WEST BENGAL POLLUTION CONTROL BOARD

"Paribesh Bhavan", 10A, Block-LA, Sector-III, Bidhannagar, Kolkata-700098, India

Capacity Building for Industrial Pollution Management Project (CBIPMP)
(Loan no- 7924-IN and Credit no- 4755-IN)

Advt.Ref: 004/WBPCB/WB-CBIPMP/ 2013-14 **Date: 26.02.2014**

EXPRESSION OF INTEREST(EOI)

1. This invitation for bids follows the general procurement notice WB2018 for this project that appeared in United Nations' *Development Business on* 08.05.2010.The Ministry of Environment & Forests (MoEF), Govt. of India has received a credit from the International Development Association / loan from the International Bank for Reconstruction & Development towards the cost of CBIPMP Project and intends to apply a part of the funds to cover eligible payments under the contracts for consultancy services as detailed below. Bidding is open to all bidders from eligible source countries as defined in the *IBRD Guidelines for Procurement.* Bidders from India should, however, be registered with the Government of West Bengal or other State Governments/Government of India, or State/Central Government Undertakings:

2.The West Bengal Pollution Control Board, the Executing Agency for the State of West Bengal, intends to apply a part of the proceeds of this loan / credit for payment under the contract for the following two consultancy services

A Consultancy Services to refurbish Central Laboratory, Kolkata by providing infrastructure including Civil Works, Electrical & Fire Protection Works, and Air-Conditioning and Mechanical Ventilations Systems (ACVHS) Works

B) Technical Consultancy for GIS mapping of the Hazardous Waste Generating Units in West Bengal .

3. Period of assignment is four years **:12 months for both A & B.** Firms are required to submit separate EOI which will be evaluated and short listed.

4.The West Bengal Pollution Control Board now invites eligible consultants to indicate their interest in providing the above mentioned Services. Interested consultants must provide information indicating that they are qualified to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Consultants may associate to enhance their qualifications. *[The "Association" may take the form of a joint venture (with joint and several liability) or of a sub-consultancy].*

5.Consultants will be selected in accordance with the procedures set out in the World Bank's Procurement Guidelines: *Selection and Employment of Consultants by Bank Borrowers*[7] May, 2004, revised October 2006 and May 2010.

6. Interested Consultants may obtain further information from Project Director,CBIPM Project, Ph- 91-33-23358213 Fax- 91-33-23352813 from 11 a.m. to 5p.m. The informations can also be obtained on the WBPCB Website: **cbipmp.wbpcb.gov.in or www.wbpcb.gov.in (select CBIPM Project)** 7.Expression of interest must be submitted by 3.00 p.m. of 14.03.2014 from the date of publication, (in case it falls on holiday, then the next working day shall be applicable as the last date of submission by 3.00 p.m. Expression of Interest must be dropped in the Boxes marked **"EOI for Consultancy Services to refurbish Central Laboratory"** & **"EOI for Consultancy Services for GIS mapping of the Hazardous Waste Generating Units in W. B."** to be kept at "Paribesh Bhawan, 10A,

Block – LA, Sec – III, Bidhan Nagar, Kolkata – 98.. **Sd/- Project Director, CBIPMP/Member Secretary, WBPCB**

WEST BENGAL POLLUTION CONTROL BOARD
(Department of Environment, Government of West Bengal)
Paribesh Bhavan, 10A, Block – LA, Sector – III,
Biddhannagar, Kolkata – 700 098
Capacity Building for Industrial Pollution Management Project
(CBIPMP)

DESCRIPTION OF SERVICES

Terms of Reference (TORs) for Consultancy Services to refurbish Central Laboratory, Kolkata by providing infrastructure including Civil Works, Electrical & Fire Protection Works, and Air-Conditioning and Mechanical Ventilations Systems (ACVHS) Works

1. Background

West Bengal Pollution Control Board (WBPCB) would like to develop infrastructure in Central Laboratory of WBPCB, Kolkata including Civil Works, Electrical, Fire Protection Works, and ACVHS Works, under World Bank assisted Capacity Building for Industrial Pollution Management Project (CBIPMP).

West Bengal Pollution Control Board is now proposing to engage Consultancy Services to refurbish Central Laboratory, Kolkata by providing infrastructure including Civil Works, Electrical, Fire Protection Works, and ACVHS Works.

A supplementary document on "**Requirement and Scope of Central Laboratory Refurbishing Works**" has been provided at the end of this document in form of a sketch for the terms of reference of the works actually to be delineated through this consultancy service.

The TORs of the tasks are given below.

2. Objective of the Task of the Consultant

The overall objective of the task of the consultant is to plan and design including preparation of detailed designs, drawings, estimates and tender documents for civil works, electrical works, fire protection works and ACVHS Works to refurbish Central Laboratory, Kolkata by providing infrastructure. The inception report should clearly narrate the present status of the laboratory, perform a GAP analysis depending on the present requirement and shall continue to produce the plan document as solution with design and drawing required for the tendering process to be followed. Specific requirements, if any, for specific instruments, are to be considered during the refurbish designing.

The Labs include instrument rooms, staff rooms etc. Lab planning has to be done taking into consideration the functional requirements, requirements of air conditioning & ventilation and complying with lab safety norms. The cost estimates have to be worked out in accordance with the applicable schedule of rates.

The proponent has to engage experts / consultants of specialized fields like (1) Civil design and architecture, (2) Laboratory electrical and safety requirements, (3) Air Conditioning and Ventilation system handling, and function in a co-ordinated way to perform and complete the requirement of this consultancy job.

3. Scope of Work

This scope of works is for a Consultancy Firm, hereinafter mentioned as "The Consultant" and not for individual consultants. In addition to the scopes of work detailed below, Project Management, Quality Control and Certification of the job has to be carried out by the consultant. The entire job is required to be planned and executed without hampering normal activities of the Head Office or the Laboratory of the Board.

A. Civil Works

The Consultant's services shall include, as applicable, the following:

Main Task	Sub-tasks
Main-task 1: Preparation of layout plan showing rooms/spaces and indicating positing of instruments to be placed in the laboratory.	Sub-task 1: To prepare draft layout plan for development of the Laboratory taking into consideration the approved requirements as above. Sub-task 2: To discuss the draft plan with the consultants of electrical & fire and AVHS and officials of WBPCB and take their comments. Sub-task – 3: To finalise the layout plan and take approval from WBPCB.
Main-task 2: To prepare preliminary designs & drawings, specifications and quantities for various items of civil work and their cost estimates.	Sub-task 1: To assess the load bearing capacity of the existing structure vis-a-vis the weight of the instruments and live load in the proposed Laboratory. Sub-task 2: To hold intensive discussions with the officials of the WBPCB, Kolkata and with the consultants of electrical & fire and ACVHS to understand the requirements of the specifications and designs of various items of civil work. Sub-task 3: To prepare preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of civil work including: ▪ All structural works including brick work, plastering etc. ▪ Plumbing, drainage, water supply and sewerage ▪ Flooring ▪ Doors, windows ▪ Furniture ▪ POP, painting etc. ▪ Others as required

	Sub-task 4: To prepare cost estimates in accordance with the applicable schedule of rates for various items of civil work. **Sub-task 5:** To take approval for all above from WBPCB.

