



**DETAILED ARCHITECTURAL AND ENGINEERING
DESIGN SERVICES (DAEDS)
of the
UNIVERSITY OF THE PHILIPPINES MINDANAO

COLLEGE OF SCIENCE AND MATHEMATICS
(CSM) ACADEMIC BUILDING**

UP Mindanao Campus
Mintal, Tugbok District, Davao City

JANUARY 2021

PROJECT MANUAL

TERMS OF REFERENCE

Detailed Architectural and Engineering Design Services
(DAEDS)

Campus Planning and Development Office
OFFICE OF THE CHANCELLOR
UNIVERSITY OF THE PHILIPPINES MINDANAO



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CSM ACADEMIC BUILDING PROJECT MANUAL

DAEDS TERMS OF REFERENCE

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PART I

GENERAL PROJECT INFORMATION

1.0 PROJECT DESCRIPTION

1.1 PROJECT TITLE

Detailed Architectural and Engineering Design Services (DAEDS) for the Proposed Two-Storey College of Science and Mathematics (CSM) Academic Building.

GENERAL DESCRIPTION

The project shall cover the required DAEDS for the UP Mindanao Two-Storey CSM Academic Building. The project site is situated in the approximately Forty Thousand (40,000) square meters CSM Academic Complex located West of the Campus. The project has a total floor area of approximately 6,000 sq. m. which is occupying approximately 10,000 sq.m. of lot area subject to be landscaped. The site is designated as Academic Zone -1 as approved by the ExeCom UP Mindanao Campus Land Use Plan of 2016.

It shall be developed to accommodate the standard requirements of a Two-Storey-storey educational facility as prescribed by the National Building Code of the Philippines and other generally accepted design standards for such facility.

The plans and designs shall be in accordance with the University-approved Conceptual Design Studies and the General Site Development and Building Design Specifications as prescribed in this Terms of Reference (TOR).

1.2 PROJECT COMPONENTS

The project includes the following basic components:

Complete Architectural and Engineering (A&E) Plans and Detailed Designs, Technical Detailed Specifications, Bill of Quantities, and Design Reports, including Site and Landscape Development, Acoustics, Structure, Electrical, Auxiliary, Sanitary and Mechanical Facilities.

All of the above deliverables shall be subject for review and approval by the University. The Conceptual Design and Plans translated from the wish-list of the end-user and developed by the UP Mindanao Campus Planning and Development Office (CPDO) as part of this TOR shall be the basis for the Schematic Design (SD), Design Development (DD), and the Contract Documents (CD) phases, which shall continue after the bid is awarded. These shall likewise be subject for review and approval by the University.

- (b) Preliminary Survey such as geodetic and Topographic Mapping of the project site shall be performed by the winning bidder to determine boundaries and provide stationing with control lines to establish feature and design criteria, and identify existing future right-of-way- limits and construction easements associated with the University's Conceptual Design and Plans.
- (c) The winning bidder shall also conduct Preliminary Investigations on the soil formation and geotechnical investigations, geologic and geomorphologic surveys, hydrology and hydraulic analysis, seismic tests, traffic analysis, environmental conditions of the site, and other design and construction requirements.

Other documents needed that define the technical requirements to build the proposed 2-storey CSM Academic Building with Multi-purpose hall project as

prepared by the winning bidder shall comply with all the provisions as prescribed in the Philippine Standards and Codes.

- (d) Permits and documentary requirements shall be prepared by the winning bidder in preparation for the Construction phase.

2.0 BACKGROUND AND LEGAL BASIS

Sec. 22 (Land Grants and Other Real Properties of the University) of Republic Act No. 9500, "An Act to Strengthen the University of the Philippines as the National University", signed into law on 29 April 2008, provides that the UP Land Grants, or "parcels of land ceded by law, decree or presidential issuance to the University of the Philippines are...declared to be reserved for the purposes intended." RA 9500 confirms "the absolute ownership of the national university over these landholdings, including those covered by original and transfer certificates of title in the name of the University of the Philippines and their future derivatives..." Sec. 22 states that: "The Board may plan, design, approve and/or cause the implementation of land leases: Provided, That such mechanisms and arrangements shall sustain and protect the environment in accordance with law, and be exclusive of the academic core zone of the campuses of the University of the Philippines: Provided, further, That such mechanisms and arrangements shall not conflict with the academic mission of the national university." Sec. 23 (Safeguards on Assets Disposition) provides that "the preservation of the value of the assets of the national university shall be of primordial consideration," and that "the sale of any existing real property of the national university shall be prohibited: provided, that the Board may alienate real property donated after the effectivity of [RA 9500] if the terms of the donation specifically allow it."

Under the Philippine Development Plan 2017-2022, in the pursuit of *Ambisyon Natin 2040*, this project embodies 2 points in the 0-10 Point Socio-Economic Agenda which are:

No. 7 Invest in human capital development, including health and education systems, and match skills and training to meet the demand of businesses and private sector;

No. 8 Promote science and technology, and the creative arts to enhance innovation and creative capacity towards self-sustaining, inclusive development.

Thereby contributing to the attainment of a "*matatag, maginhawa at panatag na buhay para sa lahat*" under the strategies of providing infrastructure development for these agenda to work.

3.0 PROCUREMENT OVERVIEW

- 3.1 The procurement of this project will be conducted through open and competitive bidding in adherence to the declared policies of the 2016 Revised Implementing Rules and Regulations of Republic Act (RA) No. 9184, otherwise known as the Government Procurement Reform Act.
- 3.2 Eligibility requirements shall be subject to Section 24, Rule VIII, RA 9184 and in compliance with the requirements enumerated under the Instruction to Bidders (ITB) and in the forms prescribed by the Government Procurement Policy Board (GPPB) for this type of procurement.

- 3.3 The determination of award to the winning bidder shall be subject to compliance with the minimum qualification requirements for this contract and through a series of pre-determined evaluation processes and procedures as enumerated under this Terms of Reference (TOR) and in accordance with the provisions of the 2016 Revised IRR of RA 9184 and other pertinent laws, circulars and orders.
- 3.4 UP shall accept the bid proposal determined to be most advantageous to the University and consider award of the contract on a best value for money basis.
- 3.5 UP reserves the right to accept or reject any bid, to annul the bidding process, and to reject all bids at any time prior to contract award without thereby incurring any liability to the affected party/parties.

4.0 PROCUREMENT MODE

The Design Consultancy scheme of procurement was recommended, endorsed and adopted pursuant to the guidelines provided in Annex "F", Contract Implementation Guidelines for the Procurement of Consulting Services, of the IRR of RA 9184.

5.0 PROCUREMENT OBJECTIVES

- 5.1 To design and prepare complete A&E Plans and related documents for a Group C - Education and Recreation Division C-1 - Educational Institutions like colleges and universities, auditoriums, seminar/workshop facilities that comply with the **Architectural and Engineering Design Parameters** specified in Part II Detailed Project Reference Section 2 of this Terms of Reference.
- 5.2 To implement a turnover procedure in accordance with Part V **Construction Phase, Acceptance and Turnover** of this Terms of Reference.

6.0 GENERAL SCOPE OF WORK

- (a) The winning bidder shall be required to set up a **local coordinating office** or **satellite office in Davao City** to ensure smooth and efficient Detailed Design Development implementation for a quick discussion, to resolve issues and other matters related to the work being executed.
- (b) The winning bidder must coordinate with UP MINDANAO CPDO Technical Team on other on-going projects simultaneously being implemented in the area on a weekly basis on as needed arises.
- (c) **Winning bidder shall observe and maintain cost allocation for the design building that the prepared design is within the budget set forth by the University. Winning bidder should be fully aware of the budget allotted for the Construction of the design building and shall observe and maintain the cost set forth by the University.**
- (d)
- (e) The Architect's Scope of Work and expected deliverables are defined in Part III Section 3 of this TOR under Architect's Responsibilities according to the different Design Phases:

- 6.1 SCHEMATIC DESIGN PHASE
6.2 DESIGN DEVELOPMENT PHASE
6.3 CONTRACT DOCUMENTS PHASE
6.4 CONSTRUCTION PHASE

7.0 PROJECT DESIGN SERVICES DURATION, SUBMISSIONS AND SCHEDULE

7.1 The Approved Period for the delivery of the Design phase is **One Hundred Eighty (180) calendar days**, commencing seven (7) calendar days from the receipt by the Architect of the Notice to Proceed (NTP).

7.2 The schedule of submissions and activities will be as follows, starting from the receipt of the NTP:

Stage	Sub-mission Schedule	Review & Approval Schedule	Outputs	Format	Payment
Project Inception with Conceptual Design Stage	Due 15 CD after NTP	Max 7 CD after receipt of inception report with conceptual design	Project Inception and Site Analysis Report:	3 Copies of A3 size report, CD containing an electronic file in PDF	5%
			<ul style="list-style-type: none"> · Project Methodology & Schedule (GANTT Chart) · Consultant Man-Hours Schedule · Review of Project Data · Initial Site Analysis · Copies of Standards and Codes to be use · Soil Analysis – this should have pay item on the Scope · Provide Critical Milestone Date (Specific) based on the calendar days of submittal · Photo Survey of the Site · Initial Recommendations · Sign and sealed Topographic Survey Plan of Site as per Annex A-1a 		
			Presentation of Findings	PowerPoint/ Visual Presentation	
Schematic Design Stage · Review No. 1	Due 15 CD after receipt of the approved inception report with conceptual design	Max 7 CD after receipt of schematic design Review 1	· Schematic Design Stage Report 1	· 3 copies of bound A3 Size Report, CD containing electronic file in PDF	
			· Cost Estimate & Project Schedule Level 1,	· Visual Presentation in PowerPoint	
			· General Technical Specifications in outline format (Level 1)		
· Review No. 2	Due 15 Days after Receipt of Schematic Design Review 1	Max 7 CD after receipt of schematic design Review 2	· Schematic Design Stage Report 2	· 3 copies of bound A3 Size Report, CD containing electronic file in PDF	15%

Read and accepted as part of the Contract:

