolation dampers at Inlet & Outlet
iii. Facility for on-site HEPA Filter scanning and testing
iv. Fumigation Ports
v. Bag-In-Bag-Out facility for filter replacement
vi. Magnehelic Gauge for monitoring pressure drop across HEPA Filter
vii. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.

d. Return duct (Bag in bag out) Containment as per specification mentioned below:

i. HEPA filter with efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size).
ii. Material of construction: SS 304 (14 gauge) with leak proof.
iii. Isolation dampers at Inlet & Outlet
iv. Facility for on-site HEPA Filter scanning and testing
v. Fumigation Ports
vi. Bag-In-Bag-Out facility for filter replacement
vii. Magnehelic Gauge for monitoring pressure drop across HEPA Filter
viii. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.

e. Validation of Laboratory and BSC:

i. For TB Containment Lab- The installation as a whole shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution

i. Pressure in each room/zone as per the design, differential pressure readings including across filters.
ii. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design
iii. Smoke pattern test for directional airflow should be performed during validation including for Passbox.
iv. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10%
v. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications
vi. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels
vii. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity
viii. Operational performance testing for

1. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit
2. Ducting for any potential leakages and insulation breakage
3. Dampers including variable control, leak proof and fire control (only verification)
4. Magnehelic Gauges
5. Temperature control sensors; pressures control sensors,
6. Passbox
7. Split ACs
8. Fire Detection system
9. EPABX System
10. Access Control System
11. CCTV System
12. UPS Back up system
13. Emergency Shower and eye wash station
14. Interlocking of supply blower motor and exhaust blower motor

ix. Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval.

ii. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.

i. The contractor shall arrange to do a mandatory third-party validation
ii. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency. For Bio Safety Cabinet:
iii. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity
iv. Maintenance of the BSC to be carried out if existing one to be used (and not covered under warranty) i.e., complete, and thorough cleaning of working Area of cabinet, cleaning of exhaust

filter from the top to eliminate and external clogging or disturbance and inspection of ducting, cleaning and oiling of sliding sash movement system, checking of switches, tube lights and UV light fittings, checking of airflow and exhaust system, calibration and validation of Magnehelic Gauges if existing, etc.

v. HEPA Filter (in BIBO) integrity test based on EN1822 at MPPS (Maximum Penetrating Particle Size) through particle count test and PAO test and manufacturer's certifications

Site name	Scope of work
LLRMC Meerut	**Inside TB containment Lab and AHU control Panel**

1. Removal of Existing Epoxy Flooring of approx. area of 400 sq. Ft including (Change Room: 14' X 5', Ante Room: 6' X 5', TB containment Room: 15' X 20'.).
2. Proper levelling and rework of existing cemented flooring before applying new epoxy flooring.
3. For Epoxy flooring in TB Containment Laboratory:
    a. Removal of epoxy flooring of area 400 sq. Ft that includes (Change Room: 14' X 5', Ante Room: 6' X 5', TB containment Room: 15' X 20'.).
    b. Reconditioning of flooring if found not as per recommended for epoxy.
    c. Epoxy flooring of entire area 400 sq. Ft. (Change Room: 14' X 5', Ante Room: 6' X 5', TB containment Room: 15' X 20'.). Flooring shall be of 5 mm (3 mm + 2mm) of self-levelling industrial epoxy including screed compound for adhesion, 3 mm semisolid cladding of Epoxy will be applied over a uniform cemented flooring and 2 mm semi-liquid Epoxy over 3 mm hardened surface with bubble free perfect smooth finishing completed in three steps: Cementing (Uniform Flooring), Hardening (3 mm Epoxy) and smoothening (2mm Epoxy).
4. Removal of Existing Rusted Wash Basin in the Ante Room
5. Installation of a new Modular standalone hand washing sinks made of SS 304 with elbow or foot operated mechanism to be provided. Wall hanging soap dispenser to be provided along with the wash basin unit. A Tissue paper rack with a mechanism to pull out tissue papers, to be provided near the wash basin to dry hands. Water lines that penetrate the Ante Room Space to be equipped with back-flow prevention devices. Outlet pipes should be made of PVC with closure outside lab
6. Supply and installation of Workbench of size (4'(L)x3'(W)x3'(H) with Frame made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection and with a Granite Top. It should be strong to hold the granite top as well as equipment placed on the workbench. It should be stable and vibration free. 1 Storage cabinet made up of SS 304 to be installed below the granite top of Workbench to store usable Lab Items.
7. Coat Hangers to be provide in the Ante Room for placing of used Lab Coats
8. Both the Split ACs to be connected to alternator (Timer Control cut-off and start) for changeover every 4 hours between them so that run load is equally distributed between both the ACs.
9. Total 5 new 5/15 Amp switch socket along with dedicated MCB in the Distribution Box to be installed inside the TB containment Lab with discussion with Microbiologist of the Lab as the Switch and Socket are not sufficient for Existing Equipment placed inside the TB Containment Laboratory.
10. Clean room Monitor (Pressure, Temperature and RH monitoring) to be installed inside the Proposed TB containment lab for monitoring, humidity, temperature, and pressure of the Lab
11. The Existing Light assembly along with Lights (8 Nos., Flush Type, 18 watts each) to be replaced with new ones with proper sealing to prevent any damage to lights
12. 3 Nos. of UPS along with External batteries (details mentioned below) to be removed from the TB containment Lab and needs to be placed outside in the corridor with connection to the dedicated switch socket inside the lab. Necessary wiring to be done to connect the switch socket inside TB Containment Lab to the UPS kept outside in the corridor/ the passage in front of the Existing Autoclave Room as per site's feasibility

Equipment Description	Make	Model	Serial Number
UPS WITH 6 BATTERIES	APC	SRC3KUXI	B21730010036
UPS WITH 6 BATTERIES	NUMERIC ONFINIT	ONFINIT 3KVA-72FMC	V170704835
UPS WITH 6 BATTERIES	NUMERIC ONFINIT	ONFINIT 3KVA-72FMC	V170704841

13. Currently the motors are not controlled trough any VFD. Additional Control Panel with VFD for both supply and Exhaust Motors and required electrical wiring to be installed near to the Existing Main AHU Control Panel.
14. Installation of Single-phase protector in the Existing AHU control Panel

15. All Equipment (Details mentioned below) inside the TB containment Laboratory to be removed with all its accessories and place them in a safe and secure temporary space provided by Site before Epoxy Flooring work to be carried out
16. MGIT-960 to be shifted and installed by BD in BSL-3 Container based Lab around which is around 500 metre in the same campus of Lab along with Accessories for 3 months of the Renovation works.
17. Supply and Installation of 1 additional camera with necessary wiring to be done and connected to the existing 8 channel DVR as no camera has been installed in the AHU shed.
18. Re-Installation of the Equipment (Details mentioned below) along with all accessories inside the TB containment Laboratory after the Interior work of TB containment Lab is completed.

Equipment Description	Make	Model	Serial Number
Refrigerated centrifuge	Thermo scientific	Sorvall legend XIR	42235464
Refrigerated centrifuge	Thermo scientific	Sorvall legend XIR	42235463
Biosafety cabinet class II A2	Heal force	Hf safe 1200 lc	061712LCJ3039K
Biosafety cabinet class II A2	Heal force	hf safe 1200 lc	061712LCJ3050K
Microliter centrifuge	Remi Elektrotechnik Limited.	Remi Elektrotechnik Limited.	09578
Microliter centrifuge	Remi Elektrotechnik Limited.	Remi Elektrotechnik Limited.	09577
Deep freezer (-20 c)	Thermo scientific	151faev-tsc	80281721444443200.00
BACTEC MGIT 960 SYSTEM along with Lexmark Printer	BD	445870 Bactec MGIT 960	MG-4179
Hot Air Oven(260Litres)	Jindal	C SMI-118	SMSI/1718/10/HAO 010

18. Proper sealing of Modular panels to prevent any seepage of water inside the Lab after re-installation of BSC inside the TB Containment Lab
19. All the materials /parts removed during partial renovation for TB containment Lab, or the AHU will be handed over to the site for further action

FOR AHU and HVAC Unit:

20. The size of the AHU shed (13'(L) x15'(W) needs to be extended to at least (20'(L)X20'(W)) with New AHU Shed to accommodate all the HVAC and AHU Components within shed and have enough space for servicing as the current space is too congested for Service and maintenance

21. As an even surface not available for AHU, the same must be levelled through (masonry work) for the entire surface area which will be enclosed within AHU shed and the AHU will be raised to a height of 1-2 feet from the base to prevent water logging and also provide vibration pads to reduce noise and Vibration.

22. AHU Shed to be made as per specification: It will be required at sites where AHU is installed on roof/ outside the lab building. AHU shed with provision for fencing, door with lock-key arrangement.

    a. Framework vertically made of M S Square Pipe frame: 2 Inches X 2 Inches, 16 Gauge
    b. M S Fencing with wire mesh: ½ inch X ½ inch
    c. Supporting Structure M S Angle: 50 X 5 mm
    d. GI pre-coated corrugated profile roof sheet: 0.5 mm thick duly supported with J Hook.
    e. 10 SWG with provision of door with lock and key
    f. AHU Shed with fencing should be duly enamel painted and with anti-rust coating from both sides. The height covered shall be at least 8 feet. There should be no gap between roof sheet and wire mesh, if any angle creates gap, it should be covered with iron bars and wire mesh in between.

23. Dismantling and Removal of AHU and HVAC component and Replacement with New AHU components mentioned below
    a. Complete Supply and Exhaust Ducting with insulation of approx. length of 30-35 Feet's each
    b. Set of Filters
        i. Pre-Filter: (Qty-1, Size(610mmx610mmx610mm) Flange Type)
        Coarse filter will be in outside fresh air pre-filter section and will be G4 washable filter (50 mm deep) class having average arrestance of 85-98% for 10 microns size as per EN779 2002
        ii. Fine Filter: (Qty-1, Size(610mmx610mmx305mm) Flange Type)
        Fine filters will be F7 filter (300 mm deep) Average Efficiency 85-95% for 1-micron size as per EN 779 2002 standards.
        iii. Removal of existing HEPA filters along with BIBO housing
        iv. Supply, installation, and commissioning of one Containment HEPA Housing assembly with 2 HEPA Filter of size(610mmx610mmx305mm) cascaded manner for supply duct as per specification mentioned below:
            a. Material of construction: SS 304 (14 gauge) with leak proof.
            b. Isolation dampers at Inlet & Outlet
            c. Facility for on-site HEPA Filter scanning and testing
            d. Fumigation Ports
            e. Bag-In-Bag-Out facility for filter replacement
            f. Magnehelic Gauge for monitoring pressure drop across HEPA Filter
            g. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.

        v) Return duct (Bag in bag out) Containment as per specification mentioned below:

            h. HEPA filter with efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size).
            i. Material of construction: SS 304 (14 gauge) with leak proof.
            j. Isolation dampers at Inlet & Outlet
            k. Facility for on-site HEPA Filter scanning and testing
            l. Fumigation Ports
            m. Bag-In-Bag-Out facility for filter replacement
            n. Magnehelic Gauge for monitoring pressure drop across HEPA Filter
        2. HEPA Filter: Filter shall have efficiency of 99.99% efficiency for 0.3 µm particle size.

    c. AHU Casing: Air Handling Units shall be of sectionalized constructions with an under frame of extruded heavy aluminium profiles. The under frame shall be mechanically strong and shall take double skinned insulated panels. The powder coated panels shall consist of 0.8 mm galvanized iron outer skin and 0.63 mm galvanized iron inner skin with 23 mm thick injected PUF insulation in between two panels. The AHUs shall be with true thermal break. There should not be any projections inside the AHUs and the covings has to flush with the side panels. Airtight access panel with suitable neoprene gaskets shall be provided in the fan section, coil and filter section. Similar gaskets should be used at all other joints of the AHU and its ducting. Units meant for indoor locations shall be specially designed to meet the arduous and corrosive atmosphere.
    d. Dampers (Volume control and Fire Dampers)

24. Shifting, Re-Installation and Commissioning of AHU Component after shifting including electrical wiring and refrigerant refilling
25. Supply motor blower assembly (Make: Nicotra, Dia: 250mm)
26. Exhaust motor blower assembly (Make: Nicotra, Dia: 315mm)
27. Condensing unit of rating 8.5 tr (2 units) but the filter dryer assembly to be replaced and additional copper piping with insulation to be laid as per new location of Condensing unit along with Refrigerant Filling of approx. 17 Kgs
28. Validation of Laboratory and BSC:

    a. For TB Containment Lab- The installation shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution

        i. Pressure in each room/zone as per the design, differential pressure readings including across filters.
        ii. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design

	iii. Smoke pattern test for directional airflow should be performed during validation including for Pass box. iv. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10% v. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications vi. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels vii. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity viii. Operational performance testing for 1. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit 2. Ducting for any potential leakages and insulation breakage 3. Dampers including variable control, leak proof and fire control (only verification) 4. Magnehelic Gauges 5. Temperature control sensors; pressures control sensors, 6. Passbox 7. Split ACs 8. Fire Detection system 9. EPABX System 10. Access Control System 11. CCTV System 12. UPS Back up system 13. Emergency Shower and eye wash station 14. Interlocking of supply blower motor and exhaust blower motor ix. Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval. b. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details. i. The contractor shall arrange to do a mandatory third-party validation ii. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency. For Bio Safety Cabinet: iii. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity c. Dedicated earthing to be carried out for the TB containment lab
IMS BHU Varanasi	**<u>Inside TB containment Lab and AHU control Panel:</u>** 1. Flooring of TB Containment Lab: a. Removal of Existing Epoxy Flooring of approx. area of 556 sq. Ft including (Change Room: 8' X 8', Ante Room: 8' X 7'9", TB containment Room: 19'6" X 22'.) b. Proper levelling and rework of existing cemented flooring before applying new epoxy flooring. c. New Epoxy flooring to be laid in an area of (Change Room: 8' X 8', Ante Room: 8' X 7'9", TB containment Room: 19'6" X 22'). 2. Wash Basin a. Removal of Existing Rusted Wash Basin in the Change Room and TB Containment Laboratory b. Installation of a new Modular standalone hand washing sinks made of SS 304 with elbow or foot operated mechanism to be provided. Wall hanging soap dispenser to be provided along with the wash basin unit. A Tissue paper rack with a mechanism to pull out tissue papers, to be provided near the wash basin to dry hands. Water lines to be equipped with back-flow prevention devices. Outlet pipes should be made of PVC with closure outside lab.