Main-task 3: To prepare tender documents as per World Bank guidelines	**Sub-task 1:** Submission of detailed specifications, schedule of quantities, detailed designs of structure and services and estimate of costs and draft tender documents sufficient to invite tenders. **Sub-task 2:** Submission of complete set of drawings and details sufficient for the work to commence at site.
Main-task 4: To monitor the actual execution of the work	**Sub-task 1:** The consultant(s) shall monitor the actual execution work to ensure that the work is being executed as per the scope, drawings and schedule, evaluation of bids and recommendation to the Board. **Sub-task 2:** The consultant shall submit reports periodically about the work being executed by the consultancy firm selected by the Board.

The tasks are summarised into various stages of work as below:

Stage	Description
1	Submission of inception report
2	Submission of list of the functional and space requirements of the lab after approval from WBPCB.
	Submission of layout plan showing rooms/spaces and indicating positing of instruments to be placed in the laboratory after approval from WBPCB
3	Submission of preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of civil work after taking approval from WBPCB.
	Preparation of basic working drawings and details sufficient for preparing item-wise estimated costs
	Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders.
	Submission of complete set of drawings and details sufficient for the work to commence at site.

B. Electrical & Fire Alarm Systems

Main Task	Sub-tasks
Main task 1: Assessment of the requirements of electrical & fire protection system in accordance with the functions and spaces in the proposed Laboratory. A detailed analysis for the total electrical load, it's present distribution of load in different phases, and a future proposal is to be developed.	**Sub-task 1:** To hold intensive discussions, to understand the electrical & fire protection requirements of the Laboratory, taking into account the office-side load, with: ▪ the officials of the WBPCB, Kolkata ▪ the ACVS consultants ▪ the civil consultants **Sub-task 2:** To list the requirements and take approval from the WBPCB Kolkata.

Main-task 2: Preparation of layout plan for electrical & fire protection system. The power supply system for the entire complex is to be considered and the actual load re-distribution solution to be propounded.	**Sub-task 1**: To prepare draft layout plan for electrical & fire protection system including data/communication cabling taking into consideration the approved requirements as above. **Sub-task 2:** To discuss the draft plan with the consultants of electrical & fire and AVHS and officials of WBPCB Kolkata and take their comments. **Sub-task – 3:** To finalise the layout plan and take approval from WBPCB Kolkata. **Sub-task – 4:** To finalise the electrical load distribution/sharing plan with present supply load, till supply augmentation takes place.
Main-task 3: To prepare preliminary designs & drawings, specifications and quantities for various items of electrical & fire protection system and their cost estimates.	**Sub-task 1:** To prepare preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of electrical & fire protection system. **Sub-task 2:** To prepare cost estimates in accordance with the applicable schedule of rates for various items of civil work. **Sub-task 5:** To take approval for all above from WBPCB Kolkata.
Main-task 4: To prepare tender documents as per World Bank guidelines	**Sub-task 1:** Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders. **Sub-task 2:** Submission of complete set of drawings and details sufficient for the work to commence at site.
Main-task 5: To monitor the actual execution of the work	**Sub-task 1:** The consultant(s) shall monitor the actual execution work to ensure that the work is being executed as per the scope, drawings and schedule, evaluation of bids and recommendation to the Board.. **Sub-task 2:** The consultant shall submit reports periodically about the work being executed by the consultancy firm selected by the Board.

The tasks are summarized into various stages of work as below:

Stage	Description
1	Submission of inception report
2	Preparation of layout plan for electrical & fire protection system
3	To prepare preliminary designs & drawings, specifications and quantities for various items of electrical & fire protection system and their cost estimates.
	Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders.
	Submission of complete set of drawings and details sufficient for the work to commence at site.

C. ACVHS Works (Air conditioning and Mechanical ventilations systems)

Main Task	Sub-tasks

Main task 1: Assessment of the requirements of ACVHS in accordance with the functions and spaces in the proposed Laboratory.	**Sub-task 1:** To hold intensive discussions, to understand the ACVHS requirements of the Laboratory, with: ▪ the officials of WBPCB Kolkata ▪ the electrical & fire alarm system consultants ▪ the civil consultants ▪ **Sub-task 2:** To list the requirements and take approval from WBPCB Kolkata.
Main-task 2: Preparation of layout plan for ACVHS.	**Sub-task 1**: To prepare draft layout plan for ACVHS taking into consideration the approved requirements as above. **Sub-task 2:** To discuss the draft plan with the consultants of electrical & fire and civil works and officials of WBPCB Kolkata and take their comments. **Sub-task – 3:** To finalise the layout plan and take approval from WBPCB Kolkata.
Main-task 3: To prepare preliminary designs & drawings, specifications and quantities for various items of ACVHS and their cost estimates.	**Sub-task 1:** To prepare preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of ACVHS works. **Sub-task 2:** To prepare cost estimates in accordance with the applicable schedule of rates for various items of ACVHS works. **Sub-task 5:** To take approval for all above from WBPCB Kolkata.
Main-task 4: To prepare tender documents as per World Bank guidelines	**Sub-task 1:** Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders, evaluation of bids and recommendation to the Board. **Sub-task 2:** Submission of complete set of drawings and details sufficient for the work to commence at site.
Main-task 5: To monitor the actual execution of the work	**Sub-task 1:** The consultant(s) shall monitor the actual execution work to ensure that the work is being executed as per the scope, drawings and schedule. **Sub-task 2:** The consultant shall submit reports periodically about the work being executed by the consultancy firm selected by the Board.

The tasks are summarised into various stages of work as below:

Stage	Description
1	Submission of inception report.
2	Preparation of layout plan for ACVHS.
3	To prepare preliminary designs & drawings, specifications and quantities for various items of ACVHS and their cost estimates.
	Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders.
	Submission of complete set of drawings and details sufficient for the work to commence at site.