Consultant Bidder

			<ul style="list-style-type: none"> · Bill of Quantities Level 2 & 3 	<ul style="list-style-type: none"> · Visual Presentation in PowerPoint 	
			<ul style="list-style-type: none"> · Construction Schedule Gantt Chart & S-Curve 		
			<ul style="list-style-type: none"> · Submit Realistic Cashflow Program for Construction 		
			<ul style="list-style-type: none"> · Technical Specifications in outline format (Level 2) with Proposed Materials Sample Submission 		
Design Development Stage	Due 35 CD after receipt of approved Schematic plans and designs	Max 7 CD after receipt of design development report	<ul style="list-style-type: none"> · Design Development Report and detailed drawings for Architectural, Civil & Structural, Electrical, Plumbing & Sanitary, Auxiliary 	<ul style="list-style-type: none"> · 3 Copies of bound A3 Size Report, CD Containing an Electronic File in PDF 	20%
			<ul style="list-style-type: none"> · BOQ Level 3&4 	<ul style="list-style-type: none"> · Visual Presentation in PowerPoint 	
			<ul style="list-style-type: none"> · Submit Updated Construction Schedule Gantt Chart & S-Curve 		
			<ul style="list-style-type: none"> · Submit Updated Cashflow Program for Construction 		
			<ul style="list-style-type: none"> · Tech Specs Level 3 		
			<ul style="list-style-type: none"> · Presentation of the Design Development Plans 		
			<ul style="list-style-type: none"> · Minimum 5 to 8-minutes Walkthrough 		
Final Report and Final Contract Documents Submission · Pre-final Review	Max 30 CD after Receipt of the approved design development report	Max 8 days after receipt of contract documents	<ul style="list-style-type: none"> · Architectural Programming, Plans & Detailed Drawings 	<ul style="list-style-type: none"> · 2 copies of bound A3 size report 	
			<ul style="list-style-type: none"> · Structural Engineering Plans, Specs, BOQ and Detailed Drawings with Structural & Seismic Analysis 	<ul style="list-style-type: none"> · CD containing electronic file in PDF 	
			<ul style="list-style-type: none"> · Submit updated Construction Schedule Gantt Chart & S-Curve 		
			<ul style="list-style-type: none"> · Submit Updated Cashflow Program for Construction 		
			<ul style="list-style-type: none"> · Electrical Plans, Specs, BOQ & Detailed Drawings & Load Schedules and Computations 		
			<ul style="list-style-type: none"> · Plumbing & Sanitary Plans, Specs, BOQ & Detailed Drawings and Design calculation 		
			<ul style="list-style-type: none"> · Mechanical Plans, Specs, BOQ & Detailed Drawings 		

Read and accepted as part of the Contract:

Consultant Bidder

			· Bill of Materials & Cost Estimates		
· Final Review	Max 30 CD after Receipt of the approved design development report Review No. 1	Max 8 days after receipt of contract documents for Final Review	· Final Architectural & Engineering Plans and Detailed Drawings	· 7 set copies of signed & sealed detailed drawings in A1 size blueprints	45%
				· One (1) set of A1 Size 90/95 Tracing Paper Print of Plans & Detailed Drawings and electronic files of CAD drawings and in PDF in CD	
			· Technical Specifications	· 5 copies bound A4 size, electronic file in MSWord file format and PDF	
			· Final Bill of Quantities & Cost Estimates	· 5 copies bound A4 size, electronic file in MS Excel file format and PDF	
			· Submit Final Construction Schedule Gantt Chart & S-Curve		
			· Submit Final Cashflow Program for Construction		
			· Blank Forms for Proposal of Bidders & Contractors	· 1 copy bound A4 size, electronic file in MSWord/ Excel file format and PDF	
			· Building Permit Forms Signed and Sealed by the Design and Supervising Architect/Engineers		
			· Submit Proposed Manhours Schedule of Deployed Architects/Engineers during Construction Phase		
TOTAL Number of Calendar Days	140 CD	40 CD	180 CD	Total=85%	
				15% of the contract amount shall be credited upon the completion of the periodic visits scheduled within the construction phase period subject to the conditions under Part 1 Item 7.5 of this TOR)*	

7.3 The **budget for the design phase shall be equivalent to the Professional/Detailed A&E Fee line item**, unless changes are recommended and approved by the University after the Project is awarded, the schedule of payment for the design services will be as follows:

<u>Activity</u>	<u>% of Professional A&E Fee</u>
(a) Upon submission of complete and <u>approved</u> Preliminary Survey and Mapping, Preliminary Investigations, and Location and Invert Elevations of Existing Utilities, Preliminary Site Development studies, Orientation and including Resolution of Design Review Comments	5%
(b) Upon submission of complete and <u>approved</u> Schematic Documents and Bill of Quantities Level 1 and 2, including Resolution of Design Review Comments	15%
(c) Upon submission of complete and <u>approved</u> Design Development Documents, Technical Specifications and Design Report, and Bill of Quantities Levels 1 to 3, including Resolution of Design Review Comments	20%
(d) Upon submission of complete and <u>approved</u> signed and sealed Contract Documents, Technical Specifications and Design Calculations, Analysis and Report, to fulfil Building Permit forms and submission requirements, and Bill of Quantities Levels 1 to 5, including Resolution of Design Review Comments	45%
(e) Upon issuance of a Surety Bond equivalent to 15% of the bid amount to the University* (Refer to Item 7.5)	15%
(f) Upon completion of Construction Phase – Return of Surety Bond*	
TOTAL	100%

7.4 Upon the request of the Design Consultant, the University agrees to make advance payments upon signing of contract and submittal of all pertaining documents required under RA 9184, provided that such payments are within the framework of the payments outlined above.

7.5 * The Winning Designer shall issue surety bond equivalent to Fifteen Percent (15%) of the bid amount to the University as per the activity stated in Section 7.3 (e) above. This bond shall serve as guarantee to the University that the winning Designer and his/her team will deliver and complete the periodic visits scheduled within the construction phase as per Section 7.2 above, and as outlined in Part III Section 5.0 of this TOR. Moreover, the surety bond shall be issued as a condition for the release of the Forty-Five Percent (45%) of the amount and upon the submission of complete and approved signed and sealed Contract Documents, Technical Specifications and Design Calculations, Analysis and Report, to fulfil Building Permit forms and submission requirements, and Bill of Quantities Levels 1 to 5, including Resolution of Design Review Comments under Section 7.3 item (d). The Certificate of Completion shall be released only to the Designing Architect and his/her team upon completion of the project with the acceptance of the constructed project by the University.

7.6 In the event of non-performance, the University has the right to forfeit the surety bond and employ other legal remedies including blacklisting and filing of case before the court of proper jurisdiction.

END OF PART I

PART II

DETAILED PROJECT REFERENCE

1.0 CONCEPTUAL DESIGNS

The commissioned Designer shall abide by the foregoing criteria and parameters for the Design of the UP Mindanao College of Science and Mathematics Academic Building.

1.1 CLASSIFICATION

- (a) Ownership : University of the Philippines Mindanao
- (b) Occupancy : Group C - Education and Recreation
- (c) Type : Division C-1 Educational Institutions such as colleges, universities, seminar/workshop facilities, exhibition halls and galleries

1.2 CONCEPTUAL PLANS

See (Part VI Annex A-1 to A-3 for the Conceptual Site Development Plan, Floor Plans and Perspectives).

1.3 MAIN SPACE REQUIREMENTS

The commissioned Architect shall consider in their design the following work and space program requirements for the design of the proposed educational facility:

- (a) Administrative Spaces
 - i. College Secretary's Office
 - ii. Dean's office with Toilet and Bath
 - iii. Department Offices, Faculty Areas
 - iv. Department Chair Offices with Staff Room
 - v. Administrative Staff Office with Reception
 - vi. Research Assistants and Project Staff Room
 - vii. Multi-purpose Hall Office
- (b) Support Facilities – Academic Building
 - i. 2 Lecture Halls for minimum 120 persons with common reception area, each convertible to 2 smaller lecture/breakout rooms and restrooms for attendees
 - ii. 8 Classrooms/Training Rooms for minimum 42 persons
 - iii. Learning Commons
 - iv. Cafeteria with Concession spaces
 - v. Clinic
 - vi. Records Room
 - vii. Security and Utility Room
 - viii. Multi-purpose Faculty Lounge
 - ix. Faculty Consultation Rooms
 - x. Thesis Storage Room with Faculty Shelves
 - xi. Concession Space at second floor
 - xii. Dean's Meeting Room
 - xiii. College Conference Room with Pantry
 - xiv. Meeting Room
 - xv. Supplies Storage Room
 - xvi. Room for Future Expansion

- (c) Support Facilities – Multi-purpose Building
 - i. Reception
 - ii. Anteroom
 - iii. Control Room
 - iv. Concession Spaces
 - v. Multi-purpose Area for 500-800 People
 - vi. Removable Stage
 - vii. 9 Rooms for Classes/Breakout rooms
 - viii. Exhibit Hall
 - ix. Kitchen/Pantry
 - x. Storage Room
 - xi. Sound Room
- (d) General spaces and Utilities
 - i. Lobby/Hallways/Corridors
 - ii. Elevator Lobby
 - iii. Connecting Link-bridges to Old CSM Building
 - iv. Connecting Link-bridge between Academic and Multi-purpose Buildings
 - v. Stairways and ramps
 - vi. Fire exits
 - vii. Server/Data Room
 - viii. Electrical room
 - ix. Data Server Center/Auxiliary Room
 - x. Maintenance and storage rooms
 - xi. Pumproom
 - xii. Genset
 - xiii. Rooftop Water Tank Area
 - xiv. Segregated Waste Storage and Collection Point and Composting area
- (e) Communal Spaces
 - i. Male and Female restrooms, Gender Neutral restrooms and PWD/Accessible restrooms for students
 - ii. Male and Female restrooms, with one shower stall each, Gender Neutral restrooms and PWD/Accessible restrooms for the Faculty Department
 - iii. Male and Female restrooms, nursing room, Gender Neutral restrooms and PWD/Accessible restrooms for Public spaces at Lecture hall area and Multi-purpose hall
- (f) Site Components
 - i. Vehicular Driveway
 - ii. Covered Entrance and Drop-off Area
 - iii. Permeable Paved Pedestrian Walkways leading to the building entrance/s
 - iv. Access Ramps and Steps with corresponding barrier-free components
 - v. Service/Delivery Areas
 - vi. Waste Disposal and Collection Area
 - vii. Landscaped Green Areas and green buffer zones and Open Spaces to include sidewalks and Bike lanes, seating areas and site signage and markings
 - viii. Wildlife-permeable Perimeter Fencing/Protective Barriers
- (g) Permeable Parking
 - i. On-site parking spaces for cars, school bus, and passenger loading/unloading area in compliance with the National Building Code (NBC) provisions
 - ii. At least two (2) parking spaces for PWD in compliance with the Accessibility Law (BP 344) provisions

- iii. Bicycle parking racks
- iv. Service and emergency vehicle access and parking spaces with corresponding signage and wayfinding elements
- (h) Circulation
 - i. Minimum number of site entry points and total width shall comply with the NBC and Fire Code provisions
 - ii. Detailed designs shall provide for pedestrian and vehicular traffic for the projected user population. Circulation and parking areas shall be provided in relation to the nearby surrounding buildings and developments, in accordance with the provisions in the NBC, BP344 and other related rules and standards.
 - iii. The circulation system shall designate emergency routes.