3. Dismantling of the Split AC:
    a. Removal of 3 numbers of existing split AC installed in the TB Containment Lab of capacity 2TR1.5TRand 1TR.
    b. Removal of 2 numbers of existing Split AC installed in the BSL-2 Lab of capacity 2 TR.

4. Re-Installation of Split AC in BSL-2 Lab:
    a. Two Numbers of Split AC of Capacity 2 TR and 1.5TR removed from TB containment Lab needs to be re-installed at BSL-2 Lab at the same location where the existing Non-Functional Split AC are installed. The exiting electrical connection available to be used for installation of Split ACs with proper refilling of Refrigerant Gas Charging (Including Pressure test/Leak Test/LN2 Flushing), copper piping and other accessories. The outdoor of the Split AC to be installed at the terrace just above the Existing BSL-2 Lab.

5. Installation of New Split AC in Renovated TB containment Lab:
    a. Supply and Installation with 2 numbers of Split AC of capacity 2 TR and 1 number of capacity 1 TR. These will be inverter ACs (minimum three star) of Hitachi/ Bluestar/ Carrier/ Lloyd/ Godrej or equivalent OEM with suitable voltage stabilizer. The outdoor unit will be suitably placed outside the lab with easy access and adequate protection from theft. Drainage pipe of ACs will be adequately long and connected into the drainage system of the institute. The Split ACs would be connected to an alternator (Timer Control cut-off and start) for changeover every 4 hours in such a way that at any given time 3TR cooling is provided to the TB Containment area as well as load is properly distributed between both the ACs. These will be used at the end of the day when main HVAC system is not operating to provide ambient temperature for MGIT.
    b. Location of the New Split ACs:
        i. 1 number of Split AC of capacity 2TR along with 1 Number of Split AC of capacity 1TR to be installed just behind the existing MGIT 960 Machines with their outdoor units installed Inside the AHU Shed along with drainage pipe that to be taken out near the AHU Shed.
        ii. 1 Number of Split AC of Capacity 2TR to be installed behind the existing Hot Air Oven with its outdoor unit mounted on the outer wall adjacent to it and the drainage for the same to be taken from the adjoining wall to outside in the corridor.
    c. Electrical Connection: Supply and provision of 2 numbers of 32 AMPMCB/Industrial type switch and socket including necessary wiring for installation of 2 new 2TR Split AC and provision of 15 Amp switch and socket for 1 new 1TR Split AC inside the Renovated TB Containment Lab

6. Furniture:
    a. Supply of additional 4 numbers of Laboratory grade hydraulic SS stools with back support, footrest, rotating type with castor wheels at the base
    b. Supply and Installation of 8 numbers of Coat Hangers in the Ante Room of TB containment Lab for hanging of used Laboratory Coats
    c. Workbenches for Renovated TB containment Laboratory
        i. Removal of existing 4 numbers of existing workbenches of Stainless steel which are not sturdy enough.
        ii. Supply and Installation of 3 numbers of workbenches of size (5’(L)x2’6” (W)x3’(H)) and 2 Numbers. of Stainless-steel workbench of size (4’(L)x2’6” (W)x3’(H) with Frame made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection and granite top. It should be strong to hold the granite top as well as equipment placed on the workbench. It should be stable and vibration free. 1 Storage cabinet made up of SS 304 to be installed below the granite top of each Workbench of dimension (4’(L)x3’(W)x3’(H)) to store usable.

7. EPABX System:
    a. Supply and Installation of New EPABX system along with 5 Phones and complete wiring to be done for the Lab. The 5 new phones to be located (1 inside TB Containment Lab, 1 inside Change Room, 1 in Corridor adjoining the TB containment Lab, 1 inside Microbiologist Room and 1 inside Media Room).

8. CCTV Monitoring System:
    a. Supply and Installation of New CCTV Monitoring system along with 6 cameras and necessary wiring to be done. The CCTV Cameras are to be located (3 inside TB Containment Lab,2 in the adjoining corridor, 1 inside the AHU Shed).

9. Electrical works:

a. The 5 Numbers of UPS (3 Numbers for Refrigerated Centrifuges, 2 Numbers of MGIT Machine) along with External batteries to be removed from the TB containment Lab and needs to be placed outside in the corridor on suitable racks with provision of dedicated switch and socket inside the lab. Necessary wiring to be done to connect the switch and socket inside TB Containment Lab to the UPS kept outside in the corridor.
b. Supply and Installation of 5 numbers of additional 5/15 Amp Modular switch and socket to be installed inside the TB containment Lab including necessary wiring. The installation of the electrical points to be done in consultation with the Microbiologist of the Lab as the existing Switch and Socket are not sufficient for the Existing Equipment placed inside the TB Containment Laboratory
c. Supply and installation of 1 number of clean rooms Monitor to be installed inside the renovated TB containment lab for monitoring parameters (humidity, temperature, and pressure) of the Lab
d. Supply and Installation of new Light assembly along with 8 numbers Lights of 36 watts each with proper sealing to prevent any damage to lights in future

10. Equipment Shifting and Re-installation:
    a. All Equipment (Details mentioned below) inside the TB containment Laboratory to be removed with all its accessories and to be placed in a safe and secure temporary location (corridor area) identified by the site before Epoxy Flooring work to be carried out.
    b. Re-Installation of the Equipment (Details mentioned below) along with all accessories inside the TB containment Laboratory after the Interior work of TB containment Lab is completed.

11. Other Interior Works:

S. No.	Equipment Name	Make	Model	Serial Number
1.	Biosafety Cabinet	ESCO	AC2-4S8	2014-92311
2.	Biosafety Cabinet	ESCO	AC2-4S8	2014-92313
3.	Biosafety Cabinet	ESCO	AC2-4S8	2014-92332
4.	Refrigerated Centrifuge	Hettich	Rotina 380R	0001335-01-00
5.	Refrigerated Centrifuge	Hettich	Rotina 380R	0001394-01-00
6.	Microlitre Centrifuge	Hettich	Micro 200	00041030300
8.	MGIT 960	BD	BD 960	MG3459
9.	MGIT 960	BD	BD 960	MG4147
10.	Hot Air Oven	Memmert	UNB 200	214.0186
11.	Refrigerator	Elanpro	EFGV 450	81.286.135.7

    a. Removal, Cleaning and Re-Fixing with proper sealing of the exiting 2 numbers of View glass in TB containment Lab for preventing any seepage of water or dust into the View panel in future
    b. Proper silicon sealing to be done for the entire TB containment Lab including the Ante and Change Room of the Lab.

FOR AHU and HVAC Unit:

1. AHU Shed:

    a. Dismantling and Removal of the Existing AHU Shed of dimensions (22'6" (L) x19'5"(W))
    b. Removal of Existing Vegetation in and around the exiting AHU Shed for Installation of New AHU Shed.
    c. Masonry works to be done to create a concrete platform for installation of Supply and Exhaust AHU.
    d. Supply and Installation of new AHU shed of dimension (25'(L)X19'5"(W)) of below mentioned specification , to accommodate all the HVAC and AHU Components within shed and have enough space for servicing as the current space is too congested for Service and maintenance.

I. Specification of AHU Shed: AHU Shed to be made as per specification: It will be required at sites where AHU is installed on roof/ outside the lab building. AHU shed with provision for fencing, door with lock-key arrangement.
   i. Framework vertically made of M S Square Pipe frame: 2 Inches X 2 Inches, 16 Gauge.
   ii. M S Fencing with wire mesh: ½ inch X ½ inch.
   iii. Supporting Structure M S Angle: 50 X 5 mm.
   iv. GI pre-coated corrugated profile roof sheet: 0.5 mm thick duly supported with J Hook.
   v. 10 SWG with provision of door with lock and key.
   vi. AHU Shed with fencing should be duly enamel painted and with anti-rust coating from both sides. The height covered shall be at least 8 feet. There should be no gap between roof sheet and wire mesh, if any angle creates gap, it should be covered with iron bars and wire mesh in between.

2. Dismantling, Removal of Existing AHU and HVAC component and Reinstallation of Existing AHU Components / Installation of New AHU components

a. Dismantling Works:

   i. Removal of External Supply Ducting with Insulation for both supply ducting ((approx. 30 R. ft) and Exhaust Ducting (approx. 40 R. ft.).
   ii. Removal of Ducting (approx. 12 ft. each) along with 3 numbers External Motor Blower for exiting 3 numbers Biosafety Cabinet (BSC).
   iii. Removal of 2 numbers Supply pre- filters of dimensions of 23"×23" and 12"×23".
   iv. Removal of Exhaust Bag in bag out (BIBO) assembly along with its HEPA Filters.
   v. Removal of any Existing Dampers present in Supply and Exhaust unit
   vi. Removal of Existing Condensing unit of capacity 8.5 TR along with Cooling coil and accessories.

b. Re-Installation:

   i. Relocation and Installation of existing Supply and Exhaust AHU casing along with the motor blower sections
   ii. Relocation and Re-Installation of existing 8.5 TR Condensing unit with proper refilling of Refrigerant Gas Charging (Including Pressure test/Leak Test/LN2 Flushing), copper piping and other accessories.

c. New Installation
   I. Ducting: Complete External Supply (~30 R. feet) and Exhaust Ducting (~ 40 R. feet) with insulation
      i. Supply Ducting: Supply and installation of Ventilation ducting shall be made from minimum 24-gauge GI sheet, all the ventilation ducting shall be leak proof and with thermal insulation (the colour of insulation material will not be black). This insulation is made of aluminium foil nitrile rubber (19mm) or glass wool (50mm) thick. The GI duct should be fabricated as per SMACNA standards. To prevent air leakage, all the lateral joints and flanged joints of GI ducting should be sealed using silicone sealant.

      ii. Exhaust Ducting: Supply and Installation of Exhaust ducting (like supply) shall be made from minimum 24-gauge GI sheet. The GI duct should be fabricated as per SMACNA standards. To prevent air leakage, all the lateral joints and flanged joints of GI ducting should be sealed using silicone sealant. All the ventilation ducting shall be leak proof and with thermal insulation (the colour of insulation material will not be black). This insulation is made of aluminium foil nitrile rubber of thickness 13 mm or glass wool of thickness 25mm.

      iii. BSC Ducting: Supply and installation of ducting of approx. 10 Feet each for all 3 BSC's with suitable capacity External Blower: The exhaust from the Biological Safety Cabinets shall be thimble connected and individually ducted out. The external extraction fan installed at the end of the ducting should exceed the volumetric flow rate of each BSC by 30–50%, and should be controllable, provided with easily accessible dampers and connected to an uninterrupted power supply. The air from the BSC should be ducted with ventilation pipes that have a diameter exceed 20 cm.

II. Supply AHU

a. Filters:
   1. Pre-Filters: Supply and Installation of 1 set Pre-filter for the Existing supply AHU of dimensions (11'5" (L) x 5'11" (W)) to be placed at the mouth of supply AHU which will be G4 washable filter (50 mm deep) class having average efficiency of 85-98% for 10 microns size as per EN779 2002
   2. Fine Filters: Supply and Installation of 1 set of Fine filters for the Existing supply AHU of dimensions (11'5" (L) x 5'11" (W)) to be placed after the Pre-filter which will be F7 filter (300 mm deep) Average Efficiency 85-95% for 1 micron size as per EN 779 2002 standards
   3. HEPA Filters: Supply and Installation of 1 set of HEPA filter in the Containment HEPA Housing connected to the supply ducting. The supply HEPA filter plenums (Containment Housing) shall be made in SS 304 (14 gauge) with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation dampers at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters. The quantity of HEPA filter should be provided based on supply air room volume, length of duct.

b. Air Conditioning unit: Supply and Installation of New additional Air Conditioning unit of capacity 8.5 TR including Refrigerant Gas Charging (Pressure test/Leak Test/LN2 Flushing works) along with necessary wiring and piping.

   i. Cooling Coil Section: Supply and Installation of two circuit cooling coil with 8 row deep DX coil, necessary component which is compatible to the Supply AHU of dimensions (11'5" (L)x5'11" (W)).

III. Exhaust AHU

a. Filter:
   i. HEPA Filters: Supply and Installation of 1 set of HEPA filter in the BIBO HEPA Housing connected to the Exhaust ducting. The exhaust air filter handling systems shall be provided with HEPA Filters such that it protects the maintenance staff from acquiring any infections while handling/replacing the filters -Bag in Bag out system (BIBO). It is essential that the maintenance person wears PPE while doing so. The HEPA filters will be located prior to exhaust unit at a place which is easily accessible and has adequate space for BIBO to function effectively. The HEPA filter housed in BIBO should have efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size). The HEPA filter plenums (Containment Housing) shall be made in SS 304 (14 gauge) with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation damper at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters. HEPA Filters of 99.99% efficiency would be used in all exhaust. All the HEPA filters should have 0.3µm filtration.

IV. Installation of New set of dampers

a. Volume Control Dampers: Supply and Installation of 1 number of Volume control damper at the supply ducting.

b. Fire Dampers for supply and exhaust air: Supply and Installation of 2 numbers of Fire dampers in both supply and Exhaust ducting. As a safety feature, fire dampers shall be provided in both supply as well as exhaust duct. In supply system it will be in between variable damper and inlet (but at an accessible point from outside). In the exhaust system

it will be located at exhaust ducting coming out of the building and prior to BIBO assembly at an accessible point from outside. These dampers are curtain type made of SS interlocking blades with fusible link which melts at 74°C.

c. Leak proof dampers: supply and Installation of 2 numbers of Leak proof damper in both Supply and Exhaust ducting with provision to prevent backflow of air shall be provided in supply unit (after blower motor and before volume control damper) and in exhaust unit (in between blower motor and volume control damper). It is made of SS blades with neoprene gasket.

V. AHU Control Panel

a. Provision of controls for additional condensing units to be installed with necessary wiring in the existing AHU control Panel (e.g.: Push buttons, indicators, contactors, etc.).
b. Installation of phase protector in the Existing AHU control Panel.
c. Dedicated earthing to be connected to the AHU control panel and HVAC system for the Lab.