4. Execution of the Assignment

i. The Consultants shall prepare drawings, designs, outline specifications and estimates of costs by cubic measurements or an area basis on schedule of rates of the executing agency plus tender percentage as per requirement. In the absence of rates in the aforesaid schedule of rates, the same shall be arrived at by actual analysis.
ii. The Consultants shall make necessary revisions as may be required by the Client in the drawings and other documents submitted by them.
iii. The drawings, specifications, reports, documents etc. prepared under this contract shall remain the property of the Client whether the project for which they are made is to be executed or not.
iv. The Client shall have the liberty to postpone or not to execute any work and the Consultants shall not be entitled to any compensation or damage for such postponement or non -execution of the work except the fees which are payable to the Consultants up to the stage of services then completed.
v. The Consultants will not proceed with the work stipulated in any stage without the written consent of the Client.

5. Monitoring of actual execution

i. The consultants shall monitor the actual execution of work to ensure that work is being executed as per the drawings and schedule.
ii. The consultant shall submit compliance reports periodically about the work being executed by the consultancy firm selected by the Board.

6. Timeframe

a. 12 weeks for submission of report of study including drawing(s), layout(s) and design parameters and draft tender document including detailed specifications.

b. In addition 8 weeks for tendering, evaluation and recommendation to the Board.

c. In addition 17 weeks for execution work supervision and completion report. In case the estimate of time for execution changes as per the consideration of the consultant, the second phase will be equal to that time frame.

7. Outputs (Deliverables)

Following are the outputs to be submitted at various stages:

A. Civil Works

Output No.	Description
Output 1	Submission of list of the functional and space requirements of the lab after approval from WBPCB Kolkata.
Output 2	Submission of layout plan showing rooms/spaces and indicating positing of instruments to be placed in the laboratory after approval from WBPCB Kolkata.
Output 3	Submission of preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of civil work after taking approval from WBPCB Kolkata.
Output 4	Preparation of basic working drawings and details sufficient for preparing item-wise estimated costs.
Output 5	Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders.
Output 6	Submission of recommendation and bid analysis report after careful analysis of the submitted bidding documents.
Output 7	Submission of complete set of drawings and details sufficient for the work to commence at site.
Output 8	Submission of documents and certificates in relation to quality control of the executed works and related Certificates.
Output 9	Submission of report of satisfactory completion of work and recommendation to conclusion of the works.

B. Electrical & Fire Protection Works

Output No.	Description
Output 1	Submission of the present situation of electrical load distribution in the entire office-cum-laboratory complex and preparation of a recommendation with detailed electrical drawings, in consultation of the WBPCB officials.
Output 2	Submission of list of requirements of electrical & fire protection system of the lab after approval from WBPCB.
Output 3	Submission of layout plan for electrical & fire protection system of the laboratory after approval from WBPCB.
Output 4	Submission of preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of electrical & fire protection system after taking approval from WBPCB.
Output 5	Preparation of basic working drawings and details sufficient for preparing item-wise estimated costs
Output 6	Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders.
Output 7	Submission of recommendation and bid analysis report after careful analysis of the submitted bidding documents.
Output 8	Submission of complete set of drawings and details sufficient for the work to commence at site.
Output 9	Submission of documents and certificates in relation to quality control of the executed works and related Certificates.
Output 10	Submission of report of satisfactory completion of work and recommendation to conclusion of the works.

C. ACVHS Works

Output No.	Description
Output 1	Submission of list of requirements of ACVHS of the lab after approval from WBPCB.
Output 2	Submission of layout plan for ACVHS of the laboratory after approval from WBPCB
Output 3	Submission of preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of ACVHS after taking approval from WBPCB
Output 4	Preparation of basic working drawings and details sufficient for preparing item-wise estimated costs
Output 5	Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders.
Output 6	Submission of recommendation and bid analysis report after careful analysis of the submitted bidding documents.
Output 7	Submission of complete set of drawings and details sufficient for the work to commence at site.
Output 8	Submission of documents and certificates in relation to quality control of the executed works and related Certificates.
Output 9	Submission of report of satisfactory completion of work and recommendation to conclusion of the works.

Consultants shall supply to the Client free of cost four sets of all interim and final reports, drawings, specifications and other outputs as above 7 (A), (B) and (C) in print form and as electronic data file to satisfy the payment milestones described below.

8. Mode of Payment

Installment	Description	Payment
1st installment	Signing of contract against equivalent amount of bank guarantee to be released after 50 percent of actual payment.	10% of contract value
2nd installment	**Civil Works:** • Submission of list of the functional and space requirements of the lab after approval from the WBPCB. • Submission of layout plan showing rooms/spaces and indicating positing of instruments to be placed in the laboratory after approval from WBPCB. **Electrical & Fire Protection Works:** • Submission of layout plan for electrical & fire protection system. **ACVHS Works:** • Submission of layout plan for ACVHS works. Jobs to be completed by 3 weeks from the date of signing the contract.	10% of contract value
3rd installment	**Civil Works:** • Submission of preliminary drawings/designs, specifications and quantities along with the preliminary estimates of costs for various items of civil work after taking approval from WBPCB. • Submission of basic working drawings and details sufficient for preparing item-wise estimated costs. • Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders. • Submission of complete set of drawings and details sufficient for the work to commence at site. Jobs to be completed by 12 weeks from the date of signing the contract.	40% of contract value Upon completion of all three
	Electrical & Fire Protection Works: • Submission of load distribution report, preliminary designs & drawings, specifications and quantities for various items of electrical & fire protection system and their cost estimates. • Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders. • Submission of complete set of drawings and details sufficient for the work to commence at site. Jobs to be completed by 12 weeks from the date of signing the contract.	
	ACVHS Works: • To prepare preliminary designs & drawings, specifications and quantities for various items of ACVHS and their cost estimates.	

	• Submission of detailed specifications, schedule of quantities, detailed design of structure and services and estimate of costs and draft tender documents sufficient to invite tenders. Submission of complete set of drawings and details sufficient for the work to commence at site. Jobs to be completed by 12 weeks from the date of signing the contract.	
4th installment	Submission of recommendation after analysis of the tender documents. Jobs to be completed by 19 weeks from the date of signing the contract.	10% of contract value
5th installment	Supervision of work of the consultant selected for actual execution and submission of completion report. Supervision period will be equal to the period of actual execution works.	30% of contract value.

9. Cost Estimates/Budget

The budget/cost estimates for the consultancy services should be quoted with break-up details by the consultants. The budget/cost estimates should include:

No. of man months of each of the staff (professional/technical/managerial/ supporting staff), cost per man month and total staff costs

1. Details of professionals envisaged for the study.
2. Travel & accommodation costs as reimbursables
3. Operational costs (drawings, office supplies, utilities and communication etc.)
4. Any other relevant costs (provide details)
5. Taxes, if any (to be specified).