1.4 ENGINEERING AND OPERATIONS SERVICES

- i. Water Supply and Sanitary Systems
- ii. Rainwater and Storm Water Collection, Retention and Reuse Systems
- iii. Power Supply System
- iv. Emergency Power and Solar Power Utilization Systems
- v. Lighting System
- vi. Security accessed entrance and exits using RFID cards
- vii. Telephone System
- viii. Data Communication and Networking Systems
- ix. Public Address System
- x. Security and Surveillance Systems: Closed Circuit Television (CCTV) System, Controlled Access System
- xi. Air-Conditioning and Condensing System
- xii. Air Changing or Air Cleaning System
- xiii. Fire Detection and Alarm System (FDAS)
- xiv. Fire Sprinkler System and other Fire Suppression System
- xv. Building Management System/Building Automation System (BMS/BAS)
- xvi. Mechanical Systems: Exhaust Ventilation and Air Conditioning System
 - Assembly and office areas shall have the minimum air changes per hour as recommended by ASHRAE and recirculation through HEPA filters
- xvii. Waste Management System
- xviii. Room Identification, Hazard Warnings, and Wayfinding Signage Systems

1.5 FUTURE SITE AND BUILDING EXPANSION

The UP Mindanao CSM Academic Building shall be so planned, designed, and constructed as to anticipate and integrate the horizontal connectivity of the facility to the existing CSM building forming a homogeneous flow of connection between the three buildings and provide a barrier-free access.

At all stages of the Design Phase, the commissioned Designer shall coordinate with the Campus Planning and Development Office (CPDO) on the expansion plans for the CSM Academic complex with the addition of the CSM Academic Building with the Multi-purpose Hall and the UP Mindanao Campus Master Development Plan in order to harmonize the A&E design with that of future developments.

1.6 SITE DEVELOPMENT PLAN

- (a) The Site Development Plan shall consist of buildings, driveways, ample parking, green areas, and other landscape elements

- (b) The commissioned Architect shall fit in the above-mentioned requirements and services (Items 1.1 to 1.5) in the Site Development Plan taking into consideration the functional design requirements and relationships with other buildings and services in the UP Mindanao Campus.
- (c) Lot Occupancy, Building Shape and Orientation
 - i. Building-to-block ratio shall be planned so as to allow for efficient traffic circulation between buildings, existing and proposed, and to provide adequate ventilation.
 - ii. The buildings shall be oriented to maximize natural ventilation and day lighting.
 - iii. Minimum building setbacks shall be as specified in the Conceptual Design and Plans prepared and issued by the Campus Planning and Development Office (CPDO) (Item 1.2) and shall comply with existing building code requirements.
 - iv. Building shape shall be in accordance with the Conceptual Plans previously approved by the end-users and the UP OVPD.

2.0 ARCHITECTURAL AND ENGINEERING DESIGN PARAMETERS

2.1 GENERAL DESIGN PRINCIPLES

- (a) Provide optimal benefits for all stakeholders, which include the procuring entity, the direct users and the Davao City-UP community;
- (b) Present market, financial and economic viability balanced with social and environmental responsibility;
- (c) Allow flexibility for maximum programmed options.
- (d) Allow site development and building design adaptability to organizational, community and technological changes;
- (e) Help achieve sustainability and is responsive to environmental issues;
- (f) Minimize cleaning and maintenance requirements; and
- (g) Conform to relevant laws, design standards, and legal procedures.

2.2 GENERAL A&E DESIGN PARAMETERS

- (a) Use of Appropriate Building Design and Technology
 - i. The architectural character of the building should appropriately project the image of a two-storey educational facility development or structures belonging to Group C - Education and Recreation Division C-1 Educational Institutions such as colleges, universities, seminar/workshop facilities, exhibition halls and galleries under the National Building Code of the Philippines, and all its services.
 - ii. Building form shall be adapted to tropical climate conditions.
 - iii. Building utilities shall prioritize the functional requirements of an educational and recreational facility.
 - iv. Detailed design of interior spaces should accommodate the building program and educational requirements.
 - v. Building systems and design shall factor in and incorporate comprehensive A&E concepts including:
 - 1. Sustainable building and green architecture and engineering concepts;
 - 2. Safe building and resilient design concepts in response to climate change;
 - 3. Natural ventilation and thermal comfort concepts;
 - 4. Energy savings concepts through day lighting, electric lighting, power consumption monitoring, and solar power utilization;

5. Water use efficiency concepts, water consumption monitoring, and rainwater and storm water retention and use;
 6. Expansibility and flexibility concepts;
 7. Occupational hazards and environmental health concepts;
 8. Site and culture sensitivity concepts; and
 9. other applicable concepts.
- vi. Building envelope, materials and finishes shall be specified in accordance with green building principles. Use of renewable and recyclable materials should be maximized.
- (b) **Compliance with Relevant Laws and Design Standards**
- i. PD 1096 or National Building Code of the Philippines and its Latest & Amended IRR
 - ii. BP 344 or Accessibility Law and its Latest and Amended IRR
 - iii. National Structural Code of the Philippines (NSCP) 2010
 - iv. National Plumbing Code of the Philippines (NPCP)
 - v. National Fire Protection Association (NFPA)
 - vi. RA 9266 or The Architecture Act of 2004 and its Latest and Amended IRR
 - vii. RA 9514 or Fire Code of the Philippines and its Latest and Amended IRR
 - viii. Bureau of Product Standards
 - ix. ISO 9001 Certification

Architectural Parameters

UP MDP Restroom Design Standards
UP MDP Accessibility Guidelines
UP MDP Development Principles and Design Guidelines
Laws concerning senior citizens

Civil/Structural Parameters

Philippine National Standards (PNS)
DPWH Blue Book
American Concrete Institute (ACI)
American Society for Testing Materials (ASTM)
American Welding Society (AWS)

Sanitary/Plumbing Parameters

Philippine National Standards for Drinking Water
National Water Resources Board (NWRB)
National Plumbers Association of the Philippines (NAMPAP)
Philippines Society of Sanitary Engineers, Inc. (PSSE)

Mechanical/Sanitary Parameters

Mechanical Engineering Code of the Philippines
Sanitary Code of the Philippines
Underwriters Laboratory (UL) and Factory Mutual (FM)
International Electrotechnical Commission (IEC) 1988

Electrical Parameters

Philippine Electrical Code
National Electrical Code
Illumination Engineering Society (IES)
National Electrical Manufacturer's Association (NEMA)

Electronics and Communications Parameters

Philippine Electronics Code

- (c) Representation of the Culture and Traditions of Mindanao's Indigenous Peoples (IP)
 - i. Incorporation of IP cultural symbols and patterns in the building's exterior and/or interior design, components, and finishes
 - ii. The commissioned Designer shall coordinate with the CPDO on the IP tribe to be assigned to the building.
- (d) Incorporation of Waste Management Systems
 - i. All liquid waste and sewage shall be treated and free from harmful elements prior to their disposal to the waste disposal system.
 - ii. Hazardous and toxic waste shall be treated before entering the public sewer.
 - iii. All solid waste shall be sorted and recycled in a space designated for such.
- (e) Information Technology and Local Area Network (IT/LAN) Infrastructure
 - i. Fibre optic connection between the campus Information Technology Office and the proposed CSM Academic Building shall be included in the scope of work.
 - ii. Overhead cable tray system within the building shall provide access for network connections and upgrades.
 - iii. Laboratories and offices shall be hardwired. Common areas shall be ready to receive active equipment for wireless network access.
 - iv. Data and phone ports shall be located according to the equipment layout requirement in laboratories and work stations. Each office desk shall also be provided with its own data and phone ports. Data ports shall also be provided along the corridors for IP cameras (security cameras) and Wi-Fi routers.
 - v. Industrial-grade Wi-Fi routers are desired over home and small office routers. These are more secure and can connect more than 100 simultaneous users without loss of quality.
 - vi. Server room ambient temperature shall be cooled down to 18 degrees Celsius using appropriate ventilating equipment.
 - vii. Server room shall be physically secured and data center shall be shielded.
 - viii. Data center shall have a minimum area of 3mx3m and shall be properly mechanically ventilated to complement server racks that shall have cooling fans on local Uninterruptable Power Supply (UPS). Server equipment shall be served by the building emergency generator.
 - ix. Servers from different programs shall be installed in the Server Room and secured within the program's own wire cage and/or data cabinets.
- (f) Safe and Reliable Power – Emergency Generator
 - i. Quality of electrical power shall be consistent with power surges eliminated to protect various equipment.
 - ii. Earth grounding for the building will be provided with each floor having a wired connection to grounding plates.
 - iii. Building shall be provided with lightning protection.

