



Republic of the Philippines  
Department of Science and Technology  
Philippine Science High School System



**PHILIPPINE SCIENCE HIGH SCHOOL – BICOL REGION CAMPUS**

# **Procurement for the Construction of Fabrication Laboratory (Design and Build Scheme)**

# Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the “Works”) through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

The PBDs are intended as a model for admeasurements (unit prices or unit rates in a bill of quantities) types of contract, which are the most common in Works contracting.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; and (iv) the obligations, duties, and/or functions of the winning Bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Works to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

- a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for bid submission*,” should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

- d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.
- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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# ***Glossary of Terms, Abbreviations, and Acronyms***

**ABC** – Approved Budget for the Contract.

**ARCC** – Allowable Range of Contract Cost.

**BAC** – Bids and Awards Committee.

**Bid** – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

**Bidder** – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

**Bidding Documents** – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

**BIR** – Bureau of Internal Revenue.

**BSP** – Bangko Sentral ng Pilipinas.

**CDA** – Cooperative Development Authority.

**Consulting Services** – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

**Contract** – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

**Contractor** – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

**CPI** – Consumer Price Index.

**DOLE** – Department of Labor and Employment.

**DTI** – Department of Trade and Industry.

**Foreign-funded Procurement or Foreign-Assisted Project** – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

**GFI** – Government Financial Institution.

**GOCC** – Government-owned and/or –controlled corporation.

**Goods** – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term “related” or “analogous services” shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

**GOP** – Government of the Philippines.

**Infrastructure Projects** – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

**LGUs** – Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**PCAB** – Philippine Contractors Accreditation Board.

**PhilGEPS** - Philippine Government Electronic Procurement System.

**Procurement Project** – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

**PSA** – Philippine Statistics Authority.

**SEC** – Securities and Exchange Commission.

**SLCC** – Single Largest Completed Contract.

**UN** – United Nations.

## ***Section I. Invitation to Bid***



## **Invitation to Bid for the Construction of Fabrication Laboratory (*Design and Build Scheme*)**

1. The *Philippine Science High School-Bicol Region Campus*, through the *National Expenditure Program 2024* intends to apply the sum of **TWENTY-NINE MILLION THREE HUNDRED EIGHTY-EIGHT THOUSAND PESOS (Php 29, 388,000.00)** being the Approved Budget for the Contract (ABC) to payments under the contract **Construction of Fabrication Laboratory (*Design and Build Scheme*)**. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The *Philippine Science High School-Bicol Region Campus* now invites bids for the above Procurement Project. Completion of the Works is required *within three hundred thirty (330) calendar days*. Bidders may have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “*pass/fail*” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from *Philippine Science High School-Bicol Region Campus* and inspect the Bidding Documents at the address given below from 8:00AM-5:00PM.
5. A complete set of Bidding Documents may be acquired by interested bidders on *November 14, 2023* from given address and website/s below *and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Twenty-Five Thousand Pesos (Php 25,000.00)*. The Procuring Entity shall allow the bidder to present its proof of payment for the fees *in person, or through electronic means*.
6. The *Philippine Science High School-Bicol Region Campus* will hold a Pre-Bid Conference<sup>1</sup> on *November 21, 2023, 1PM* at the BAC Room, Administration Building, PSHS-BRC, Goa, Camarines Sur and/or through videoconferencing/webcasting *via zoom* which shall be open to prospective bidders upon a letter of intent sent to **[bac@brc.pshs.edu.ph](mailto:bac@brc.pshs.edu.ph)**.

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<sup>1</sup> May be deleted in case the ABC is less than One Million Pesos (PhP1,000,000) where the Procuring Entity may not hold a pre-bid conference.

6. Bids must be duly received by the BAC Secretariat through (i) manual submission at the office address as indicated below, (ii) online or electronic submission as indicated below, or (iii) both on or before December 4, 2023, 1PM. Late bids shall not be accepted.
7. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 15.
8. Bid opening shall be on *December 4, 2023, 1PM* at the given address below and/or through *Zoom (link shall be sent to bidders who intended to join)*. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
9. *Eligible bidders shall submit a certified true copy of Valid PCAB license for Size Range-Medium A, License category B.*
10. The *Philippine Science High School-Bicol Region campus* reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
11. For further information, please refer to:

*(Sgd)JOY MELGA B. OLAZO  
BAC Secretariat Chairperson  
Philippine Science High School-Bicol Region  
Tagongtong, Goa, Camarines Sur  
Email ad: bac@brc.pshs.edu.ph  
School Website: brc.pshs.edu.ph  
Cp# 09178373849*

12. You may visit the following websites:

For downloading of Bidding Documents: *PhilGEPS, brc.pshs.edu.ph*

For online bid submission: *bac@brc.pshs.edu.ph*

*November 14, 2023*

*(Sgd)SEVEDEO J. MALATE  
BAC Chairperson or Authorized Representative*

## ***Section II. Instructions to Bidders***

## **1. Scope of Bid**

The Procuring Entity, *Philippine Science High School-Bicol Region Campus* invites Bids for the Construction of Fabrication Laboratory with Project Identification Number Infra-2024-01.

## **2. Funding Information**

2.1. The GOP through the source of funding as indicated below for Calendar Year 2024 in the amount of TWENTY-NINE MILLION THREE HUNDRED EIGHTY-EIGHT THOUSAND PESOS (Php 29,388,000.00). The source of funding is: National Expenditure Program.

## **3. Bidding Requirements**

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendment made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

## **4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices**

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

## 5. Eligible Bidders

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.
- 5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.

- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

## 6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

## 7. Subcontracts

- 7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that:

- a. Subcontracting is not allowed.

- 7.1. *[If Procuring Entity has determined that subcontracting is allowed during the bidding , state:]* The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criteria stated in **ITB** Clause 5 in accordance with Section 23.4 of the 2016 revised IRR of RA No. 9184 pursuant to Section 23.1 thereof.

- 7.2. *[If subcontracting is allowed during the contract implementation stage, state:]* The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must submit the documentary requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

- 7.3. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

## **8. Pre-Bid Conference**

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and/or through videoconferencing/webcasting as indicated in paragraph 6 of the **IB**.

## **9. Clarification and Amendment of Bidding Documents**

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

## **10. Documents Comprising the Bid: Eligibility and Technical Components**

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.
- 10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.
- 10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of

availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

## **11. Documents Comprising the Bid: Financial Component**

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

## **12. Alternative Bids**

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

## **13. Bid Prices**

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

## **14. Bid and Payment Currencies**

- 14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

- 14.2. *Payment of the contract price shall be made in:*

- a. Philippine Pesos.

## **15. Bid Security**

- 15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

- 15.2. The Bid and bid security shall be valid for *One Hundred Twenty calendar days*. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

## **16. Sealing and Marking of Bids**

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

## **17. Deadline for Submission of Bids**

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB**.

## **18. Opening and Preliminary Examination of Bids**

- 18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

- 18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

## **19. Detailed Evaluation and Comparison of Bids**

- 19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.
- 19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.

- 19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

## **20. Post Qualification**

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

## **21. Signing of the Contract**

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

### ***Section III. Bid Data Sheet***

# Bid Data Sheet

ITB Clause	
2.1	The GOP through the source of funding as indicated below for Calendar Year 2024 in the amount of TWENTY-NINE MILLION THREE HUNDRED EIGHTY-EIGHT THOUSAND PESOS (Php 29,388,000.00). The source of funding is: National Expenditure Program.
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be:  Construction of general buildings/ laboratories/ workshops
7.1	<i>Subcontracting is not allowed.</i>
8	<i>Pre-bid conference will be held on November 21, 2023 at 1:00 PM at the BAC Room, Administration Bldg., PSHS-BRC Goa, Camarines Sur and /or through video conferencing/webcasting via zoom, link of which will be sent upon an intent to join is submitted to <u><a href="mailto:bac@brc.pshs.edu.ph">bac@brc.pshs.edu.ph</a></u>.</i>
10.3	<i>Eligible bidders shall submit a Certified True Copy of valid PCAB license for Size Range-Medium A- License Category B.</i>
10.4	<p>The key personnel must meet the required minimum years of experience set below:</p> <p><b>For Design</b></p> <p>The key professionals and the respective qualifications of the design personnel shall be as follows:</p> <ul style="list-style-type: none"> <li>Principal Architect</li> </ul> <p>The Principal Architect must be duly-licensed with at least ten (5) years' experience in the design of residential, government offices or institutional facilities, and shall preferably be knowledgeable in the application of rapid construction technologies.</p> <ul style="list-style-type: none"> <li>Structural Engineer</li> </ul> <p>The Structural Engineer must be a duly-licensed Civil Engineer with at least ten (5) years' experience in structural design and shall preferably be knowledgeable in the application of rapid construction technologies.</p> <ul style="list-style-type: none"> <li>Professional Electrical Engineer</li> </ul> <p>The Electrical Engineer must be a registered Professional Electrical Engineer with at least five (5) years' experience in the design of lighting, power</p>

distribution, communication systems (specifically structured and local area network cabling, PABX), building management systems and preferably knowledgeable in developments in emergent efficient lighting technologies and energy management.

- Professional Mechanical Engineer

The Mechanical Engineer must be a Professional Mechanical Engineer with at least five (5) years in HVAC and fire Protection systems and preferably knowledgeable in emergent, alternative energy- efficient HVAC technologies.

- Sanitary Engineer

The Sanitary Engineer must be duly-licensed with at least five (5) years' experience in the design of building water supply and distribution, plumbing, and preferably knowledgeable in waste water management/treatment, and emergent, alternative effluent collection and treatment system.

The key professionals listed are required. The DESIGN & BUILD CONTRACTOR may, as needed and at its own expense, add additional professionals and/or support personnel for the optimal performance of all Architectural and Engineering Design Services, as stipulated in these Terms of Reference, for the PROJECT. Prospective bidders shall attach each individual's resume and PRC license of the (professional) staff.

- Master Plumber

Design personnel may also be utilized for the construction phase provided that the same meet the minimum number of years of experience in the construction of similar projects.

#### **For Construction Personnel**

The key professionals and the respective qualifications of the construction PERSONNEL shall be as follows:

- Project Manager

The Project Manager shall be a licensed architect or engineer with at least (5) years relevant experience on similar and comparable projects in different locations. The Project Manager should have a proven record or managerial capability through the directing/managing of major civil engineering works, including projects of a similar magnitude.

- Project Engineer

The Project Engineer shall be a licensed architect or engineer with at least five (5) years' experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

- Materials Engineer (M.E. I)

The Materials Engineer must be duly accredited with the DPWH and with at least five (5) years' experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

- Electrical Engineer

The Electrical Engineer must be duly-licensed with at least five (5) years' experience in similar and comparable projects in the installation of lighting, power distribution, communication systems (specifically structured and local area network cabling, PABX), building management systems.

- Mechanical Engineer

The Mechanical Engineer must be duly-licensed with at least five (5) years' experience in similar and comparable projects in the installation of HVAC and fire protection.

- Sanitary Engineer

The Sanitary Engineer must be duly-licensed with at least three (3) years' experience in similar and comparable projects in the installation of building water supply and distribution, plumbing.