The CVs of the staff/experts that would work on the project should be provided. If consultancy is awarded, the same staff/experts as quoted are required to work.

10. Requirements of the Applying Consultancy Firm

The consultancy is aimed for a firm having experts with appropriate qualifications and experience of working in the sector. The consulting firm should be in a position to offer team of three key members comprising the Team Leader, Senior Project Manager and Senior Industrial Engineering consultant.

The firm can combine more than one expertise and could include other technical specialists as required to perform the scope of work envisaged in the TOR. The firm should mobilize adequate staff and resources to complete the assignment within the stipulated time frame. The comprehensive details of such staff and resources and their deployment schedule shall be provided in the technical proposal.

Qualifications and experience of the team members

Particulars / Position	Minimum Requirement(s)	Required Attributes
Team Leader (One): will be responsible for overall leadership to the assignment, interactions with agencies and institutions, quality control and report delivery.	Bachelor's degree in Civil Engineering and minimum 7 years of Interior Designing.	Experience of execution of similar works in laboratories or hospital operation arena.

Assistant Engineer (One): Will be responsible for all jobs in relation to “Electrical & Fire Protection” systems.	Bachelor’s degree in Electrical Engineering with minimum 5 years of experience in Interior Designing. Or Diploma in Electrical Engineering with 7 years of experience in interior designing	Experience of execution of similar works in laboratories or hospital operation arena.

Methodology to be followed :

APPENDIX-A: Technical Approach and Methodology

The prioponent is to detail the approach and the work plan under the headings below.

1. Data sharing and recording with the client
2. Preservatin and deployment of the data sheet for layout preparation.
3. Coordination between different experts.
4. Concurrence of different plans and client approval.
5. Preparation of estimates.
6. Preparation of final consolidated statement followed by Client approval.
7. Finalization of the Bill of Quantities and Client approval.
8. reparation of tender document(s) on the basis of World Bank norms.
9. Assistance on tender opening, evaluation and appointment of vendors for execution of the project.
10. Project execution monitoring and completion

TEAM COMPOSITION & TASK ASSIGNMENT

Professional Staff				
Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned

APPENDIX B - REPORTING REQUIREMENTS

The consultant shall report the progress on the step-wise tasks in the prescribed format being agreed upon by both the parties.

The consultant shall report the progress on fortnightly basis through a consultative meeting with the representatives of contracting agency.

The consultant shall submit the reports as per the schedules for each of the step-wise tasks mentioned at "Deliverables" of the TORs. The exact dates for submission of the reports shall be in-line with the duration given for each of the step-wise tasks and with reference to the exact date of commencement of the services by the consultant.

APPENDIX C - KEY PERSONNEL

The details of Key Personnel are as follows :

Key person	Position	Qualifications	Task

APPENDIX D - BREAKDOWN OF CONTRACT PRICE IN FOREIGN CURRENCY

Cost of the Financial Proposal	Civil Works	Electrical & Fire Alarm Systems	ACVHS Works	TOTAL
Remuneration				
Reimbursables				
Sub Total:				
Statutory Taxes and Duties				
TOTAL:				

APPENDIX E - BREAKDOWN OF CONTRACT PRICE IN LOCAL CURRENCY

The breakdown of contract price is as follows :

Amount in INR

Cost of the Financial Proposal	Civil Works	Electrical & Fire Alarm Systems	ACVHS Works	TOTAL
Remuneration				
Reimbursables				
Sub Total:				
Add: Service Tax@ 12.36%				
TOTAL:				

APPENDIX F - SERVICES AND FACILITIES PROVIDED BY THE CLIENT

Relevant information available with WBPCB.

Supplementary Document

Requirement and Scope of Central Laboratory Refurbishing Works

S1.1 Description of Work

The West Bengal Pollution Control Board developed it's Central Laboratory during 2003 / 2003 with a good number of sophisticated laboratory instruments. This laboratory then-after has acquired more such installations that require rather specific working atmosphere, safety precautions, gas supply network and stable electrical power supply with quality electrical earthing. Recently this laboratory is being further developed in respect to it's analytical capability for hazardous waste samples. This requires and overhauling of the electrical power distribution system in respect of load distribution and the safety devices. In addition, the recent instrumental installations requires special ambience for their functioning. The scope of the present work thereby are presented in three broad categories detailed below.

S1.1.1 Studying the present electrical distribution system and preparation of it's renovation plan with GAP/REQUIREMENT reports for different (6 numbers) deployment scenario. Changes required are to be implemented, tested and certified by third party holding proper certification authority.

S1.1.2 Turnkey construction of Clean Room and related facility for sophisticated analytical instrument and sample preparation arena for DIOXINES and FURANS including establishment of chamber for sample pre-processing with organic solvents. The laboratory at present has room G3 as the utility gas supply center. This center is to be shifted to a grilled caging outside the plinth area of the building on the ground floor by the side of the Ramp. The scope includes Designing, Supply, Installation, Testing, Third party certification, Commissioning, Training and Providing Warranty and AMC after warranty period.

S1.1.3 Testing of the developed new electrical circuitry and laboratory clean-rooms by third party as per ISO 14644. In short, the proposed laboratory shall be completed in all respects and be handed over with testing certificates from appropriate authorities to the WBPCB in "WALK IN CONDITION" for its ready occupation as per the stipulated project execution period.

S1.2 Requirement for Clean Rooms

The project consists of three separate blocks, namely:

a) Room A. Room for installation of Gas Chromatograph (MS-MS)
b) Room B. Room for sample preparation and installation of sample processing chamber
c) Room C. Room for installation of IR Spectrometer
d) Room D. Room for installation of X-Ray Fluorescence Spectrometer

Rooms A and C will need electrical connections and utility gas supply system. Room C will need a hood on the instrument that discharges hot furnace exhaust to outside. No scrubber is required for these rooms. Room D is to have air conditioning and humidity controller system installed.

Room B is space for sample preparation and installation of the pre-processing chamber. Room B should have gas connections, water supply and exit for washing purpose, chimney attached with the processing chamber to discharge the exhaust 5 feet above the roof of the building (without any scrubber).

S1.2.1 Laboratory Layout Drawing – Annex – 1

S1.2.2 Clean Room Condition

Clean room condition is to be established for Room A and Room C as per the layout drawing. Class 100,000 (ISO 8) for clean rooms and the walk in processing chamber is to be established and maintained for the stipulated period of time.