3. Validation of Renovated TB Containment Laboratory and BSC:

A. For TB Containment Lab- The installation shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution

a. Pressure in each room/zone as per the design, differential pressure readings including across filters.
b. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design.
c. Smoke pattern test for directional airflow should be performed during validation including for Pass box.
d. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10%.
e. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications.
f. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels.
g. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity.
h. Operational performance testing for
    i. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit
    ii. Ducting for any potential leakages and insulation breakage
    iii. Dampers including variable control, leak proof and fire control (only verification)
    iv. Magnehelic Gauges
    v. Temperature control sensors; pressures control sensors,
    vi. Pass box
    vii. Split ACs
    viii. Fire Detection system
    ix. EPABX System
    x. Access Control System
    xi. CCTV System
    xii. UPS Back up system
    xiii. Emergency Shower and eye wash station
    xiv. Interlocking of supply blower motor and exhaust blower motor

Note: "Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval"

i. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.
   a. The contractor shall arrange to do a mandatory third-party validation
   b. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency.

B. For Bio Safety Cabinet:
   a. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49 and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity
   b. HEPA Filter (in BIBO) integrity test based on EN1822 at MPPS (Maximum Penetrating Particle Size) through particle count test and PAO test and manufacturer's certifications

IRL Patiala

Inside TB containment Lab, BSL-2 and AHU control Panel:

1. Uninstallation, Packaging & Shifting of Equipment:

The following equipment from the TB Containment Lab needs to be uninstalled, packed, and shifted to BSL2 Lab / corridor on the same floor as TB Lab (identified by the site):

- two BSC
- three refrigerated centrifuges
- two microliter centrifuges
- one universal oven
- one -20 Freezer
- two MGIT 960 system
- All UPS of these equipment

All these equipment should be adequately packed (bubble wrapping & cardboard boxing). These activities should be carried out under supervision of OEM/service provider in coordination with FIND BME.

2. Shifting & Reinstallation of Equipment:

a) BSC:
   - Reinstallation of two BSC (ESCO make) in the renovated TB Containment lab connecting the existing duct.

b) Other remaining equipment: All remaining equipment planned for TB containment lab need to be reinstalled under supervision of OEM/service provider in coordination with FIND BME. Details of the equipment are shown in table below:

S. No	Equipment Name	Make	Model	Serial Number	Last Date of PM and Calibration	Shifted from Exiting TB Containment Facility to Location
1.	Biosafety Cabinet	ESCO Biotech India Pvt.Ltd.	LA2-4A1	2013-81168 2013-81248	14-08-21 14-08-21	Corridor
2.	Refrigerated Centrifuge	1- Hettich 2- Hettich 3- Eppendorff	1- Rotina 380R 2- Rotina 380R 3- 5810R	0001333-01-00 0001400-01-06 5811CI469423	18-09-21 18-09-21 20-07-21	BSL2 Lab

3.	MGIT 960	Becton & Dickinson	Bactec MGIT 960	MG4132 MG3347	NA	BSL2 Lab
4.	Hot Air Oven	Memmert	UNB- 200	C212.0931	20-01-21	BSL2 Lab
5.	Microlitre Centrifuge	Hettich	Mikro 200	0004133-03-00 0004134-03-00	18-09-21 18-09-21	BSL2 Lab
6.	Refrigerator	Deep freezer(-20)	NA	NA	NA	Corridor

3. Civil Work:

Existing TB Containment Lab:

a) Flooring:

- Existing vinyl flooring need to be removed from TB Containment lab area 25 ft (L) X 15 ft (W) approximately.
- Floor Levelling work required for existing area 25 ft (L)X 15 ft (W) approximately for TB Containment lab. Floor of lab has uneven surface.
- Epoxy flooring work required in existing area 25 ft(L) X15 ft (W) approximately for TB Containment lab.

Epoxy Flooring shall be of 5 mm (3 mm + 2mm) of self-levelling industrial epoxy including screed compound for adhesion, 3 mm semisolid cladding of EPOXY will be applied over a uniform cemented flooring and 2 mm semi-liquid epoxy over 3 mm hardened surface with bubble free perfect smooth finishing completed in three steps: Cementing (Uniform Flooring), Hardening (3 mm epoxy) and smoothening (2mm epoxy). Epoxy used for this application will be self-levelling and clean room compatible

Existing BSL2 Lab:

- Damp proof treatment of existing visible walls inside the BSL2 lab by applying appropriate cementing and putty work.
- Paining of entire wall and ceiling inside the BSL2 lab.

4. Furniture Supply:

- **Laboratory chair**: supply and installation of 3 numbers of Ergonomic laboratory chair to work for Biosafety Cabinets, designed for infectious laboratory areas as below

c. adjustable height to suit different users
d. adjustable-angle back rest (no arm rest)
e. caster wheels
f. all metal parts chrome plated
g. dis-infectable with alcohol-containing disinfectants

- **Laboratory stool**: supply and installation of 2 numbers of Laboratory stools. These stools will be of Laboratory grade hydraulic SS stools with back support, footrest, rotating type with castor wheels at the base.
- **Laboratory workstation:** Supply and installation of 2 work benches with 2.6 ft (L) x 2.6 ft (W) x 2.6 ft (H) size are required for TB Containment lab. The work bench frame shall be made up of SS 304, with nylon cushion/bushing for the legs, non-particle shredding material and shall be chemical resistant to allow chemical disinfection. It should be strong to hold the granite top/workbench as well as equipment places on the workbench. It should be stable and vibration free. There shall be no drawers or safe in the workstation and shall have arrangement for placing the UPS below the work bench.
- **consumable racks:** Supply and installation of slotted angled racks (10 units)

- Dimension: 3’6” (L)x 1’6” (W) x 6’(H)
- Material:18 Gauge Iron with anti-rusting coating
- Adjustable 4 shelves for each rack
- Plastic/ Rubber/ Neoprene Shoes
- Bolts and nuts as required for fitting of shelves
- Scratch resistance smooth finish

5. **UPS**: Supply and installation of one 3 KVA online UPS to cater to the extreme essential power requirement of the laboratory. All critical components like lights, Door Interlocks, exhaust blowers of BSCs, Fire alarm sensor, CCTV camera & monitoring shall be provided with uninterrupted power supply for 30 minutes.

6. Digital clean room Monitor (Pressure, Temperature and RH monitoring) to be installed inside the Proposed TB containment lab for monitoring, humidity, temperature, and pressure of the Lab.

7. Appropriate silicon sealant of entire wall and ceiling panel for TB Containment lab area 25 ft (L) x 15 ft (W) approximately.

8. Suitable painting for wall and ceiling panel of area approx. 60 Sqft.

9. Installation of Single-phase protector in the Existing AHU control Panel

10. **HVAC related Works:**
    a) **AHU shade:** One GI pre-coated corrugated profile roof sheet of 0.5 mm thick duly supported with J Hook tin Shed of size 2.5 ft W X 6 ft L need to replace which got damage.

    b) **Exhaust Duct insulation:** supply and installation of Thermal insulation of 50 running feet for exhaust ducting. This insulation is made of aluminium foil nitrile rubber of thickness 13 mm.

    c) **Containment HEPA housing with HEPA filters:** the existing HEPA housing is rusted and need to be replace.
    - Supply and installation of one HEPA housing of suitable size along with suitable numbers of HEPA filters for the supply duct system.
    - The HEPA filter plenums (Containment Housing) shall be made up of MS with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation dampers at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters.

    - The HEPA filter housed in BIBO should have efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size). All the HEPA filters should have 0.3µm filtration.

    d) **BIBO HEPA housing with HEPA filters:** the existing BIBO HEPA housing is rusted and need to be replace.
    - Supply and installation of one BIBO HEPA housing of suitable size along with suitable numbers of HEPA filters for the exhaust duct system.
    - The HEPA filter plenums (BIBO Housing) shall be made in MS steel with airtight and leak proof construction. The HEPA filter plenums shall be provided Isolation dampers at Inlet and Outlet and shall have provisions and facility to carry out on site HEPA filter scanning, testing and validation, magnehelic pressure gauge to monitor pressure drop across the HEPA filter, fumigation ports to allow IN-SITU decontamination of HEPA filters and Bag-In-Bag-Out facility for change/replacement of filters. HEPA Filters of 99.99% efficiency would be used in all exhaust.
    - The HEPA filter housed in BIBO should have efficiency of H13 or H14 tested as per EN1822 at MPPS (Maximum Penetrating Particle Size). All the HEPA filters should have 0.3µm filtration.

11. Validation of Laboratory and BSC:

For TB Containment Lab- The installation shall be balanced, tested, and validated upon completion, and all relevant information, including the following shall be submitted to the Institution

i. Pressure in each room/zone as per the design, differential pressure readings including across filters.
ii. Air inflow velocity and outflow velocity test across all inlets and outlets to measure/derive air change rate per hour (minimum 6-12 ACH) and as per design
iii. Smoke pattern test for directional airflow should be performed during validation including for Pass box.
iv. Temperature shall be maintained at 22°C±2 and humidity level should be maintained at 60±10%
v. HEPA Filter (in BIBO) integrity test based on PAO test and manufacturer's certifications
vi. Electrical current readings, in amperes on full load work, average running, and on starting, Testing of power cabling, earthling, AHU control panel, MCCB panel and LT panels
vii. Containment room -the walls, floors, ceilings, penetrations, and other containment barrier features have adequate integrity
viii. Operational performance testing for
    1. HVAC including Blower motors in the Supply, exhaust including emergency, extractor of BSC ducting and condensation unit
    2. Ducting for any potential leakages and insulation breakage
    3. Dampers including variable control, leak proof and fire control (only verification)
    4. Magnehelic Gauges
    5. Temperature control sensors; pressures control sensors,
    6. Passbox
    7. Split ACs
    8. Fire Detection system
    9. EPABX System
    10. Access Control System
    11. CCTV System
    12. UPS Back up system
    13. Emergency Shower and eye wash station
    14. Interlocking of supply blower motor and exhaust blower motor

ix. Prior to validation, the contractor shall prepare and submit a detailed 'Validation Document' for approval.

h. The Validation Document shall provide the detailed procedure for validation, parameters for validation, validation schemes and formats for recording the validation details.

i. The contractor shall arrange to do a mandatory third-party validation
ii. The contractor shall arrange for all the instruments, tools, manpower etc. required for the validation. The validation results shall be recorded and documented and shared with the site and hiring/funding agency.

For Bio Safety Cabinet:

iii. Validation of BSC: Particle count test, PAO (Filter Integrity test for pre-filters, filters ULPA filter/ HEPA filters), Air in-flow velocity and down-flow velocity test as per NSF 49and EN 12469 standards with devices traceable to National/International Standards, UV, and fluorescent light intensity

Annexure 1

Schedule Wise (five sites) existing and proposed Drawings/ Layout of TB Containment Lab

(Downloadable PDF files of drawings are attached separately)

Inspections and Validation Visits by FIND/ LABS

1 - **Agency Introduction visit to site with FIND team**

2-Midterm work assessment during the course of work

3- Final work completion, validation and handover

Annexure-2
Schedule of Payment and Reporting Requirements

100% payment will be released after successfully completion of renovation work along with performance testing and validation

Documents required for payment: Visit report (signed checklist), final work completion certificate along with photographs & confirmation from FIND'S Technical representative

Note:- Payment shall be released as per the schedule of payments (as above), within 60 days upon submission of Invoice along-with supporting documents (two copies – One original and one duplicate copy).

Section V- CONTRACT FORM and CONDITIONS OF CONTRACT

DESIGN, CONSTRUCTION, TESTING, COMMISSIONING AND VALIDATION OF TB CONTAINMENT LABORATORIES AND ASSOCIATED WORKS ON 'TURNKEY BASIS' UNDER RNTCPACROSS INDIA

Laboratory Site Address:_____

(1) Strategic Alliance Management Services Pvt. Ltd. (“SAMS”)

- and –

(2) [***insert the Contractor's name***]

Contract No.: [***insert***][***insert month***] **20**22

CONTRACT FORM

THIS CONTRACT is made on the_____day of _____ 20[***insert***].

BETWEEN

1) Strategic Alliance Management Services Pvt. Ltd. (SAMS), having its postal address at B-18, Sector-6, Noida, G.B. Nagar, Uttar Pradesh - 20130 (“Purchaser”); and
2) [***insert name***], a [***insert type of company i.e. limited liability***] company incorporated under the laws of [***insert***] and having its registered address at [***insert address***], [***insert name of city and country***] (**"Contractor"**).

BACKGROUND

a) The Purchaser intends to undertake the Project. The Works are an integral part of the Project.

b) The Contractor has represented to the Purchaser that it has the appropriate experience, expertise, licences and resources to undertake the Works and has agreedto undertake the Works in accordance with the Contract

c) In reliance on the Contractor's representations, the Purchaser has entered into the Contract.

d) The Contract sets out the terms and conditions upon which the Contractor willundertake the Works.

THIS CONTRACT:

1) The Purchaser agrees to pay the Contractor the Contract Price, at the times and in the manner prescribed by the Contract, in consideration for the Contractor executing and completing the Works and remedying all defects in accordance with the Contract and otherwise performing all of its obligations in accordance with the Contract.

2) The Contractor shall ensure compliance of The Global Fund’s Code of Conduct for Suppliers (https://www.theglobalfund.org/media/3275/corporate_codeofconductforsuppliers_policy_en.pdf), as amended from time to time.

3) In the Contract words and expressions will have the same meanings as are respectively assigned to them in the General Conditions.

4) The following documents, listed in the order of priority, are deemed to form and be read and construed as part of the Contract:

4.1 this Instrument of Agreement;
4.2 the Schedule of Details;
4.3 the Particular Conditions;
4.4 the General Conditions;
4.5 the Specification;
4.6 the Drawings; and
4.7 the remaining Schedules.

IN WITNESS WHEREOF, the Parties have caused this Contract to be executed by theirrespective duly authorised representatives as of the date first written above:

SIGNED BY _____

[***insert name of authorised signatory of SAMS***]

Duly authorised to sign this Contract for and on behalf of the Employer,

SAMS:In the presence of:

Signature _____(witness)

Address _____

Occupation _____

SIGNED BY _____

[***Insert name of authorized signatory of the Contractor***]Duly authorised to sign this Contract for and on behalf of the

Contractor, [***insert***]:In the presence of:

Signature _____(witness)

Address _____

Occupation _____

CONDITIONS OF CONTRACT

General Conditions

1. GENERAL PROVISIONS

1.1 Definitions

In the Contract as defined below, the words and expressions defined have the following meanings assigned to them, except where the context requires otherwise:

"Bank Guarantee for advance payment" means the security (or securities) to be provided under Sub-Clause 11.3 [*Advance Payment*].

