



Name of Project: **CONSTRUCTION OF A THREE (3) STOREY GYMNASIUM**
Location: PNU MAIN CAMPUS
Subject: **SCOPE OF WORKS AND TERMS OF REFERENCE**

OBJECTIVE:

The three-storey gymnasium will house state-of-the-art facilities intended for physical education (PE) and sports classes/events/activities. This will be an ideal training ground not only for pre-service teachers of PNU, but also for in-service teachers, both in the public and private sectors.

DESCRIPTION:

The three-storey gymnasium will house the following facilities: 1. Ground Floor – Sports Center (Open Space) 2. Second Floor - Multipurpose Hall that may also serve as classrooms and Performance and Exhibition Rooms 3. Third Floor - Gym, Indoor Track (for running/walking), Wellness & Fitness Center, Faculty Rooms for the Institute of Physical Education, Health, Recreation, Dance, and Sports (IPHERDS), Center for Culture and Sports Development (CCSD) Office, Equipment Room, IPHERDS Director's Office, Conference Room, Faculty Lounge, Pantry, Coaches' Lounge, Shower Rooms, Restrooms, Holding Areas.

SCOPE OF DIRECT WORKS:

The Work consists of supervision, supply of materials, labor and equipment and all other items and services necessary to complete the Project. The Contractor shall execute and complete the Work with full responsibility and in self-supporting capacity. He shall comply with all Laws, City Ordinances, and all Government Regulations and with other regulatory requirements. He shall be responsible for all damages to persons or property, which may occur in connection with the execution of the Work.

Unless otherwise specified in the contract documents, the Contractor shall be fully responsible for all the direct work required to complete the project including, but not limited to the following:

I. GENERAL REQUIREMENTS

1. Mobilization of workers, materials, and construction equipment to be supplied and used by the contractor.
2. Construction of temporary facilities for temporary offices, warehouse, and workshop or staging area.
3. Furnishing of ID cards and uniforms, PPEs, and other safety equipment necessary for the complete protection of workers and others around the project area against the dangers of injuries, sicknesses, or deaths. Also, installation of temporary protection and cover of school facilities.
4. Use of various pieces of equipment, including heavy equipment and scaffoldings.
5. The contractor shall secure all the necessary permits such as municipal fees, licenses, fire permit, zoning fees, electrical fees, sanitary permit, permit to operate of the elevator, demolition permit, excavation permits, building occupancy permits and other permits necessary prior to construction. All Incidental/municipal fees shall be included in the cost estimate of the above-mentioned





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- project. The FMSO will assist the contractor in all documentation for the application of the necessary permits.
6. Items, materials and works which are integral and critical for the smooth operation of the project shall be addressed/shouldered by the contractor without additional cost to the procuring entity.
 7. Contractor shall have a PCAB License General Building Category "AA", size range in Building "Large A".
 8. Bidder must be ISO certified 9001:2015 Quality Management System. Bidder shall submit valid/latest ISO certification during bid opening.
 9. Similar contracts refer to those that involve the same major categories of work. The bidder must have completed a similar contract with the valued at least fifty percent (50%) of the Approved Budget for the Contract (ABC) for the constructed of multi-purpose building. Prospective bidders are required to submit evidence of this contract, which shall be included as part of the Technical Specifications and evaluation.
 10. During the bid opening, items in the Bill of Quantities that include the phrase 'submit technical data sheet' require the submission of evidence (in the form of manufacturer sales literature/catalogs/brochures). This will be part of the criteria for the document evaluation.
 11. The bidder/s must conduct an onsite inspection on the project mentioned above and submit a site inspection certificate issued by the PNU Facilities Management and Sustainability Office (FMSO) during bid opening. A certificate of site inspection will be given to the bidder/s who procured the bid documents.
 12. All revised designs shall conform to national building code of the Philippines, fire code, mechanical code, electrical code, plumbing code of the Philippines and other statutory requirement of the government that will apply in the above mention project.
 13. Cabling 1 Lot - Cable Construction (All-Dielectric)
 - 13.1. 20 years WARRANTY for CABLES. Bidder shall submit 20 years of warranty for the cables during bid opening.
 - 13.2. Standards and flame rating ✓ UL 1666 (Riser) ✓ IEC 60332-1 (Flame Retardant) ✓ IEC 61034 and IEC 60754-2 (Low Smoke and Zero Halogen) ✓ RoHS Compliant
 - 13.3. Electrical Specifications Characteristic Impedance 100 ohm Characteristic Impedance Tolerance ± 15 ohm dc Resistance, maximum 6.66 ohms/100 m | 2.03 ohms/100 ft Delay Skew, maximum 45 ns Dielectric Strength, minimum 1500 Vac | 2500 Vdc Mutual Capacitance at Frequency 5.6 nF/100 m @ 500 MHz Nominal Velocity of Propagation (NVP) 64 % Operating Voltage, maximum 80 V Remote Powering Fully complies with the recommendations set forth by IEEE 802.3bt (Type 4) for the safe delivery of power over LAN cable when installed according to ISO/IEC 14763-2, CENELEC EN 50174-1, CENELEC EN 50174-2 or TIA TSB-184-A Segregation Class c Material Specifications Conductor Material Bare copper Insulation Material Polyolefin Jacket Material Low Smoke Zero Halogen (LSZH) Shield (Tape) Material Aluminum/Polyester Mechanical Specifications Pulling Tension, maximum 11.34 kg | 25 lb
 - 13.4. Environmental Specifications Installation temperature 0 °C to +60 °C (+32 °F to +140 °F) Operating Temperature -20 °C to +75 °C (-4 °F to +167 °F) Acid Gas Test Method IEC 60754-2 EN50575 CPR Cable EuroClass Fire Performance No Rating Environmental Space Low Smoke Zero Halogen (LSZH) Temperature Rating, UL 75 °C | 167 °F Flame Test Method IEC 60332-1 Smoke Test Method IEC 61034-2 Packaging and Weights Packaging Type Reel Regulatory Compliance/Certifications Agency Classification CHINA-ROHS Below maximum concentration value ROHS Compliant UK-ROHS Compliant
 - 13.5. Category 6A/Class EA Certified channel performance in a 4-connector configuration up to 100 meters and channel performance: exceeds the requirements of ANSI/TIA-568-C.2 Category 6A





and ISO 11801 Class EA standards for supporting 10GBASE-T transmission over twisted-pair cabling systems as part of the™ 10Gig™ UTP Copper Cabling System Headroom warranty: Guaranteed performance beyond the standard when a complete end-to-end™ 10Gig™ UTP Copper Cabling System is installed by a CABLING certified installer Cable diameter: 0.275 in. (7.0mm) nominal FCC and ANSI Meets ANSI/TIA-1096-A requirements; contacts plated with compliance: 50 microinches of gold for superior performance RoHS compliance: Compliant IEC compliance: Meets IEC 60603-7 PoE compliance: Rated for 2500 cycles with IEEE 802.3af / 802.3at and proposed 802.3bt type 3 and type 4 UL rated: UL 1863 approved Flammability rating: CMt