S1.2.3 Layout

Bidders have to develop detailed internal layout including ducting and exhaust system to suit the system requirements. A detailed layout of the equipment, power requirement, entry points, emergency exit and partitions are to be prepared for approval of the WBPCB according to the requirement detailed in Annex - II

S1.2.4 All the partitions to be established in the final approved layout has to be modular.

S1.2.5 Air handling unit and Gas cylinders has to be placed within the area demarcated.

S1.2.6 The entire area under this job shall have optical type smoke detectors, heat detectors and organic emission detectors placed at strategic locations. Single loop fire panel is to be provided for all smoke and heat detectors. Fire panel should be stand alone type. Both optical and audio alarms are to be provided with the detectors, with appropriate control systems and DRILL options.

S1.2.7 The entire existing utility gas (Hydrogen, Helium, Acetylene, Nitrogen, Argon, Air) distribution system (that supplies gases to all the four floors at different rooms depending on the requirement through SS 316 pipe lines with appropriate gas purification systems as required for the analytical instruments) is to be overhauled with the cylinder storage and supply center shifting to the outside of the building by the side of the Ramp on the ground floor.

S1.2.8 Particulars of the different sections of the area under this job is provided at Annex – III.

S1.3 Scope of Work

The scope of work for establishment of the clean arena is the following:

S1.3.1 Planning, Designing, Preparation of Drawings, Preparation of Bill of Quantities, Execution of the job, commissioning and providing warranty and AMC support (after the period of warranty)

S1.3.2 Testing of the clean arena through approved third party for certification once after installation and before handing over and once a year during the warranty period. The third party engagement will be done by the Board from a list of such approved parties.

S1.4 Warranty

Warranty shall have to be provided for a period of three years from the date of handing over of the installations. After the expiry of the warranty period, the system shall be maintained through AMC.