"Bank Guarantee for performance" means the security (or securities) to be provided under Sub-Clause 4.4 [*Bank Guarantee for Performance*].

"Bill of Quantities" means the document, if any, entitled Bill of Quantities set out in the Schedule of Contract Price.

"Commencement Date" means the date stated in the Schedule of Details.

"Contract" means the Instrument of Agreement, these General and Particular Conditions, the Schedules and the further documents (if any) which are listed in the Instrument of Agreement.

"Contract Price" means the price specified in the Schedule of Details, subject to any increases or decreases as may be made in accordance with this Contract.

"Contractor" means the entity named as the "Contractor" in the Instrument of Agreement and the legal successors in title and assigns to this entity.

"Contractor's Equipment" means all apparatus, machinery, vehicles, facilities and other things required for the execution of the Works but does not include Materials or Plant.

"Contractor's Personnel" means the Contractor's Representative and all personnel the Contractor utilises on the Site, which may include the staff, labour, agents and other employees of the Contractor and of each subcontractor and any other personnel assisting the Contractor in the execution of the Works.

"Contractor's Representative" means the person named as such in the Schedule of Details or appointed from time to time by the Contractor under Sub-Clause 4.2, who acts on behalf of the Contractor.

"Cost" means all direct and reasonable expenditure properly incurred in connection with the execution of the Works by the Contractor but does not include non-project specific overheads, profit or loss of profit.

"Country" means the country in which the Site is located.

"Date of Substantial Completion" means the date when the Works have reached Substantial Completion as stated in the Taking-Over Certificate.

"day" means a calendar day, unless provided otherwise.

"Defects Notification Period or Comprehensive Warranty Period" means the periodfor notifying defects in the Works under Sub-Clause 9.1, as stated in the Schedule of Details (with any extension under Sub-Clause 9.1), calculated from the Date of Substantial Completion as stated in the Taking-Over Certificate issued under Sub-Clause 8.2.

"Drawings" means the drawings of the Works as listed in the Schedule of Works, and any additional or modified drawings issued by (or on behalf of) the Employer.

"Employer" means the entity named as the "Employer" in the Instrument of Agreement, and the legal successors in title and assigns and novatees to this entity.

"Employer's Representative" means the person named as such in the Schedule of Details or as otherwise notified by the Purchaser to the Contractor, who acts on behalf of the Employer.

"Employer's Risks" means those matters listed in Sub-Clause 6.1.

"Final Completion Certificate" means the certificate issued under Sub-Clause 9.3.

"Force Majeure" means an event or circumstance which is beyond the control and without the fault or negligence of the Party affected and which by the exercise of reasonable diligence the Party affected was unable to prevent provided that event or circumstance is limited to the following:

a) war, (whether war be declared or not), invasion, act of foreign enemies within the Country;
b) rebellion, terrorism, revolution, insurrection, military or usurped power, orcivil0020war within the Country;
c) munitions of war, ionising radiation or contamination by radio-activity within theCountry, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity; and
d) earthquake, hurricane, typhoon, tsunami or fire emanating from outside the Site within the Country that are outside the normal range for that place at that time of year, but excluding any other weather conditions regardless of the severity.

"General Conditions" means these general conditions of Contract.

"Instrument of Agreement" means the document signed by the Parties and forming part of the Contract.

"Materials" means things of all kinds (other than Plant) intended to form or forming part of the permanent work.

"Particular Conditions" means the particular conditions (if any) set out immediately before the Schedules to the Contract.

"Party" means either the Purchaser or the Contractor.

"Plant" means the machinery, vehicles and apparatus intended to form or forming part of the permanent work.

"Project" means the project described in the Schedule of Details.

"Schedule of Contract Price" is Schedule 4.

"Schedule of Details" is Schedule 1.

"Schedule of Payment" is Schedule 5.

"Schedule of Security" is Schedule 6.

"Schedule of Site" is Schedule 3.

"Schedule of Works" is Schedule 2.

"Schedules" means Schedules 1 to 12 to this Contract, including any further documents which are annexed or attached to, or incorporated by reference into **Schedules 1 to 12**.

"Site" means the places provided by the Purchaser where the Works are to be executed and to which Plant and Materials are to be delivered as shown in the Schedule of Site, and any other places specified in the Contract as forming part of the Site.

"Specification" means the requirements or documents as listed in the Schedule of Works, including Employer's requirements in respect of design to be carried out by the Contractor, if any, and any Variation to such document.

"Substantial Completion" means that stage in the execution of the Works when the following has occurred:

(a) the Works are performed and completed in accordance with this Contract exceptfor minor defects which would not affect the performance or operation of the Works;
(b) all tests required by this Contract have been undertaken and successfullypassed;
(c) all documents, technical and other information, including plans, designs, drawings, as-built drawings, engineering information, data, specifications, reportsand any other information required under this Contract have been supplied to the Employer's Representative in accordance with this Contract or as directed by theEmployer's Representative from time to time;
(d) all third party warranties and certificates and local authority approvals have beenissued and provided to the Employer's Representative; and
(e) any other preconditions to Substantial Completion set out in the Schedule ofDetails have been met.

"Taking-Over Certificate" means a certificate issued under Clause 8 certifying that the Works have reached Substantial Completion and stating the Date of Substantial Completion.

"Time for Completion" means the time for completing the Works as stated in the Schedule of Details (or as extended under Sub-Clause 7.3), calculated from the Commencement Date.

"Variation" means a change, alterations, addition or omission to the Works which is instructed by the Employer's Representative under Sub-Clause 10.1

"Works" means all the work and design (if any) to be performed by the Contractor in accordance with this Contract as specified in the Schedule of Works, including temporary work and any Variation.

1.2 Interpretation

Words importing persons or parties include firms and organisations. Words importing singular or one gender include plural or the other gender where the context requires.

1.3 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. If an ambiguity or discrepancy is found in the documents, the Employer's Representative will issue any necessary instructions to the Contractor, and the priorityof the documents is in accordance with the order as listed in the Instrument of Agreement.

1.4 Language

The language for communications is English.

1.5 Communications

Any notice, approval, consent or other communication in relation to this Contract mustbe in writing, signed, dated and marked to the relevant representative of the Parties and sent to the address for service of notices and communications set out in the Schedule of Details.

1.6 Statutory Obligations

The Contractor must comply with the laws of the countries where activities are performed. The Contractor must give all notices and pay all fees and other charges in respect of the Works.

1.7 Assignment

The Contractor must not assign or novate any of its rights or obligations under this Contract without prior written consent of the Employer.
The Purchaser has the right to assign or novate any or all of its rights or obligationsunder this Contract after giving written notice to the Contractor.

1.8 Confidential Details

The Contractor must keep confidential and must not, without the written consent of the Employer, disclose to any third party the terms and conditions of the Contract, or any documents or other information furnished directly or indirectly by either Party in connection with the Contract or the Works, except if disclosure is required by law or for outside consultants engaged to act in connection with the Works (including insuranceand legal advisers). In addition, the Contractor must not (without the prior written consent of the Employer) take, or authorize the taking of, any photograph of the Worksor the Site for use in any publicity or advertising.

2. THE PURCHASER

2.1 Provision of Site

The Purchaser will provide non-exclusive possession of the Site and non-exclusive right of access to the Site at the times stated in the Schedule of Details. TheContractor must comply with any conditions relating to the Site as stated in the Schedule of Site.

2.2 Permits and Licenses

The Contractor must obtain and comply with all relevant permits, licences, authorisations and approvals necessary to carry out the Works in accordance with theContract. The Purchaser must, if requested, assist the Contractor in applying for suchpermits, licences, authorisations or approvals which are required for the Works.

2.3 Employer's Instructions

The Contractor must comply with all instructions given by the Purchaser or the Employer's Representative in respect of Works. The Purchaser or the Employer's Representative is entitled to suspend progress of part or all of the Works at any time and for any reason by giving the Contractor written notice. During such suspension, the Contractor must protect, store and secure such part of the Works against any deterioration, loss or damage.

If the Contractor receives a notice of suspension under this Sub-Clause 2.3, the Contractor must suspend progress of the relevant parts of the Works until such time asthe Employer's Representative directs the Contractor to resume progress of those parts of the Works by notice in writing.

If a suspension under this Sub-Clause 2.3 has continued for more than 180 consecutive days, the Contractor may request the Employer's Representative's permission to proceed with the Works. If the Employer's Representative does not givepermission within 28 days after being requested to do so, the Contractor may, by giving notice to the Employer's Representative, treat the suspension as an omission under Sub-Clause 10.1 of the affected part of the Works. If the suspension affects thewhole of the Works, the Contractor may give a notice in accordance with Sub-Clause 12.2.

2.4 Approvals

No approval or consent or absence of comment by the Purchaser or the Employer's Representative will affect the Contractor's obligations.

3. EMPLOYER'S REPRESENTATIVE

3.1 Employer's Representative

The Employer's Representative is authorised to carry out the duties assigned to it in the Contract. The Employer's Representative has no authority to amend the terms ofthe Contract unless an amendment is authorised and approved in writing by the Employer. The Employer's Representative may instruct Variations in accordance withClause 10.

3.2 Employer's Representative's Assistant

The Employer's Representative may from time to time assign duties and delegate authority to an individual to carry out certain duties. The appointee may be notified bythe Purchaser to the Contractor from time to time. The Purchaser must notify the Contractor of the delegated duties and authority of this Employer's Representative's assistant.

4. THE CONTRACTOR & PERFORMANCE OF THE WORKS

4.1 General Obligations

The Contractor must carry out the Works properly and in accordance with the Contract, including all works which are necessary to satisfy the Specifications and theDrawings and all other works which (although not expressly mentioned in the Contract)are necessary for the stability and/or for the completion, and/or safe and proper operation of the Works. The Contractor must provide all supervision, labour, Materials, Plant and Contractor's Equipment which may be required. All Materials and Plant on Site are deemed to be the property of the Employer.

The Contractor must comply with all applicable occupational health and safety and environmental laws, guidelines, rules, procedures, quality control requirements and codes of practice including those stated in the Schedule of Works and any provided tothe Contractor by the Employer's Representative.

The Contractor is deemed to have inspected and examined the Site, its surroundings,and access to the Site and to have satisfied itself that the Site and access to the Site,including security, is suitable for the Works and is deemed to have obtained all necessary information as to risks which may affect execution of the Works including climatic, hydrological and natural conditions and is not entitled to an increase to the Contract Price or to an extension to the Time for Completion based upon such conditions encountered during the execution of the Works that could have been reasonably foreseen by an experienced contractor acting in accordance with industry best practice.

The Contractor must, in a form acceptable to the Employer's Representative, provide the Employer's Representative with monthly, or more frequently on request by the

Employer's Representative, reports in relation to the Works and any occupational, health and safety issues in relation to the Works. The report must comply with any requirements stated in the Schedule of Works.

4.2 Contractor's Representative

The Contractor's Representative is named in the Schedule of Details. The Contractormust not replace the Contractor's Representative without the prior written consent of the Employer's Representative and must submit to the Employer's Representative forapproval the name and particulars of the person the Contractor proposes to replace the Contractor's Representative. The Contractor is responsible for all acts and omissions of the Contractor's Representative.

The Contractor gives the Contractor's Representative all authority necessary to act onthe Contractor's behalf under the Contract.

4.3 Subcontracting

The Contractor must not subcontract the whole of the Works. The Contractor should not subcontract any part of the Works without the prior written consent of the Employer's Representative. Subcontracting shall not relieve the Contractor from the responsibility of completing the works and giving the performance as per the Contract

4.4 Bank Guarantee for Performance

Unless otherwise stated in the Schedule of Details, the Contractor must deliver to the Employer, within 14 days of the Commencement Date, an unconditional and irrevocable on-demand bank guarantee in the form provided in the Schedule of Security, from a bank approved by the Employer, for the amount stated in theSchedule of Details.

Any Bank Guarantee for performance provided to the Purchaser under Sub-Clause 4.4must be valid for three months beyond Defects Notification Period under Contract.

The Purchaser may withhold, retain or set off from any payment due to the Contractor under this Contract amounts to protect the Purchaser against any costs, charges, expenses and damages for which the Contractor is liable to the Purchaser under or in connection with this Contract. This right to withhold, retain or set off does not limit the Employer's right to recover those amounts in any other way.

4.5 Contractor's Personnel

The Contractor's Personnel must be appropriately qualified, skilled and experienced intheir respective trades or occupations. The Employer's Representative may require the Contractor to remove (or cause to be removed) any person employed on the Site or inthe execution of the Works, including the Contractor's Representative who in the opinion of the Employer's Representative:

a) persists in any misconduct or lack of care;
b) carries out duties incompetently or negligently;
c) fails to conform with any provisions of the Contract; or
d) persists in any conduct which is prejudicial to safety, health, or the protection ofthe environment.

Where this Sub-Clause 4.5 applies, the Contractor must then appoint (or cause to be appointed) a suitable replacement person for each person so removed.

The Contractor must provide and maintain all necessary sanitary and welfare facilitiesfor the Contractor's personnel and must at all times take all reasonable precautions tomaintain the health and safety of the Contractor's personnel and comply with all relevant labour laws.

The parties agree that if the Employer's Representative becomes aware that the Contractor has failed to pay any subcontractor's or the Contractor's Personnel in

accordance with this Contract, and the Employer's Representative gives the Contractor written notice 48 hours before the Purchaser intends to pay, the Purchaser may, in its absolute discretion, pay those staff, labour or subcontractors the amount the Employer's Representative determines is, or may be owing and the Purchaser may recover any such amount paid as a debt due from the Contractor to the Employer.

The Purchaser will not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any of the Contractor's Personnel, unless resulting from any act or default of the Employer, its agents or servants. The Contractor must defend, hold and save harmless and indemnify the Purchaser against all claims and proceedings, as well as damages and compensation in relation to any accident or injury to any of the Contractor's Personnel, unless resulting from any act or default of the Employer, its agents or servants. The Contractor is responsible for all costs, including legal costs, charges and expenses whatsoever associated with thedefence of the Employer. In defending the Employer, the Contractor shall not enter into asettlement agreement without the prior written approval of the Employer.