- Foreman

The Foreman must have at least five (5) years' experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

- Project Architect

The Principal Architect must be duly-licensed with at least ten (5) years' experience in the design of residential, government offices or institutional facilities, and shall preferably be knowledgeable in the application of rapid construction technologies.

10.5	<p>The minimum major equipment requirements are the following:</p> <table> <tr> <th><u>Equipment</u></th><th><u>Number of Units</u></th></tr> <tr> <td>Bulldozer</td><td>1 unit</td></tr> <tr> <td>Backhoe</td><td>1 unit</td></tr> <tr> <td>- Dump Truck</td><td>2 units</td></tr> <tr> <td>- Delivery truck</td><td>1 unit</td></tr> <tr> <td>One-bagger concrete mixer</td><td>1 unit</td></tr> <tr> <td>Plate compactor</td><td>1 unit</td></tr> <tr> <td>Concrete vibrator</td><td>1 unit</td></tr> </table>	<u>Equipment</u>	<u>Number of Units</u>	Bulldozer	1 unit	Backhoe	1 unit	- Dump Truck	2 units	- Delivery truck	1 unit	One-bagger concrete mixer	1 unit	Plate compactor	1 unit	Concrete vibrator	1 unit
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15.1	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <p>a. The amount of not less than Php 587,760.00 if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit;</p> <p>b. The amount of not less than Php 1,469,400.00 if bid security is in Surety Bond.</p>																
15.2	The bid and bid security shall be valid until One Hundred Twenty (120) calendar days																
16	Each bidder shall submit (1) original and (3) copies of the first and second components of its bid.																
17	Deadline for submission of bids is December 04, 2023 @ 1:00PM.																
19.2	Partial bids are not allowed.																
20	<i>Bidder shall submit/present all required licenses and permits relevant to the project.</i>																
21	Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, such as construction schedule and S-curve, manpower schedule, construction methods, equipment utilization schedule, construction safety and health program approved by the DOLE, and other acceptable tools of project scheduling.																

## ***Section IV. General Conditions of Contract***

## 1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

## 2. Sectional Completion of Works

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

## 3. Possession of Site

3.1 The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC**, which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2 If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

## 4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

## **5. Performance Security**

- 5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.
- 5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

## **6. Site Investigation Reports**

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

## **7. Warranty**

- 7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.
- 7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

## **8. Liability of the Contractor**

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

## **9. Termination for Other Causes**

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

## **10. Dayworks**

Subject to the guidelines on Variation Order in Annex “E” of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor’s Bid shall be used for small additional amounts of work only when the Procuring Entity’s Representative has given written instructions in advance for additional work to be paid for in that way.

## **11. Program of Work**

11.1. The Contractor shall submit to the Procuring Entity’s Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC**.

11.2. The Contractor shall submit to the Procuring Entity’s Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC**. If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity’s Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

## **12. Instructions, Inspections and Audits**

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor’s accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

## **13. Advance Payment**

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex “E” of the 2016 revised IRR of RA No. 9184.

## **14. Progress Payments**

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity’s Representative/Project Engineer. Except as otherwise stipulated in the **SCC**, materials and equipment delivered on the site but not completely put in place shall not be included for payment.

## **15. Operating and Maintenance Manuals**

- 15.1. If required, the Contractor will provide “as built” Drawings and/or operating and maintenance manuals as specified in the **SCC**.
- 15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity’s Representative’s approval, the Procuring Entity’s Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

## ***Section V. Special Conditions of Contract***

# Special Conditions of Contract

GCC Clause																																	
2	<i>Intended days of completion of whole works is 330 calendar days.</i>																																
3.1	<i>The Procuring Entity shall give possession of all parts of the Site to the Contractor upon NTP.</i>																																
4	<table> <tr> <th data-bbox="475 600 933 638"><u>Key Personnel</u></th><th data-bbox="933 600 1433 638">Years of <u>Relevant Experience</u></th></tr> <tr> <td colspan="2" data-bbox="475 667 933 712"><b><u>For Design</u></b></td></tr> <tr> <td data-bbox="475 741 933 786"><i>a. Principal Architect</i></td><td data-bbox="933 741 1433 786">5 years</td></tr> <tr> <td data-bbox="475 792 933 837">b. Structural Engineer</td><td data-bbox="933 792 1433 837">5 years</td></tr> <tr> <td data-bbox="475 866 933 911">c. Professional Electrical Engineer</td><td data-bbox="933 866 1433 911">5 years</td></tr> <tr> <td data-bbox="475 918 933 963">d. Professional Mechanical Engineer</td><td data-bbox="933 918 1433 963">5 years</td></tr> <tr> <td data-bbox="475 992 933 1037">e. Sanitary Engineer</td><td data-bbox="933 992 1433 1037">5 years</td></tr> <tr> <td colspan="2" data-bbox="475 1066 933 1111"><b><u>For Construction Personnel</u></b></td></tr> <tr> <td data-bbox="475 1140 933 1184">a. Project Manager</td><td data-bbox="933 1140 1433 1184">5 years</td></tr> <tr> <td data-bbox="475 1191 933 1236">b. Project Engineer</td><td data-bbox="933 1191 1433 1236">5 years</td></tr> <tr> <td data-bbox="475 1265 933 1310">c. Materials Engineer</td><td data-bbox="933 1265 1433 1310">5 years</td></tr> <tr> <td data-bbox="475 1317 933 1361">d. Electrical Engineer</td><td data-bbox="933 1317 1433 1361">5 years</td></tr> <tr> <td data-bbox="475 1391 933 1435">e. Mechanical Engineer</td><td data-bbox="933 1391 1433 1435">5 years</td></tr> <tr> <td data-bbox="475 1442 933 1487">f. Sanitary Engineer</td><td data-bbox="933 1442 1433 1487">3 years</td></tr> <tr> <td data-bbox="475 1516 933 1561">g. Foreman</td><td data-bbox="933 1516 1433 1561">5 years</td></tr> <tr> <td data-bbox="475 1568 933 1612">h. Project Architect</td><td data-bbox="933 1568 1433 1612">5 years</td></tr> </table>	<u>Key Personnel</u>	Years of <u>Relevant Experience</u>	<b><u>For Design</u></b>		<i>a. Principal Architect</i>	5 years	b. Structural Engineer	5 years	c. Professional Electrical Engineer	5 years	d. Professional Mechanical Engineer	5 years	e. Sanitary Engineer	5 years	<b><u>For Construction Personnel</u></b>		a. Project Manager	5 years	b. Project Engineer	5 years	c. Materials Engineer	5 years	d. Electrical Engineer	5 years	e. Mechanical Engineer	5 years	f. Sanitary Engineer	3 years	g. Foreman	5 years	h. Project Architect	5 years
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6	The site investigation reports: Site Inspection																																
7.2	Warranty against structural defects: Fifteen (15) years.																																
10	a. Dayworks are applicable at the rate shown in the Contractor's original Bid.																																
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within <i>fourteen (14)</i> days of delivery of the Notice of Award.																																

11.2	The amount to be withheld for late submission of an updated Program of Work is still to be determined.
13	The amount of the advance payment is <i>15% of the total contract price and schedule of payment.</i>
14	Materials and equipment delivered on the site but not completely put in place shall be included for payment.
15.1	The date by which operating and maintenance manuals are required is <i>before full payment of the contract.</i>
15.2	The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required is <i>still to be determined.</i>

## ***Section VI. Specifications***

# TERMS OF REFERENCE

For the Procurement and Implementation of the  
Project, CONSTRUCTION OF FABRICATION  
LABORATORY through Design and Build Mode

Tagongtong, Goa, Camarines Sur

## 1. PROJECT INFORMATION

### 1.1 Project Description

The contract will involve the Design and Build Scheme leading to the construction of the Three (3) - Storey Fabrication Laboratory at Philippine Science High School-Bicol Region Campus (PSHS-BRC), Tagongtong, Goa, Camarines Sur.

The building, which will be 1,335 square meters including the ground floor, lower ground floor and second floor, will be built at the back of AdTech Building and Dormitory Building III.

The plans and designs shall be in accordance with the plan as conceptualized by the End-User of the building in consultation with the Management Committee of PSHS-BRC or as conceptualized by the winning bidder if the latter is found to be superior.

The Project shall have an Approved Budget for the Contract (ABC) of Twenty Nine Million Three Hundred Eighty Eight Thousand Pesos (PHP 29,388,000.00), inclusive of the cost for the Detailed Architectural and Engineering Design (DAED). Under PSHS-BRC NEP 2024, this project has an allocation of Thirty Million Php30,000,000. The cost of the Detailed Architectural and Engineering Design is not to exceed three percent (3%) of the ABC and the remaining amount will be for the Civil Works. The project shall have the following basic components:

- a. Complete Detailed Architectural and Engineering Design Plans, technical specifications, and design calculations for the construction of the Project. Such plans, designs, and technical specifications shall be subject for review and approval by the end user.
- b. The bid shall be based on the conceptual design prepared by the end users.
- c. The structural component of the building; the building's systems that include electrical, mechanical/fire protection, plumbing/sanitary and information and communication shall be rendered fully functional; the building will be with complete architectural finishes and complete roughing-in works; and exterior walls are painted and finished according to the end users' specification. The building shall be waterproof (no leaks on walls and roof).

### 1.2 Contractual Framework

The contractual arrangement to be used for the project is the Design-and-Build (DB) scheme. Under this scheme the procuring entity awards a single contract for the architectural/engineering design and construction to a single firm, partnership, corporation, joint venture or consortium.

The winning contractor shall consult and collaborate with the PSHS-BRC end users and subject for the review and approval by the same.

The obligations and liabilities of the contractor and its Architect shall be joint and solidary for purposes of the Detailed Architectural Design of the Project in accordance with Article 1723 of the Civil Code of the Philippines and other pertinent laws. The DB Scheme of procurement was recommended, endorsed, and adopted pursuant to the guidelines provided in Annex "G" – Guidelines for the Procurement and Implementation of Contracts of Design and Build Infrastructure of the revised IRR of RA 9184.