S1.5 Event Calendar of the Entire Work – Annex - IV

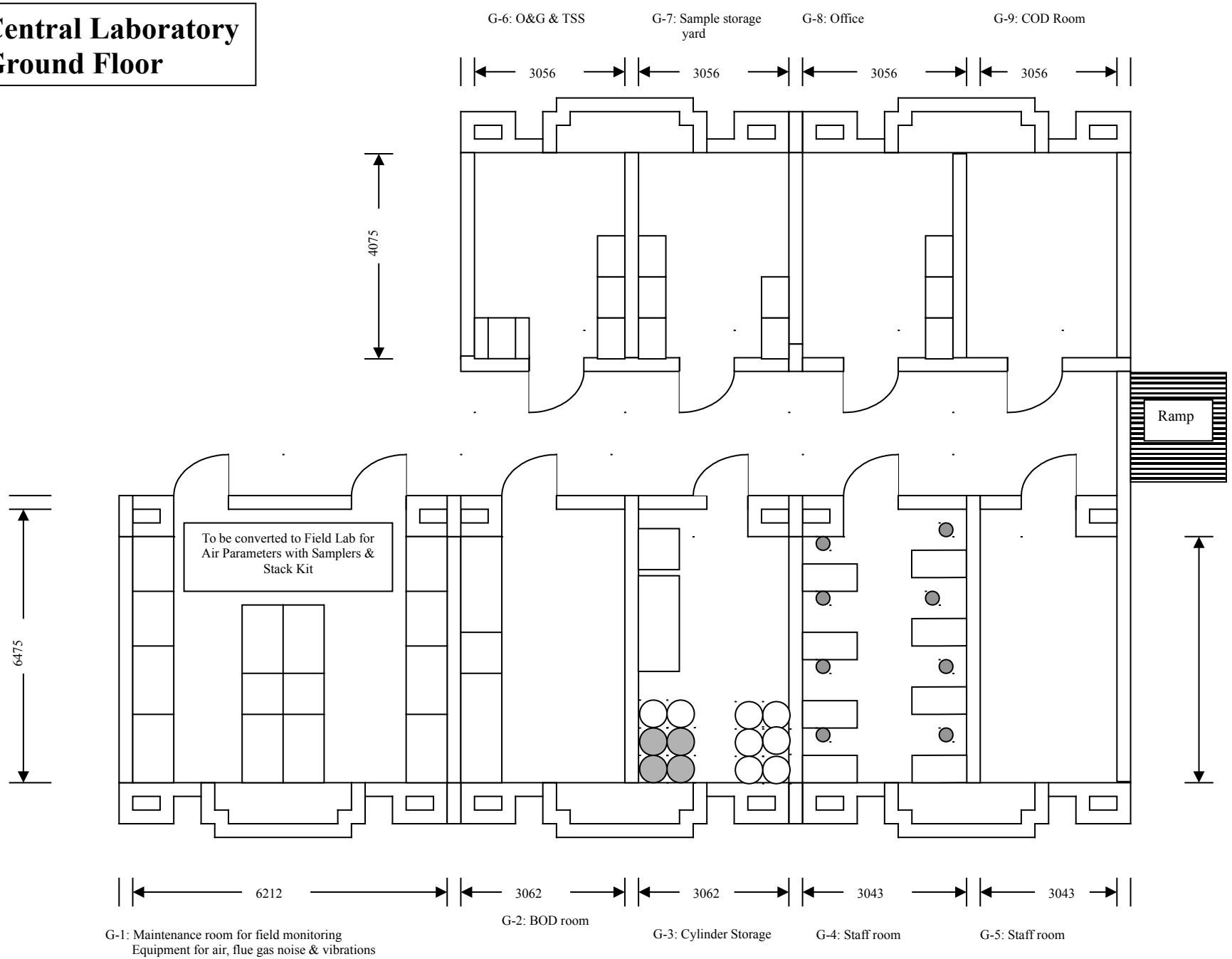
Payment

P1.1 Payment Procedures

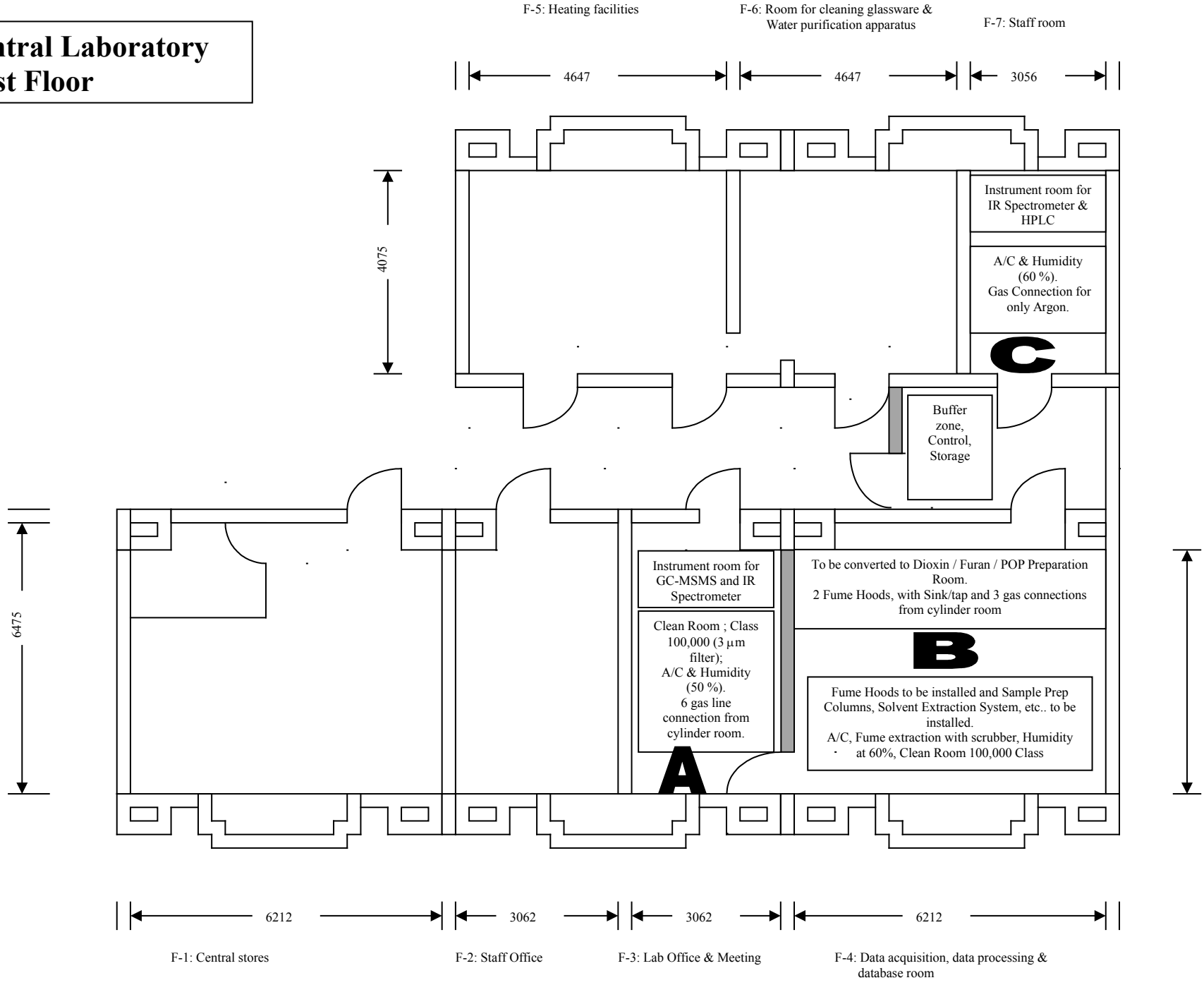
Payment will be made in Indian Rupees in crossed bankers' cheque against the following milestones.

P1.1.1 15% against approval of the Refurbishing Plan – **Task 1** – Week 5/6 after kick off
P1.1.2 30% against receipt of installation items at site – **Task 2** – Week 9/10 after kick off
P1.1.3 30% against third party validation – **Task 3** – Week 13/14 after kick off
P1.1.4 25% against handing over and submission of final report – **Task 4** – Week 17/1 after kick off