4.6 Publicity and Use of the Name, Emblem or official Seal of the Purchaser

The Contractor must not advertise or otherwise make public for purposes of commercial advantage or goodwill that it has a contractual relationship with the Employer, nor must the Contractor, in any manner whatsoever use the name, emblem or official seal of the Employer, or any abbreviation of their name in connection with its business or otherwise without the written permission of the Employer. This Sub-Clause survives the completion, expiry or termination of the Contract.

4.6 Mines

a) The Contractor warrants and represents that neither it, its parent entities (if any), nor any of the Contractor's subsidiaries or affiliated entities (if any) is engaged in the sale or manufacture of anti-personnel mines or components utilised in the manufacture of anti-personnel mines.

b) The Contractor acknowledges and agrees that any breach of this Sub-Clause 4.7 entitles the Purchaser to terminate the Contract immediately in accordance with Sub-Clause 12.1, without any liability for termination charges or any otherliability of any kind.

4.8 Official-Not-To-Benefit, Corruption and Fraud

a) The Contractor warrants that it has not engaged, or attempted to engage, in any way whatsoever, in any corruption or fraud in connection with the selection process or the execution of this Contract or any other activities of the Employer, involving, in any way whatsoever, any Employer's personnel or representative, official, or other agent of the Employer.

b) In this Sub-Clause 4.8, "corruption" means the offering, giving, receiving or soliciting from or to any person, directly or indirectly, anything of value as an inducement or reward:

i. for doing or forbearing to do any action in relation to the Contract, the selection process or any other activities of the Employer; or

ii. for showing or forbearing to show favour or disfavour to any person in relation to the Contract, or any other activities of theEmployer.

c) In this Sub-Clause 4.8, “fraud” means a misrepresentation or omission of fact(s) in order to influence, or to attempt to influence, the selection process orthe execution of this Contract or any other activities of the Employer.

d) Contractor acknowledges and agrees that any breach of this Sub-Clause 4.8 entitles the Purchaser to terminate the Contract immediately by written notice in accordance with Sub-Clause 12.1, without any liability for termination charges or any other liability of any kind.

4.9 Supply of Water

The Contractor must provide on the Site, for the duration of the Works, an adequate supply of drinking and other water for the use of its staff and labour.

4.10 Alcoholic Liquor or Drugs

The Contractor must not bring onto or store on the Site, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by its subcontractors, agents, staff or labour.

4.11 Arms, Ammunition & Explosives

Unless otherwise stated in the Schedule of Works or instructed or permitted by the Purchaser in writing, the Contractor must not bring onto or store on the Site, give, barter or otherwise dispose of to any person or persons, any arms, ammunition or explosives of any kind or permit or suffer the same.

4.12 Festivals and Religious Customs

The Contractor must in all dealings with its staff and labour have due regard to all recognised festivals, days of rest and religious or other customs.

4.13 Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor must comply with and carry out such regulations, orders and requirements as may be madeby the relevant authorities or local medical or sanitary authorities for the purpose of dealing with or overcoming the epidemic.

4.14 Fundamental Principles and Rights at Work:

a) The Contractor warrants that it will comply with, and ensure the Contractor’s Personnel will comply with, the 1998 International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work. These universal rights, as applied in the context of ILO, are freedom of association and the effective recognition of the right to collective bargaining, the elimination of forcedor compulsory labour, the abolition of child labour and the elimination of discrimination in respect of employment and occupation.

b) The Contractor must provide a safe and secure working environment, and provide separate amenities on the Site, for women employed in the execution ofthe Works.

c) The Contractor acknowledges and agrees that any breach of this Sub-Clause 4.14 entitles the Purchaser to terminate the Contract immediately in accordance with sub-Clause 12.1, without any liability for termination charges or any other liability of any kind.

d) The Contractor shall at all times during the continuance of the Contract complyfully with all existing Acts, regulations and bylaws including all statutory amendments and re-enactments and acts that may be passed in future either bythe state or the Central Government or local authority, including, Indian Workmen's Compensation Act, Contract Labour (Regulation and Abolition) Act 1970 and Equal remuneration Act 1976. Factories Act, Minimum Wages Act, provident fund regulations employees provident Fund Act and schemes made under same Act, Health and Sanitary Arrangements for workmen,

Insurance and other benefits and shall keep the Purchaser indemnified in caseany action is commenced for contravention by the contractor

4.15 Child Labour

a) The Contractor represents and warrants that neither it, its parent entities (if any),nor any of the Contractor's subsidiary or affiliated entities (if any) is engaged in any practice inconsistent with the rights set forth in the Convention on the Rightsof the Child, including Article 32 thereof, which, *inter alia,* requires that a child must be protected from performing any work that is likely to be hazardous or tointerfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

b) The Contractor acknowledges and agrees that any breach of this Sub-Clause 4.15 entitles the Purchaser to terminate the Contract immediately in accordance with Sub-Clause 12.1, without any liability for termination charges or any other liability of any kind.

4.16 Sexual Exploitation

a) The Contractor must take all appropriate measures to prevent sexual exploitation or abuse of anyone by the Contractor's Personnel. For these purposes, sexual exploitation and abuse includes sexual activity with any person less than eighteen years of age, regardless of any laws relating to consent, unless such sexual activity is consensual between two persons who are married and such marriage is recognized as valid under the laws of the country of citizenship of such Contractor's personnel.

b) In addition, the Contractor must refrain from, and must take all reasonable andappropriate measures to prohibit its employees or other persons engaged andcontrolled by it from exchanging any money, goods, services, or other things ofvalue, for sexual favours or activities, or from engaging any sexual activities that are exploitive or degrading to any person.

c) The Contractor acknowledges and agrees that any breach of this Sub-Clause 4.16 entitles the Purchaser to terminate the Contract immediately in accordance with Sub-Clause 12.1, without any liability for termination chargesor any other liability of any kind.

4.17 Security of the Site

Unless otherwise stated in the Contract, the Contractor must keep unauthorised persons from entering the Site. Authorised persons are limited to the Contractor's Personnel and the Employer's personnel and any other personnel notified to the Contractor, by the Purchaser or the Employer's Representative, as authorised personnel of the Purchaser or the Employer's other contractors on the Site. The security and safety of the Site, the Contractor's Equipment, the Employer's equipment, Plant, Materials and all other property or personnel on the Site is the sole responsibility of the Contractor. The Contractor must comply with any other security requirements set out in the Schedule of Site.

4.18 Unexploded Ordinances

If at any time during the carrying out of the Works the Contractor discovers an unexploded ordinance or land mine, the Contractor must immediately stop work, notify the Employer's Representative, take all necessary steps to ensure the safety of all persons and property and secure the Site. The Contractor must immediately resume the Works when instructed by the Employer's Representative that is it safe to do so.

5. DESIGN BY CONTRACTOR

5.1 Contractor's Design

The Contractor must carry out design to the extent specified in accordance with the Contract, including the Schedule of Works. The Contractor must promptly submit to

the Employer’s Representative all designs prepared by the Contractor. Within 14 daysof receipt the Employer’s Representative may notify any comments or, if the design submitted is not in accordance with the Contract, may reject it stating the reasons. The Contractor must not construct any element of the permanent work designed by the Contractor without the approval and prior written consent of the Employer’s Representative or where the design for that element has been rejected. Design that has been rejected must be promptly amended and resubmitted. The Contractor must resubmit all designs commented on, taking these comments into account as necessary.

5.2 Design by Contractor

The Contractor is responsible for any design it has prepared and such design must befit for the intended purposes defined in the Contract. The Contractor is also responsible for any infringement of any patent or copyright in respect of the same.

6. EMPLOYER’S RISKS

6.1 Employer’s Risks

In this Contract, Employer's Risks mean:

a) a Force Majeure event,
b) a suspension under Sub-Clause 2.3 unless it is attributable to the Contractor'sfailure, act, omission or breach,
c) any delay or disruption caused by any Variation, except where that Variation iscaused by the Contractor’s failure, act, omission or breach,
d) any act, omission or breach by the Purchaser or its agents, and
e) the occurrence of any event specified in the Schedule of Details.

7. TIME FOR COMPLETION

7.1 Execution of the Works

The Contractor must commence the Works on the Commencement Date and must proceed expeditiously and without delay and must complete the Works within the Timefor Completion.

7.2 Programme

Within the time stated in the Schedule of Details, the Contractor must submit to the Employer’s Representative for approval, a programme for the Works in accordance with and in the form stated in the Schedule of Works. The programme will be used to monitor the progress of the Works under the Contract. The Employer’s Representativemay request the Contractor to submit an amended programme at any time forapproval.

7.3 Extension of Time

Subject to Sub-Clause 10.3, the Contractor may be entitled to an extension to the Time for Completion if it is or will be delayed by any of the Employer's Risks.

Despite any other provision in this Contract, the Employer’s Representative may, in its absolute discretion and at any time, grant an extension to the Time for Completion. Such an extension must be granted in writing.

7.4 Late Completion

If the Contractor fails to complete the Works within the Time for Completion, the Contractor must pay delay damages for such failure in the amount stated in the Schedule of Details for each day for which the Contractor fails to complete the Worksup to and including the Date of Substantial Completion as stated in the Taking-Over Certificate.

If the cumulative amount of delay damages reaches the amount stated in the Scheduleof Details, the Purchaser may terminate the Contract at any time in accordance with Sub-Clause 12.1.

8. TAKING OVER

8.1 Completion

The Contractor must notify the Employer's Representative in writing as soon as it considers that the Works have reached the stage of Substantial Completion.

8.2 Taking-Over Certificate

After receiving the notice under Sub-Clause 8.1, the Employer's Representative must either issue a Taking-Over Certificate stating the Date of Substantial Completion or notify the Contractor that there are defects or deficiencies in the Works that prevent Substantial Completion being reached.

If the Employer's Representative notifies the Contractor that there are defects or deficiencies in the Works, the Contractor must correct the defects or deficiencies and the procedures in this Clause 8 must be repeated until the Employer's Representativeissues a Taking-Over Certificate.

The Contractor acknowledges and agrees that it takes full responsibility for the care ofthe Works until the Date of Substantial Completion and that no partial or entire use or occupancy of the Site or the Works by the Purchaser in any way constitutes an acknowledgement by the Purchaser that Substantial Completion has occurred, nor does it release the Contractor from any of its warranties, obligations or liabilities underor in connection with this Contract.

The Purchaser must take over the Works upon the Date of Substantial Completion.

After issuance of the Taking-Over Certificate the Contractor must promptly complete any outstanding work, submit a statement in accordance with Sub-Clause 11.2 and, subject to Clause 9, clear the Site.

8.3 Testing

The Contractor must undertake all tests in accordance with the requirements set out inthe Schedule of Works, and must agree, with the Employer's Representative, 4 days prior written notice of the time and place for the specified testing of any Plant, Materials and other parts of the Works.

9. REMEDYING DEFECTS

9.1 Remedying Defects

The Employer's Representative may at any time prior to the expiry of the relevant Defects Notification Period, notify the Contractor of any defects or outstanding work. The Contractor must remedy at no cost to the Purchaser any defects due to the Contractor's design, Materials, Plant or workmanship not being in accordance with theContract. The timing of remedying a defect must be agreed between the Parties, or failing agreement, be reasonably specified by the Employer's Representative.

If the Contractor fails to rectify the defect within the time agreed or specified, the Employer's Representative may do so or engage another party to do so at the Contractor's risk and expense and any cost will be a debt due from the Contractor to the Employer.

The Defects Notification Period will be extended to the extent that the Works, part of the Works or a major item of Plant (as the case may be) cannot be used for the purposes for which they are intended by reason of a defect or damage or failure by the

Contractor to comply with any other obligation of the Contract and such extension willbe equal to the period for which the Works, part of the Works or major item of Plant cannot be so used for the purpose intended or, if instructed in writing by the Employer's Representative, the Defects Notification Period will recommence (and restart from the beginning) from the date of the repair, replacement or making good ofsuch defect or damage, but only in respect of that part of the Works repaired, replacedor made good.

9.2 Uncovering and Testing

The Employer's Representative may give instruction as to the uncovering and/or testing of any work. Unless as a result of any uncovering and/or testing it is established that the Contractor's design, Materials, Plant or workmanship are defectiveor not in accordance with the Contract or the Contractor did not give sufficient notice inaccordance with Sub-Clause 8.3 before covering the relevant parts of the Works, the Contractor will be paid for such uncovering and/or testing as a Variation in accordance with Sub-Clause 10.2. If the Contractor did not give sufficient notice in accordance withSub-Clause 8.3 before covering the relevant parts of the Works or if the Employer's Representative establishes that the Contractor's design, Materials, Plant orworkmanship are defective or not in accordance with the Contract, the Contractor must(at its cost) then promptly make good the defect and ensure that the rejected item complies with the Contract and bears the cost of uncovering and testing.

9.3 Final Completion Certificate

Performance of the Contractor's obligations will not be considered to have been completed until the Employer's Representative has issued the Final CompletionCertificate to the Contractor, stating the date on which the Contractor completed its obligations under the Contract.

The Employer's Representative must issue the Final Completion Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods or as soon thereafter as the Contractor has supplied all relevant documents and completed and tested all of the Works, including remedying defects notified under Sub-Clause 9.1. Acopy of the Final Completion Certificate must be issued to the Employer. Notwithstanding this the Purchaser may issue the Final Completion Certificate at any time after the Employer's Representative has issued the Taking-Over Certificate.

9.4 Unfulfilled Obligations

After the Final Completion Certificate has been issued, each Party remains liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract is deemed to remain in force.

10. VARIATIONS AND CLAIM

10.1 Right to Vary

The Employer's Representative may, in its absolute discretion and at any time beforethe Taking-Over Certificate is issued, initiate, or immediately instruct Variations by written notice and the Contractor must carry out and be bound by any such Variations.Unless otherwise instructed by the Employer's Representative in this notice, the Contractor must provide a detailed breakdown of the increase or decrease in the Contract Price and any effect on the Time for Completion within 7 days of receipt of this notice, and before the Contractor carries out the Variation. The Contractor must then execute and is bound by the Variation unless otherwise instructed by theEmployer's Representative.

The Contractor agrees that a Variation may involve an omission of any part or parts ofthe Works and in the case of an omission the Purchaser may engage others to perform that part or parts so omitted.