## **2. SCOPE OF CONTRACT**

### **2.1 Obligations of the Winning Bidder/Contractor**

- 1.** Render architectural and allied engineering design services including final schematic design necessary for the implementation of the project. The allied engineering design services shall include, but shall not be limited to, design for architectural, civil, structural, electrical, mechanical/fire protection, sanitary/plumbing, electronics, and security system works. All drawings shall be generated using licensed AutoCAD or related software and printed on A1 (594mm x 841mm.) High-Quality Tracing Papers.
- 2.** Complete detailed design will also be submitted by the winning bidder including but not limited to the following:
  - a.** Preparation of Detailed Design Drawings based on the approved Design Development Drawings and Design Parameters including any revisions and refinements as approved and required by PSHS-BRC Detailed Architectural Plans
  - b.** Detailed Structural Plans
  - c.** Detailed Electrical Plans
  - d.** Detailed Mechanical Plans
  - e.** Detailed Sanitary and Plumbing Plans
  - f.** Complete Technical Specifications
  - g.** Structural Computations including Soil Boring Test Results and Seismic Analysis General Notes and Technical Specifications describing type and quality of materials and equipment to be used, manner of construction and the general conditions under which the project is to be constructed
  - h.** Detailed Bill of Quantities, Cost Estimates including a summary sheet indicating the unit prices of construction materials, labor rates and equipment rentals.
  - i.** Summary of Works
- 3.** As a rule, contract implementation guidelines for procurement of infrastructure projects shall comply with Annex E and guidelines for the implementation of contracts for Design and Build infrastructure projects shall comply with Annex G of the Revised IRR of RA 9184. The following provisions shall supplement these procedures:
  - a.** No works shall commence unless the contractor has submitted the prescribed detailed drawings as requirements for the Building Permit and the PSHS-BRC has given written approval, Work execution shall be in accordance with reviewed and approved documents.
  - b.** The contractor shall be responsible for obtaining all necessary information as to risks, contingencies and other circumstances which may affect the works and shall prepare and submit all necessary documents specified by the concerned Building Officials to meet all

regulatory approvals as specified in the contract documents including the following:

- i. All necessary building permits prior to construction. All incidental fees shall be included in the cost estimate of the building.
  - ii. Prepared PERT-CPM documents of the construction phase.
  - iii. Provide all other necessary documents that shall be required end user
- c. The contractor shall submit a detailed program of works within fourteen (14) calendar days after issuance of the Notice to Proceed for approval by the procuring entity that shall include among others:
  - i. The order in which it intends to carry out the work including anticipated timing for each stage of design/detailed engineering and constructions
  - ii. Periods for review of specific outputs and any other submissions and approvals;
  - iii. Sequence of timing for inspection and tests;
  - iv. General description of the design and construction methods to be adopted
  - v. Number and names of personnel to be assigned for each stage of the work
  - vi. List of equipment required on site for each stage of the work
  - vii. Description of the quality control system to be utilized for the project
- d. Any errors, omissions, inconsistencies, inadequacies, or failures submitted by the contractor that do not comply with the requirements shall be rectified, resubmitted and reviewed at the contractor's cost. If the contractor wishes to modify the design or document which has been previously submitted, reviewed, and approved, the contractor shall notify the PSHS-BRC within a reasonable period of time and shall shoulder the cost of such changes
- e. As a rule, changes in design and construction requirements shall be limited only to those that have not been anticipated in the contract documents prior to contract signing and approval. The following guidelines shall govern approval for change or variation orders:
  - i. Change orders resulting from design errors, omissions or non-conformance with the performance specifications and parameters and the contract documents by the contractor shall be implemented by the contractor at no additional cost to PSHS-BRC
  - ii. Provided that the contractor suffers delay and/or incurs costs due to changes or errors in the PSHS-BRC performance specifications and parameters, the contractor shall be entitled to either one of the following:
    - a. Any extension of time for any such delays under Section 10 of Annex E of the Revised IRR RA 9184;
    - b. Payment for such costs as specified in the contract documents provided that the cumulative amount of the variation order does not exceed ten percent (10%) of the original project cost.

- iii. The contract documents shall include the manner and schedule of payment specifying the estimated contract amount and installments in which the contract will be paid.
  - iv. The contractor shall be entitled to advance payment subject to the provisions of Section 4 of Annex E, Revised IRR RA 9184.
  - v. The PSHS-BRC shall define the quality control procedures for the design and construction in accordance with PSHS-BRC guidelines and shall issue the proper certificates of acceptance for sections of the works or whole of the works as provided for in the contract documents.
  - vi. The contractor shall provide all necessary equipment, personnel, instruments, documents, and others to carry out specified tests.
  - vii. This design and build project shall have a minimum Defects Liability period of one year after contract completion or as provided for in the contract documents. This is without prejudice to the liabilities imposed upon the engineer/architect who drew up plans and specifications for building sanctioned under Section 1723 of the New Civil Code of the Philippines.
  - viii. The contractor shall be held liable for design and structural defects and/or failure of the completed project within the warranty period of 15 years for permanent structures/buildings as specified in Section 62.2.3.2 of the Revised IRR of RA 9184.
4. The winning bidder shall conduct and submit engineering surveys at the vicinity of the construction site which include, but not necessarily limited to topographic, geotechnical and geological investigation. Surveys and reports shall include boundaries, elevations, and contours at 0.5m interval, soil tests, location, dimension, floor elevations and other pertinent data on existing buildings and improvements (roads, parking areas, mature trees) and existing utility lines at the the vicinity of the proposed project.
  5. The construction and design of the Fabrication Laboratory must comply with the minimum specifications and standards set forth by the National Building Code of the Philippines (PD 1096- R.A. 6541 Revision); Accessibility Law (BP 344), National Structural Code of the Philippines, Civil Engineering Law (R.A. 544), Electrical Engineering Law (RA 7920), Mechanical Engineering Law (RA 5336), Plumbing Code (RA 1378, 1993-1994 Revisions), Fire Code (RA 9514); Philippine Green Building Code (PD1096);and other related safety, health, labor and sanitary laws.
  6. The winning bidder shall certify that he has, at his own expense, inspected and examined the proposed project site, its surroundings and existing infrastructure and facilities related to the execution of the work and has obtained all the pieces of information that are considered necessary for the proper execution of the work covered under these Terms of Reference.
  7. The winning bidder shall ensure that all works at the stages of design, construction, restoration of affected areas, and testing and commissioning shall be carried out efficiently and effectively.

8. The winning bidder shall provide the school with complete reports such as technical analysis, maps and details regarding the existing conditions and proposed improvements within the site.
9. The winning bidder shall consider the academic calendar and critical dates and occasions within the School, in order to align his work schedule with the academic calendar of the school to avoid unnecessary disruption of school activities due to construction activities such as closure of water.
10. The winning bidder shall comply with the following relevant items of work as specified below:

**a. Concrete Works**

**i. Formworks**

The formwork shall be designed for the loads, lateral pressure and allowable stresses outlined in the "RECOMMENDED FORMWORK" (ACI 347). All formworks shall be made of phenolic board and supported by steel acro-post or equivalent.

**ii. Concrete reinforcing- reinforcing steel bars**

All reinforcements shall be weldable deformed bars, new and free from rust, oil, defect, grease, or kinks. They shall conform to the ASTM A615 "SPECIFICATION FOR BILLET STEEL FOR CONCRETE REINFORCEMENT" as manufactured by "Pag-Asa Steel Works, Inc.", "Capitol Steel", and "Steel Asia" or approved equal. Strength of Reinforcing bars shall conform and have a minimum grade of PNS Grade 40.

**iii. Tie wires**

Tie wires shall be Ga. #16 G.I

**iv. Cast-in-place Concrete**

All concrete columns, beams and slabs shall be 3000 psi. This specification shall cover ready-mixed concrete manufactured and delivered to a purchaser in a freshly mixed and unhardened state.

**v. Concrete works**

Concrete works including but not limited to walls, corners, beams, posts, headers, shall be square, plumb and leveled and aligned.

**b. Masonry Works**

**i. CHB**

Concrete hollow blocks shall be manufactured based on standards, machine-vibrated, fine and even texture, and well defined edges. Concrete hollow blocks to be used shall conform to the requirements of ASTM Specification C-90 and PNS 16.

**ii. Steel reinforcement for CHB blocks**

10 mmØ RSB shall be used for CHB 4" thick and 5" thick. All reinforcements shall be weldable deformed bars free from rust, oil, defect, grease, or kinks.

**iii. Tie Wires**

Tie wires shall be Ga. #16 G.I

**c. Plastering works**

The required sand for plastering works shall be washed/Albay sand or vibro sand passing through sieve number 1/8 inch or less.

**d. Plumbing Works**

All plumbing materials shall conform to the Sanitary and Plumbing Code of the Philippines.

**e. Doors**

Aluminum frames of glass doors shall be powder-coated.  
Door finish and color shall be approved first before application.

The following shall be the specifications to be used for the different door types:

**i. Main Entrance**

The main door shall be double door composed of the following:

- First Door - Wooden double swing door that will form as part of the facade when opened.
- Second Door - Shall be automatic magnetic sliding door, 12mm thick tempered glass, with RFID Door lock system.

**ii. Alternate Entrance**

The alternate entrance (may be accessed from the existing AdTech Bldg) shall be a single leaf swing door, 1mx2.10m dimensions and a polyurethane finish.

**iii. Emergency/Fire Exits**

Fire exit doors shall be compliant with the Fire Code of the Philippines; have a panic device with measurements 90cm x 210cm and steel sheet gauge 15mm.

**iv. Offices/Laboratories**

Solid wood door with viewing glass for offices, first class and of good quality with at least a dimension of 1 x 2.1m complete with wall mounted door stopper.

**v. Restrooms**

Solid wood Doors for Restrooms, first class and of good quality with at least a dimension of 0.8 x 2.1m complete with wall mounted door stopper and finished.

**f. Locksets**

All hardware accessories such as locksets, doorknobs and the like should have the approval of the end user before installation.

**i. Main Entrance -**

i.1st door - Heavy duty with double lock set

ii.2nd door - Heavy duty with double lock set and Smart lock system

ii.Alternate Entrance- Heavy duty double with double lock set and Smart lock system

iii. Office/laboratory doors - Round type lock set

iv.Restrooms - Round type lock set

**g. Windows**

Window sills shall be slightly sloped outwards to prevent damage to windows and paint due to water seepage. Section details shall be required to show this slope.

The following shall be the specifications for windows at each level:

**i.Lower Ground Floor**

External windows for the lower ground floor of the building shall be 12mm thick tempered clear glass mounted at a height of 1.6m. Should be aluminum framed, complete with accessories. Steel grills should be installed inside the glass windows.

**ii. Upper Ground Floor**

External windows for the upper ground floor of the building shall be 12mm thick tempered clear glass mounted at a height of 0.9m. Should be aluminum framed, complete with accessories.

**iii. Second Floor**

External windows for the upper ground floor of the building shall be 12mm thick tempered clear glass mounted at a height of 0.9m. Should be aluminum framed, complete with accessories.

**iv. Restrooms**

External windows for the restrooms of the building shall be 12mm thick tempered smoked glass mounted at a height of 1.6m. Should be aluminum framed, complete with accessories.

**h. Stairs**

**i. Upper Ground Floor to Second Floor**

Shall be made of concrete and shall have a minimum dimension of 1.8 meters. Shall also be provided with non skid tile steps and nosing. Railings should be polished stainless steel.

**ii. Lower Ground to Upper Ground Floor**

Shall be made of concrete shall have a minimum dimension of 1.8 meters. Shall also be provided with non skid tile steps and nosing.

Railings should be polished stainless steel.

**i. Floor Finish**

**a. Rubberized Flooring**

Rubberized flooring shall be installed in the following areas: Machining area, makerspace, storage area, and tool and die. This flooring shall be slip-resistant, non-staining, non-permeable, and moisture and fire proof and abrasion resistant. Thickness should not be less than ½ inch.