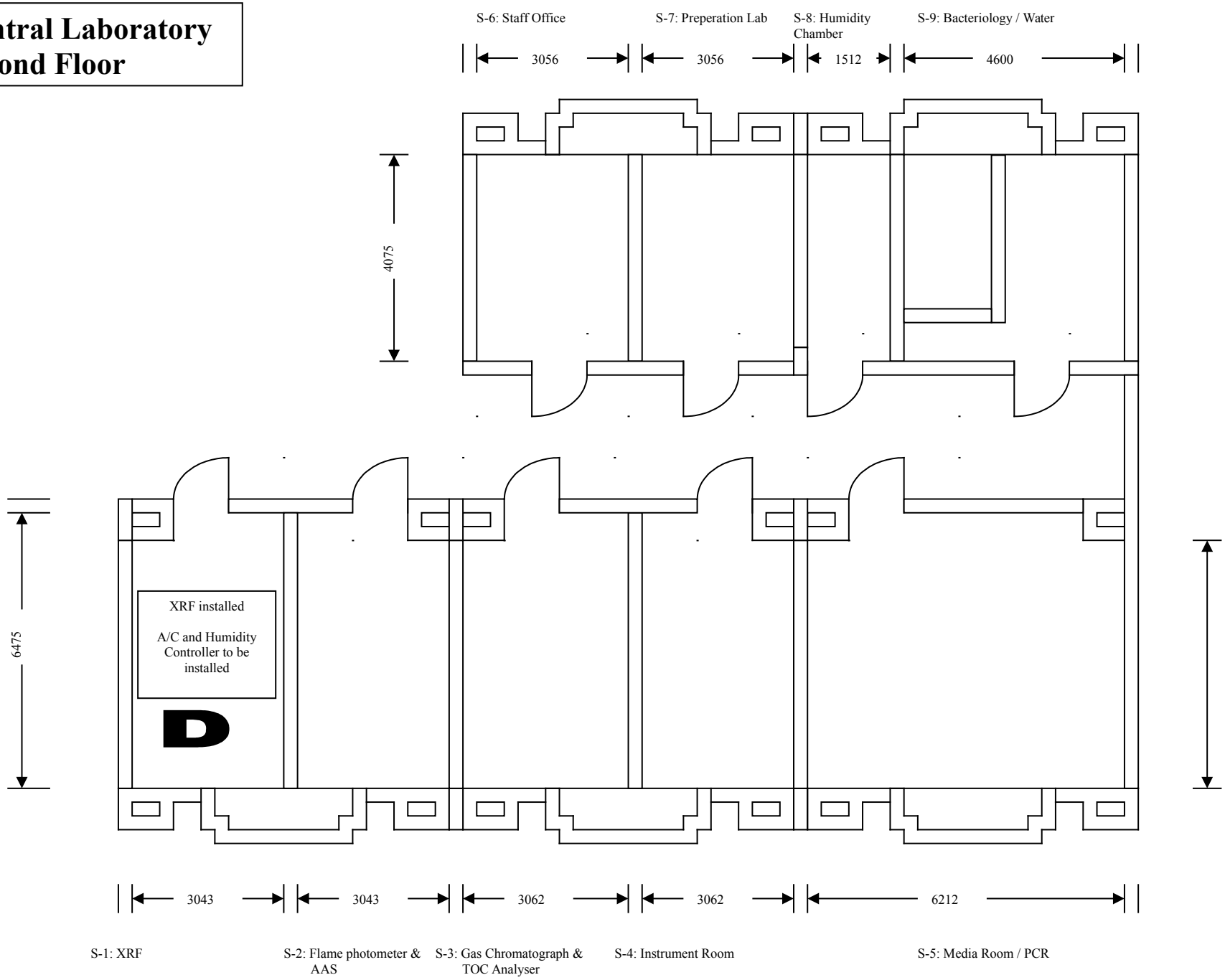
Central Laboratory Ground Floor



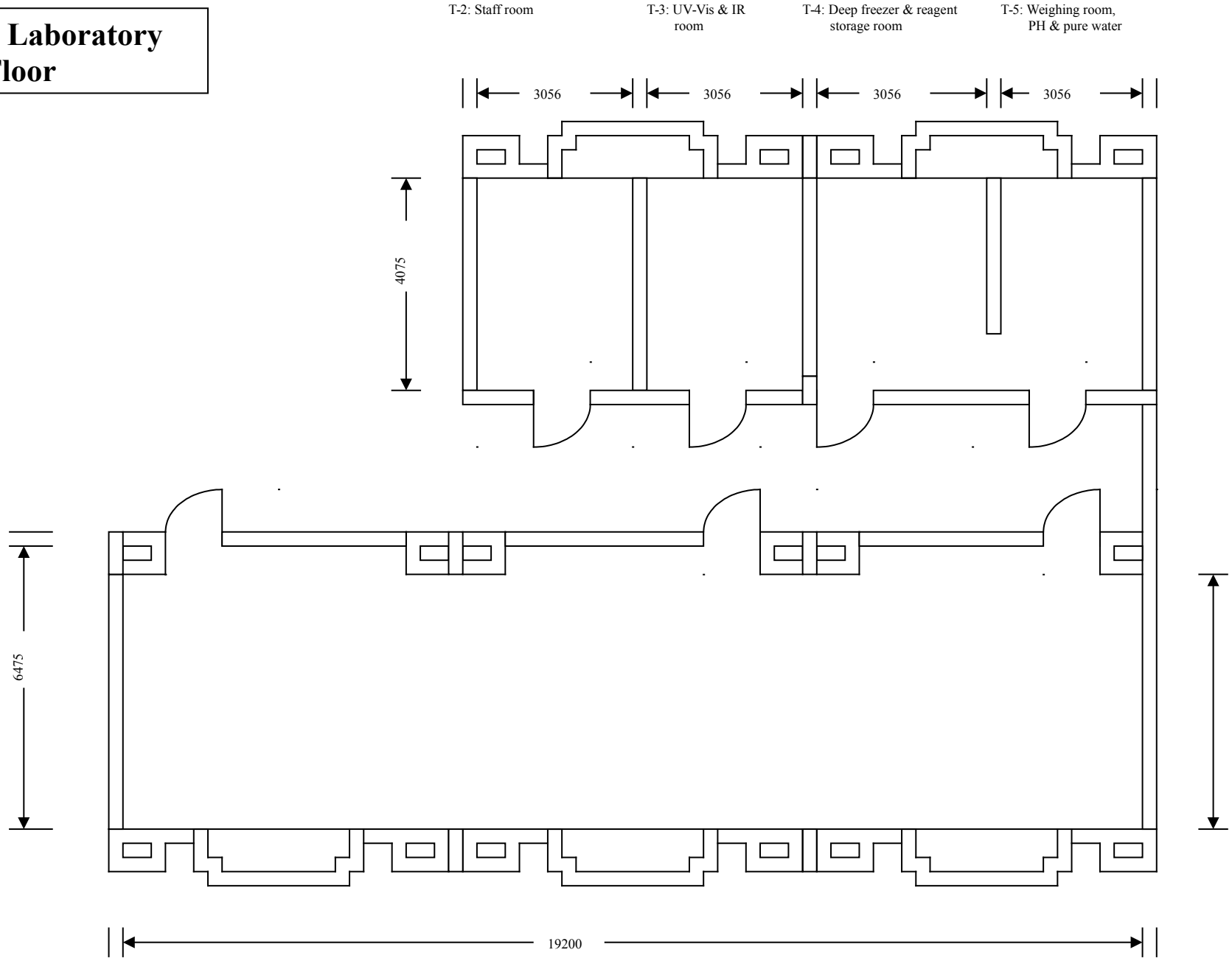
Central Laboratory
First Floor



Central Laboratory
Second Floor

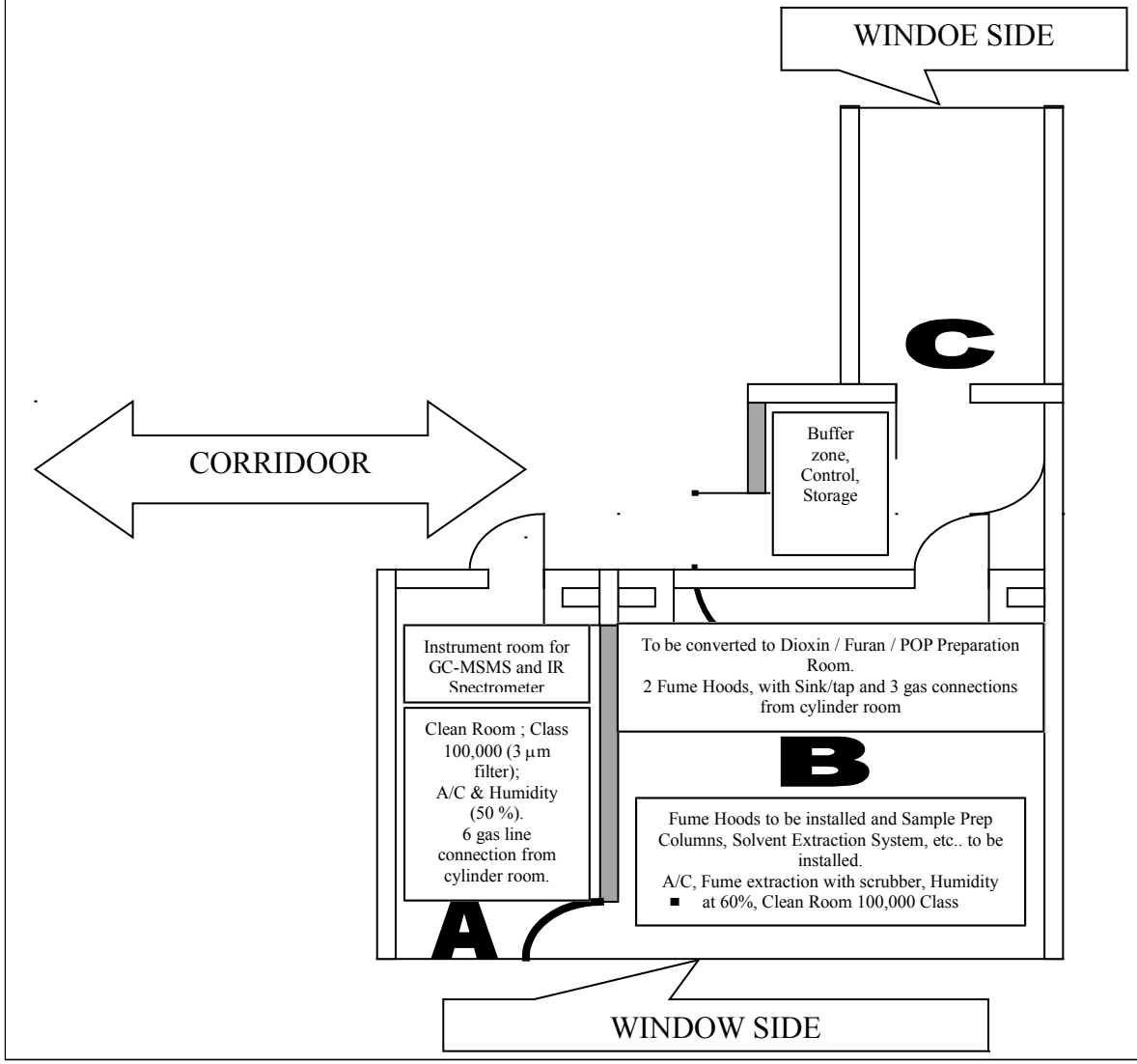


Central Laboratory
Third Floor



T-1: Pretreatment room for extraction, concentration & purification of samples

ANNEX – II



Inner Dimension of A	20 Sq. M
Inner Dimension of B	40 Sq. M
Inner Dimension of C	12 Sq. M.
A	Clean room for GC-MSMS. Tables will be provided only. Buffer zone creation may be necessary.
B	Clean arena for sample processing. Tables will be provided only
C	Clean room for IR-Spectrometer. Tables will be provided only
	Partition wall to be created
	Doors to be created

ANNEXURE – III

Sl. No.	Particulars
1	Double skin AHU complete with thermal break profile, Mixing Chamber section, Fan section, Coil sections, Filter sections, Return air Plenum with Volume control damper for return air and fresh air ,fresh air damper with double HDPE insect mesh, G4 (EN779:2012) filter, DIDW (double inlet double width) backward curved air blower, 6 row deep Cooling Coil, Supply air Plenum with 10& 5 micron filters. Service windows, Supply air Volume control damper, Motor for blower.
2	Air Cooled condensing unit complete with Reciprocating/Scroll compressor, condenser, expansion valve, drier cum strainer, isolation valves, sight glass etc. & all required accessories including interconnecting copper piping to AHU for following capacities:(Condensing units)
3	G.S.S. Ducting complete with supports, nut-bolts, painted MS angle Flanges, neoprene gaskets duly installed.
4	Duct insulation with self adhesive closed cell nitrile rubber.
5	FILTER SECTION a) Should consist of Pre- filter section (10 micron filter with 90% efficiency) b) Micro-filters (5 micron filter with 98% efficiency) c) False ceiling mounted terminal filter box complete with HEPA filter (Eff 99.97% @ 0.3 micron) and SS perforated grills.
6	R.Air Riser made from G.I powder coated Sheet (18 G) complete with R. Air perforated Grille and volume control damper suitable for operating from front of grille. Front panel of R.A. riser to be duly buffed and can be removable/open able for proper cleaning.
7	Horizontal LAF (Laminar Air Flow) unit
8	2-3 persons simultaneous entry AIR SHOWER
9	PU (Polyeurethene) antifungal paintings on walls
10	2mm thick Epoxy flooring (has to be acid/alkali and organic solvent resistant)
11	Covings on wall to wall and wall to floorings
12	Metallic false ceiling in Aluminium; PU painted.
13	Clean Room Tube light fixtures; complete with electronic ballast, reflector, CFL tubes, complete in all respects.