2.3 GENERAL PERFORMANCE SPECIFICATIONS

Unless otherwise specifically specified by the University, the architectural and engineering designs shall conform to the specifications set by the functional requirements of the Proposed CSM Academic Building:

- (a) Adjacencies and Space Inter-relation
Spatial disposition shall be based on rational zoning that considers related and complementary uses.
- (b) Design Standards
- i. Have a thorough understanding of the policies of the University of the Philippines, including the stipulations in the University of the Philippines Master Development Plan Development Principles and Design Guidelines and other similar documents and provisions.
 - ii. Be familiar with the UP Mindanao Campus Master Development Plan, as well as the context of the proposed CSM Academic Building in relation to the rest of the campus.
 - iii. Have verified the topographic survey and other site investigation procedures.
 - iv. Have studied the layout and site development plans of existing buildings to align the development of the proposed building and its site within its environs.
 - v. Identify the architectural features and character of the surrounding structures.
 - vi. Identify the location of critical areas and portions of utility systems within and around existing buildings, including the outflow direction of sanitary lines, septic tanks, building water meter and water supply lines, power supply service entrances, cisterns and other utility lines.
 - vii. Have studied the current and projected flow of people, vehicles and activity within and proximate to the project site to allow for the provision of sidewalks, lighting systems, directional signs and traffic signs, to effectively design an efficient vehicular and pedestrian circulation route.
 - viii. Identify the presence of vegetation that may be affected during and after the development of the site and the proposed buildings.
 - ix. Common or public spaces shall follow general design criteria that would allow ease of egress in times of emergency.
 - x. Ceiling heights shall allow ductwork and plumb utilities to run below the largest structural elements (beams). Slab to slab heights shall be reviewed in relation to the expected structural supports and other building elements.
 - xi. Provide and install required signage for proper fire escape and identification of private spaces from public spaces. Signage shall also indicate the location of mechanical room hazards to alert personnel prior to entering the interior entry doors.
 - xii. Include enclosures (fences)/lot perimeters
 - xiii. Include provisions for special needs,
 - xiv. Consider views and vistas
 - xv. Consider safety (on-site and within the vicinity)
 - xvi. Include appropriate security systems
 - xvii. Include appropriate IT systems (Wi-Fi connectivity, etc.)
- (c) Environmental Hazards
- i. Space for “shelter-in-place” should be reviewed for future needs.
 - ii. Designs for interior and exterior spaces must incorporate disaster-preparedness features.
- (d) Maintenance
- i. The design shall consider both capital and long-run costs. The latter involves efficient life cycle operation.
 - ii. Energy-efficient systems shall be incorporated to minimize operation costs.

- iii. Access panels and doors shall be planned for periodic service and inspection.
- (e) Site Integration
- i. Site development shall seamlessly integrate with the circulation and other service systems, either existing or proposed, of the UP ExeCom-approved UP Mindanao Campus Land Use Plan of 2016 and Campus Master Development Plan.
 - ii. The project shall fit well into the UP Mindanao Campus Master Development Plan, including its overall ecological concept.
 - iii. Avoid conflict with perceived property limits of adjacent buildings and structures.

END OF PART II

PART III

THE ARCHITECT'S RESPONSIBILITIES

The Architect shall be responsible for taking the necessary steps to carefully examine all documents. It also rests upon the Architect to acknowledge all conditions, local or otherwise, affecting the carrying out of the Design Services works, and to arrive at an estimate of the facilities available and needed for the Project. Failure to do so shall be at the Architect's risk which shall cover part of the Architect's liability. The Architect shall work with the designated Project Management Team (PMT) of the University who will assist the UP CPDO in the entire duration of the project.

GENERAL PROVISIONS

- a) **60-day Early Event Schedule** - Shall be provided to the CPDO no later than 14 calendar days after Contract Effective Date. The 60 Day Early Event Schedule is an interim working schedule to alert all work groups of schedule obligations at Project initiation, critical key milestones. This Schedule is driven by priorities established by the Consultant Master Project Schedule & Summary Schedules (CMPS). It lists all Project milestone dates chronologically, and details all key activities to be started, underway, or completed within the first 90 days of the Project. The 60-Day Early Event schedule shall be maintained and updated as the execution schedule.
- b) The Design discipline to be assigned during the DAEDS Phases of the Work and their duties, responsibilities, and fee schedule, and the duration of their assignments are as bid out shown on Schedule "E" of the winning consultant, which is incorporated in this Terms of References. Such personnel shall not be replaced without the prior written consent of the University thru the office of the Campus Planning and Development Office (CPDO) which shall not unreasonably withhold such consent.
- c) **REPORTS** – Design Consultant shall prepare and submit Weekly and Monthly Reports for all phases of the DAEDS preparations required by CPDO. All reports shall be structured by major discipline and shall be summarized for the total of the Services. All reports shall be based upon the current agreed Schedule and shall include statistics and activities of Consultant. These instructions shall include the minimum requirements of the CPDO but Consultant is free to propose additional items that will enhance the value of the report.
- d) **PROJECT MEETINGS** - Prior to the commencement of Work, the Design Firm shall attend a kick-off conference with the CPDO to discuss the Progress/Milestone Schedule, procedures for handling drawings and other submittals, and for processing Applications such as Building permits, and to establish a working understanding among the parties as to the Work. During the prosecution of the Work, the Design Firm shall attend any and all meetings convened by the CPDO with respect to the Project undertaken, when directed to do so by CPDO. Design Firm shall have its affiliates and other experts attend all such meetings (including the preconstruction conference) as may be directed by the CPDO.
- e) **OWNERSHIP OF THE MATERIALS** - Any studies, reports or other materials, graphic software or otherwise, prepared by the Consultant for the CPDO under this Contract shall belong to and remain the property of the University. The Consultant may retain a copy of such documents and software, exclusively for record purposes.
- f) **MINUTES OF MEETINGS**
Design consultant shall prepare and distribute, minutes of all meetings (such as Vendor meetings, progress meetings, project management team meetings, etc.) within five (5) working days from date of meeting.

g) NON-FORMAL COMMUNICATIONS

Non-formal communications, such as e-mails, telephone conversations, et cetera, that imply project decisions or transfer of information from which project action is to take place shall be documented by the design consultant and established "Coordination Procedure".

- h) **CONFIDENTIALITY** - The Consultant shall not disclose any propriety or confidential information relating to the Services, this Contract without the prior written consent of the signatory of the University or his duly authorized representative.

1.0 BIDDING PHASE

1.1 ELIGIBILITY AND MINIMUM QUALIFICATIONS REQUIRED FOR THE ARCHITECT

All submittals and attendances required for this bidding and enumerated in the Invitation to Bid must be strictly complied with, without exemption to the place, date and time unless otherwise modified with proper notification through Bid Bulletin by the UP Mindanao Bids and Awards Committee (BAC). The eligibility requirements and qualification process shall be in accordance with the provisions of 2016 Revised IRR of RA 9184 Section 24 on Eligibility Requirements and Shortlisting for Consulting Services and Annex "B" General Principles on Consulting Services, Section 4.4.2.

- (a) The Design Consultant, whether an individual or the designated principal/lead Architect of a firm of two or more associated individuals, or a partnership, shall be a **Registered Licensed Architect** and shall have a valid license issued by the Professional Regulatory Commission (PRC).
- (b) The Architect shall have **minimum 5 years' experience** and solid background in Architecture and Engineering Design and Development of educational facilities belonging to Group C - Education and Recreation Division C-1 Educational Institutions such as colleges, universities, seminar/workshop facilities, exhibition halls and galleries, **with existing Davao-based projects and active satellite office and locally-based allied professionals and technical staff.**
- (c) The Lead Architect shall be responsible to commission, under his/her supervision and coordination, the allied professionals and Design Team members to include but not limited to the following:
- (i) **Licensed Civil/Structural Engineer**
 - (ii) **Licensed Sanitary/Plumbing Engineer/Registered Master Plumber**
 - (iii) **Licensed Professional Electrical Engineer**
 - (iv) **Licensed Electronics and Communications Engineer**
 - (v) **Licensed Professional Mechanical Engineer**
 - (vi) **Licensed Project Controller/Cost Engineer**
 - (vii) **Licensed Landscape Architect**
 - (viii) **Licensed Geodetic Engineer**
 - (ix) **and other manpower necessary to accomplish the project requirements, such as, but not limited to, the following:**
 - 1. **Draftsman or AutoCAD operator, technical staff**
 - 2. **3D Modeler or Renderer, BIM Modeler, a plus**
 - 3. **Quantity Surveyor/Estimator**
 - 4. **Specifications Specialist**
- (d) The commissioned Design professionals shall have at least 5 years' experience with solid background in Engineering Design and Development including design of educational facilities.
- (e) The Design Consultant is required to prioritize the engagement of locally, Davao-based allied professionals with the provision for a functional local office.

1.2 DESIGN AND METHODOLOGY PRESENTATION

The Architect with the commissioned design team, after having been shortlisted and passed the eligibility phase, shall, along with the submission of Technical Proposal, submit a design presentation of the ***Preliminary Site Development Plan and rendered Interior perspectives of the Faculty Room and Lecture Room. An optional 3-minute-long Walkthrough Presentation is a plus.*** This process shall be evaluated according to **Annex A-4 Evaluation Criteria for Design Presentation and Methodology.**

1.3 DESIGN CONSIDERATIONS, GUIDELINES & COMPLIANCES

The Architect is given free will to design the exterior and interiors of the proposed project according to the vision; and enhance the University-issued Conceptual Design and Plans (Annex A-1) and the End-user Space Criteria Sheets (Annex A-2) as he/she find proper, taking into consideration the provisions in the UP MDP Development Principles and Design Guidelines (Annex C-1), UP MDP Accessibility Guidelines 2018 (Annex C-2) and the UP MDP Restroom Design Standards 2018 (Annex C-3).