14. After the completion of the project the bidder shall submit the one set As-Built Plans of Mylar paper and five copies of all design drawings with the size of 20 x 30 duly signed and sealed of the engineers and architects. The bidder shall utilize AutoCAD software for the preparation and submission of all drawings together with the electronic file save in the 1TB storage device.
15. Value Engineering. For major projects as specified by the agency, value engineering shall be conducted according to accepted standards and practices. Value engineering shall analyze alternative schemes of achieving the projects objectives in order to delete or reduce non-essential features and lessen the life cycle costs of the projects without sacrificing the quality and integrity of the structure, while maintaining its essential function, performance, and safety. The bidder performs value engineering as stated below:
 - 15.1. Conduct of pertinent site surveys and investigation for the construction of 3 storey university gymnasium to determine the design intervention needed.
 - 15.2. Value engineering and revision of architectural, structural, sanitary, mechanical, electrical, equipment and other accessories.
 - 15.3. The Bidder shall be wholly responsible for all aspects of the value engineering of the 3-storey university gymnasium including, mechanical, electrical, site development and civil works, architectural design, soil investigation, geotechnical and soil bearing capacity determination, if needed.
16. After the completion of the project, the contractor shall submit the soft copy of the as-built-plans in CAD format stored in NVME External 1 TB and five (5) copies of 20" x 30" signed and sealed as-built-plans of the following: a) Structural plan; b) Architectural plan; c) Electrical Plan; d) Mechanical plan; e) Plumbing plan; and f) Electronics and Communication plans.
17. Procuring entity shall provide utility services such as water and electricity to be used during the execution of the project.
18. Upon the winning bidder's receipt of the Notice to Proceed, the contractor is given 60 days to finalize the submitted plans, including the final bill of quantities and the detailed unit price analysis.
19. The bidder shall submit a notarized certificate of no record/s pending case to any government agencies.
20. The Approved Period for the contract is three hundred sixty-five (365) calendar days for the completion of the abovementioned project.
21. The approved budget contract for the abovementioned project is Php200,000,000.00.
22. Request of extension will be on the following conditions:
 - 22.1. Due to weather conditions with supporting documents from Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA).
 - 22.2. Due to unavailability of materials and equipment subject to attached justification from the manufacturer.





- 22.3. Due to the noise produced by construction, which is affecting university events, conferences, classes and meetings.
- 22.4. Due to the perfection of the plans resulting from the contractor's value engineering.
- 22.5. Due to unforeseen site conditions, client-initiated changes and non-acquisition of permits.
- 22.6. Due to sudden declaration and suspension of works by the government.
- 22.7. No extension will be granted due to regular holidays. All regular holidays have been included in the contract duration.

II. STRUCTURAL WORKS

A. Site/Earthworks Works

1. Complete site survey, laying out, and staking.
2. Demolition of all unnecessary existing structures that will affect the implementation of the project.
3. Excavation and trimming, backfilling using suitable backfill, complete with proper compaction.
4. Construction of temporary structures to protect adjacent structures.
5. Complete installation and compaction of gravel bedding to all structures cast against earth.
6. Use of water pumps and other dewatering procedure when necessary.
7. Supply and application of soil treatment against termites and other similar wood destroying insects.
8. Supply and installation of vapor barrier on structures, especially slab, cast against earth.
9. Disposal of debris, site cleanup and demobilization.

B. Foundation Works

1. Installation of bored files or other method of foundation necessary to carry the new the new building.

C. Concreting Works

1. Concreting of columns, beams, including tie beams, and suspended slabs using 5000 psi ready-mix concrete.
2. Concreting of stairs, pedestrian ramps, wall footings, parapet stiffener columns and beams using 3000 psi ready-mix concrete.

D. Rebar Works

1. Supply and installation of rebars for all structures using grade 60 steel bars for 16mm diameter and above.
2. Supply and installation of rebars for all structures using grade 40 steel bars for 12mm diameter and below.

E. Formworks and Falseworks

1. Supply and installation of formworks and falsework.

F. Metal Works

1. Supply and installation of steel deck for portion of roof deck.
2. Supply and installation of structural steel for construction of steel beams and trusses, complete with necessary steel plate connectors and various bolts

III. ARCHITECTURAL WORKS

A. Masonry Works





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1. Supply and installation of concrete hollow blocks, including reinforcements, compressible fillers, and concrete stiffeners as shown on drawings, described in the specifications and as otherwise required.
 2. Plastering of exterior and interior walls and other masonry and concrete surfaces.
- B. Doors
1. Supply and installation of frameless tempered glass doors w/ h handle.
 2. Supply and installation of wood doors.
 3. Supply and installation of metal doors.
- C. Windows
1. Supply, delivery, and installation of tempered low-E clear glass windows on powder-coated aluminum frames.
 2. Supply, delivery, and installation of tempered low-E clear glass windows on powder-coated aluminum frames.
 3. Supply, delivery, and installation of tempered low-E clear glass curtain wall on powder-coated aluminum frames.
- D. Floor Finishes
1. Floor leveling/topping.
 2. Proper surface preparation, supply, and installation of solid hardwood T&G finish with cush rubber pads, complete with lanes, PNU logo, and tag line, and protective topcoat
 3. Proper surface preparation, supply, and installation of porcelain floor tiles on pure heavy-duty adhesive on wet-pack application.
 4. Proper surface preparation, supply, and application of self-leveling heavy-duty rubberized epoxy floor coating.
 5. Proper surface preparation, supply, and installation of vinyl sports flooring with complete lanes on heavy duty adhesive.
 6. Supply, and installation of tactile tiles on ordinary adhesive.
- E. Wall Finishes
1. Supply and installation of 600 x 600mm porcelain tiles on comfort room walls on pure heavy duty adhesive.
 2. Supply and installation of WPC Wall cladding on liquid nail and screw.
 3. Supply and installation of an insulated operable partition, complete with accessories and railing, on painted finish.
 4. Supply and installation of Stone Cladding on entrance Plant boxes
- F. Ceiling Finishes
1. Supply and installation of fiber cement ceiling board on a light gauge metal framing system.
 2. Painting of exposed slab and beams using acrylic latex paint.
 3. Supply and installation of fiber cement ceiling board on a tee runner.
 4. Supply and installation of aluminum linear ceiling on standard spacing of light gauge metal framing system.
- G. Painting Works
1. Complete surface preparation works before application of paints.
 2. Painting of exterior walls, interior walls, and ceiling using acrylic latex paints.
 3. Painting of steel surfaces using quick-drying enamel paints.
- H. Waterproofing Works