10.2 Valuation of Variations

Variations will be valued by the Employer's Representative as follows:

a) at a rate or lump sum price agreed between the Parties, or in the absence of agreement
b) where appropriate, at rates in the Bill of Quantities, or if there are no applicablerates in the Bill of Quantities, at the rates in the schedule of Variation rates contained in the Schedule of Contract Price, or
c) in the absence of appropriate rates, then a fair and reasonable valuation of theVariation will be made by the Employer's Representative, or
d) if the Employer's Representative so instructs, at day work rates set out in the Schedule of Contract Price for which the Contractor must keep records of hours of labour and Contractor's Equipment, and of Materials used.

For the avoidance of doubt the Contractor's entitlement to payment for a Variation excludes non-project specific overheads and costs.

10.3 Notice of Delay

The Contractor must notify the Employer's Representative as soon as practicable andin any case in writing no later than 7 days (or within a time frame notified by the Employer's Representative) after it becomes aware of any event or circumstance which may delay or disrupt the Works, or which may give rise to a claim for additionalpayment, Costs and/or other entitlements or relief from obligations, under any Clauseof these General Conditions or otherwise arising out of or in connection with the Contract. The Contractor must take all reasonable steps to minimise these effects.

The notice submitted by the Contractor under this Sub-Clause 10.3 must set out details of the event or circumstance giving rise to the claim, and if requested supply supporting documents, stating a reasonable period by which the Contractor believes the Time for Completion should be extended and the nature and extent of any additional resultant Costs. As soon as practicable after the receipt of this notice, the Employer's Representative will notify the Contractor of the period, if any, by which the Time for Completion will be extended and additional payment of Costs (if any) to which the Contractor is entitled under the Contract. The Employer's Representative may alsorespond with comments and request any necessary further particulars.

The Contractor is not entitled to an extension to the Time for Completion or additional payment or Costs if it does not submit a notice in accordance with and within the time stated in Sub-Clause 10.3 in which case the Contractor will be deemed to have waivedits entitlement to make such claim, the Purchaser will be discharged from all liability arising out of or in connection with the claim and the Contractor must comply with its obligations to perform the Works by the Time for Completion and for the Contract Price.

10.4 Right to Claim

Subject to Sub-Clause 10.3, if the Contractor incurs Cost as a result of any of the Employer's Risks, other than a Force Majeure event, the Contractor will be entitled to the amount of such Cost. If as a result of any of the Employer's Risks, it is necessary to change the Works, this will be dealt with as a Variation.

10.5 Adjustments for Changes in Cost

Unless otherwise expressly stated in the Schedule of Contract Price, the Contract Price, and the rates and prices inserted in the Bill of Quantities, will not be adjusted forrises or falls in the cost of labour, goods and other inputs to the Works and the

Contract Price and the rates and prices inserted in the Bill of Quantities, will be deemed to include amounts to cover contingency of rises and falls in the cost of labour, goods and other inputs to the Works.

11. CONTRACT PRICE AND PAYMENT

11.1 Contract Price & Valuation of the Works

The Purchaser must pay the Contractor the Contract Price in accordance with this Clause 11 and the Schedule of Contract Price. The Contractor is deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price and all fixed unit rates and prices in the Contract.

11.2 Statements

The Contractor must submit a statement to the Employer's Representative in accordance with the requirements and timings stated in the Schedule of Payment or otherwise as notified by the Employer's Representative in writing. Each statement must be in a form approved by the Employer's Representative, showing the value of the work performed and details of any other amounts to which the Contractor considers itself entitled. If requested by the Employer's Representative, when submitting the statement the Contractor must provide verification of all payments owedto subcontractors and the Contractor's Personnel.

The statement must be based on the prices and/or rates set out in the Bill of Quantitiesor as otherwise set out in the Schedule of Contract Price.

If a percentage is stated in the Schedule of Details, the Contractor will be entitled to that percentage of the value of Materials and Plant listed in the Schedule of Details if such Plant and Materials are in accordance with the Contract, delivered to and properly stored on the Site at a reasonable time.

Within 28 days after the Employer's Representative issues the Taking-Over Certificate,the Contractor must submit a statement to the Employer's Representative as its final statement in respect of the Contract Price and any claim the Contractor has in respectof the Works under the Contract which the Contractor considers to be due from the Purchaser for all events and circumstances that have occurred up to the Date of Substantial Completion stated in the Taking-Over Certificate.

The Contractor is not entitled to make, and the Purchaser is released from, any new claim or an increased existing claim against the Purchaser in respect of the Contract Price or otherwise in respect of all events and circumstances that have occurred up tothe earlier of the submission of the statement or expiration of the 28 days.

11.3 Advance Payment

a) The Purchaser will make the advance payment a maximum of 10% of the totalcontract value (if any) set out in the Schedule of Payment, as a loan for mobilisation, when the Contractor submits a Bank Guarantee for advance payment in accordance with this Sub-Clause 11.3. If no advance payment is set out in the Schedule of Payment, then this Sub-Clause 11.3 will not apply.

b) Unless otherwise notified by the Employer, the Purchaser will pay the advancepayment only after receiving the Bank Guarantee for performance (if any) in accordance with Sub-Clause 4.4 and a Bank Guarantee for advance paymentin accordance with Sub-Clause 11.3(c), in amounts and currencies equal to theadvance payment.

c) The Bank Guarantee for advance payment payable in accordance with Sub- Clause 11.3(b), must be an unconditional and irrevocable on-demand bank guarantee in the form provided in the Schedule of Security, from a bank

approved by the Employer. Unless and until the Purchaser receives this guarantee, Sub-Clause 11.3 will not apply.

d) The Contractor must ensure that the Bank Guarantee for advance payment is valid and enforceable until the whole of the advance payment has been repaid,but its amount may be progressively reduced by the amount repaid by the Contractor in the interim payments. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 28 days prior to the expiry date, the Contractor must extend the validity of the guarantee until the advance payment has been repaid.

e) The advance payment must be repaid by the Contractor through percentage deductions in interim payments. The Purchaser will deduct a percentage of each interim payment, at the rate stated in the Schedule of Payments, until such time as the advance payment has been repaid.

f) If the advance payment has not been repaid prior to the issue of the Taking Over Certificate for the Works or prior to termination of the Contract, the wholeof the balance then outstanding will immediately become due and payable by the Contractor to the Employer.

11.4 Interim Payment

Within 28 days of delivery of each statement submitted in accordance with Sub-Clause11.2, the Purchaser will pay to the Contractor the amount shown in the Contractor's statement at the rate stated in the Schedule of Details and less any amounts to be deducted for advance payment and repayments in accordance with Sub-Clause 11.3,and less any other amount for which the Employer's Representative has specified its reasons for disagreement or that has become due under the Contract. The Purchaseris not bound by any sum previously considered by the Purchaser to be due to the Contractor

The Purchaser may withhold interim payments until it receives the performancesecurity under Sub-Clause 4.4 (if any).

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11.5 Final Payment

Within 7 days after receiving the Final Completion Certificate, the Contractor must submit a final account to the Employer's Representative together with any documentation reasonably required to enable the Purchaser to ascertain the final contract value.

Within 28 days after the submission of this final account, the Purchaser must pay to the Contractor any amount due. If the Purchaser disagrees with any part of the Contractor's final account, the Purchaser must specify its reasons for disagreement when making payment.

11.6 Currency

Payment will be in the currency stated in the Schedule of Details.

11.7 Delayed Payment

The Contractor is not entitled to any interest in respect of any amount in any statement submitted to the Purchaser in accordance with Sub-Clause 11.2 which remains due and unpaid.

11.8 Provisional Sums

If a provisional sum is included in the Schedule of Contract Price, it will not be payableby the Purchaser unless the Employer's Representative directs the Contractor to perform the work or item to which the provisional sum relates. If the Employer's Representative directs the Contractor to perform that work, the work or item will be

priced by the Employer's Representative in accordance with Sub-Clause 10.2, and the difference will be added to or deducted from the Contract Price.

11.9 Audit and Investigations

a) Each payment made by the Purchaser to the Contractor may be subject to a post-payment audit by auditors, whether internal or external, of the Purchaser or by other authorised and qualified agents of the Purchaser at any time duringthe term of the Contract and for a period of two (2) years following the expiration or prior termination of the Contract. The Purchaser is entitled to a refund from the Contractor for any amounts shown by such audits to have beenpaid by the Purchaser other than in accordance with the terms and conditions of the Contract.

b) The Contractor acknowledges and agrees that, from time to time, the Purchaser may conduct investigations relating to any aspect of the Contract orthe award thereof, the obligations performed under the Contract, and the operations of the Contractor generally relating to performance of the Contract. The right of the Purchaser to conduct an investigation and the Contractor's obligation to comply with such an investigation does not lapse upon issuance of the Final Completion Certificate or prior termination of the Contract. The Contractor must provide its full and timely cooperation with any such inspections, post-payment audits or investigations. Such cooperation must include, but is not limited to, the Contractor's obligation to make available the Contractor's Personnel and any relevant documentation for such purposes at reasonable times and on reasonable conditions and to grant to the Purchaser access to the Contractor's premises at reasonable times and on reasonable conditions in connection with such access to the Contractor's Personnel and relevant documentation. The Contractor must require its agents, including, but not limited to, the Contractor's attorneys, accountants or other advisers, to reasonably cooperate with any inspections, post-payment audits or investigations carried out by the Employer.

12. DEFAULT & TERMINATION

12.1 Default by Contractor

If the Contractor abandons the Works, refuses or fails to comply with a valid instructionof the Purchaser or the Employer's Representative or fails to proceed expeditiously and without delay, or is in breach of the Contract, the Employer's Representative maygive notice referring to this Sub-Clause and stating the default.

If the Contractor has not taken all practicable steps to remedy the default within 14 days after the Contractor's receipt of the Employer's Representative's notice, the Purchaser may by a second notice of 14 days, terminate the Contract.

The Purchaser may terminate the Contract immediately by written notice if the Contractor is declared insolvent under Sub-Clause 12.3 or is in breach of Sub-Clauses4.7, 4.8, 4.14, 4.15 or 4.16 or submits a guarantee, certificate, statement, test result or any other document it is required to submit under the Contract that is false or intentionally misleading.

If the Purchaser delivers a termination notice under this Sub-Clause 12.1, the Contractor must stop work and demobilise (except to the extent specified in the noticefrom the Employer) and take such action as necessary or as the Employer's Representative directs, for the transfer, protection and preservation of the Employer'sproperty and deliver any required goods and documents to the Employer's Representative. The Contractor must use its best efforts to comply immediately with any reasonable instructions included in the notice for the assignment of any

subcontract and for the protection of life or property or for the safety of the Works. The Contractor must leave behind any Contractor's Equipment, Materials and Plant whichthe Purchaser or the Employer's Representative instructs, in writing, is to be used untilthe completion of the Works. The Purchaser may employ others to complete or perform the Works and the cost incurred that exceeds the Contract Price will be a debtdue from the Contractor to the Employer.

12.2 Default by Employer

If the Purchaser fails to pay in accordance with the Contract, or if a prolonged suspension affects the whole of the Works as described in Sub-Clause 2.3, the Contractor may give notice referring to this Sub-Clause and stating the default. If the default is not remedied within 14 days after the Employer's receipt of this notice, the Contractor may suspend the execution of all or parts of the Works.

If the default is not remedied within 28 days after the Employer's receipt of the Contractor's notice, the Contractor may by a second notice of 14 days, terminate the Contract. The Contractor must then demobilise from the Site.

12.3 Insolvency

If the Contractor is declared insolvent under any applicable law, the Purchaser may by written notice terminate the Contract immediately.

12.4 Payment upon Termination

After termination, the Contractor is entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
b) any sums to which the Purchaser is entitled,
c) in the absence of appropriate rates, the rates in the Contract will be used as the basis for valuation, or failing which the Employer's Representative will make a reasonable valuation, or
d) if the Contractor has terminated under Sub-Clause 12.2 or the Purchaser has terminated under Sub-Clause 12.5, the Contractor is entitled to the Cost of its suspension and demobilisation together with a sum equivalent to 5% of the value of those parts of the Works not executed at the date of termination.

The net balance due must be paid or repaid within 28 days of the notice of termination.

12.5 Employer's Entitlement to Terminate for Convenience

The Purchaser may in its absolute discretion terminate the Contract, at any time for the Employer's convenience, by giving notice of such termination to the Contractor. The termination will take effect 28 days after the latter of the dates on which the Contractor receives this notice, or the Purchaser returns the Bank Guarantee for performance.

12.6 Cessation of Work and Removal of Contractor's Equipment

After a notice of termination under Sub-Clauses 12.2, 12.5, 13.2 or 12.3 has taken effect, the Contractor must promptly cease all further work (except to the extent specified in the notice from the Employer) and take such action as necessary or as directed by the Employer, for the transfer, protection and preservation of the Employer's property, protection of life or for the safety of the Works. Unless otherwisenotified in writing by the Purchaser under Sub-Clause 12.1, the Contractor must remove all Contractor's Equipment from the Site and remove from the Site any wreckage, rubbish and debris of any kind and leave the whole of the Site in a clean and safe condition.

13. RISK & RESPONSIBILITY

13.1 Contractor's Care of the Works

The Contractor is responsible for the care of the Works from the Commencement Dateuntil the date the taking-over Certificate is issued under Sub-Clause 8.2. Responsibilitywill then pass to the Employer. If any loss or damage happens to the Works during theabove period, the Contractor must rectify such loss or damage so that the Works conform with the Contract and the requirements of any relevant authorities.

The Contractor must defend, hold and save harmless and indemnify, at its own cost, including legal costs, the Employer, its agents and employees from and against all suits, actions, claims and costs arising out of the acts or omissions of the Contractor, its employees, agents or subcontractors in connection with the Works and the Contractor's other obligations under or in connection with the Contract, in respect of any accident, bodily injury, sickness or death to any person, infringement of any intellectual property rights and loss or damage to the Works or any property unless due to an act or default of the Purchaser or its personnel. In defending the Employer, the Contractor shall not enter into a settlement agreement without the prior written approval of the Employer.

13.2 Force Majeure

If a Party is or will be prevented from performing any of its obligations by Force Majeure, the Party affected must notify the other Party immediately in writing and not later than 7 days, setting out full details of the Force Majeure event and the reasons for the Force Majeure event preventing that Party from, or delaying that Party from, performing the affected obligations under this Contract. If instructed by the Employer'sRepresentative, the Contractor must suspend the execution of the affected Works and,to the extent agreed with the Employer's Representative, demobilise the Contractor's Equipment, but only so far as, and for so long as, the performance of those obligationsis affected by the Force Majeure event. The affected Party must use its best endeavours to overcome or remove the effects of the Force Majeure event as quicklyas possible.