2.0 DESIGN PHASE

2.1 GENERAL COORDINATION

- a) The Architect shall perform all services stipulated by the Contract Documents as well as those services reasonably deduced from the Contract Documents as necessary for completion of the Work and the Project. The Architect agrees to perform these services using its best efforts, skills, judgments and abilities.
- b) The Architect shall at all times endeavour to further the interests of the University and complete the Project in an expeditious and economical manner consistent with the interests of the University and in accordance with the Project Schedule.
- c) It shall be the responsibility of the Architect to check and verify the location of existing water, electrical, and other utility tapping points, sewer lines, and storm drainage and incorporate such in the design as a necessary consideration for a fully adapted building in its environs.

2.2 MILESTONE SCHEDULE

The Architect shall be required to abide by the given process and schedule with the corresponding minimum deliverables and timeline as stated in the **General Information of the Project in Part 1 Section 7.2 of this Terms of Reference.**

2.3 DESIGN SUPERVISION AND COORDINATION

- (a) The Principal Architect may, in the absent of Principal Architect may in writing, authorize and delegate a Project Architect as the representative who will represent and engage and is responsible for the day-to-day management of the Design Phase Services until the return of the Principal Architect. Such delegation shall be given authority to approved/decide on the spot queries and concern that needs outright decisions. This delegated project architect shall be the Primary contact (Focal person) during the Design Phase and shall be stationed at the University for the entire duration of the FEEAD (Front End Engineering and Architectural Design) stage for a quick resolution decision and swift solution to any problem arise, concern and issues.
- (b) The Architect shall issue its proposed Organizational Chart as presented during bid. NO replacement/substitution shall be made by the Winning bidder to its professionals during execution phase. Any replacement of professional support is allowed during FEED but subject to the approval and review of University representative. Corresponding CVs and Other pertinent data showing the

professional's qualifications shall be submitted to CPDO office for review and approval prior to mobilization. In the event that the Architect or any of its Engineers shall be found unqualified and subsequently rejected, the Architect shall nominate another substitute for review and approval of CPDO. Any changes without the Prior Approval from the University will form a breach of Contract subject for termination.

- (c) The **Project Architect**, as the lead Architect, shall supervise the submission of all design requirements, shall be responsible for the direct supervision and coordination of the approved Design Team members. The Architect may replace any professional consultant found non-performing thereby affecting the progress of the project. Any member of the commissioned professionals by the winning consulting if found not cooperative and not responsive to the request of the CPDO technical team shall be replaced and removed from the project.
- (d) The Principal Architect, as the lead Architect, shall personally attend meetings to be scheduled by CPDO during the Design and Construction Phase for updates and provide **weekly** reports status regarding the Project undertaken. The allied consultants are likewise required to attend design and coordination meetings as called for to speed up design review, consultation and presentation to CPDO and the end-users. Should the Engineers/Architect be unavailable, he/she shall notify the UP Mindanao CPDO at least Three (3) days in writing a delegation Authority before the set schedule and send or assign a substitute or representative, who shall be authorized to act and make decisions on design concerns.
- (e) The Architect and Project Cost Control lead shall be responsible for managing the Design Services to ensure that the following are achieved:
 - i. The Project shall be designed according to the end-user requirements such that all provisions are considered, planned and indicated in the drawings, specifications and cost estimates, whereby future add-ons to the building such as equipment and technological and operational systems are identifiable, considered and possible without compromising the integrity of the building design and entailing unreasonable cost;
 - ii. The Project, as designed, can be constructed for an amount that is within Construction Cost Limitation and will achieve the energy and operational savings required by the Contract, Cost Control Engineer/Architect shall submit reports and update as required by the CPDO technical team. The obligation to design the Project so as to achieve the program objectives of scope and cost shall continue through completion and acceptance of Construction Contract Documents. Any adjustment to the scope or quality considered necessary to comply with the Construction Cost Limitation or the program during the Design Phase shall be mutually agreed upon and shall be considered normal to that process.
- (f) The Architect warrants to the University the sufficiency and completeness of all Design Services performed, and that all drawings, specifications, and other information furnished or provided by Design Consultant shall be free from material errors and omissions. Approval or acceptance of any Design Services by the University shall not in any way release Architect from any duty, responsibility or liability for such services, it being understood that University is at all times relying upon Architect's skill and knowledge in performing the Design Phase Services.
- (g) The University shall have the right to reject any Design Services deem unreasonable and unacceptable or other defective Work on the Project of which

the University becomes aware. The Architect shall promptly correct any such defect at the Architect's expense.

2.4 CONSTRUCTABILITY PROGRAM

- (a) The Architect and Commissioned Professionals shall implement and conduct a constructability program to identify and document project cost and schedule savings opportunities.

Note: Prepare a "Constructability Report" that identifies items which, in the Architect's opinion or by Engineers, may negatively impact construction of the Project. The Constructability Report shall address the overall coordination of Project Drawings, Specifications, and details and identify discrepancies that may generate Change Orders or claims once Project construction commences. The Constructability Report shall be updated at least monthly during the Design Phase. Any potential change shall be listed on the register and level as "High/Medium/Low" and shall be presented to CPDO technical team for evaluation and discussion.

- (b) The Architect/Project Control Specialist shall provide and implement a tracking system for Queries, resolutions, decisions, directions and other information matters that arise during the development of the Drawings and Specifications for the Project. This tracking documents is called "Action Items List" shall be updated on a weekly basis and to be submitted to the CPDO representative for documentation purpose. The decision tracking system shall be in a format approved by the University.
- (c) A Program calendar Schedule, the Design Team and CPDO representative will jointly develop an integrated Project Schedule which reflects both the design team's basic Engineering/Architectural activities and the University's integration activities. This Level 3 Master Project Schedule which contains all activities necessary to execute FEED is managed by the Design team. The Design Team and CPDO representative will jointly review the schedule bi-weekly.
- (d) The Design team shall issue Key Milestones date during the presentation of Schematic design phase.

2.5 COORDINATION OF DESIGN AND CONSTRUCTION CONTRACT DOCUMENTS

- (a) The Architect shall consult with CPDO representative on the selection of materials, equipment, component systems, and types of construction used on the Project. The Architect shall likewise advise the University on site use, construction feasibility, availability of labor and materials, procurement time requirements, and construction coordination.
- (b) The Architect shall advise the University on reasonable adjustments in the project scope, quality or other options for keeping the Project cost within the Construction Cost Limitation. The Architect shall keep in mind the Cost Allocation set forth by the University for the Project. Make sure that Construction plans and specification prepared is align to the appropriate budget.

2.6 REVIEW OF DRAWINGS

- (a) The Architect, at its sole expense, shall provide the University with the required number of design document review sets at each required stage of completion.
- (b) The Architect shall incorporate into the documents such corrections and amendments as the University requests at each stage review, unless the Architect objects to such changes in writing and the University agrees to the objections. Any

additional cost incurred due to Architect's failure to incorporate the University's requested corrections and amendments shall be borne by the Architect.

- (c) The Architect shall abide by the schedule/timeline set by UP as described in the General Project Information. This document shall be used as a basis for the monitoring of the Design progress for the duration of the Project.
- (d) The Architect is required to submit the proposed relocation map/plan of affected utilities, if any.

2.7 COORDINATION OF WORK WITH PROJECT MANAGEMENT TEAM

The University, through the CPDO, shall contract a Project Management Team as the third-party owner representative who will work with the Design Consultants during design, construction, and post-construction. They shall report all information and issues to the CPDO or its representative prior to implementation.

3.0 **ARCHITECT'S SCOPE OF WORK**

The Design Consultant shall have the following minimum scope of work in each phase of the design process as outlined below. The Architect shall perform other tasks not mentioned but may be required by the University or its representatives as long as such tasks are legally within their professional responsibility.

3.1 SCHEMATIC DESIGN PHASE

Conduct preliminary site inspections and data gathering to verify the existing facilities and environment in relation to the issued Conceptual Design and Plans to include but not limited to the following:

- i. Geodetic Topographic Mapping and Survey of the 4.0 hectares of the College of Science and Math Academic Complex block as indicated in **Annex A-1A**.
 - ii. Geotechnical Investigation
 - iii. Geologic and Geomorphologic Survey
 - iv. Hydrology and Hydraulic Analysis
 - v. Seismic Tests
 - vi. Traffic Analysis
 - vii. Environmental Conditions Investigation
 - viii. Location and Invert Elevations of Existing Utilities
- (a) Attend a Pre-Design Conference and subsequent meetings/consultations, as necessary, with the CPDO and end-user to ascertain the project requirements and to further develop and finalize the Schematic Plans;
 - (b) Prepare and submit the proposed schedule of the Project Architect's assignment in UP Mindanao, detailing how the **One Hundred and Eighty (180) calendar days** shall be broken down during the Schematic Design and Design Development phases;
 - (c) Submit the name, contact number, and email address of the Architect and commission professional who shall be engage for the design
 - (d) Prepare and submit the Proposed Design Schedule for approval by the CPDO;
 - (e) Prepare and submit the final Schematic Plans approved by the University:
 - i. Floor Plans
 - ii. Exterior Perspectives; and
 - iii. Utilities Schematic Plans and Locations
 - (f) Prepare and submit a Project Construction Cost Estimate (Levels 1 and 2) based on current cost parameters.

3.2 DESIGN DEVELOPMENT PHASE

- (a) **Prepare and submit the Preliminary Architectural and Engineering Design Report, including Functional and Technical Criteria of the building;**
- (b) Prepare and submit Design Developed Plans approved by the University:
 - (i) Floor Plan
 - (ii) Elevations
 - (iii) Sections
 - (iv) Roof Plan
 - (v) Site Development Plan
 - (vi) Exterior and Interior Perspectives;
- (c) Prepare and submit the outline specifications to fix and illustrate the size and character of the Project in its essentials as to kinds of materials, type of structure, mechanical, electrical, and sanitary systems and such other work as may be required;
- (d) Prepare and submit a further Project Construction Cost Estimate (Levels 1 to 3); and
- (e) Prepare and submit a preliminary walk-through presentation of the 3D model of the Project including exterior and interior perspectives.