1. Supply and application of flexible cementitious waterproofing in toilets.
 2. Supply and installation of torch-applied waterproofing membrane.
 - I. Miscellaneous Architectural Works
 1. Supply and installation of precast concrete wall, complete with reinforcements, compressible fillers, and concrete stiffeners as shown on drawings, described in the specifications and as otherwise required.
 2. Supply and installation of pvc grooves.
 3. Supply and installation of PNU logo and "University Gym" signage with backlight
 4. Supply and installation of steel locker cabinets.
 5. Supply and installation of bleachers and basketball hoops.
 6. Supply and installation of granite countertops.
 7. Supply and installation of 10mm thk x 1.50m ht tempered glass railing with SS304 handrail complete with supports.
 8. Supply and installation of 16mm square bar with 2" dia. G.I. Pipe post Roof top fence
 9. Supply and installation of Facial Mirror (900mm H) with LED Strip backlight
 10. Supply and installation of PWD Comfort room Handrail
 11. Supply and installation of Soap Dispenser
 12. Supply and installation of Tissue Holder
 13. Supply and installation of Phenolic Urinal Partition and 200mm D shelves on cubicles
 14. Supply and installation of Stainless steel Room Signages
 - J. Toilet Partitions
 1. Supply and installation of phenolic compact board partitions, complete with stainless-steel fittings and accessories.
 - K. Plumbing Fixtures
 1. Supply and installation of dual flush water closets with bidet
 2. Supply and installation of vessel-type lavatories, complete with self-closing tap line.
 3. Supply and installation of wall-hung lavatories.
 4. Supply and installation of stainless steel shower valves and heads.
 5. Supply and installation of self-closing tap line lavatory faucets.
 6. Supply and installation of slop sink hose bib
 7. Supply and installation of flush water-saving urinals.
 - L. Miscellaneous
 1. Supply and installation of SS304 Stair Handrails and SS304 stair railing support on all stairs and fire exits.
 2. Supply and installation of SS304 ramp handrails and SS304 ramp railing support on all stairs and fire exits.
 3. Supply and installation of F-type Brass Stair Nosing embedded to stairs steps
 - M. Landscape Works
 1. Softscape, including a variety of plants, garden soils, shrubs, and Hardscape Works, including stones, boulders, pots, gravel, bricks, sidewalk, with drainage line, wall lamps, Garden Lights, and Bollards.
- IV. ELECTRICAL WORKS**
1. Supply and installation of electrical roughing-ins.
 2. Supply and installation of electrical wiring devices: switches and outlets.
 3. Supply and installation of electrical wires and cables.
 4. Supply and installation of panel boards and boxes



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5. Supply and installation of lighting fixtures
6. Complete Testing of the Electrical System and submit the following test result.
 - a. Insulation Test Result
 - b. No-Load, and Full Load Test Result
 - c. Continuity Test Result
 - d. Live test Result
7. As-built electrical drawings showing the updated electrical system.

V. MECHANICAL WORKS

1. Supply and installation of air-conditioning units.
2. Supply and installation of toilet exhaust fans with ducting and ventilating caps and exhaust ventilation fan.

VI. PLUMBING AND SANITARY WORKS

1. Supply and installation of all needed Drain, Sewer, and Vents systems, including PVC pipes and fittings, floor drains, catch basins, area drainages, and clean outs.
2. Construction of a new septic tank and tapping to the existing STP line.
3. Supply and installation of floor drains, cleanouts, and p-traps.
4. Supply and installation of waterline system including PPR, G.I. supply pipes and fittings, valves, connectors, and accessories.
5. Construction of Cistern Tank for Water Supply & Fire Protection, including tapping to existing supply line.
6. Supply and installation of pumps and equipment for water supply
7. Supply and installation of an elevated water tank.
8. Leak and pressure test on pipes.

SCOPE OF INDIRECT WORKS:

The following services shall be included in the indirect work/expenses as deemed necessary:

1. Overhead expenses which include but not limited to the following: Engineering and Administrative Supervision, transportation allowances, office expenses, temporary utility services; and premiums on bonds and insurances.
2. Contingency works, which include meetings, coordination, design and construction of temporary works, if necessary, and other unforeseen events.
3. Miscellaneous works to include material testing whenever necessary for quality control, preparation and submission of shop drawing or working drawings, documents and/or materials samples as required, and preparation of as-built plans.
4. Contractor's profit and value-added tax.

VII. DESIGN DOCUMENTATION SUBMITTAL, DOCUMENTS AND REVIEW PROCESS

The Bidder shall submit the following documents, at a minimum, during the bid opening. These documents must be developments of, or updates to, information previously submitted during the tender process, where applicable.

1. Health and Safety Plan.
2. Revised civil works plans, mechanical plans, sanitary plans, electrical plans, and architectural plans.





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3. Electrical drawings including schematics, electrical single line diagrams and schedule of loads.
4. Electrical design calculations and details of grounding system
5. Bidder shall submit during bid opening valid/latest certification ISO certified 9001:2015 Quality Management System.
6. Architectural landscape design including hardscapes and softscapes specification.
7. Submit Certificate of Site Inspection issued by the PNU Facilities Management and Sustainability Office (FMSO).
8. The contractor shall submit all the following documents during bid opening:
 - 8.1 Bid prices in the Bill of Quantities;
 - 8.2 Detailed estimates, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid;
 - 8.3 Detailed Unit Price Analysis (DUPA); and
 - 8.4 Cash flow by quarter or payment schedule
9. Bidder shall submit technical data sheet and these technical data sheet shall be part of the criteria for evaluation (see BOQ – submit technical data sheet)
10. All technical documents shall be reviewed by PNU authorized representative
11. PNU authorized representative shall evaluate all revised drawings, calculations or documents submitted by the Bidder. The bidder shall comply all the requirements stated on the terms of reference of the procuring entity.
12. The Bidder shall submit three hard copies blueprint or white print size 20 x 30 all revised drawings duly signed and sealed by the designer/respective engineer, and hard copies of calculations and other documents.
13. The Bidder shall submit a detailed unit price analysis for each of the pay item.
14. The contractor shall provide adequate number of duly qualified key personnel to perform the class of work stated herein. All key personnel shall be authorized, properly trained, equipped and organized to perform all works in accordance with the terms and conditions stipulated in the contract within the project duration. The bidder(s) must submit the photocopy of key personnel updated PRC Registration No., PTR No., TIN no., and Curriculum Vitae. The key personnel must meet the required minimum years of experience set below

| Key Personnel | Minimum Years of Total Works Experience | Minimum Years of Experience in Similar Works on Same Position |
|---|---|---|
| I. CIVIL WORKS | | |
| 1 – Project Manager (any field of engineer with licensed) | 10 | 5 |
| 1 – Licensed Project Engineer/ Architect | 10 | 5 |





| | | |
|---|----|---|
| 1 – DPWH’s Accredited Materials Engineer II | 5 | 3 |
| 2 – Safety officer II (COSH) | 5 | 3 |
| 1 – Registered Master Plumber | 5 | 3 |
| 1 – Registered Electrical Engineer | 5 | 3 |
| 1 – Professional Electrical Engineer | 5 | 3 |
| 1 – Licensed Electronic Engineer | 5 | 3 |
| 1 – Licensed Sanitary Engineer | 5 | 3 |
| 1 – Licensed Mechanical Engineer | 5 | 3 |
| 1 – Licensed Architect | 5 | 5 |
| 1 – Licensed Civil / Structural Engineer | 10 | 5 |
| 1 – General Foreman with experience in building | 5 | 3 |
| 1 – Licensed Geodetic Engineer | 5 | 3 |
| 2 – First aider | 1 | 1 |