**b. Ceramic Tiles**

Ceramic Floor Tiles with dimensions of 600 mm x 600 mm x 10 mm thick shall be installed in Display area, Digital Fabrication area, Electronics area, and hallways. Provide glazed ceramic wall tiles and non-slip ceramic tiles for restroom floors. Brochures are to be presented for design and tile color for approval.

**c. Carpeted Floor Tiles**

Black/Gray carpeted floor Tiles with dimensions of 300 mm x 300 mm x 10 mm thick shall be installed in the Drafting Room, Design Studio, and IP Office. Submit brochure for design approval.

**d. Concrete Pavement**

The Contractor shall include a 1.0m wide concrete perimeter pavement.

**e. Equipment Layout and Placement**

Flooring, particularly in the lower ground floor should be designed according to the specifications of the heavy equipment to be housed in that particular area. The winning bidder should also provide a floor layout for the placement of the equipment such as plasma cutter, cnc machine, lathe, etc.

**j. Paint and Wall Finish**

i. Overall color scheme of the building shall be white-black/gray gradient;

ii. Complement colors shall be used to accent the following:

- i. Wood planks in selected wall areas
- ii. Fluted wall section
- iii. Bricks in selected wall areas
- iv. Movable furnitures (those included in the project)

iii. Built-ins may be painted in either white, dark gray, or wooden color depending on the wall color

iv. Door/window glass frames shall be in black

- v. To add some texture to concrete walls, brutalist approach may be employed
- vi. Overall, it shall have an industrial feel
- viii. Rest room walls shall be finished with glazed ceramic wall tiles (two-tone color) with accented wall and shall be installed from the finish floor line up to the ceiling of the Male and Female restrooms.
- ix. Layout and work on wall and floor tiles must be aligned, plumb, level, and square.
- x. Wall color, tile color and design shall be approved first before installation/application..

## **k. Ceiling**

### **i. Entrance/Hallway/Lobby Ceiling**

- a. Entrance/Hallway/Lobby Ceiling design shall be a pop false ceiling design.
- b. Materials that may be used for this design shall be the appropriate material.
- c. The vertical clearance from floor to ceiling shall be 3.3 meters.
- d. Ceiling shall be painted in white and gray gradient.

### **ii. Other parts of the building with ceiling**

- e. Ceilings shall be 6-mm fiber cement board. It shall include ceiling works to the display area, fabrication workspace, comfort rooms, drafting room, Design studio, and IP Office.
- f. The vertical clearance from floor to ceiling shall be 3.3 meters.
- g. Ceiling shall be painted in off-white finish.

## **I. Hand Washing Stations**

- a. Hand washing stations (minimum of 2) shall be wall mount single stations wash sink with the following specifications: welded 16 Gauge Type 304 Stainless Steel Construction with Satin Finish or better. Stations shall be working with connections to water supply and wastewater disposal canals.
- b. Faucet for handwashing stations should be gooseneck type or extended spray nozzle type or the like.

## **m. Partitions**

- a. All partitions using glass shall use glass with 12mm thick, tempered glass.
- b. Toilet cubicle partitions shall be 12 mm thick compact laminated board complete with stainless steel accessories.

## **n. Restroom Fixtures and Accessories**

- a. Restroom fixtures and accessories (lavatory, hand dryer, mirror frame, bidet, soap holder, tissue holder and garbage containers) shall be made of stainless steel.
- b. Urinals and water closets shall feature flush toilet faucets with bidet.
- c. Other fixtures inside the toilet shall be made with wood with paint finish.
- d. Each restroom shall have 3 water closets (female and male). Male restroom shall also have three (3) urinals.

**o. Emergency Safety Showers and Eyewash**

- a. Emergency safety showers and eyewash should have the following specifications:

Height	2250 mm
Drain Size	NPT 1 ¼ inches
Work Pressure	0.20.6 Mpa
Eye Wash Flow	≥11.4L/min
Shower Flow	≥75.7L/min

b. Shall be made of stainless steel

c. Shall be located outside the laboratories, along the hallway and shall be clear of any obstructions.

**p. Electrical Works**

- a. All electrical works shall conform to the Electrical Code of the Philippines in terms of number of outlets, loads, and lights.
- b. Three-way electrical light switches shall be provided at the foot and the top of the stairs per floor. Likewise at both ends of a long corridor.

**q. Lighting Fixtures**

- a. All lighting fixtures shall be LED type.
- b. Individual lights for workshop areas should be at a minimum of 2,000 lumen/m<sup>2</sup>
- c. Lighting fixtures shall be ceiling mounted.

**r. Railings**

- a. Railings shall be a combination of concrete and stainless railing with a minimum height of 1m.
- b. Polished stainless steel railings shall be used for stairs.

**s. Ramp**

- a. Suitable for machine transport (with a minimum approximate weight of 1000kg).
- b. Shall be used as access ramp for persons with disabilities

**t. Fire Detection, Alarm, and Suppression System**

- a. Functional fire detection, alarm, and suppression systems and other items such as fire extinguishers, fire alarm system smoke detectors, emergency lights, and other items necessary should conform to the specifications and quantity per floor specified in the National Building Code and Fire Code of the Philippines.

**w. Air Conditioning System**

- a. Air-conditioning systems for closed rooms requiring removal of heat and humidity should be computed in accordance with the BTU required for each square foot of living space.
- b. A drainage line shall be provided for proposed locations of split-type air conditioners. In cases where air conditioners are located in the interior part of the building they shall be placed adjacent to areas with drainage lines, e.g. toilets, downspouts, balconies.

**x. Ventilation System**

- a. Mechanical ventilation systems should be provided in accordance with ASHRAE 62.1 computation.

**y. Building Signage**

- a. Building signage shall bear the appropriate building number (based on the building numbering of PSHS-BRC) and the name of the building.
- b. The signage will be made up of stainless steel.
- c. It will be a stand alone concrete structure at the front of the building finished with metal cladding and light fixtures. The size should be not less than 6 x 10 ft.

**z. Roofing**

- a. Roof gutters shall be stainless or concrete and shall be designed in a way that should there be a case of clogged downspout, the overflow of water will be directed outside of the building and not towards the eaves or interior ceiling to prevent any damage.
- b. Gutter guards shall be installed to prevent leaves and debris from entering the gutters. Provide details.

**aa. Drainage and Sewage**

- a. Water from downspouts and catch basins shall be directed to the existing drainage of the school. Sewage and waste discharge shall be directed to the existing sewage treatment line.

**ab. Landscaping**

- a. The front lawn of the building should be landscaped with the combination of plants, pebbles/boulders/rocks, lights and a water feature. Landscaping should feature a combination of a rock and metal garden.

**2.2 OBLIGATIONS OF PSHS-BRC**

The following are the obligations of PSHS-BRC:

1. Prepare the design brief for the project in accordance with PSHS Systems' policies, existing codes, traditions, standards, and the conditions and design criteria enumerated in the Terms of Reference. Provide full information on all requirements for the Project;
2. Approve the Winning Bidder or Contractor's design without diminishing their full and sole responsibility for the quality and integrity thereof;
3. Coordinate with design-and-build contractor with regards to the design and implementation of the project.
4. Give prompt written notice thereof to Winning Bidder or Contractor, if it observes or becomes aware of any defect in the Project;
5. Assign, when necessary, representatives authorized to act on its behalf. It shall examine documents submitted by the Winning Bidder or Contractor and render decisions pertaining thereto promptly, to avoid unreasonable

- delay in the progress of their work. It shall observe the procedure of issuing orders to the Winning Bidder or Contractor;
6. Assist in the coordination of the design-and-build contractor with various utility agencies during the detailed design and implementation phases of the project.
  7. Conduct regular coordination meetings between the design-and- build contractor and the end-user to facilitate the implementation of the project.
  8. Supervise and monitor the implementation of the project

## **2.3 BIDDING DOCUMENTS**

The Bidding Documents for the Project shall govern the conduct of the procurement of the Project.

## **3.0 SCOPE OF WORKS AND PROJECT IMPLEMENTATION**

### **3.1 Design Phase**

The Philippine Science High School - Bicol Region Campus, through the PSHS System Design and Build Committee for Design and Build Scheme, shall provide the design brief description of the project in accordance with RA 9184 Annex G Sec. 11.

In compliance with the design and build Terms of Reference, the DESIGN AND BUILD CONTRACTOR shall submit a detailed program of work within fourteen (14) calendar days after the issuance of the Notice to Proceed for approval by the procuring entity that shall include, among others:

1. The order in which it intends to carry out the work including anticipated timing for each stage of design/detailed engineering and construction;
2. Periods for review of specific outputs and any other submissions and approvals;
3. Sequence of timing for inspections and tests as specified in the contract documents;
4. General description of the design and construction methods to be adopted;
5. Number and names of personnel to be assigned for each stage of the work;
6. List of equipment required on site for each major stage of the work;
7. Description of the quality control system to be utilized for the project
8. Provide a geotechnical/soil investigation report which will serve as basis for the actual sizing of the column and foundation of the building.
9. Prepare from the approved schematic design documents, the complete construction drawings and detailed technical specifications, cost estimates and the bill of quantities, setting forth in detail the work required for the architectural, structural, civil, landscape architecture, electrical, plumbing/sanitary, mechanical and other service- connected equipment, utilities, site planning aspects and related works, electronic and communications and the site development plan of the PROJECT's immediate environs.
10. Prepare layouts, specifications and estimates of all furniture and equipment required for the fit-out of the buildings, specifically items that are owner-furnished materials.
11. Prepare the scope of work for construction based on the prepared bill of quantities and cost estimates while fitting within the approved budget.

12. Provide value engineering analysis on all prepared construction documents.
13. Coordinate with all offices and agencies concerned, within and outside the Campus regarding utility connections, permits and other requirements needed.
14. Periodically coordinate and present the status of the design phase to the Head of Procuring Entity and the PSHS Design & Build Committee.

All drawings included in the contract documents should be drawn using CAD software and plotted on 20" x 30" sheets. All other textual submittals shall be printed and ring-bound on A4- sized sheets.

Where required, design components shall be designed in coordination with the agencies concerned (e.g., coordinate with electric company for power lines and concerned company/agency for water and sewage lines).

Partial and earlier submission of the construction drawings, such as those affecting the preliminary stages of construction (site works, foundation works, etc.) shall be allowed. The DESIGN & BUILD CONTRACTOR may only proceed with the CONSTRUCTION PHASE after the approval of the HOPE of the drawings, designs and bill of estimates as recommended by the Technical Working Group (TWG) and upon accomplishing all necessary PRE-CONSTRUCTION tasks.

### **3.1.1 Building Space Design Requirements**

The proposed Fabrication Laboratory shall be a three-storey building adjacent to Dormitory Building III facing the Motorpool and the Gymnasium. The building shall have a Lower Ground floor, Ground Floor and Second Floor . The building shall be constructed in consideration of the natural ground contour and elevations.

The building shall have the following descriptions, requirements and specifications:

#### **a. Lower Ground Floor**

**Description of Rooms/Spaces.** This floor shall house the large and heavy equipment. In the design, transport, placement, specific use and specific requirements should be considered. The layout of the ground floor prioritizes traffic flow and maintains continuity. Whiteboard with glass cover should be installed in all rooms except storage rooms, warehouse, restrooms, painting/finishing room, and intellectual property office.