Upon completion of the Force Majeure event, the affected Party must as soon as is reasonably practicable recommence the performance of the affected obligations.

If the event continues for a period of 84 days, either Party may then give notice of termination which will take effect 28 days after the giving of the notice.

After termination, the Contractor is entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
b) the Cost of suspension and demobilisation,
c) any sums to which the Purchaser is entitled.

The net balance due must be paid or repaid within 28 days of the notice of termination.

The Contractor acknowledges and agrees that, with respect to any of its obligations under the Contract, the Contractor will be performing such obligations in areas in which the Employer, is engaged in, preparing to engage in, or disengaging from peacekeeping, humanitarian or similar operations and any delays or failure to performsuch obligations arising from or relating to harsh conditions within such areas, shall not, in and to itself, constitute a Force Majeure event.

14. INSURANCES

14.1 Extent of Cover

The Contractor must, on or prior to the Commencement Date, effect and thereafter maintain insurances in the joint names of the Parties:

a) for loss and damage to the Works, Materials, Plant and the Contractor's Equipment,
b) for liability of both Parties for loss, damage, death or injury to third parties or their property arising out of the Contractor's performance of the Contract, including the Contractor's

liability for damage to the Employer's property otherthan the Works, and

c) for liability of both Parties and of any Employer's personnel for death or injury to the Contractor's Personnel except to the extent that liability arises from the negligence of the Employer, any Employer's representative or their employees.

14.2 Arrangements

All insurances must conform with the requirements detailed in the Schedule of Details.The policies must be issued by insurers and in terms approved by the Employer. The Contractor must provide the Purchaser with evidence that any required policy is in force and that the premiums have been paid.

All payments received from insurers relating to loss or damage to the Works must be held jointly by the Parties and used for the repair of the loss or damage or as compensation for loss or damage that is not to be repaired.

14.3 Failure to Insure

If the Contractor fails to effect or keep in force any of the insurances referred to in the previous Sub-Clauses, or fails to provide satisfactory evidence, policies or receipts, the Purchaser may, without prejudice to any other right or remedy, effect insurance for thecover relevant to such default and pay the premiums due and recover the same as a deduction from any other monies due to the Contractor.

15. RESOLUTION OF DISPUTES

15.1 Dispute Resolution Procedure

Unless settled amicably by the Parties' Representatives, any dispute or difference which arises between the Contractor and the Purchaser out of or in connection with the Contract, including any valuation or other decision of the Purchaser ("**Dispute**"), the Dispute must be referred, if requested by either Party, to the Senior Representatives of the Parties set out in the Schedule of Details, or any replacement notified by a Party to the other Party in writing.

If the Senior Representatives of the Parties are unable to resolve a Dispute referred tothem within 28 days, either Party may invite the other Party to conciliate the Dispute in

accordance with the provisions of Sub-Clause 15.2. Otherwise the Dispute must be referred, if requested by either Party, directly to arbitration in accordance with the provisions of Sub-Clause 15.3.

15.2 Conciliation

a) In accordance with Sub-Clause 15.1, either Party may invite the other Party toconciliate a Dispute under the Arbitration and Conciliation Act, 1996 (the "Conciliation Rules")

b) If the Parties do not reach agreement under the Conciliation Rules, the Dispute shall be referred, if requested by either Party, to arbitration in accordance with Sub-Clause15.3.

15.3 Arbitration

1) If the Parties are unable to resolve the Dispute in accordance with Sub-Clause 15.1 or15.2, the Dispute must, if requested by either Party, be referred to and finally resolved by arbitration in accordance with the Arbitration and Conciliation Act, 1996 ("Arbitration Rules") then in effect.
2) The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Purchaser and the Supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed in accordance with the provisions of the Arbitration and Conciliation Act 1996.
3) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause 2) above, within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the appointment of the Arbitrator shall be made in accordance with the provisions of the Arbitration and Conciliation Act 1996

4) The venue of Arbitration shall be New Delhi and the language of the arbitration proceedings and that of all councils and communications between the parties shall be English
5) The decision of the majority of arbitrators shall be final and binding upon parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself
6) The provisions of the Arbitration and Conciliation Act of 1996 along with the Rules herewith and any statutory modification or reenactment thereof shall apply to arbitration proceedings
7) The arbitral proceedings and any information and documents relating to these proceedings must be regarded as confidential.

15.4 Dispute resolution not to delay execution of the Works

Despite any activation of the dispute resolution procedures under Sub-Clause 15.1, the Contractor must continue to execute the Works and its other obligations under or in connection with the Contract.

15.5 Survival

This Clause 15 survives the completion, expiry or termination of the Contract.

16. PRIVILEGES AND IMMUNITIES

Nothing in or relating to the Contract is deemed a waiver, express or implied, of any ofthe privileges and immunities whatsoever.

PARTICULAR CONDITIONS

Additional Clauses

The General Conditions are amended by the inclusion of the following additional conditions:If nothing is stated, then no additional conditions apply.

Clause	Additional General Condition

Schedules

SCHEDULE 1 - SCHEDULE OF DETAILS

Commencement Date (Sub-Clause 1.1)	Date.....
Contract Price (Sub-Clause 1.1)	[***If this is a lump sum contract insert thefollowing: "The lump sum amount of [insert the amount in words and figures]"*** See the Schedule of Contract Price & Payment for a breakdown of the Contract Price
Contractor's Representative (Sub-Clause 1.1)	[***name, position title and contact detailsto be inserted***]
Defects Liability Period (Comprehensive Warranty) (Sub-Clause 1.1)	**24 months from the date of Final work completion certificate**
Employer's Representative (Sub-Clause 1.1)	[***insert name, position title and contactdetails***]
Project (Sub-Clause 1.1)	
Substantial Completion (Sub-Clause 1.1)	No additional grounds.
Time for Completion (Sub-Clause 1.1)	
Address for Service of Notices and Communications (Sub-Clause 1.5)	**Employer** **Attention: Sanjay Rastogi** **Strategic Alliance Management Services Pvt.Ltd. B-18, Sector-6, Noida, G.B. Nagar – 201301 (Uttar Pradesh** **Facsimile :: +91-11-26312514Contractor :** Attention: [***to be inserted***] Position title: [***to be inserted***] Address: [***to be inserted***] Facsimile Number: [***to be inserted***]Email Address: [***to be inserted***]

Time(s) for access to and possession of site (Sub-Clause 2.1)	**Date.....**
Amount of Bank Guarantee for Performance (Sub-Clause 4.4)	The amount of the Bank Guarantee for performance to be provided under Sub-Clause 4.4 is the amount equal to **3%** of the Contract Price. The initial validity of the performance security shall be at least more than two months of warranty period.
Additional Employer's Risks (Sub-Clause 6.1)	If Site is not ready.
Time for Programme Submission (Sub-Clause 7.2)	Within14 days from the Commencement Date
Delay Damages for failure to complete the Works within the Times for Completion (Sub-Clause 7.4)	**Whole of the Works** 0.05% of the total contract amount per day subject to a maximum of 10% of the contract value.
Cumulative Amount of Delay Damages (Sub-Clause 7.4)	10%
Percentage of Plant & Materials (Sub-Clause 11.2)	Nil
Percentage deduction for Retention (Sub-Clause 11.4)	Nil
Currencies of payment (Sub-Clause 11.8)	Payments will be made in INR only.
Insurance Details (Sub-Clause 14.2)	[***insert insurance requirements and amounts***]
Senior Representatives (Sub-Clause 15.1)	**Employer:** Sanjay Rastogi, Director Strategic Alliance Management ServicesPvt. Ltd. **Contractor:** [***insert name, position title and contact details***]
Arbitration (Sub-Clause 15.3)	The place of the hearing shall be Delhi

SCHEDULE 2- SCHEDULE OF WORKS

LIST OF WORKS (SITE DETAILS) & SCHEDULING

As per Sub sections A, B and C of SECTION IV of ITB

SCOPE OF WORKS, TECHNICAL SPECIFICATIONS AND DRAWINGS

As per Sub sections D of SECTION IV of ITB

SCHEDULE 3 - SCHEDULE OF SITE

As per Sub Sections A and B of SECTION IV of ITB

SCHEDULE 4 - SCHEDULE OF CONTRACT PRICE

For example:

1. Contract Price

[If this is a lump sum contract, insert the lump sum amount and include theclearest breakdown of the Contract Price. This may be in tabular form.]

2. Bill of Quantities

SCHEDULE 5 - SCHEDULE OF PAYMENT

100% payment will be released after successfully completion of renovation work along with performance testing and validation

Documents required for payment: Visit report (signed checklist),final work completion certificate along with photographs & confirmation from FIND'S Technical representative

Note:- Payment shall be released as per the schedule of payments (as above), within 60 days upon submission of Invoice along-with supporting documents (two copies – One original and one duplicate copy).

SCHEDULE 6 - SCHEDULE OF SECURITY

BANK GUARANTEE FOR PERFORMANCE

[***On the letterhead of the Bank***] Date: [***insert***]

T
o

The Director
M/s Strategic Alliance Management Services Pvt.
Ltd. B-18, Sector-6,
Noida, G.B. Nagar Uttar Pradesh - 201301

Dear [***insert***]

[*insert works title*] Construction Contract - Bank Guarantee for Performance

You entered into a contract dated [***insert date***] with [***insert***] ("**Contractor**") titled [***insert contract title***] Construction Contract for the [***insert name of the project***] for certain works and services ("**Works**") to be undertaken by the Contractor ("**Contract**").

We, [***insert Bank***], irrevocably and unconditionally undertake with you that whenever you givewritten notice to us stating that in your sole and absolute judgment the Contractor has failed toobserve or perform any of the terms, conditions or provisions of the Contract on its part to beobserved or performed, we will, notwithstanding any objection which may be made by the Contractor and without any right of set-off or counterclaim, immediately pay to you or as you may direct such an amount as you may in such notice require not exceeding the sum equivalent to ***3*** % of the Accepted Contract Amount ("**Guaranteed Sum**").

This Bank Guarantee for Performance ("**Guarantee**") is valid and will continue to be valid fromthe date of this letter for the Guaranteed Sum till [***insert date***]. This Guarantee will automatically become null and void by the end of this validity period.

Any payment by us in accordance with this Guarantee must be in INR free and clear of and without any deduction for or on account of any present or future taxes, levies, imposts, duties, charges, fees, set off, counterclaims, deductions or withholdings of any nature whatsoever and by whomever imposed.

Our obligations under this Guarantee constitute direct primary, irrevocable and unconditional obligations, do not require any previous notice to or claim against the Contractor and will not be discharged or otherwise prejudiced or adversely affected by any:

- time, lenience or tolerance which you may grant to the Contractor;
- amendment, modification or extension which may be made to the Contract or the Works executed under the Contract;
- intermediate payment or other fulfilment made by us;
- change in the constitution or organisation of the Contractor; or
- other matter or thing which in the absence of this provision would or might have that effect, except a discharge or amendment expressly made or agreed to by you in writing.

This Guarantee may not be assigned by you to any person, firm or company other than an Affiliate, without our prior written consent, which must not be unreasonably withheld. You must notify us in writing of any assignment, after which we must make any payment claimed under this Guarantee to the person, firm or company specified in the notice which will constitute a full and valid release by us in relation to that payment.

Any notice required by this Guarantee is deemed to be given when delivered (in the case of personal delivery) or forty-eight (48) hours after being despatched by prepaid registered postor recorded delivery (in the case of letter) or as otherwise advised by and between the parties.

We agree that part of the Contract may be amended, renewed, extended, modified, compromised, released or discharged by mutual agreement between you and the Contractor, and this security may be exchanged or surrendered without in any way impairing or affectingour abilities under this Guarantee without notice to us and without the necessity of any additional endorsement, consent or guarantee by us, provided, however, that the GuaranteedSum does not increase or decrease.

No action, event or condition which by any applicable law may operate to free us from liabilityunder this Guarantee will have any effect. We waive any right we may have to apply such lawso that in all respects our liability under this Guarantee will be irrevocable and, except as stated in this Guarantee, unconditional in all respects.

Capitalised words and phrases used within this Guarantee have the same meanings as are given to them in the Contract.

This Guarantee is governed by the Uniform Rules for Demand Guarantees, ICC Publication No. 758, provided that the supporting statement under Article 15 (a), and Articles 34 and 35 are excluded. Any disputes arising out or in connection with this Guarantee, or the breach, termination, or invalidity thereof will be referred to and finally resolved by arbitration in accordance with the Arbitration and Conciliation Act 1996then in effect, the language of the proceedings being English.

Nothing in or relating to this Guarantee shall be deemed a waiver, express or implied, of any of the privileges and immunities whatsoever.

IN WITNESS of which the [***insert Bank***] has duly executed this Guarantee on the date statedabove.

SIGNED by [***insert***])
as attorney for [***insert***])
under power of attorney dated)
[***insert***])
in the presence of)
)
……)
Signature of witness)
)
……)
Name of witness (block letters))
……)
Address of witness)
……)
Occupation of witness

……
…….. By executing this agreement the attorney states that the attorney hasreceived no notice of revocation of the power of attorney

Address for notices
[***insert address***]

SCHEDULE-7
BANK GUARANTEE FOR ADVANCE PAYMENT
[***On the letterhead of the Bank***]

Date: [***insert***]

To:

The Director
M/s Strategic Alliance Management Services Pvt.
Ltd. B-18, Sector-6,
Noida, G.B. Nagar
Uttar Pradesh - 201301

Dear [***insert***]

[*insert works title*] Construction Contract - Bank Guarantee for Advance Payment

You entered into a contract dated [***insert date***] with [***insert***] ("**Contractor**") titled [***insert contract title***] Construction Contract for the [***insert name of the project***] for certain works and services ("**Works**") to be undertaken by the Contractor ("**Contract**").

We, [***insert Bank***], irrevocably and unconditionally undertake with you that whenever you give written notice to us stating that in your sole and absolute judgment the Contractor has failed to observe or perform any of the terms, conditions or provisions of the Contract on its part to be observed or performed, we will, notwithstanding any objection which may be made by the Contractor and without any right of set-off or counterclaim, immediately pay to you or as you may direct such an amount as you may in such notice require not exceeding the sum equivalent to ***5*** % of the Accepted Contract Amount ("**Guaranteed Sum**").