15. List of contractor’s major equipment units, 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 such as official receipt with the name of the owner, contract and other related proof evidence. The bidder(s) shall have major equipment requirements to be supported with proof of ownership with certification of availability of the equipment from the owner for the duration of the project the following such as official receipt with the name of the owner.

| Construction Equipment | Required No. of Unit/s (Owned) | Minimum Capacity /Unit |
|------------------------|--------------------------------|------------------------|
| Telescopic Crane | 1 | 25 Tons. |





| | | |
|-----------------------------|---|-----------------|
| Excavator with breaker line | 1 | 0.5 cu. M |
| 1 Bagger Mixer | 2 | - |
| Mini Dump Truck | 2 | 4200kgs. |
| Generator Set (Standby) | 1 | 50KVA |
| Concrete Cutter | 1 | - |
| Plate Compactor | 1 | - |
| Electric Rebar Bender | 2 | 28mm to 32mm |
| Pay Loader | 1 | 1.2 cubic meter |

16. **SPECIFICATIONS OF WIRELESS FIDELITY 7TH GEN. INDOOR ACCESS POINT– 30 UNITS (submit technical datasheet)**

- Complies with the 802.11be standard, enterprise grade AP
- Interface: 1 x 100/1000M/2.5G/5G/10G Multigigabit Ethernet, RJ-45, PoE input + 1 x 1000M/10G optical port, PSFP, PoE input + 1 x 10/100/1000M Ethernet, RJ-45, PoE output
- Weight: at most 0.79g - 0.90g
- Must support dual-radio 4-5 streams and built-in antennas, with one radio supporting switching between 6GHz and 5GHz, and the other radio supporting switching between 5GHz and 2.4GHz, with a speed of up to 8.647Gbps – 9.647Gbps
- Must support yellow/green/blue status LEDs for different working states indicate boot loader status, association status, operating status, and fault states of the system
- Must support Cloud-based management option with no additional licenses and subscription
- Must support Built-in BLE5.4 IoT Module
- IPsec: Cloud AP mode supports IPsec
- Overall power consumption: at most 35.6W-38.6W
- Must support 128-1024 number of clients.
- Must support 14-16 number of BSSIDs for each radio
- Must support Service Assurance features: Must support Remote AP, Doctor AP, Spectrum Analysis, only 802.11ax processing, Intelligent bandwidth guarantee, Port Aggregation, Broadcast Suppression, Prohibit weak client signal access, Terminal





roaming navigation, Actively triggering client relinking, Adjust channel reuse between APs, Fast forwarding function for client data services, Shorten client sleep time, Software version anomaly repairing.

- Compliant with Wi-Fi Alliance standards, supporting Wi-Fi 7, Wi-Fi 6E, and Wi-Fi 6; certified for WMM, WPA, WPA2, and WPA3 (Enterprise, Personal [SAE], and Enhanced Open [OWE]) security protocols.
- The proposed brand must be included in the latest release (2025) of Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure and included in The Forrester Wave™: IoT-Ready Wireless Solutions, Q2 2024
- The Access Point must support WMM, QoS (TOS/DSCP marking, SSID/VLAN policy mapping, CAR), User Bandwidth Management (per STA, SSID-based, dynamic adjustment), ATF (Airtime Fairness), CAC (Call Admission Control), and Application Identification (SQA, UCC) for enhanced audio, video, and data transmission quality.
- The Access Point must support Green AP mode (dynamic MIMO adjustment), U-APSD (Unscheduled Automatic Power Save Delivery), and SM Power Save (Spatial Multiplexing Power Save) to minimize device power consumption and enhance energy efficiency.
- The Access Point must support Cloud AP Web management via HTTP/HTTPS, SNMP v1/v2c/v3, MIB (RFC 1213 & RFC 3418), SSH v2.0/Telnet/FTP/TFTP for remote debugging, CLI for local access, Syslog for information maintenance, Secure Boot for firmware integrity, and Netconf for programmable network management.
- The Access Point must be compliant with IEEE 802.11a/b/g/n/ac/ac Wave 2/ax/be, IEEE 802.11d/e/h/i/w/u, IEEE 802.11k/v/r, 802.3af/802.3at/802.3bt, 802.3bz, 802.15.1
- The Access Point must be the same brand with the proposed POE Switch, Wi-Fi Controller and HCI.

17. SPECIFICATIONS OF 48-PORTS POE SWITCH - 2 UNITS (submit technical datasheet)

- 48 × 10/100/1000BASE-T PoE+ Ports and 4 × 1G/10GBASE-X SFP+ Ports
- Must support Fast PoE, Perpetual PoE
- Must support the industry-leading 6KV service port surge protection capability
- Must support IEEE 802.3af/at.
- One port's maximum output power is 30W-40W or Higher; Power consumption (fully configured):969 W-1069 W (PoE: 770 W-870 W)
- Port switch capacity(bps): 176Gbps-190Gbps. System Switching Capacity(bps):336Gbps-390Gbps; CPU: Dual Core, 1.2GHz-1.4GHz
- Embedded Smart Graphical Management Center.
- Must support SDN, OpenFlow 1.3, NETCONF, Cloud management, Zero Touch Provisioning
- Must support IRF2 technology that connects multiple physical devices (up to 9) to a logical device
- The proposed brand must be included in the latest release (2025) of Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure and included in The Forrester Wave™: IoT-Ready Wireless Solutions, Q2 2024.



- The Access Point must be the same brand with the proposed POE Switch, Wi-Fi Controller and HCI.

18. SPECIFICATIONS OF CLOUD-BASED WI-FI CONTROLLER – 1 LOT (submit technical datasheet)

- Must be a public cloud-based management solution for networking equipment
- Must come with no additional licenses and subscription
- Must adopt an advanced full-containerization solution and a fully distributed deployment architecture
- Must support unified cloud management: Monitoring, operation, configuration, and maintenance not only for SD-WAN routers but also for other network equipment, such as traditional routers, switches, wireless ACs, APs, and security devices
 - Must support mobile operation and maintenance capabilities through a Mobile Application version of the cloud-based management platform
 - Must support multi-user management through role-based access control
 - Must support hierarchical and decentralized management for network
 - Must support site management
 - Must support customized dashboard to display desired monitoring statistics and other preferred information on a single page
 - Must support built-in value-add services like Cloud Engineering Survey: Capability to simulate wireless AP signal and set obstacles in a specific floor plan
 - The proposed public cloud-based management solution must be the same brand with the proposed AP, POE Switch and HCI.