The following are the descriptions that must be considered in the design of spaces/facilities for the Lower Ground Floor:

1. **Warehouse:** the warehouse shall contain the raw materials and supplies needed for fabrication projects. There should be steel shelves and storage fixtures that could store metals, wood planks, ply boards, metals sheets and the like.
2. **Workspace:** workspace is an open area dedicated for assembly and manufacture of various maker projects. This is where parts produced from the machining area, digital fabrication area and

tool-and-die area are put together to make projects come alive. Movable workbenches will occupy this area. Ceiling type industrial lights should be provided in this area with the required illumination as previously mentioned in section 2.1 (q). Proper ventilation system should be provided in consideration with the requirement mentioned in section 2.1 (x).

The fabrication workspace should remain open without walls or partitions to encourage collaboration and shared resource utilization. The designer/contractor should prioritize ample open spaces and allocate a significant amount of space to this area.

3. **Machining Area:** the machining area shall provide space for prototyping and production of metal projects. This room should be enclosed and equipped with necessary equipment for suctioning metal dusts.
4. **Tools Storage Area:** the tool storage area shall provide space for organizing and storage of various tools and equipment. This area shall employ storage solutions such as organizers, peg boards, pullout drawers, etc. This is an enclosed area with lock and key.
5. **Digital Fabrication:** this air-conditioned digital fabrication area provides space for digital project design and manufacturing. Provisions for centralized vacuum equipment shall be installed in this area. The room is also equipped with computers for CAD and CAM machines for production. Located in this are the following spaces:
  - a. **Laser Cutting and Engraving Area:** this area allows for the production of parts and projects that require cutting precision and digitally engraved designs. Fixtures and equipment that will be located in this area are laser cutting machines, two computer sets, four input power outlets, internet drops one special dedicated circuit/outlet earth ground for each laser machine, rolling work tables, ceiling drop for power and internet, shelves and tools
  - b. **Subtractive Manufacturing Area:** there must be a provision for CNC machines for wood and metal for this area, two computer sets, one special dedicated circuit/outlet, earth ground (dust collector 9 single phase, 220-240V) for each wood and metal CNC, four input power outlets, internet drops, A-frame on wheels for large material storage and transportation, rolling work table, and open shelving for tools.
6. **Tool and Die/Molding and Casting Area:** this is a space for specialized equipment used in manufacturing processes to create, shape, or modify parts and components for various industries. The area shall provide spacious room for metal forming and reproduction activities. There must be a provision for fume hood, air exhaust, large sink with hot and cold water, heavy duty tables, stools.
7. **Finishing/Painting Area:** an enclosed area where the last steps of manufacturing, processing or assembling operations are performed. Ongoing and finished projects will be painted and provided with finishing touches in this area. This area should be properly ventilated and shall have access from outside of the building. Wall and floor finish of this area should be easy to clean with a rug and a paint remover.
8. **Male/Female/PWD Restroom :** See Section 3.1.1.d of this TOR.
9. **CCTV/PagingSystem/WIFI Ports:** All floors of the building shall have provisions for a ceiling type paging system, CCTV equipment and WIFI ports.

**Lower Ground Floor Space Requirements.** The table below shows the space requirements for the spaces/rooms at the Lower Ground Floor:

Rooms	Qty.	Space Rqts (in square meters)	Total
<b>LOWER GROUND FLOOR</b>			
Warehouse (materials and supplies)	1	100	100
Workspace	1	126	126
Machining Area	1	80	80
Storage Area	1	50	50
Digital Fabrication			
Subtractive Manufacturing Area	1	70	70
Laser Cutting and Engraving Area	1	60	60
Tool and Die/Molding and Casting Area	1	15	15
Finishing/Painting Area)	1	50	50
Male/Female/PWD Restroom	2	12	24
CCTV/Paging System/WIFI Port			

#### **b. Ground Floor**

On the ground floor is the main entrance of the building. The makerspace, display area, electronics and robotics lab are also in this building level. The layout of the ground floor should prioritize traffic flow and maintain continuity. The entrance area of the building serves as a creative display space for students' innovative outputs, with a minimum area of (5.0m x 8.0m).The following are the requirements and descriptions of the facilities in this floor level:

- 1. Facade:** The façade of the building should reflect a modern and futuristic, aesthetic design. Combination of veneer, stainless steel, ceramic materials should be considered.
- 2. Raised Platform:** The raised platform offers a stage-like area to be used for presentations, talks and teaching sessions whenever necessary. Provisions of presentation devices such as projector or an LED tv shall be considered in designing/building this area.
- 3. Display Area:** the display area provides space for showcasing completed projects.This area shall be built by employing appropriate modern lighting techniques to highlight each project.
- 4. Makerspace:** the Makerspace provides a space where students with shared interests, often in fields such as technology, engineering and crafts, gather to create, invent, innovate and learn. It provides access to tools, equipment and resources that may not be readily available to individuals, such as printers (laser, 3D, sublimation, etc.) laser cutters, woodworking tools, electronic components, and more. This area shall foster creativity, collaboration, and hands-on learning, allowing individuals to bring their ideas to life and engage in DIY (do-it-yourself) projects.

This space has a mobile feature, which can be converted into different small rooms when necessary. All fixtures in this area are movable. Each table should have a dedicated light source. Similarly, when used for lecture purposes shall have a necessary light source, as needed. Wall and

floor power outlets should be installed across the whole area to provide electrical access to equipment used by students.

This area should be provided with an air conditioning system.

**5. Additive Manufacturing Area:** This air-conditioned additive manufacturing area provides space design and production of 3D Objects. It will be equipped with 3D printers and 3D scanners, one (1) computer set with voltage regulators, four (4) input power outlets, internet drops, heavy duty tables , hardcore tables, high stools, shelves, LED wall TV

**6. Electronics Laboratory:** the electronics laboratory is dedicated for electronics and engineering design/prototyping/fabrication activities. This will include an electronics workshop, electrical laboratory, circuitry zone, electronic fabrication area, electronic testing area, with a collapsible partition that separates the Electronics lab from the Robotics laboratory.. Electrical outlets must be distributed across the floor and can be covered flush when not in use, there should be electrical outlets provision for 10 electronic workstations/workbenches distributed along the side walls of the laboratory. An area will be dedicated for equipment and electronic components storage and office area and is separated from the main laboratory with a concrete wall. This wall should have a large glass window with a counter to facilitate easy dispensing of electronic equipment and components. Air-conditioning rough ins in both the main lab and the storage/office area, should be incorporated during construction. Fume hoods should also be provided for each workstation.

This is an air-conditioned room.

**7. Robotics Laboratory:** the robotics laboratory provides spaces for design, prototyping, creation and building of robots. Provision of spaces for robot playground, shelves for robotic kits, voltage regulators, wall power outlets, internet drops, display shelves shall be considered in the design of this laboratory. This air-conditioned area is separated from the electronics lab by a collapsible partition.

**8. Supply/Storage :** the supply and storage provides safekeeping and organizer spaces for electronic and robotics components and equipment.

**9. Male/Female/PWD Restroom :** See Section 3.1.1.d of this TOR.

**10. CCTV/Paging System/WIFI Ports/Info Boards:** All floors of the building shall have provisions for a ceiling type paging system, CCTV equipment and WIFI ports. Provision for the info board shall be located on this floor at the main lobby/entrance.

**Ground Floor Space Requirements.** The table below shows the space requirements for the spaces/rooms at the Ground Floor.

Rooms	Qty.	Space meters)	Rqts(in square	Total
<b>GROUND FLOOR</b>				
Facade	1	60	60	60
Raised Platform				
Display Area	1	126	126	126
Maker Space				
Additive Manufacturing Area				
Electronics Area	1	150	150	150
Robotics Laboratory				
Supply/Storage	1	20	20	20
Male/Female/PWD Restroom	2	12	24	24
CCTV/Paging System/WIFI Port/Info Board				

### c. Second floor

The second floor of the building shall house the following:

1. **Design Studio:** the design studio shall be an enclosed space that will house computer tables and sets to be used for creative, individual, and collaborative design. This is an airconditioned room.
2. **Collaboration and Social Spaces:** these areas shall provide users with an environment that fosters cooperation, collaboration, teamwork and social interaction. This shall be designed as a Japanese garden with seating tables for at least 50 persons at one time. This space should be air conditioned and conducive for its purpose. This shall be used as:
  - a. **Group work areas:** Space for collaborative projects, discussions and brainstorming. Provide comfortable seating (bean bags, sofa set, throw pillows, ergonomic chairs, etc) whiteboards and project display areas to encourage collaboration and sharing of ideas.
  - b. **Rest/Break Area :** This space shall also be used for coffee/tea breaks, and relaxation.
3. **Drafting Room:** the area where design concepts are developed by drawing plans and sketches. Personal computers or tablets equipped with CAD softwares shall be considered in locating drawing tables. These tables shall have provisions for electrical outlets. This is an air-conditioned area.
4. **Faculty/In-Charge Office:** This air-conditioned faculty/in-charge office shall house a maximum of 10 faculty members. Provisions for receiving area and working areas for each occupant shall be taken into consideration.

Pantry: The faculty office shall have a pantry with provisions for air conditioning system, fume hood, electrical outlets. The pantry shall have a stainless sink with granite countertop and a central island also with granite top.

Restrooms: The faculty office shall have its own male and female restrooms. The male restroom shall include at least one urinal, a shower area and an enclosed stall with toilet bowl, bidet and faucet . It shall also include a common wash area with lavatory and mirror. The design shall ensure privacy and hygiene to male users. The female restroom shall include a shower area, two enclosed stalls each with toilet bowl, bidet and faucet . It shall also include a common wash area with lavatory and mirror. The design shall ensure privacy and hygiene to male users. Male and female restroom shower areas shall have provision of towel holder, cloth holder and heavy duty soap holder.
5. **Intellectual Property Office:** The IPO office shall be provided with two office tables with chairs, at least two filing steel cabinets, a receiving area with furniture. This is an airconditioned room.

6. **Rest Room : Male/Female/PWD Restroom** : See Section 3.1.1.d of this TOR.

7. **CCTV/Paging System/WIFI**: Provisions to CCTV/Paging/ WIFI/ INFOboard wirings and fixtures shall be considered.

**Second Floor Space Requirements.** The table below shows the space requirements for the spaces/rooms at the Second Floor.

Rooms	Qty.	Space Rqts(in square meters)	Total
<b>SECOND FLOOR</b>			
Design Studio	1	100	100
Collaboration and Social Space	1	40	40
Drafting Room	1	96	96
Faculty In-charge Office w Receiving Area, Pantry & Male/Female Restroom	1	100	100
Intellectual Property Office	1	20	20
Male/Female Restroom	2	12	24
CCTV/Paging System/WIFI Port			

d. **Male/Female/PWD Restroom** : The restroom shall be well-ventilated to ensure air quality and comfort. Adequate lighting is provided throughout the restroom. Non-slip flooring is used for safety. It shall have three separate rooms for male, female and persons with disabilities.