3.3 CONTRACT DOCUMENTS PHASE

- (a) Conduct meetings/consultations and make presentations, as necessary, with the CPDO to develop the approved Design Development Documents.
- (b) Prepare and submit the Architectural and Engineering Design Report;
- (c) Prepare and submit weekly progress drawings/plans in CAD and PDF file formats according to the approved Design Schedule;
 - (i) Detailed Furnishing Plans, indicating casework and base building equipment that shall be Contractor Furnished / Contractor Installed (CFCI)
 - (ii) Detailed Site Development Plan/Civil and Landscape Architectural Designs and Plans
 - (iii) Detailed Site and Building Engineering Designs and Plans:
 1. Detailed Structural Plans, including, but not limited to the following:
 - a. Structural plans and details of all facilities and amenities, with due consideration for future expansion;
 - b. And other crucial structural details.
 2. Detailed Plumbing and Sanitary Plans, including, but not limited to the following:
 - a. Rainwater and Stormwater Retention and Use Plans
 - b. Plumbing and Sanitary plans and details of all facilities, with due consideration for future expansion;
 - c. And other crucial Plumbing and Sanitary details.
 3. Detailed Electrical Plans, including, but not limited to the following:
 - a. Emergency Power and Solar Power Utilization Plans
 - b. Fire Detection and Alarm System
 - c. Electrical plans and details of all facilities, with due consideration for future expansion;
 - d. And other crucial Electrical details.
 4. Detailed Electrical Auxiliaries Plans, including, but not limited to the following:
 - a. Components:
 - i. Telephone System
 - ii. Data Communication and Networking System
 - iii. Cable or Master Antennae Television (CATV/MATV) System
 - iv. Public Address Systems
 - v. Security Systems: Closed Circuit Television (CCTV) System, Controlled Access System
 - vi. Fire Detection and Alarm System
 - vii. Building Management System/Building Automation System (BMS/BAS)

- b. Electrical Auxiliary plans and details of all facilities and amenities, with due consideration for future expansion;
 - c. And other crucial Electrical Auxiliary details.
5. Detailed Mechanical Plans, including Engineering Mechanical Building Utilities, Fire Sprinkler/Fire Suppression Systems and Ventilation/Air Changing or Air Cleaning Systems, including, but not limited to the following:
- a. Mechanical plans and details of all facilities and amenities, with due consideration for future expansion;
 - b. And other crucial Mechanical details.
- (d) Prepare and submit the Technical Specifications describing type and quality of materials, manner of construction and the general conditions under which the Project is to be implemented;
 - (e) Prepare and submit the Bill of Quantities and Detailed Cost Estimates (Levels 1 to 5) using the template/format to be provided by the University;
 - (f) Prepare and submit Weekly/Monthly report updates of the programme demonstrating progress to date to UP Mindanao CPDO for review. This will include progress of the design, procurement, construction methodology and meetings attended.
 - (g) Prepare and submit a walk-through presentation of the 3D model of the Project including exterior and interior perspectives;
 - (h) Prepare and submit the Proposed Construction Schedule and Health and Safety Program for the Construction Phase;
 - (i) Furnish the University the following:
 - i. One (1) set of scaled, signed and sealed Topographic Survey Map of the approximately 4.0 Hectares of the College of Science and Math Academic Complex Block
 - ii. Three (3) sets of Blueprint copies of the above signed and sealed Topographic Survey Map;
 - iii. One (1) complete set of signed and sealed construction drawings in original tracing paper of the CSM Academic Building;
 - iv. Seven (7) complete sets of signed and sealed blueprint copies;
 - v. Five (5) sets of Technical Specifications in A4 sheets;
 - vi. Five (5) sets of Bill of Quantities and Detailed Cost Estimates in A4 sheets;
 - vii. One (1) set of Blank Bill of Quantities form and Blank Detailed Cost Estimates form in A4 sheets for Bidding Purposes;
 - viii. One (1) set (or as required) of signed and sealed Building Permit forms, as required;
 - ix. One (1) set of signed and sealed photocopy of PTR and PRC ID of all professionals;
 - x. One (1) CD/DVD containing
 - 1. complete set of construction drawings in CAD and PDF formats
 - 2. Technical Specifications in PDF format
 - 3. Bill of Quantities and Detailed Cost Estimates and Detailed Unit Price Analysis (DUPA) in Excel and PDF formats
 - 4. Walk-through presentation of the 3D model
 - (j) Keep the University informed of any adjustments to previous Project Construction Cost Estimates indicated by changes in scope, requirements or market conditions;
 - (k) Conduct a Risk Analysis activity with CPDO to forecast variations in the design; and
 - (l) Assists the University in filing required documents to secure approval of government authorities having jurisdiction over the design of the Project.
 - (m) Assists the University in preparation of the required tender documents for the Construction Bidding Process.

4.0 DETAILED ARCHITECTURAL AND ENGINEERING DESIGN PLANS, SPECIFICATIONS AND COST ESTIMATES

- (a) The Architect shall prepare and submit a complete set of detailed architectural drawings/plans and specifications of all the structures/buildings, signed and sealed by a Registered Licensed Architect (RLA), in accordance with the checklist of requirements in Annex B-1.
- (b) The Design Team shall prepare and submit a complete set of detailed engineering drawings/plans and specifications, signed and sealed by prequalified licensed allied professionals, for the below cited engineering discipline in accordance with the checklist of requirements in Annex B-1.
- (c) The checklist details the minimum standard drawings to be prepared and submitted. It shall be the responsibility of the Architect to provide detailed architectural drawings/plans and specifications in accordance with the Annex C-4 Masterformat 2016 Edition that are as complete and comprehensive as necessary to set forth in detail the work to be executed.

4.1 DETAILED ENGINEERING DESIGN PLANS AND SPECIFICATIONS

- (a) Structural Design
- (b) Sanitary/Plumbing Design
- (c) Electrical Design
- (d) Electrical Auxiliaries Design
- (e) Mechanical Design

The checklist in Annex B-1 details the minimum standard drawings to be prepared and submitted. It shall be the responsibility of the Architect to provide detailed engineering drawings/plans and specifications that are as complete and comprehensive as necessary to set forth in detail the work to be executed.

4.2 COST ESTIMATE GUIDELINES

In the preparation of all construction cost estimates, the Architect shall use the template/format provided by the University in Annex B-2 to Annex B-4. Following are the submittals and guidelines to observe:

- (a) The Design Consultant shall prepare a Detailed Cost Estimate using the templates provided in Annex B-2 to B-5 and submit the Bill of Quantities (BOQ) in the level corresponding to the phase of the design (i.e. Level 1-Summary, Level 2-Schematic Design Phase, Level 3-Design Development Phase, Level 4-Construction Document Phase, Level 5-Detailed Unit Price Analysis).
- (b) The Design Consultant shall use the Detailed Unit Price Analysis (DUPA) Template in Annex B-4, to breakdown each construction scope of work with corresponding materials, equipment and labor components and related taxes, direct and indirect costs to substantiate the Detailed Cost Estimates.
- (c) Direct Construction Cost means the sum of the amounts that the Cost Engineer estimates the Constructor necessarily incurs constructing the Work in strict compliance with the Construction Documents.
- (d) The labor component of the cost estimates shall follow the ranges provided in the ordinance and the latest wage order of the Department of Labor and Employment (DOLE) Region XI.

Note: Winning Bidder shall provide copy of DOLE latest wage Order

- (e) Materials-market price means the costs of material supplied to the project site by Build Contractor, if such items are fully consumed in the construction of the Work. Cost for used items shall be based on fair market value. If an item is not fully consumed in the construction of the Work, its cost shall be based on actual cost of the item less its fair market salvage value.
Note: Winning Bidder shall provide at least three (3) Canvassed of the latest material price in the market to a well-known hardware's.
- (f) Rental rates of equipment and hand tools (except those customarily owned by construction workers) shall be based on prevailing Association of Construction Equipment for Lease (ACEL) rental rates.
Note: Winning Bidder shall provide copy of ACEL rate of Equipment and Small Tool deployed on the cost estimate.
- (g) Indirect cost computations shall be guided by the Department Order of DPWH DO 197 series 2016.

4.3 DESIGN DURATION AND SCHEDULE OF DELIVERY OF SERVICES

- (a) The approved period for the Design Phase is **One Hundred and Eighty (180) calendar days**, starting from the receipt of the Notice to Proceed (NTP).
- (b) The schedule of submissions, deliverables and activities shall be as presented in under Part 1 of the General Project Information Section 7.2, to commence from the Architect's receipt of the Notice to Proceed (NTP). The project design period includes reviews by CPDO, end-user (based on the presentations) and the Project Management Team, allotted with a separate deadline.
- (c) Submittals for each phase of the Project shall be reviewed and approved by the University and CPDO within the given period. Failure to receive comments within the designated time shall render the submission approved.
- (d) The Architect shall be responsible for addressing all design concerns/issues in the Design Review/s issued by CPDO in each Design Phase. All items in the Design Review documents shall be resolved and considered "closed" prior to approval of the submissions. Only then can the Design Consultant proceed to the next phase of the design.
- (e) Prior to commencement of the Design Phase, the Architect may propose an alternative Schedule of Delivery of Design Services as it deems more advantageous or suitable to its operations. Such proposal is subject to the review and approval of the CPDO.

5.0 CONSTRUCTION PHASE

- 5.1 The Designer and the design team shall make themselves available to deliver **periodic visits to the project during the construction phase** and cover the following responsibilities as follows:
 - (a) Assist and advice in securing bids, tabulating and analysis bid results, and make recommendations on the award of construction contracts, and in preparing formal contract documents.
 - (b) Provide supplementary drawings required to suit actual field conditions and that further illustrate the design intent for portions or elements of the project that require detailing or revision/s arising from the Requests for Approval (RFA) and Requests for Information (RFI) from the contractor;
 - (c) Review, evaluate and approve detailed construction and as-built drawings, shop and erections drawings submitted by the contractor in accordance with the overall design.