19. SPECIFICATIONS OF 50KW SOLAR INVERTER EQUIPMENT – 1 lot

- **Smart PV Controller – 1 unit (submit technical data sheet)**
 - Max. efficiency : 98% @ 220V
 - European efficiency : 97.5%
 - Max. Input Voltage : 750 V
 - Max. Current per MPPT : 48 A
 - Max. Short Circuit Current per MPPT : 66 A
 - Start Voltage : 160 V
 - MPPT Operating Voltage Range : 160 V ~ 750 V
 - Number of MPP trackers : 7
 - Max. input number per MPP tracker : 3
 - Nominal AC Active Power : 50,000 W
 - Max. AC Apparent Power : 55,000 VA
 - Max. AC Active Power (cosφ=1) : 55,000 W
 - Nominal Output Voltage : 220Vac, 3W/N+PE
 - Rated AC Grid Frequency : 50 Hz / 60 Hz
 - Nominal Output Current : 131.3 A
 - Max. Output Current : 144.4 A
 - Adjustable Power Factor Range : 0.8 leading ... 0.8 lagging
 - Alternating Current THDi : < 3%
 - Input-side Disconnection Device : Yes





- Anti-islanding Protection : Yes
- AC Overcurrent Protection : Yes
- DC Reverse-polarity Protection : Yes
- PV-array String Fault Monitoring : Yes
- DC Surge Arrester : Type II
- AC Surge Arrester : Type II
- DC Insulation Resistance Detection : Yes
- Residual Current Monitoring Unit : Yes
- Smart String Level Disconnecter : Yes
- Arc Fault Protection : Yes
- Terminal Temperature Detection : Yes
- PID Recovery : Yes
- PV Ground-Fault Protection : Yes
- Display : LED indicators; WLAN adapter + Solar APP
- RS485 : Yes
- USB : Yes
- Dimensions (W x H x D) : 1,000 x 710 x 395 mm
- Weight (with mounting plate) : 98 kg
- Operating Temperature Range : -25°C ~ 60°C
- Cooling Method : Smart Air Cooling
- Max. Operating Altitude : 4,000 m (13,123 ft.)
- Relative Humidity : 0 ~ 100%
- DC Connector : Amphenol HH4
- AC Connector : Waterproof Connector + OT/DT Terminal
- Protection Degree : IP66
- Topology : Transformerless
- Certificate : EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 61727, IEC 60068, IEC 61683
- **Smart Power Sensor – 1 unit (submit technical data sheet)**
 - Power grid type : 3P4W/3P3W
 - Input voltage (line voltage) : 90 ~ 500 Vac
 - Power consumption : ≤ 1.5 W
 - Line voltage : 90 ~ 1000 Vac (> 500 with external PT)
 - Phase voltage : 52~577 Vac
 - Current : 0 ~ 80 A(>80 with external CTs)
 - Voltage / Current : ±0.5 %
 - Power / Energy : ±1 %
 - Frequency : ±0.01 Hz
 - Interface : RS485
 - Baud rate : 4800/9600/19200/115200(Default 9600bps)
 - Communication protocol : Modbus-RTU
 - Accessories : RS485 Cable (10 m / 33 ft.) and 3 CT 250 A/50 mA (5 m)
 - Mounting type : DIN35 Rail





- **Specifications of Smart Logger 3000A - 1 unit (submit technical data sheet)**

- Max. Number of Manageable Devices : 80
- WAN : WAN x 1, 10 / 100 / 1000 Mbps
- LAN : LAN x 1, 10 / 100 / 1000 Mbps
- RS485 : COM x 3, 1200 / 2400 / 4800 / 9600 / 19200 / 115200 bps, 1000 m
- Digital / Analog Input / Output : DI x 4, DO x 2, AI x 4
- Active DO : 12V, 100mA (connection with relay, sensor)
- Ethernet : Modbus-TCP, IEC 60870-5-104
- RS485 : Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
- LED : LED Indicator x 3 – RUN, ALM, 4G
- WEB : Embedded Web
- USB : USB 2.0 x 1
- APP : Solar APP Communicated by WLAN for Commissioning
- AC Power Supply : 100 V~240 V, 50 Hz / 60 Hz
- DC Power Supply : 12V / 24 V
- Power Consumption : Typical 8 W, Max. 15 W
- Protection Degree : IP20
- Installation Options : Wall Mounting, DIN Rail Mounting, Tabletop Mounting

- **Specifications of 615-635 Watt Solar Panel – 50 units (submit technical datasheet)**

- Cell Type : N- type Mono-crystalline
- No. of cells : 156 (78x2)
- Dimensions : 2465x1134x30 mm
- Weight : 34.0 kg
- Front Glass : 2.0 mm, Anti-Reflection Coating
- Back Glass : 2.0 mm, Heat Strengthened Glass
- Frame : Anodized Aluminium Alloy
- Junction Box : IP68 Rated
- Protection Class : Class II
- IEC Fire Type : Class C
- Output Cables : 4.0 mm² (+): 400 mm , (-): 200 mm or Customized Length
- Maximum Power - Pmax [Wp] : 635
- Maximum Power Voltage - Vmp [V] : 47.86
- Maximum Power Current - Imp [A] : 13.27
- Open-circuit Voltage - Voc [V] : 57.21
- Power Tolerance : 0 _ + 3 %
- Temperature Coefficients of Pmax : -0.29 %/o\$
- Temperature Coefficients of Voc : -0.25 %/o\$
- Temperature Coefficients of Isc : 0.045 %/o\$



- Maximum Power - Pmax [Wp] : 479
- Maximum Power Voltage - Vmp [V] : 44.98
- Maximum System Voltage : 1500 VDC (IEC)
- Maximum Series Fuse Rating : 30 A

20. SPECIFICATIONS OF 20 KVA RACK MOUNTED UNINTERRUPTED POWER SUPPLY (UPS) WITH COMPLETE ACCESSORIES – 1 SET (submit technical datasheet)