1. Male Restroom- It shall include at least three urinals separated by partitions and three enclosed stalls each with toilet bowl, bidet, and faucet for water supply. It shall also include a common wash area with at least two lavatories, a horizontal mirror comparative to the area occupied by the lavatories, and a faucet for water supply. The design shall ensure privacy and hygiene to male users.
2. Female Restroom - It shall include at least five enclosed stalls with toilet bowl, bidet and faucet for water supply. It shall also have a common wash area/powder area that have at least three lavatories, a horizontal mirror comparable to the area occupied by the lavatories, and a faucet for water supply. The design shall ensure privacy and hygiene to female users.
3. PWD Restroom -The PWD compartment is designed to be accessible to individuals with disabilities. It shall have at least three enclosed stalls with toilet bowl, bidet, grab bars, and faucet for water supply. It should be spacious and shall have accessibility features such as wider doors, lower sinks and counters. Each stall shall provide a wheelchair-accessible toilet stall, a sink, and a mirror at an appropriate height for wheelchair users. It may also include an emergency call button and sufficient space to accommodate mobility aids such as wheelchairs or scooters.

The table below summarizes the space requirements, in square meters, for rooms/facilities in the building.

Rooms	Qty.	Space Rqts(sqm)	Total
<b>LOWER GROUND FLOOR</b>			
Warehouse (materials and supplies)	1	100	100
Fabrication workspace	1	126	126
Machining Area	1	80	80
Storage Area	1	50	50
Digital Fabrication			
Subtractive Manufacturing Area	1	70	70
Laser Cutting and Engraving Area	1	60	60
Tool and Die/Molding and Casting Area	1	15	15
Finishing/Painting Area)	1	50	50
Male/Female/PWD Comfort Room (L-R)	2	12	24
CCTV/PAGING/WIFI/INFOBOARD			
<b>GROUND FLOOR</b>			
Facade	1	60	60
Raise Platform			
Display Area	1	126	126
Maker Space			
Additive Manufacturing Area			
Electronics Area	1	150	150
Robotics Laboratory			
Supply/Storage	1	20	20
Male/Female/PWD Comfort Room	2	12	24
CCTV/PAGING/WIFI/INFOBOARD			
<b>II. SECOND FLOOR</b>			
Design Studio	1	100	100
Collaboration and Social Space	1	40	40
Drafting Room	1	96	96
Faculty In-charge Office	1	80	80
Intellectual Property Office	1	40	40
Male/Female/PWD Comfort Room	2	12	24
CCTV/PAGING/WIFI/INFOBOARD			
	<b>TOTAL</b>		<b>1,335</b>

### 3.1.2 Preliminary Design

The approved concept design shall adopt the following design considerations:

TOOLS AND EQUIPMENT			Capacity/Wattage
Table Saw	5		1800W
Band Saw	3	9x28x77in	900W
Planer	3	23x28x44 in	1800W
Jointer	3		1800W
Drill Press	3	13.5x 36.6 x 16.8 in	750W
Slot Mortiser	2	13.5 x 22 x 29 in	2640W
Router Table	2	22.8x 18 x 14.5in	2640W
Disc Sander	5	22 x 11 x 12.5in	370W
Wet Grinder	1	10x19x12.5 in	180W
Radial Arm Saw	2	2x23x18.5in	1850W
Lathe	2	57x31x28 in	1150W
Scroll Saw	5	29.5x19.5 x 12.1in	50W
Wet and Dry Vacuum	4	18x22x17.5in	1100W
Milling Machine	1	37.5x30x45.5in	
Dust Collector System	1		3600W
Spray Booth	1	13.3x10.9x18.3in	
Hot Wire Foam Cutters	2	17.3x4.5x13.2in	18W
Heat Sealing Equipment	1		
Sheet Metal Brake/Slip Roller	1	39x26x16in	N/A
Digital Oscilloscope 2 Channels	4		50W
Variable DC Power Supply 120V 3A	15		360W
DC Bench Power Supply	4		150W
Inkjet- Versacamm Sp-540i	1	54 in	1320W
Plotter	2	38.9x20.9x11.2in	100W
Sewing Machine	10		110W
3D Printer	10	11.8x11.8x11.8in	450w
Mark Two	1	12.6x5.2x6.0 in	150W
Metal X	1	12.6x5.2x6.0 in	2880W
Tormach 770M	1	14x7x13.25in	1100W

Shopbot Desktop	1	24x18x3.5in	3600W
Prs Standard CNC	1	96x48x6in	3600W
Inkjet Printer/ Versacamm Vs-640i	1		1320W
Vinyl Cutting Machine	2	24 in	408W
Vinyl Cutting Plotter	1	52x196.85 in	100W
508FS Machine	1	19x17 in	3200W

### **1. Layout and Zoning:**

- a.** Open floor plan: Allows for easy reconfiguration of the space as needed and promotes collaboration among users. It also provides a clear line of sight, enabling efficient supervision and monitoring of activities within the lab.
- b.** Zoning: Create distinct areas for different fabrication processes, such as 3D printing, laser cutting, plasma cutting machine, CNC router, electronics, metalworking, and assembly.
- c.** Flow and accessibility: Ensure a logical flow of movement within the lab, considering safety and efficiency. Provide clear pathways and minimize obstructions.

### **2. Workstations and Equipment Placement:**

- a.** Workbenches: sturdy with adequate workspace and storage for tools, materials, and ongoing projects. Provide ample workbench space with sufficient storage for tools, materials, and ongoing projects. Consider adjustable-height workbenches to accommodate various user preferences and accessibility requirements.
- b.** Tool storage: storage cabinets, drawers, and shelves for organizing and storing hand tools, power tools, and equipment. Include designated storage areas for tools, keeping them organized and easily accessible.
- c.** Fabrication equipment: Enough space for 3D printers, laser cutters, CNC machines, soldering stations, and other equipment. There are fabrication equipment that shall need a specific waste collection system and this should be considered in the design of the work station.
- d.** Equipment placement: Placement of equipment must allow for efficient workflows and to minimize safety risks and conflicts between processes.

The following are the power tools and equipment to be procured by the school in the future. The contractor should provide ample outlets to carry out the load capacity required by each component to avoid power interruption or technical glitches.

### **3. Utilities and Infrastructure:**

- a.** Power supply: Ensure sufficient electrical capacity to support the operation of machinery and equipment. Consider separate circuits for different power requirements (3 phase connection should be considered).
- b.** Water Supply: Ensure adequate water to support the hot and cold water requirements for the building including the Fire Protection System and all the equipment that need water for its safety.

- c. Ventilation: Incorporate proper ventilation systems, including exhaust fans, fume hoods, and air filtration, to remove fumes and maintain air quality.
- d. Lighting: Install adequate lighting throughout the laboratory including task lighting at workstations and general ambient lighting.
- e. Fire Detection, Alarm, and Suppression System: Provide audible and visual signals as a result of the operation of manual or automatic fire alarm initiating devices such as a Manual Fire Alarm station, smoke detector or heat detector or from other protective equipment such as a fire sprinkler system.
- f. Lightning Protection System: Provide proper grounding for lightning protection to prevent or lessen lightning strike damage to the building especially the sensitive equipment to be installed in the laboratory.
- g. Data and connectivity: Provide robust internet connectivity and data infrastructure to support digital fabrication, research, and collaboration.

#### **4. Safety and Accessibility:**

- a. Safety measures: Implement safety protocols, signage, and safety equipment like fire extinguishers, first aid kits, safety showers, and eyewash stations.
- b. Emergency exits: Ensure clear and accessible emergency exits with proper signage and lighting.
- c. Accessibility: Design the lab to be inclusive, considering accessibility features such as ramps, wide aisles, and adjustable-height workstations.

#### **5. Collaboration and Social Spaces:**

- a. Group work areas: Allocate spaces within the Makerspace for collaborative projects, discussions, and brainstorming. Provide comfortable seating, whiteboards, and project display areas to encourage collaboration and idea sharing.
- b. Rest/Break area: Provide a designated space for breaks, relaxation, and social interaction, equipped with seating, tables, and amenities like a pantry.
- c. Project display: Designate areas to showcase completed projects, inspiring others and fostering a sense of accomplishment and community.

#### **6. Storage and Organization:**

- a. Material storage: Allocate space for storing raw materials, consumables, and project components in an organized manner.
- b. Project storage: Provide storage solutions for ongoing projects, ensuring they are secure and easily accessible.
- c. Tool and equipment storage: Designate specific areas or cabinets for storing tools, equipment, and accessories when not in use.

#### **7. Flexibility and Future Expansion:**

- a. Modular design: Opt for a modular layout that allows for reconfiguration and adaptation as fabrication needs evolve.
- b. Future expansion: Plan the lab layout with scalability in mind, considering potential growth and the addition of new equipment or processes.

#### **8. Makerspace Design Considerations**

Designing a Makerspace requires careful consideration of various factors to create a functional, collaborative, and inspiring environment for innovation and creativity. Here are some key elements to consider for the best design of a Makerspace:

- a. **Flexible Layout:** Open floor plan: Opt for an open layout that allows for flexibility and easy reconfiguration of the space to accommodate different projects, equipment, and group activities.

Modular furniture: Use movable workbenches, tables, and storage units to enable users to rearrange the space according to their needs and project requirements.

- b. **Storage and Organization:** Material storage: Include shelves, bins, or cabinets for storing materials, components, and consumables. Categorize and label storage areas to maintain an organized environment. Project storage: Allocate dedicated spaces for ongoing projects, providing secure storage solutions to protect work in progress.

- c. **Safety and Accessibility:**

**Safety measures:** Implement safety protocols, signage, and safety equipment like fire extinguishers, first aid kits, and emergency showers. Ensure clear pathways and designated areas for hazardous processes, materials, and waste management.

**Accessibility:** Consider accessibility features like ramps, wide aisles, and adjustable workstations to accommodate users with disabilities.

- d. **Multi-functional Areas:**

Learning and training spaces: Incorporate areas for workshops, training sessions, or classes to facilitate skill development and knowledge sharing.

Break area: Include a designated space for relaxation and socialization, equipped with seating, tables, and amenities like a pantry or vending machines.

- e. **Internet connection:** Provide structured cabling and wifi connectivity throughout the building.

- f. **Colors and aesthetics:** Choose colors, artwork, and decor that inspire creativity and foster a positive and energetic atmosphere. Color of this space shall follow the overall building color scheme, black/white/gray gradients and complimenting accents.

- g. **Sustainability:** Energy efficiency: Incorporate energy-efficient lighting, equipment, and appliances to minimize energy consumption.

- h. **Waste management:** Implement proper waste segregation and recycling systems, encouraging sustainable practices within the Makerspace.

- i. **Collaboration:** Design of this area should encourage cooperation and teamwork among its users. Thus, fixtures such as tables and chairs should be able to move freely and be configured/arranged as necessary.