- (d) Together with the PMT, evaluate the progress of the contractor and certify with endorsement to CPDO and the University, the progress billing and other contractor requests as necessary.
 - (e) Conduct **periodic site visits 4hours/week for 52 weeks in a year for 2 years minimum or until the completion of the construction project** to familiarize with the general progress and quality of the work and to determine whether the work is proceeding in accordance with the Contract Documents. During such project site visits and on the basis of his observations, the commissioned Architect shall report defects and deficiencies noted in the work of Contractors, and shall condemn work found failing to conform to the Contract Documents;
 - (f) Provide findings and recommendation to the University indicating construction progress, remarks, and suggestions pertaining to the project quality, workmanship, and compliance to the plans and specifications.
 - (g) Observe performance tests and start-up and make reports thereon; and
 - (h) Conduct a final inspection and report of the completed project.
- 5.2 Only when the Designer and his/her team has completed the Construction Phase as per the process indicated in Part V of this Terms of Reference will the Certificate of Completion be issued and considered completed and be given the clearance and credit for the project.

END OF PART III

PART IV

RESPONSIBILITIES OF THE UNIVERSITY OF THE PHILIPPINES

1.0 PROJECT MANAGEMENT TEAM (PMT)

- 1.1 A Project Management Team, commissioned by the University to assist the UP CPDO, shall be designated to coordinate and monitor the project to ensure that the following general conditions are met:
- (a) The Architectural and Engineering (A&E) plans are in accordance with the design parameters and space requirements provided and approved by the End User and the University;
 - (b) The A&E plans are detailed, coherent, and comprehensive enough to allow the successful execution of the construction;
 - (c) The completed construction works are in accordance with the "For Construction" contract documents (plan and specifications) approved by the End User and the University;
 - (d) The completed construction works are able to perform as expected and is constructed in a way to allow successful operations and certification (if applicable).
- 1.2 The Project Management Team shall report directly to the CPDO on all matters regarding the Project.

2.0 BIDDING PHASE

The University, through the Campus Planning and Development Office (CPDO) and Physical Plant Office (PPO), shall assist the proponent:

- (a) In locating the existing water, electrical, and other utility tapping points, sewer lines, and storm drainage and provide the plans of such, only if available
- (b) With the provision of the Conceptual Plans and Designs as preliminary studies as approved by the University and the end-users and other essential site information that may be available for the Design process to flourish.

3.0 DESIGN PHASE

- 3.1 The UP CPDO and the Project Management Team shall conduct design review/s of all plans and documents during each submission to comply with the Project requirements. CPDO, through the Project Management Team, shall notify the Architect of the results/findings of the design review/s in written form.
- 3.2 The UP CPDO and the Project Management Team's review of plans and documents shall be given a five (5) to Seven (7) working days, starting from the receipt of the Architect of the written acknowledgement of the CPDO or the Project Management Team that the submitted hard and/or soft copies of the documents are clear, readable and/or not corrupted.
- 3.3 Should the CPDO, Project Management Team or any other representative of the University notice errors or missing details in the Contract Documents during the review of the Architect's output, the Architect shall comply with the required revisions and additions as required by CPDO before the final submission.

4.0 CONSTRUCTION PHASE

- 4.1 The UP CPDO and the Project Management Team shall conduct site inspection of the construction and coordination with the building contractor and shall inform the architect of the necessity of involvement by the Architect and his/her design team should this need require more than the required frequency indicated in the periodic visit required of the Design Team.
- 4.2 The UP CPDO together with the PMT and the Design Team shall assist to facilitate the coordination for the acceptance and project closure with the respective stakeholder of the University.

END OF PART IV

PART V

PROJECT COMPLETION, ACCEPTANCE AND TURNOVER

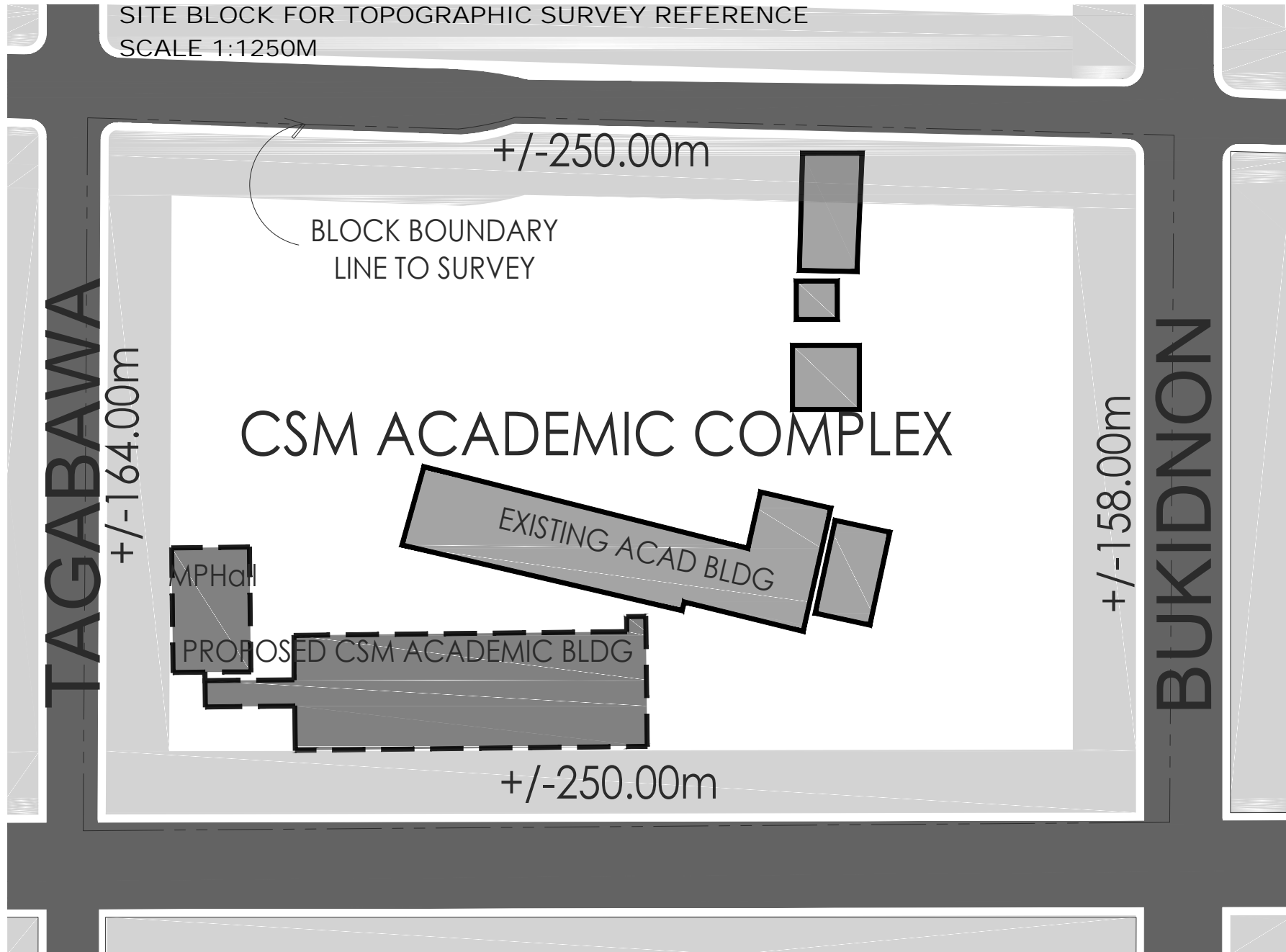
1.0 AS-BUILT PLANS APPROVAL

- 1.1 Prior to the certificate of Completion of the Construction Phase, the Architect and Design Consultants is required, to review, approve and sign the “As-built Plans” submitted by the Contractor with the final approval and review of UP Mindanao Campus Planning and Development Office (CPDO) and the PMT.
- 1.2 The Architect shall make himself/herself available for any clarification of the design in all aspects during the Construction Phase as necessary in order to keep the integrity of the design and to be able to track the progress of the design implementation and construction progress.
- 1.3 The Architect and the allied consultants may be called for in meetings as deemed necessary by the PMT and UP CPDO for the purpose of addressing design matters affecting the project and their design responsibilities.
- 1.4 The Architect shall coordinate all the submissions with the Project Management Team (PMT) who shall ensure that:
 - (a) The “For Construction” contract documents (plans and specifications) are approved by the End User and the University.
 - (b) All necessary government design and building safety codes, permits for the project implementation and occupancy shall be complied with;
 - (c) The approved design shall be implemented as per the designer’s intent;
 - (d) The “As-built Plans” shall be accurate and submitted accordingly prior to the Architect’s and UP CPDO’s approvals.
- 1.5 Should the Project Management Team and CPDO notice minor defects, the Designer shall review and correct prior to final acceptance.