- Modes of Operation. The UPS will operate in the following modes:
 - Normal: The UPS inverter continuously supplies the critical AC load.
 - ECO Mode: The critical AC load will be continuously powered by the bypass with the inverter available to power the load if the bypass source voltage or frequency exceeds adjustable parameters of power quality.
 - Battery: Upon failure or degradation of the primary AC source, the load will be supplied through the inverter drawing power from the battery.
 - Recharge: If the primary AC source returns within tolerance limits prior to a UPS automatic end of discharge shutdown, the rectifier will recommence powering the inverter and simultaneously recharging the battery through the battery converter.
 - Bypass: If the UPS must be taken out of service, the static transfer switch will transfer the load to the bypass source.
 - Off-Battery: If the battery only is taken out of service, it will be disconnected from the DC-DC converter by means of an external disconnect circuit breaker.
 - Parallel: Inherent scalability features should be available to meet higher capacity and higher reliability requirements.
 - Common Battery (for external battery bank): The UPS should be able to support the common battery function when multiple UPS systems are connected in parallel.
- Performance Requirements. The solid-state power components, magnetic, electronic devices and over current protection devices will operate within the manufacturer's recommended temperature when the UPS is operating at 100% critical load and maintain battery charging under either of the following conditions: Any altitude within the specified operating range $\leq 3000\text{m}$ elevation and any ambient temperature within the specified operating range of 0°C to 50°C .
- Input
 - A. Voltage: Input/output voltage specifications of the UPS will be
 - Rectifier AC Input: 220/230/240Vac, single-phase, two-wire-plus-ground for 5/6kVA
 - 380/400/415Vac, three-phase, four-wire-plus-ground for 16/20KVA
 - Single-Phase or Three-phase supply for 10kVA
 - Bypass AC Input: 220/230/240Vac, single-phase, two-wire-plus-ground for 5/6kVA
 - 380/400/415Vac, three-phase, four-wire-plus-ground or Single Phase for 16/20KVA
 - Single-Phase or Three-phase supply for 20kVA
 - AC Output: 220/230/240Vac, single-phase, two-wire-plus-ground for 5/6/10kVA





- 380/400/415Vac, three-phase, four-wire-plus-ground or Single-Phase for 16/20kVA
- Voltage Range: 305-498Vac at full load; 173-498Vac at 50% derated load conditions without battery discharge.
- Frequency Range: 40 - 70Hz
- Maximum Inrush Current: UPS inrush current not to exceed 1.5 times rated input current.
- Power Factor: Minimum 0.99 at full load & 0.98 at half load with nominal input voltage
 - Minimum 0.95 at full load for 3phase in/1 phase out for 10kVA
- Current Distortion: Less than 5% THD at full load input current in double-conversion mode.
- Surge Protection: Sustains input surges of 4kV (Line to ground) without damage as per criteria listed in EN 61000-4-5: 1995.
- AC Output
 - Load Rating: 100% of load rating @ 30°C, 80% of load rating @ 40°C, 70% load rating @ 50°C for any load from 0.5 lagging to unity
 - Load power factor: Unity
 - Voltage Tolerance
 - ±1% RMS average for a balanced, three-phase load
 - ±2% for 100% unbalanced three phase load
 - +/- 3% for parallel UPS
- Voltage Adjustment Range: ±5% for line drop compensation adjustable by factory service personnel
- Voltage Distortion:
 - <2% for 0-100% linear loads
 - <5% for 0-100% Non-linear loads
- Frequency Regulation:
 - Synchronized with internal clock: +/-0.25%
 - Synchronized with bypass: +/-0.25%
- Frequency synchronization window: Synchronized to bypass: Nominal ±5% Hz
- System Efficiency: defined as output kW/input kW at rated lagging load power factor; and not less than the values listed below

In Online double conversion mode: (depending on load)

For 5/6kVA – up to 95.5%

For 10kVA- up to 95.8%

For 16/20kVA- up to 96.2%

In Eco mode: up to 99%

- Phase Imbalance:
 - Balanced loads 120° ±1°
 - 100% unbalanced loads 120° ±1°
 - Voltage Transients (average of all three phases):
 - 0-100% or 100-0%
- Response Meets IEC 62040-3: 2010 Figure 2 Curve 1, Class 1
Meets ITIC and CBEMA Curve Requirements
- Overload Capacity:





105% - 125% of full load for 5minutes

125% - 150% of full load for 1minute

>150% of full load for a minimum of 200 milliseconds

- Grounding. The UPS chassis will have an equipment ground terminal.
- ENVIRONMENTAL CONDITIONS. The UPS will be able to withstand the following environmental conditions without damage or degradation of operating characteristics:
 - Operating Ambient Temperature
 - UPS: 0 to 50°C
 - Battery: 25°C ± 3°C (depends on battery mfg. recommendations)
 - Storage temperature
 - -40°C ~ +70°C (battery excluded); -25°C ~ +55°C (battery included)
 - Relative Humidity
 - 0 to 95%, non-condensing
 - Altitude
 - ≤ 3000m; above sea level derate power by 1% per each 100m increase
 - Audible Noise Level (measured 1m from the surface of the unit)
 - <55 dBA for 5/6/10kVA
 - <58 dBA for 16/20kVA
- **OR**
- Input: Output - 1-in: 1-out, 3-in: 1-out or 3-in: 3-out
- Mains Input
 - Input Wiring : L+N+PE /3Ph+N+PE
 - Rated Voltage : L-N: 220/230/240V AC
 - Input Voltage Range : L-N: 80-280V AC
 - Input Frequency Range : 40-70Hz
 - Input Power Factor : 0.99
- Bypass Input
 - Rated Voltage : L-N: 220/230/240V AC
 - Frequency : 50/60 ± 6Hz
- Battery
 - Rated Voltage : 384-480V DC, 32-40 section adjustable, default 40
- Output
 - Output Power Factor : 0.9
 - Waveform : Sine wave, THDv<2%
 - Efficiency : 95%
 - ECO Efficiency : 98%
- Certifications
 - EN/IEC 62040-1; EN/IEC 62040-2; EN/IEC 62040-3; CE; CB; RoHS, REACH, WEEE
- Communications
 - USB (optional RS485/Dry contact/SNMP)

21. SPECIFICATIONS OF 800 KG. PASSENGER ELEVATOR FOR THREE STOPS MACHINE ROOMLESS TYPE, WITH GEARLESS TRACTION MACHINE – 1 UNIT (submit technical data sheet)

- Elevator Type : Passenger Elevator





- Rated Capacity : 800kgs.
- No. of Stops : 3 stops / 3 floors / 3 door openings
- Floor Marking : 1,2,3
- Speed : 1.0 m/s
- Door Type / Arrangement : Center Opening
- Car and Landing Door Finish : Hair Stainless Steel Finish
- Car Ceiling : Hairline Stainless Steel Finish w/ LED light and Fan
- Car Right Side Panel : Hairline Stainless Steel Finish
- Car Left Side Panel : Hairline Stainless Steel Finish
- Car Rear Panel : Hairline Stainless Steel Finish
- Car Flooring : PVC Anti Slide Tiles
- Car Dimension : 1400mm (W) x 1400mm (D) x 2300mm (H)
- Door Dimension : 800mm (W) x 2100mm (H)
- Hoistway Dimension : 2200mm (W) x 1900mm (D)
- Power Supply : 220V, 3 Phase, 60Hz – verify at site
- Overhead Clearance (OH) : 4800mm
- Hoistway Pit Depth : 1800mm
- Car Finish : For ceiling and flooring, submit sample designs (Catalog) based on the proprietary standards of the brand
- Others : Automatic Rescue Device, Voice Synthesizer, Automatic Voltage Regulator, Braille Push Button, Handrail Handicap COP, Earthquake Censor, Card Reader VIP Function, Built-in Intercom System, one (1) – Year Warranty Comprehensive Preventive Maintenance (CPM) Services.