**9. Sample Fabrication Laboratories:** The Fabrication Laboratory Philippine Science High School-BRC aims to have features and facilities parallel to other fabrication Laboratories in Europe and the United States of America. Example of these features and facilities are the following:





**Note:** These pictures were taken from the internet to be used by the bidders as guide in the design of the Fabrication Laboratory





**Note:** These pictures were taken from the internet to be used by the bidders as guide in the design of the Fabrication Laboratory

### 3.2 Pre-Construction Phase

During Pre-Construction Phase, the Contractor shall:

1. Secure all necessary building permits prior to construction. All incidental fees shall be included in the cost estimate of the building.
2. Preparation of the PERT-CPM of the construction phase.
3. Provide all other necessary documents that shall be required by D&B Committee

### 3.3 Construction Phase

The Construction Phase shall be comprised of the following activities:

1. Excavation of soil at the Lower Ground Floor. Portion of the Lower Ground Floor is filled with earth during the leveling of this area. To accommodate enough space, the surplus materials shall be excavated and hauled and/or disposed of.
2. Conduct of Engineering surveys: Survey includes elevations and contours at 0.50 meter interval
3. Conduct of Boring Test
4. Implementation of General Requirements:
  - a. Mobilization/Demobilization
  - b. Construction of Temporary facilities:
    - i. Field office for the engineers and storage for the construction materials. Construction workers will not be allowed to stay inside the campus.
    - ii. House rental for the construction workers. Unit measurement and payment shall be "Month"
  - c. Compilation Photographs
    - . This item consists of the supply of equipment and materials, i. e. album necessary to undertake photographic progress activities of the project and of all costs incidental to the preparation and submission of photographs (at least 12 photographs per day). The quantities for photographs shall be one (1) set of photographs per month selected and provided as "Progress Photographs". Unit measurement and payment shall be "Month".
  - d. Health and Safety Program including Personal Protective Equipment (PPE) Compliance
  - e. Environmental compliance
  - f. Installation Billboard (COA) and signages
  - g. Implementation of all works indicated in the approved construction drawings and documents. All revisions and deviations from the approved plans, especially if it shall impact the overall cost of the project, shall be subject for approval.
  - h. Provision of soil filling, grading and other soil protection measures of the building and other elements of the site, in response to the results of soil and materials testing.
  - i. Construction of the building and other necessary structures, complete with utilities and finishes, resulting in operable and usable structures.
  - j. Provision of protection or relocation of existing trees indigenous to the area, and proper removal and replacement of all introduced trees and vegetation affected by the construction.
  - k. Layout of piping, conduits, manholes, boxes and other lines for utilities including tapping to existing utility lines. Installation of all utilities (power, water, sewer, structured cabling and telephone) with the existing PSHS-BRC network. All application fees shall be included in the project cost.

- l.** Coordination with the D&B Committee regarding scheduling of delivery and installation of all owner-furnished materials and equipment during construction.
- m.** Conduct of all necessary tests (to be required by D&B Committee) and issuance reports of results.
- n.** Rectification of punch-listing works to be inspected and issued by the D&B Committee and/or the End-user.
- o.** Provision all other necessary documents that shall be required by the D&B Committee.

#### **4.0 GENERAL CODE AND STANDARDS**

The design and specifications shall conform to, but shall not be limited to the following standards set by the:

1. National Building Code of the Philippines (NBCP), latest edition
2. National Structural Code of the Philippines (NSCP), latest edition
3. Fire Code of the Philippines (PD 1185)
4. Uniform Building Code (v) Accessibility Law (BP 344)
5. Philippine Electrical Code (RA 184)
6. Philippine Mechanical Code
7. Revised National Plumbing Code of the Philippines (RA 1378)
8. Code on Sanitation of the Philippines (PD 856)
9. Ecological Solid Waste Management Act (RA 9003)
10. Applicable Local Regulations and Ordinances

With respect to the actual construction, applicable rules and regulations prescribed by the following agencies and/or embodied in the following shall be observed:

1. Department of Public Works and Highways
2. Department of Health
3. National Pollution Control Commission
4. Department of Environment and Natural Resources
5. Bureau of Fire Protection
6. Applicable Building Laws/Ordinances

#### **5.0 APPROVED BUDGET FOR THE CONTRACT (ABC)**

The Approved Budget for the Contract (ABC) is **PhP29,388,000..** This is the ceiling for acceptable bids. Bids higher than ABC shall be automatically rejected.

#### **6.0 IMPLEMENTATION SCHEDULE**

The DESIGN & BUILD CONTRACTOR shall complete the project not exceeding Three Hundred Thirty (330)calendar days from the date of the issuance of the Notice to Proceed (NTP): Sixty (60)calendar days for the Design Phase and Two Hundred Seventy (270) calendar days for the Construction Phase.

<b>CALENDAR DAYS</b>	<b>60</b>	<b>270</b>
1. Survey, conceptual Design and Detailed Design Phase		
2. Construction Phase		

## **7.0 ELIGIBILITY CRITERIA FOR BIDDERS**

### **7.1 General**

The Eligibility Requirements for this DB Project shall adopt the provisions of Annex “G” of the Implementing Rules and Regulations of RA 9184 (e.g. Eligibility Requirement). However, a prospective bidder who has no experience in DB Project on its own may opt to enter a subcontracting agreement with a design or engineering firm for the design portion of the project.

### **7.2 Legal Requirements**

- a. Valid Contractor’s License issued by the Philippine Contractors Accreditation Board
- b. Valid license of the Contractor’s designer issued by the Professional Regulation Commission.

### **7.3 Technical Requirements**

- a. The Contractor must have built one structure similar to the project at hand with construction cost of at least 50 % of the ABC.
- b. The Contractor’s designer must have designed one structure similar to the project at hand with a construction cost of at least 50 % of the ABC.

### **7.4 Financial Requirements**

The Contractor must have a Net Financial Contracting Capacity (NFCC) at least equal to the ABC to be bid or equivalent to **P PhP29,388,000.00**.

## **8.0 CONTENTS OF THE BID**

### **8.1 IN THE FIRST ENVELOPE**

#### **Class “A” Documents**

#### Legal Documents

1. Mayor's/Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas. In cases of recently expired Mayor's/Business permits, it shall be accepted together with the official receipt as proof that the bidder has applied for renewal within the period prescribed by the concerned local government unit, provided that the renewed permit shall be submitted as a post qualification requirement in accordance with Section 34.2 of this IRR.
2. Tax clearance per E.O. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).
3. Registration certificate from SEC, Department of Trade and Industry (DTI) for sole proprietorship, or CDA for cooperatives.

#### Technical Documents

4. Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid.
5. Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of this IRR, within the relevant period as provided in the Bidding Documents in the case of Goods.
6. A valid Philippine Contractors Accreditation Board (PCAB) License or Special PCAB License in case of Joint Ventures, and registration for the type and cost of the contract to be bid.

#### Financial Documents

7. The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission.
8. The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

#### **Class "B" Document**

9. If applicable, JV bidders shall submit a JVA in accordance with R.A. 4566 and its IRR.

#### **Bid Security**

**10.** Bid Security in the prescribed form, amount, and validity period (see Section 27 of the Revised IRR of R.A. 9184).

**Project Requirements, which shall include the following:**

**11**

. Organizational Chart for the contract to be bid;

**12.** List of Contractor's Personnel (Design and Construction), (see Clause 12.2(d)(2), Section III, BDS of Bidding Documents) to be assigned to the contract to be bid, with their complete qualification and experience data;

**13.** List of Contractor's Equipment Units which are owned, leased and/or under purchase agreements, supported by certification of availability of equipment from lessor/vendor for the duration of the project (see Clause 12.2(d)(3), Section III, BDS of Bidding Documents).

**Other documents included in the 1<sup>st</sup> envelope are the following:**

**14.** Omnibus Sworn Statement by the prospective bidder or its authorized representative in the prescribed format;

**15.** Minimum Materials Testing Equipment (D.O. #11, Series of 2017);

**16.** Preliminary Conceptual Architectural Design Plans in accordance with the degree of details specified by the procuring entity:

- a. Location plan/vicinity map
- b. Perspective
- c. Floor plans
- d. Front view elevation
- e. Rear view elevation
- f. Left side view elevation
- g. Right side view elevation
- h. Longitudinal section
- i. Transverse section

**17.** Design and Construction Method

**18.** List of Design and Construction Personnel.

**For Design**

The key professionals and the respective qualifications of the design personnel shall be as follows:

- Principal Architect

The Principal Architect must be duly-licensed with at least five (5) years' experience in the design of residential, government offices or institutional facilities, and shall preferably be knowledgeable in the application of rapid construction technologies.

- Structural Engineer

The Structural Engineer must be a duly-licensed Civil Engineer with at least ten (5) years' experience in structural design and shall preferably be knowledgeable in the application of rapid construction technologies.

- Professional Electrical Engineer

The Electrical Engineer must be a registered Professional Electrical Engineer with at least five (5) years' experience in the design of lighting, power distribution, communication systems (specifically structured and local area network cabling, PABX), building management systems and preferably knowledgeable in developments in emergent efficient lighting technologies and energy management.

- Professional Mechanical Engineer

The Mechanical Engineer must be a Professional Mechanical Engineer with at least five (5) years in HVAC and fire Protection systems and preferably knowledgeable in emergent, alternative energy-efficient HVAC technologies.

- Sanitary Engineer

The Sanitary Engineer must be duly-licensed with at least five (5) years' experience in the design of building water supply and distribution, plumbing, and preferably knowledgeable in waste water management/treatment, and emergent, alternative effluent collection and treatment system.

The key professionals listed are required. The DESIGN & BUILD CONTRACTOR may, as needed and at its own expense, add additional professionals and/or support personnel for the optimal performance of all Architectural and Engineering Design Services, as stipulated in these Terms of Reference, for the PROJECT. Prospective bidders shall attach each individual's resume and PRC license of the (professional) staff.

- Master Plumber

Design personnel may also be utilized for the construction phase provided that the same meet the minimum number of years of experience in the construction of similar projects.

#### For Construction Personnel

The key professionals and the respective qualifications of the CONSTRUCTION PERSONNEL shall be as follows:

- Project Manager

The Project Manager shall be a licensed architect or engineer with at least (5) years relevant experience on similar and comparable projects in different locations. The Project Manager should have a proven record or managerial capability through the directing/managing of major civil engineering works, including projects of a similar magnitude.

- Project Engineer

The Project Engineer shall be a licensed architect or engineer with at least five (5) years' experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

- Materials Engineer (M.E. I)

The Materials Engineer must be duly accredited with the DPWH and with at least five (5) years' experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

- Electrical Engineer

The Electrical Engineer must be duly-licensed with at least five (5) years' experience in similar and comparable projects in the installation of lighting, power distribution, communication systems (specifically structured and local area network cabling, PABX), building management systems.

- Mechanical Engineer

The Mechanical Engineer must be duly-licensed with at least five (5) years' experience in similar and comparable projects in the installation of HVAC and fire protection.

- Sanitary Engineer

The Sanitary Engineer must be duly-licensed with at least three (3) years' experience in similar and comparable projects in the installation of building water supply and distribution, plumbing.