14	Clean Room Flush type Doors in GI powder coated construction complete with Door closure, view panel.
15	Flush type Window in Aluminium powder coated complete with float glass on both sides.
16	Garment cubicle in SS-304/ SS-316 construction complete with HEPA Filter, motor blower.
17	Cross Over Bench (if required) in SS-304/ SS-316 construction.
18	Separate gas room for placing 10 Nos Gas cylinders will be provided near the clean room beside the AHU shed. 10 Gas line is considered from this room.
19	Enclosure for AHU & Condensing unit. AHU/Condensing unit may be required to be located on roof top.
20	Fume extraction chamber (Dimension 48 inch (W) X 30 inch (Depth) X 32 inch (H), mounted on a table, all material SS304, with electrical & water supplies and rod/clamp arrangements for holding chromatography columns. Chamber has to be supplied with suction motor and ducting with all controls.
21	Flexible pipe fume extraction system, complete with suction motors and controllers.

Annexure - IV

Event Calendar for the job "Central Laboratory Refurbishing" of West Bengal Pollution Control Board

Event	Week after Kick Off (Tentative Kick Off Date March 15 2013)															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Kick-off Meeting																
Task 1																
Preparation of Implementation Plan																
Studying the requirement of the system																
Visual Survey of Project Sites																
Estimation of electrical load at different operation scenario																
Development of Internal Layout Plan																
Submission of Plan and discussion																
Approval by WBPCB																
Task 2																
Civil works and BOQ Indentation																
Civil works initiation																
Submission of BOQ and finalization																
Civil / Mechanical works completion																
Electrical laying and installations																
Installation of AHUs																
Installation of fume chamber(s)																
Utility Gas supply system renovation																
Safety installations																
Task 3																
System Testing																
Establishment of target parameters																
Third party certification / validation																
Task 4																
System Integration																
Function synchronization with load																
Validation of planned parameters with load																
Handing over																

N.B: After shortlisting, selection of consultant will be made under CQS method of World Bank Procurement Guidelines for Consultants