VIII. SPACE REQUIREMENTS AND SPECIFICATIONS

| NO. | SPACE/DESCRIPTION | TOTAL FLOOR AREA / sq.m. ± | FINISHES | | |
|------------|----------------------|----------------------------|--|--|---|
| | | | CEILING | WALL | FLOOR |
| 1.0 | GROUND FLOOR | | | | |
| | Main Entrance Stairs | 138.86 | Aluminum linear ceiling on standard metal furring channels, 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail | 600mm x 600mm Non-Skid Outdoor Porcelain Tiles with Brass Nosing on Steps |





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| | | | 600mm x 600mm – Acrylic Paint Finish, Flat | Stone Cladding on plant box | |
| | Porch 1 | 34.44 | Aluminum linear ceiling on standard metal furring channels, 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail | 600mm x 600mm Non-Skid Outdoor Floor Tiles |
| | Porch 2 | 34.44 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail | 600mm x 600mm Non-Skid Outdoor Floor Tiles |
| | Basketball Court | 420 | - | - | Solid Hardwood T&G finish indoor Basketball court Flooring (Maple) with complete Lanes and PNU Logo |
| | Common Area | 412.27 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss WPC Outdoor Wall Cladding | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Stairs (Left Side) | 15.75 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish with |





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| | | | | 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Brass Nosing on Steps |
| | Stairs (Right Side) | 15.75 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Fire Exit Stairs (Left Side) | 23.14 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Fire Exit Stairs (Right Side) | 23.14 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Pump Room | 18.81 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |





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Taft Ave. cor. Ayala Blvd., Ermita, Manila

(+632) 5317-1768 loc. 779

fms@pnu.edu.ph

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| | Electrical Room | 10.12 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Control Rooms | 13.32 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Bleacher Area | 80.88 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Pedestrian Ramp | 27.84 | Aluminum linear ceiling on standard metal furring channels, 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail | Plain Cement Finish with 300mm x 300mm Tactile Tiles |
| | Access Ramp | 27.84 | Aluminum linear ceiling on standard metal furring channels, 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x | Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail | Plain Cement Finish with 300mm x 300mm Tactile Tiles |





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| | | | 600mm – Acrylic Paint Finish, Flat | | |
| | PWD Ramp | 17.82 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail | Plain Cement Finish with 300mm x 300mm Tactile Tiles |
| | Female Dressing Room | 21.77 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Male Dressing Room | 21.42 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Stage | 66.71 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Solid Hardwood T&G finish indoor Basketball court Flooring (Maple) with Brass Nosing on Steps |
| | Back Stage | 11.75 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |





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| | | | 600mm – Acrylic Paint Finish, Flat | | |
| | Female Toilet | 17.27 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Male Toilet | 19.60 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Gender Neutral/PWD Toilet | 3.22 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| 2.0 | SECONDFLOOR | | | | |
| | Second Floor Corridor | 173.22 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 10mm THK x 1.50m HT Tempered Glass railing with SS304 Handrail | Self-Leveling heavy- duty rubberized Epoxy Finish |





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| | Activity Area | 172.02 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 10mm THK x 1.50m HT Tempered Glass railing with SS304 Handrail | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Stairs (Left Side) | 15.75 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Stairs (Right Side) | 15.75 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Fire Exit Stairs (Left Side) | 23.14 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |





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|--|-------------------------------|-------|---|--|---|
| | Fire Exit Stairs (Right Side) | 23.14 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Equipment Storage Room | 18.81 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Electrical Room/IT Room | 10.12 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Male Comfort Room | 23.41 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Female Comfort Room | 26.36 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Gender Neutral/PWD Toilet | 3.22 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x | 600mm x 600mm 3 meters Height | 600mm x 600mm Non-Skid Porcelain Floor Tiles |





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| | | | 600mm – Acrylic Paint Finish, Flat | Porcelain Wall Tiles | |
| | Male Locker Room | 14.88 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Female Locker Room | 14.74 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Multi-Purpose Area | 159.49 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| 3.0 | Third Floor | | | | |
| | Third Floor Corridor | 181.87 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Indoor Running Track | 357.62 | Plain Cement Finish – Acrylic Finish, Flat | 10mm THK x 1.50m HT Tempered Glass railing with SS304 Handrail | Heavy Duty Vinyl Indoor Sports Flooring |





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| | Stairs (Left Side) | 15.75 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Stairs (Right Side) | 15.75 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Fire Exit Stairs (Left Side) | 23.14 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Fire Exit Stairs (Right Side) | 23.14 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |





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fms@pnu.edu.ph

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|--|---------------------------|-------|---|--|--|
| | Equipment Storage Room | 18.81 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Electrical Room/IT Room | 10.12 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Male Comfort Room | 12.39 | 4.5mm Thk. Fiber Cement Board on 1” x 2” Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Female Comfort Room | 14.98 | 4.5mm Thk. Fiber Cement Board on 1” x 2” Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Gender Neutral/PWD Toilet | 3.22 | 4.5mm Thk. Fiber Cement Board on 1” x 2” Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 3 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Janitorial Closet Male | 0.90 | 4.5mm Thk. Fiber Cement Board on 1” x 2” Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | 600mm x 600mm Non-Skid Porcelain Floor Tiles |





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| | Janitorial Closet Female | 0.90 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Coach/Trainer Lounge | 17.45 | 600mm x 600mm x 4.5mm Thk. Fiber Cement Board on Tee Runner – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Cultural Office | 28.35 | 600mm x 600mm x 4.5mm Thk. Fiber Cement Board on Tee Runner – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Cultural Office C.R. | 1.61 | 4.5mm Thk. Fiber Cement Board on 1" x 2" Metal Furring Spaced at 600mm x 600mm – Acrylic Paint Finish, Flat | 600mm x 600mm 2.4 meters Height Porcelain Wall Tiles | 600mm x 600mm Non-Skid Porcelain Floor Tiles |
| | Choir | 38.92 | 600mm x 600mm x 4.5mm Thk. Fiber Cement Board on Tee Runner – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Rondalla | 39.55 | 600mm x 600mm x 4.5mm Thk. Fiber | -Plain Cement Finish – | Self-Leveling heavy-duty rubberized Epoxy Finish |





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|------------|--------------------|---------|--|---|--|
| | | | Cement Board on Tee Runner – Acrylic Paint Finish, Flat | Acrylic Finish, Semi-Gloss | |
| | Art Room | 39.55 | 600mm x 600mm x 4.5mm Thk. Fiber Cement Board on Tee Runner – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Fitness Room | 38.92 | 600mm x 600mm x 4.5mm Thk. Fiber Cement Board on Tee Runner – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| | Multi-Purpose Room | 107.39 | 600mm x 600mm x 4.5mm Thk. Fiber Cement Board on Tee Runner – Acrylic Paint Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss | Self-Leveling heavy-duty rubberized Epoxy Finish |
| 3.0 | ROOF DECK | | | | |
| | Roof Deck | 1361.05 | - | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Plain Cement with Membrane Waterproofing |
| | Utility Room Right | 17.57 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Plain Cement with Membrane Waterproofing |
| | Utility Room Left | 17.57 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Plain Cement with Membrane Waterproofing |