- Foreman

The Foreman must have at least five (5) years' experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

- Project Architect

The Principal Architect must be duly-licensed with at least ten (5) years' experience in the design of residential, government offices or institutional facilities, and shall preferably be knowledgeable in the application of rapid construction technologies.

#### 19. Value Engineering Analysis of design and construction.

The second envelope (Financial Proposal) shall contain all the required documents for infrastructure projects under Section 25.38 of the IRR of R.A 9184.

### **8.2 IN THE SECOND ENVELOPE – FINANCIAL PROPOSAL**

The contents of Financial Proposal shall all the required documents for infrastructure projects under Section 25.3 of the IRR of RA 9184 and the following documents:

1. Lump sum bid prices for the following in the prescribed Bid Form:
  - a) Detailed Architectural and Engineering Design;
  - b) Building Construction/Civil Works.
2. Detailed estimates including summary sheet indicating the unit prices of construction materials, labor rates and equipment rentals used in coming up with bid;
3. Cash flow by the quarter and payments schedule.

## **9.0 PROCEDURE AND CRITERIA FOR BIDS EVALUATION**

The Procedure and Criteria for Bid Evaluation shall be governed by the provision of Annex G IRR of RA 9184.

## **10.0 DATA TO BE PROVIDED BY THE PSHS-BRC**

These data are for reference only and does not guarantee the Contractor that the data provided are correct, free from error, and applicable to the project at hand. The Contractor is responsible for the accuracy or applicability of any data that he will use in his design– build proposal and services.

Sample Data for Buildings:

- a. Conceptual Plans

## **11.0 DOCUMENTS TO BE PROVIDED BY THE CONTRACTOR DURING CONTRACT IMPLEMENTATION**

- a. Detailed Architectural and Engineering Plans
- b. Design Analysis
- c. Survey Data
- d. Quantity Calculation
- e. Detailed Geotechnical Investigation Report
- f. Design Report
- g. As-Built Plans, (Printed including CAD Files and BIM files (LOD 500))
- h. Other relevant documents

## **12.0 DESIGN AND BUILD PERIOD**

The Winning Bidder shall commence actual works upon the issuance by the PSHS-BRC the Notice to Proceed (NTP).

The Winning Bidder shall complete the DAED and submit within the ninety (60) calendar days (CDs) period to the PSHS-BRC for review and approval. The contractor shall complete the construction of the building within 270 CDs.

### **13.0 DETAILED ENGINEERING REQUIREMENT**

#### **A. Pre-Construction**

1. Upon award of the design and build contract, the winning bidder shall be responsible for the preparation and submission of all necessary detailed engineering investigations, surveys and designs in accordance with the provisions of Annex "A" of this IRR (with the exception of the Bidding Documents and the ABC).
2. The procuring entity shall ensure that all the necessary schedules with regard to the submission, confirmation and approval of the detailed engineering design and the details of the construction methods and procedures shall be included in the contract documents.
3. The procuring entity shall review, order rectification, and approve or disapprove – for implementation only - the submitted plans within these schedules. All instructions for rectification shall be in writing stating the reasons for such rectification. The design and build contractor shall be solely responsible for the integrity of the detailed engineering design and the performance of the structure irrespective of the approval/confirmation by the procuring entity.

#### **B. Construction Phase**

- a. Implement all works indicated in the approved construction drawings and documents. All revisions and deviations from the approved plans, especially if it shall impact the overall cost of the project, shall be subject for approval.
- b. Provide soil filling, grading and other soil protection measures of the building and other elements of the site including soil and materials testing.
- c. Construct the buildings and other necessary structures, complete with utilities and finishes, resulting in operable and usable structures.
- d. Provide protection or relocation of existing trees indigenous to the area, and proper removal and replacement of all introduced trees and vegetation affected by the construction.
- e. Layout piping, conduits, manholes, boxes and other lines for utilities including tapping to existing utility lines. Facilitate the connection of all utilities (power, water, sewer, structured cabling and telephone) with their corresponding utility companies. All application fees shall be included in the project cost.
- f. Preparation of shop-drawings for approval.
- g. Coordinate with the end users regarding the schedule of deliveries and installations of all owner-furnished materials and equipment during construction.
- h. Conduct all necessary tests and issue reports of results.
- i. Rectification of punch-listing works to be inspected and issued by Management Committee and/or the End-user.
- j. Provide all other necessary documents that shall be required by the end users.

### **C. Post Construction Phase**

- a. Preparation of as-built plans
- b. Turn-over of all manuals, certificates and warranties of installed items.
- c. Submit to thorough and detailed inspections of the newly constructed building to the inspectorate team.

## **14.0 PROJECTED SUBMITTALS DURING THE PROJECT**

The following submittals and accomplished documents shall be duly completed and turned- over by the winning bidder for the project:

### **A. FOR THE DESIGN PHASE**

- a) Construction plans (signed and sealed) that include Architectural , Civil, Structural, Electrical, Structured Cabling, Mechanical, Fire Protection and Plumbing plans (12 sets hard copy and soft copy)
- b) Technical specifications (7 sets hard copy and soft copy)
- c) Detailed cost estimate (3 sets hard copy and soft copy)
- d) Bill of quantities (3 sets hard copy and soft copy)
- e) Site survey, topographic survey, survey of existing trees, geotechnical report including soil test and all other pertinent data related to the conditions of the project site
- f) Documents required for securing the Building Permit
- g) Drawings and reports may be required for the periodic update concerning the status of the design phase.

### **B. FOR THE CONSTRUCTION PHASE**

- a) As-built plans (hard copy and soft copy)
- b) All necessary permits (Fees shall be included in the contract)
- c) Shop drawings (hard copy and soft copy)
- d) PERT-CPM
- e) Test results
- f) Guarantees, warranties and other certificates
- g) Fire and Life Safety Assessment Report 2 and 3 (FALAR 2 and 3)
- h) Certificate of Occupancy
- i) All other necessary documents to be required by End users

## **15.0 MODE OF PAYMENT**

- a) The PSHS-BRC shall pay the winning bidder progress payments based on billings for actual works accomplished. In no case, shall progress billing be made more than once every thirty (30) calendar days. Materials or equipment

delivered on the site but not completely put in place or used in the project shall not be included for payment.

- b) All progress payment shall be subject to retention of ten percent (10%) based on the amount due to the winning bidder prior to any deduction. The total retention money shall be released only upon Final Acceptance of the Project. Winning bidder may, however, request for its release prior to Final Acceptance subject to the guidelines set forth in R.A. 9184 and its Implementing Rules and Regulations.
- c) The winning bidder may request in writing which must be submitted to form part of the Contract Documents, for an advanced payment equivalent to fifteen percent (15%) of the total Contract Price. The advance payment shall be made once the winning bidder issues its irrevocable standby letter of credit from a reputable bank acceptable to the PSHS System, or GSIS Surety Bond of equivalent value, within fifteen (15) days from the signing of the Contract Agreement to cover said advanced payment.
- d) First Payment/Billing shall have an accomplishment of at least 20%. Succeeding billing and payment shall be made on a MONTHLY BASIS.
- e) The following documents must be submitted to the agency before processing of payments to the winning bidder can be made:
  - i. Progress Billing
  - ii. Request for payment by the DESIGN & BUILD CONTRACTOR
  - iii. Pictures/photographs of original site conditions (for First Billing only)
  - iv. Pictures/photographs of work accomplished and Accomplishment Report
  - vi. Material Testing Results, if nay
  - vii. Payment of utilities (power and water consumption)
  - viii. DESIGN & BUILD CONTRACTOR's affidavit (if accomplishment is more than 60%)

#### **D. Variation Orders**

- a. Any errors, omissions, inconsistencies, inadequacies, or failures submitted by the contractor that do not comply with the requirements shall be rectified, resubmitted, and reviewed at the contractor's cost. If the Contractor wishes to modify any design or document which has been previously submitted, reviewed, and approved, the contractor shall notify the procuring entity within a reasonable period of time and shall shoulder the cost of such changes.
- b. As a rule, changes in design and construction requirements shall be limited only to those that have not been anticipated in the contract documents prior to contract signing and approval. The following guidelines shall govern approval for change or variation orders:
- c. Change Orders resulting from design errors, omissions or non-conformance with the performance specifications and parameters and the contract documents by the contractor shall be implemented by the contractor at no additional cost to the procuring entity.

- d. Provided that the contractor suffers delay and/or incurs costs due to changes or errors in the procuring entity's performance specifications and parameters, he shall be entitled to either one of the following:
  - i. an extension of time for any such delays under Section 10 of Annex "E"; or
  - ii. payment for such costs as specified in the contract documents, provided, that the cumulative amount of the variation order does not exceed ten percent (10%) of the original contract.

#### **E. DEFECTS AND LIABILITY**

- a. All design and build projects shall have a minimum Defects Liability Period of one (1) year after contract completion or as provided for in the contract documents. This is without prejudice, however, to the liabilities imposed upon the engineer/architect who drew up the plans and specification for a building sanctioned under Section 1723 of the New Civil Code of the Philippines. The contractor shall be held liable for design and structural defects and/or failure of the completed project within the warranty periods specified in Section 62.2.3.217 of the IRR.

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Campus Director

## ***Checklist of Technical and Financial Documents***

# Checklist of Technical and Financial Documents

## I. TECHNICAL COMPONENT ENVELOPE

### *Class “A” Documents*

#### Legal Documents

- ☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);  
**or**
- ☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document;  
**and**
- ☐ (c) Mayor’s or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;  
**and**
- ☐ (e) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

#### Technical Documents

- ☐ (f) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- ☐ (g) Statement of the bidder’s Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules;  
**and**
- ☐ (h) Philippine Contractors Accreditation Board (PCAB) License;  
**or**  
Special PCAB License in case of Joint Ventures;  
**and** registration for the type and cost of the contract to be bid; **and**
- ☐ (i) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;  
**or**  
Original copy of Notarized Bid Securing Declaration; **and**
- ☐ (j) Project Requirements, which shall include the following:
  - ☐ a. Organizational chart for the contract to be bid;
  - ☐ b. List of contractor’s key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
  - ☐ c. List of contractor’s major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
- ☐ (k) Original duly signed Omnibus Sworn Statement (OSS);

**and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

**Additional Documents under Annex "G" (Design and Build):**

- i. Preliminary Conceptual Design Plans in accordance with the degree of details specified by PSHS-BRC;
- ii. Design and Construction Methods
- iii. List of design and construction personnel, to be assigned to the contract to bid, with their complete qualification and experience data;
- iv. Value engineering analysis of design and construction method.

**Financial Documents**

- ☐ (l) The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission; **and**
- ☐ (m) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

***Class "B" Documents***

- ☐ (n) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence;  
**or**  
duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

**II. FINANCIAL COMPONENT ENVELOPE**

- ☐ (o) Original of duly signed and accomplished Financial Bid Form; **and**

**Other documentary requirements under RA No. 9184**

- ☐ (p) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- ☐ (q) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- ☐ (r) Cash Flow by Quarter.

**Important:**

**For some of the above forms, updated templates are provided through this link:**

**<https://www.gppb.gov.ph/downloadables.php>**