This Bank Guarantee for Performance ("**Guarantee**") is valid and will continue to be valid from the date of this letter for the Guaranteed Sum till [***insert date***]. This Guarantee will automatically become null and void by the end of this validity period.

Any payment by us in accordance with this Guarantee must be in INR free and clear of and without any deduction for or on account of any present or future taxes, levies, imposts, duties, charges, fees, set off, counterclaims, deductions or withholdings of any nature whatsoever and by whomever imposed.

Our obligations under this Guarantee constitute direct primary, irrevocable and unconditional obligations, do not require any previous notice to or claim against the Contractor and will not be discharged or otherwise prejudiced or adversely affected by any:

- time, lenience or tolerance which you may grant to the Contractor;
- amendment, modification or extension which may be made to the Contract or the Works executed under the Contract;
- intermediate payment or other fulfilment made by us;
- change in the constitution or organisation of the Contractor; or
- other matter or thing which in the absence of this provision would or might have that effect, except a discharge or amendment expressly made or agreed to by you in writing.

This Guarantee may not be assigned by you to any person, firm or company other than an Affiliate, without our prior written consent, which must not be unreasonably withheld. You must notify us in writing of any assignment, after which we must make any payment claimed under this Guarantee to the person, firm or company specified in the notice which will constitute a full and valid release by us in relation to that payment.

Any notice required by this Guarantee is deemed to be given when delivered (in the case of personal delivery) or forty-eight (48) hours after being despatched by prepaid registered post or recorded delivery (in the case of letter) or as otherwise advised by and between the parties.

We agree that part of the Contract may be amended, renewed, extended, modified, compromised, released or discharged by mutual agreement between you and the Contractor, and this security may be exchanged or surrendered without in any way impairing or affecting our abilities under this Guarantee without notice to us and without the necessity of any additional endorsement, consent or guarantee by us, provided, however, that the Guaranteed Sum does not increase or decrease.

No action, event or condition which by any applicable law may operate to free us from liability under this Guarantee will have any effect. We waive any right we may have to apply such law so that in all respects our liability under this Guarantee will be irrevocable and, except as stated in this Guarantee, unconditional in all respects.

Capitalised words and phrases used within this Guarantee have the same meanings as are given to them in the Contract.

This Guarantee is governed by the Uniform Rules for Demand Guarantees, ICC Publication No. 758, provided that the supporting statement under Article 15 (a), and Articles 34 and 35 are excluded. Any disputes arising out or in connection with this Guarantee, or the breach, termination, or invalidity thereof will be referred to and finally resolved by arbitration in accordance with the Arbitration and Conciliation Act 1996then in effect, the language of the proceedings being English.

Nothing in or relating to this Guarantee shall be deemed a waiver, express or implied, of any of the privileges and immunities whatsoever.

IN WITNESS of which the [***insert Bank***] has duly executed this Guarantee on the date stated above.

SIGNED by [***insert***]
as attorney for [***insert***]
under power of attorney dated [***insert***]
in the presence of

……
…….
Signature of witness

……
…….
Name of witness (block letters)
……
…….
Address of witness
……
…….
Occupation of witness

……
……...
By executing this agreement the attorney states that the attorney has received no notice of revocation of the power of attorney

Address for notices
[***insert address***]

SCHEDULE 8 - SCHEDULE OF PROGRAMME

(A) Approved Preliminary Programme

(B) Milestone Dates

(C) Contract Programme Requirements

(A) Approved Preliminary Programme

The Approved Preliminary Programme is attached to this Schedule and setout immediately after this page.

(B) Milestone Dates

The Contractor must complete the following Milestones by the corresponding Milestone

Dates:

Sl. No.	Milestone	Milestone Date
1	(insert a detailed description of the Milestone) (for example: The supply, construction, commissioning, testingand completion of Road Section XX)	(insert date)
2	(insert a detailed description of the Milestone)	(insert date)
3	(insert a detailed description of the Milestone)	(insert date)
4	(insert a detailed description of the Milestone)	(insert date)
5	(insert a detailed description of the Milestone)	(insert date)

If no Milestones are listed above, then no Milestones apply, and the Contractor must still complete the whole of the Works by the Time for Completion.

(C). Contract Programme Requirements [*this section is to set out the programme* r*equirements consistent with the general conditions. An example is provided below -amend as required*:]

Within 21 days after the Date of the Contract, the Contractor must submit to the Employer's Representative a draft Contract Programme incorporating all timing requirements of the Contract, in accordance with Sub-Clause 8.3 of the General Conditions. Upon approval and certification by the Employer's Representative, the draft Contract Programme, or resubmission thereof, will become the Contract Programme.

The draft Contract Programme must be in such form and detail as the Employer's Representative requires and shall contain as a minimum:

1. the order in which the Contractor proposes to carry out the Works;
2. the time limits within which submission of any Contractor's Documents are required under the Contract; and

The Contract Programme must be prepared in sufficient detail to ensure the adequate planning, execution and monitoring of the Works. The networked activities mustbe detailed enough to provide a meaningful measurement tool for progress of works. For this purpose, with the exception of approval cycles and the procurement of material, no activity can have a duration of more than 28 days.

The Contract Programme shall be resource loaded and include material, plant and labour. The labour resource assignment shall be further broken down to clearly identify types (trade and/or discipline) and number of resources allocated to an activity.

The Contract Programme must include a detailed CPM logic linked network with activity durations and resource allocations. Negative lags and/or SF (start – finish) relationships are not to be used in developing the Contract Programme.

The Contract Programme will be prepared in electronic format using a recognized computer programme or as otherwise directed by the Employer's Representative.

The Contract Programme will be coded as such to identify the work packages within the scope of work and each ID will be in a format approved by the Employer's Representative. Additionally, the Contract Programme will also identify the life-cycle phases of the work to be carried out i.e. Design, Procurement, Construction, Commissioning & Handover.

The Contract Programme must be accompanied by and/or detail:

1. a programme narrative that describes the inclusions and assumptions made in preparing the Contract Programme;
2. a general description of the arrangements and methods which the Contractor proposes to adopt for carrying out the Works;
3. the critical path for the Works and a complete critical path analysis for the execution of the Works which must show clearly the links between activities and the float times available within the Contract Programme and the earliest start/earliest finish and latest start/latest finish times for each and every activity;
4. Details, and durations on Site, of the resources proposed to achieve the Contract Programme;
5. A manpower (resource) histogram detailing cumulative and monthly volumes by trade for the duration of the Works;
6. A detailed cash flow estimate, in quarterly periods, of all payments to which the Contractor may be entitled under the Contract;
7. An overall planned performance monetary s-curve based upon the approved

Contract Programme; and

8. A schedule of all submittals and material procurement activities, including time for submittals, re-submittals and reviews and time for any fabrication and delivery of manufactured products and samples. The interdependence of design procurement and construction activities must be included in this schedule.

SUBMISSIONS

All programme submissions by the Contractor are to include:

1. 3 coloured hard copies, plus
2. 1 full copy in native electronic format on CD.

CALENDARS

All programmes shall be developed using appropriate calendars that reflect the intended method of working, public holidays, etc. The standard calendars to be used are:

1. Calendar 1 – Eight (8) hour day, Five (5) day work week, Saturday and Sunday non-working days and include public holidays. The start day for the calendar is Sunday. This calendar should generally be applied to all non- construction activities related to design, procurement, government and/or other approvals, etc.
2. Calendar 2 – Ten (10) hour day, Six (6) day work week, Sunday non-working day and include public holidays. The start day for the calendar is Saturday. This calendar will be applied to a majority of construction activities.

All other non- standard calendars that need to be used to reflect the intended method of work are to be identified and highlighted in any programme submission and will be subject to the Employer's Representative's approval.

SCHEDULE 9 - SCHEDULE OF KEY PERSONNEL

The Contractor's Key Personnel for the Project are:

Sl. No.	Position Description	Name
1	[*insert position description*] [*for example: Safety Manager, Quality control Manager, Environmental Manager, Site Manager, Site Foreman.*]	[*insert name*]
2	[*insert position description*]	[*insert name*]
3	[*insert position description*]	[*insert name*]
4	[*insert position description*]	[*insert name*]
5	[*insert position description*]	[*insert name*]
6	[*insert position description*]	[*insert name*]
7	[*insert position description*]	[*insert name*]
8	[*insert position description*]	[*insert name*]
9	[*insert position description*]	[*insert name*]
10	[*insert position description*]	[*insert name*]

If there is a position stated in this Schedule but no person is named in that particular role, then the Contractor shall obtain the Employer's Representative's approval before appointing a person to fill that role.

Schedule 10 - SCHEDULE OF FORMS OF CERTIFICATES

(A) Form of Taking Over Certificate
(B) Form of Final Completion Certificate
(C) Form of Final Payment Certificate
(D) Form of Warranty Services Performance Certificate

(A) FORM OF TAKING-OVER CERTIFICATE

[ON LAB/SITE OFFICIAL LETTERHEAD]

[***insert Date***]

Contractor's Representative

[***Address***]

TAKING-OVER CERTIFICATE

Dear [***insert***]

[***insert works title***] **Construction Contract ("Contract")**

[***insert name of the development***]

We refer to Clause 8.2 of the

Contract.

We advise you that on [***insert date***] the Works, or a Section or part of the Works as specified below, were completed to a stage ready to be Taken Over by the Purchaser in accordance with the Contract.

The works to which this Taking-Over Certificate relates are:	

By signing this Taking-Over Certificate, the Purchaser acknowledges and accepts that the Works, or the Section or part of the Works specified above, were completed, including the matters described in Clause 7 [*Time for Completion*], and Taken Over by the Purchaser in accordance with the Contract on [***insert date***].

This Taking-Over Certificate is executed by an official representative duly authorised to bind the Employer.

This Taking-Over Certificate does not relieve you from any of your unperformed or continuing warranties, obligations or liabilities under or in connection with the Contractor at law, including the remedying of all defects.

Yours sincerely

.....

[***insert***]

Employer's Representative

(B) FORM OF FINAL COMPLETION CERTIFICATE

[ON LAB/SITE OFFICIAL LETTERHEAD]

[***insert Date***]

Contractor's Representative

[***Address***]

FINAL COMPLETION CERTIFICATE

Dear [***insert***]

[***insert works title***] **Construction Contract ("Contract")**

[***insert name of the development***]

We refer to Sub-Clause 9.3 of the Contract.

We advise that on [***insert date***] you have completed your obligations under the Contract toa stage ready for the Final Completion Certificate to be issued by the Purchaser in accordance with the Contract.

By signing this Final Completion Certificate, the Purchaser acknowledges and accepts that your obligations under the Contract have been completed to a stage ready for the Final Completion Certificate to be issued by the Employer.

This Final Completion Certificate is executed by an official representative duly authorised to bind the Employer.

This Final Completion Certificate does not relieve you from any of its unperformedor continuing warranties, obligations or liabilities under or in connection with the Contractor at law.

Yours sincerely

.....

[***insert***]

Employer's Representative

(C) FORM OF FINAL PAYMENT CERTIFICATE

[ON SAMS LETTERHEAD]

[***insert Date***]

Contractor's Representative
[***Address***]

FINAL PAYMENT CERTIFICATE

Dear [***insert***]

insert works title] **Construction Contract ("Contract")**

This Final Payment Certificate is issued pursuant to Clause 11.7 of the Contract.

Date of Final Statement applying for a Final Payment Certificate:

Total amount claimed in the Final Statement: INR

Value of all work done in accordance with Contract: INR

Any additional amount that the Contractor is entitled to under the Contract: INR

Amount to be deducted for all prior payments made by the Purchaser to the Contractor: INR

Total of the amount due for payment to [the Contractor by the Employer][the Purchaserby the Contractor]: INR

Yours sincerely

.....

[***insert***]

Employer's Representative

(D) Form of Warranty Services Performance Certificate

[***insert Date***]

Contractor's Representative

[***Address***]

Warranty Services Performance Certificate

[***insert works title***] **Construction Contract ("Contract")**

We refer to Sub-Clause 9.3 of the Contract.

We advise that on [***insert date***] you have completed your obligations under the Contract towards First / Second year warranty in accordance with the Contract.

By signing this Certificate, the Purchaser acknowledges and accepts that your obligations under the Contract have been completed, which includes the following:

1) Annual third-party validation of laboratory
2) Closure of all breakdown / maintenance calls logged during the warranty period

This Certificate is executed by an official representative duly authorised to bind the Employer.

This Certificate does not relieve you from any of its unperformedor continuing warranties, obligations or liabilities under or in connection with the Contractor at law.

Yours sincerely

.....

[***insert***]

Employer's Representative

SCHEDULE 11 - SCHEDULE OF PERMITTED SUBCONTRACTORS

Subcontract Works	Permitted Subcontractors
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]

For all other subcontract works not listed above, the Contractor must obtain the Employer's prior written consent before engaging a subcontractor to execute such parts of the Works.

If no subcontractors are listed above, then no Permitted Subcontractors apply and the Contractor must obtain the Employer's prior written consent before subcontracting any partof the Works.

SCHEDULE 12 - SCHEDULE OF NOMINATED SUBCONTRACTORS

Subcontract Works	Nominated Subcontractors
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]
[*insert description*]	[*insert*]

For all other subcontract works not listed above or in Schedule 15, the Contractor must obtain the Employer's prior written consent before engaging a subcontractor to execute such parts of the Works.

The Purchaser reserves the right to nominate additional subcontractors for certain worksin accordance with the General Conditions.

Chapter VI– Other Standard Form

Form of Bid Security Declaration

[Please refer to ITB Para 17 of the Bid Document]
[The Bidder shall fill in this form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: *[date (as day, month and year)]*
Bid Ref. No.: *[number of bidding process]*

Ref:

To

The Director
M/s Strategic Alliance Management
Services Pvt. Ltd. B-18, Sector-6,
Noida, G.B. Nagar
Uttar Pradesh - 201301

We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with the Purchaser for the period of 2 (two) years starting on *the date of suspension,* if we are in breach of our obligation(s) under the bid conditions, because we:

(a) have withdrawn our Bid during the period of bid validity specified in the Letter of Technical Bid; or

(b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract; or (ii) fail or refuse to furnish the Performance Security, if required, in accordance with the ITB.

We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder_____

Name of the person duly authorized to sign the Bid on behalf of the Bidder_____

Title of the person signing the Bid_____

Signature of the person named above_____

Date signed _____