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Taft Ave. cor. Ayala Blvd., Ermita, Manila

(+632) 5317-1768 loc. 779

fms@pnu.edu.ph

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|--|-------------------------------|-------|--|--|---|
| | Pump Room | 35.02 | Plain Cement Finish – Acrylic Finish, Flat | Plain Cement Finish – Acrylic Finish, Semi-Gloss | Plain Cement with Membrane Waterproofing |
| | Fire Exit Stairs (Left Side) | 16.83 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |
| | Fire Exit Stairs (Right Side) | 16.83 | Plain Cement Finish – Acrylic Finish, Flat | -Plain Cement Finish – Acrylic Finish, Semi-Gloss 2" ø Stainless Steel Handrail Low-E Glass Curtain Wall | Self-Leveling heavy-duty rubberized Epoxy Finish with Brass Nosing on Steps |





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IX. DETAILED UNIT PRICE ANALYSIS (DUPA) FORM

| DETAILED UNIT PRICE ANALYSIS (DUPA) | | | | | |
|-------------------------------------|---|----------------------|---------------------|--------------------|--------------------|
| NAME OF PROJECT: | | | | | |
| LOCATION: | | | | | |
| Item No. / Description | | | | | |
| Unit of Measurement | | | | | |
| Output per hour | | | | | |
| A. | Designation | No. of Person | No. of Hours | Hourly Rate | Amount |
| | Labor | | | | |
| | Sub-Total for A | | | | |
| B. | Name and Capacity | No. of Units | No. of Hours | Rental Rate | Amount |
| | Equipment | | | | |
| | Sub-Total for B | | | | |
| C. | Total (A + B) | | | | |
| D. | Output per hour = | | | | |
| E. | Direct Unit Cost (C / D) | | | | |
| F. | Name and Specifications | Unit | Quantity | Unit Cost | Amount |
| | Materials | | | | |
| | Sub-Total for F | | | | |
| G. | Direct Unit Cost (E + F) | | | | |
| H. | Overhead, Contingencies & Miscellaneous (OCM) | | | | % of G |
| I. | Contractor Profit (CP) | | | | % of G |
| J. | Value Added Tax (VAT) | | | | 12% of (G + H + I) |
| K. | Total Unit Cost | | | | G + H + I + J |
| Prepared / Submitted by: | | | | | |
| Signature Over Printed Name | | | | | |
| Company | | | | | |





X. Items to be turned-over to the PNU.

University Gym Bldg. – Salvageable Items

| No. | Item | Remarks |
|-----|--|--|
| 1 | Stage Spotlights | For turn-over to the University To be dismantled by Third party - Microdata |
| 2 | High bay light and Troper lights | For turn-over to the University To be dismantled by PNU Admin |
| 3 | All Electrical Panels, pull boxes Electric meter, wire and cables attached to the building | For turn-over to the University To be dismantled by PNU Admin |
| 4 | Public address and sound system - Speakers - Mega phone | For turn-over to the University To be dismantled by PNU Admin |
| 5 | LED wall and wall mount support | For turn-over to the University To be dismantled by Third party - Mega Speech Lab |
| 6 | CCTV cameras pull box, wirings, and cables | For turn-over to the University To be dismantled by PNU Admin |
| 7 | Data Cabling, tray, conduits and WIFI router | For turn-over to the University To be dismantled by PNU Admin |
| 8 | Data Cabinet | For turn-over to the University To be dismantled by PNU Admin |
| 9 | Fire alarm system | For turn-over to the University To be dismantled by PNU Admin |
| 10 | Industrial Ceiling Fan | For turn-over to the University To be dismantled by Third party - Microdata |
| 11 | Wall mounted Exhaust Fan | For turn-over to the University To be dismantled by PNU Admin |
| 12 | Wire mesh, supports and insulation | For turn-over to the University To be dismantled by the Contractor |
| 13 | New roofing and accessories (Long Span Rib type) | For turn-over to the University To be dismantled by the Contractor |
| 14 | Old Roofing and accessories | For turn-over to the University To be dismantled by the Contractor |
| 15 | Steel Framing (hot purlins and C- purlins) | For turn-over to the University To be dismantled by the Contractor |
| 16 | Stage Lights steel supports | For turn-over to the University To be dismantled by Third party - Mega Speech Lab |



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fmso@pnu.edu.ph

| | | |
|----|---|---|
| 17 | Wall grills | For turn-over to the University To be dismantled by the Contractor |
| 18 | Furnitures and Furnishing | For turn-over to the University To be dismantled by PNU Admin |
| 19 | Downspouts and accessories | For turn-over to the University To be dismantled by the Contractor |
| 20 | Equipments and Appliances (Airconditioning unit Electric fan, ceiling fan) | For turn-over to the University To be dismantled by PNU Admin |

Culture and Sports Building – Salvageable Items

| No. | Item | Remarks |
|-----|--|--|
| 1 | All Lighting Fixtures | For turn-over to the University To be dismantled by PNU Admin |
| 2 | All Electrical Panels, pull boxes Electric meter, wire and cables attached to the building | For turn-over to the University To be dismantled by PNU Admin |
| 3 | Public address and sound system - Speakers - Mega phone | For turn-over to the University To be dismantled by PNU Admin |
| 4 | CCTV cameras pull box, wirings, and cables | For turn-over to the University To be dismantled by PNU Admin |
| 5 | Data Cabling, tray, conduits and WIFI router | For turn-over to the University To be dismantled by PNU Admin |
| 6 | Data Cabinet | For turn-over to the University To be dismantled by PNU Admin |
| 7 | Fire alarm system | For turn-over to the University To be dismantled by PNU Admin |
| 8 | Gym equipment and sport materials | For turn-over to the University To be dismantled by PNU Admin |
| 9 | Furnitures and Furnishing | For turn-over to the University To be dismantled by PNU Admin |
| 10 | Equipment and Appliances (Airconditioning unit Electric fan, ceiling fan) | For turn-over to the University To be dismantled by PNU Admin |

Structural and Architectural Works

Electrical Works



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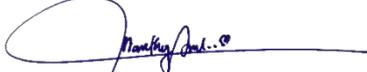
 (+632) 5317-1768 loc. 779

 fmso@pnu.edu.ph

Prepared by:

ALFREDO G. ALARCON, JR.
Civil Engineer

Prepared by:


MARK ANTHONY Q. AMUL
Electrical Engineer

Submitted by:


PROF. JOHN P. NATIVIDAD
Director