2.0 FINAL ACCEPTANCE AND PAYMENT

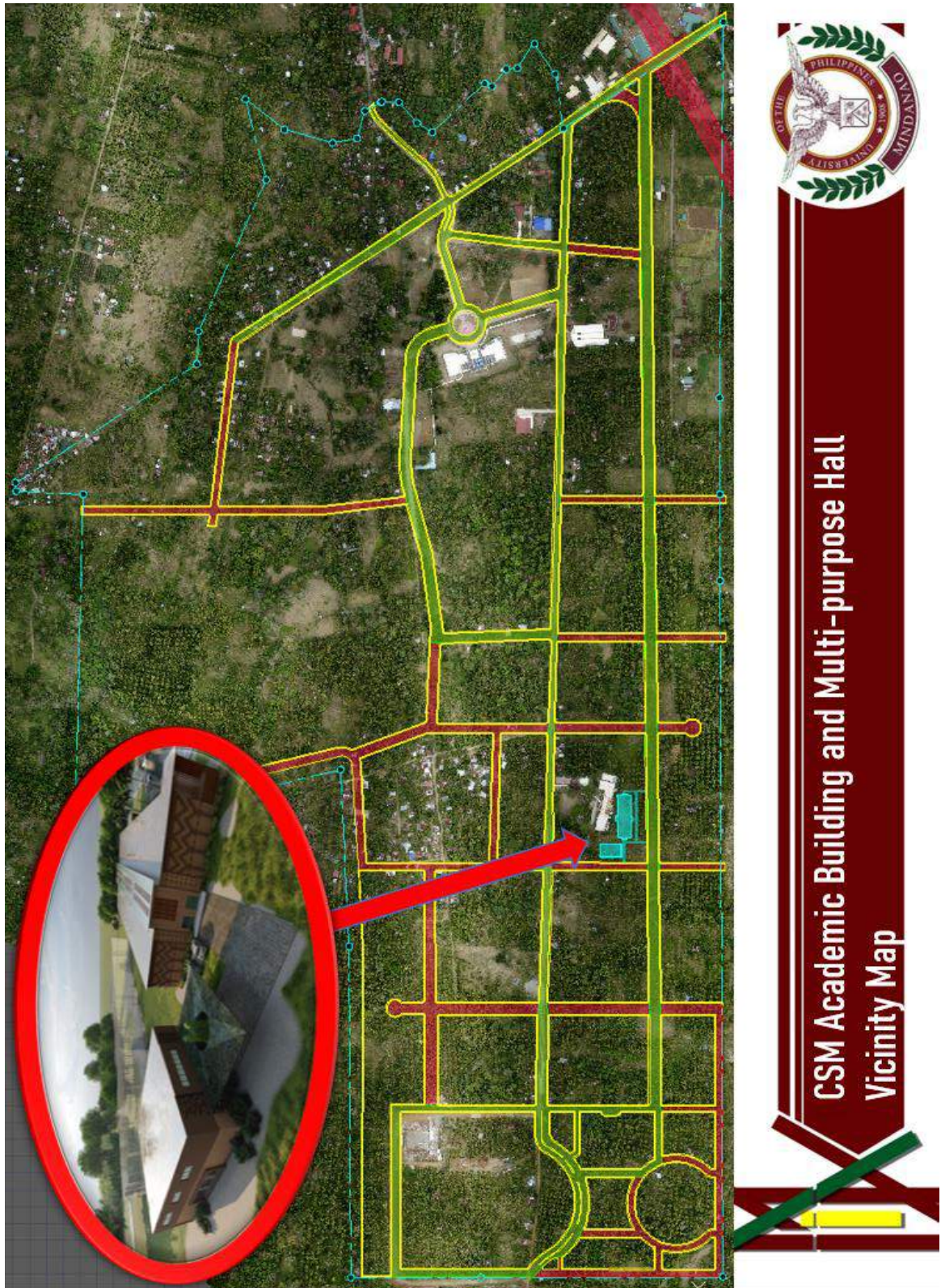
- 2.1 Upon final acceptance of the constructed project, the balance payable for the Design Consultancy Services of the Project shall be released accordingly, upon request and approval.
- 2.2 The University shall issue a Certificate of Completion to the Architect to signify the acceptance and completion of the Project as accepted by the respective end-user and the University Chancellor.

END OF PART V



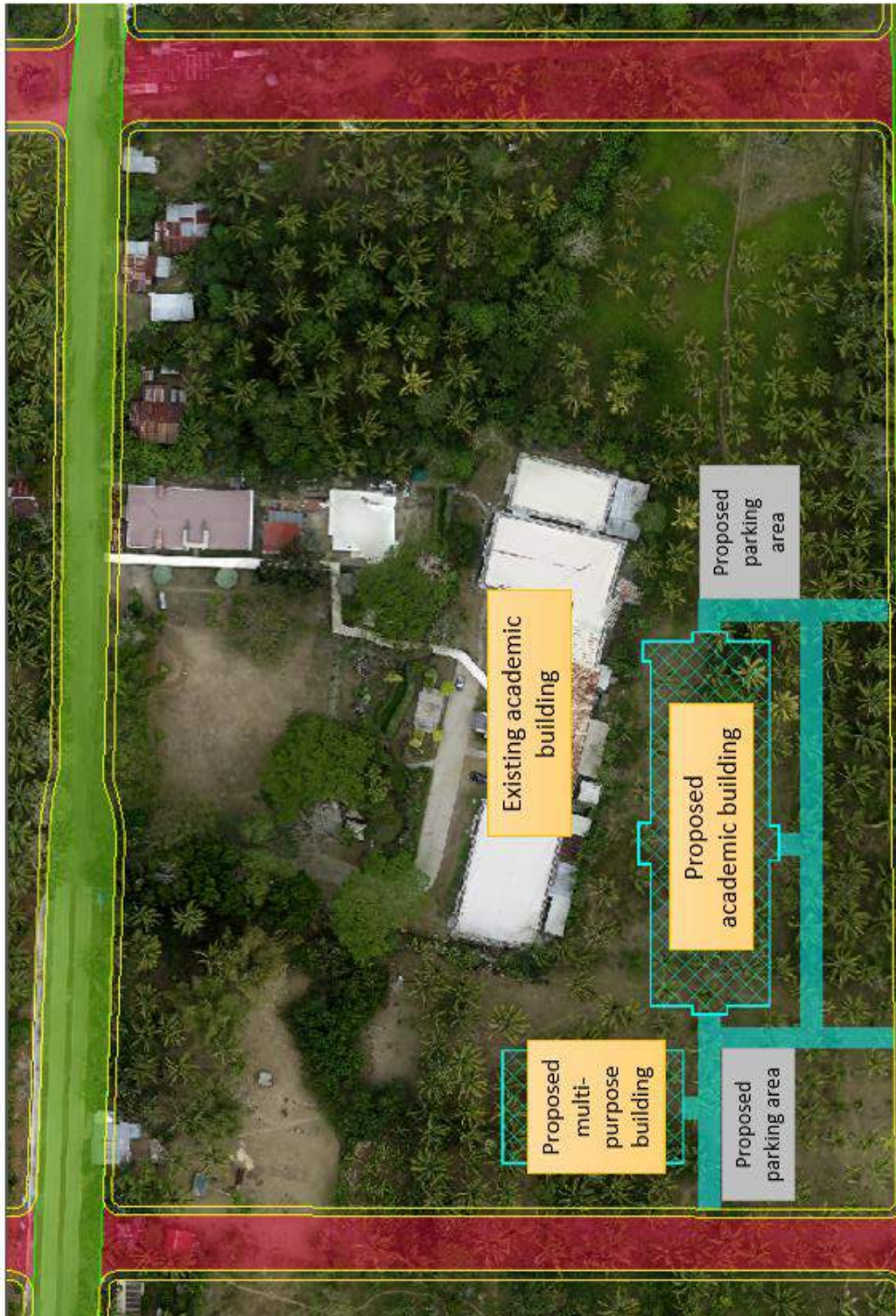
PART VI **ANNEX A-1 CONCEPTUAL PLANS AND PERSPECTIVES**

1.0 PROPOSED LOCATION



Read and accepted as part of the Contract:

Consultant Bidder

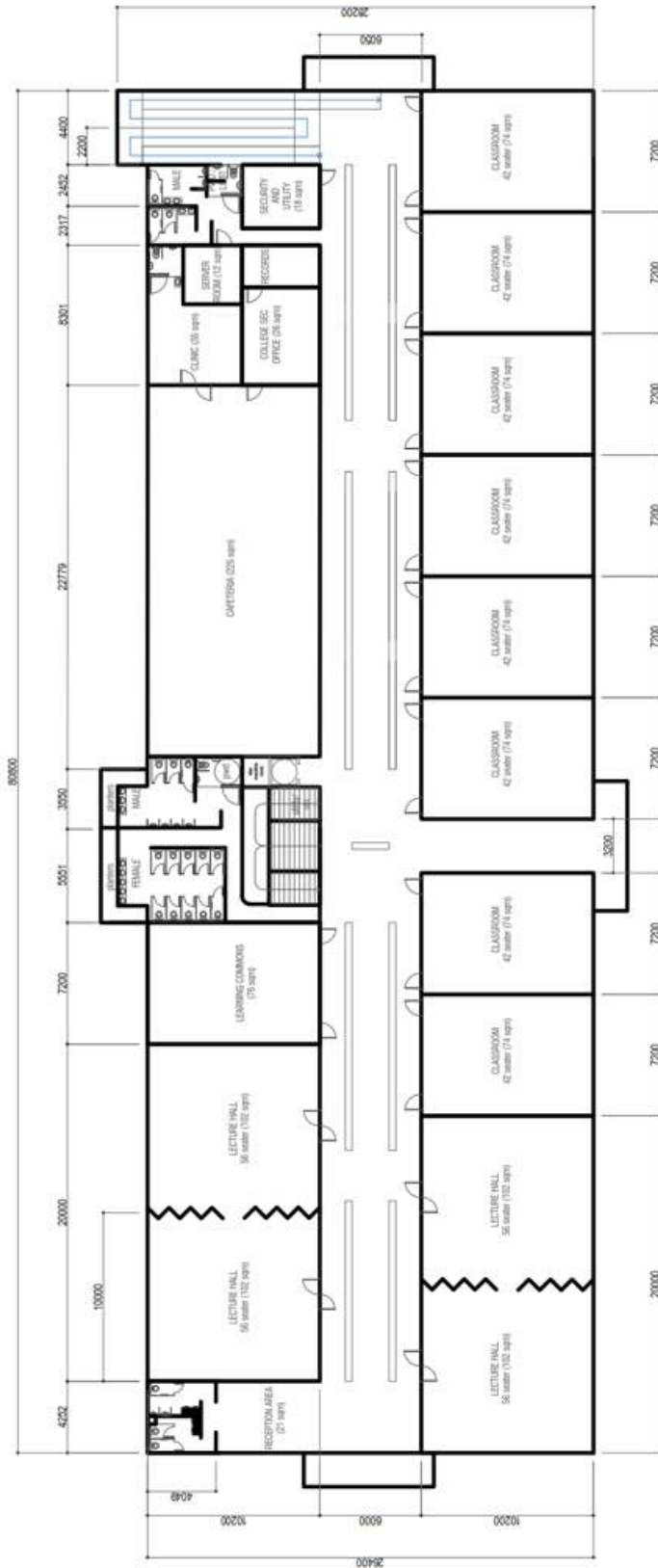


College of Science and Mathematics Academic Block Site Development Plan

Read and accepted as part of the Contract:

Consultant Bidder

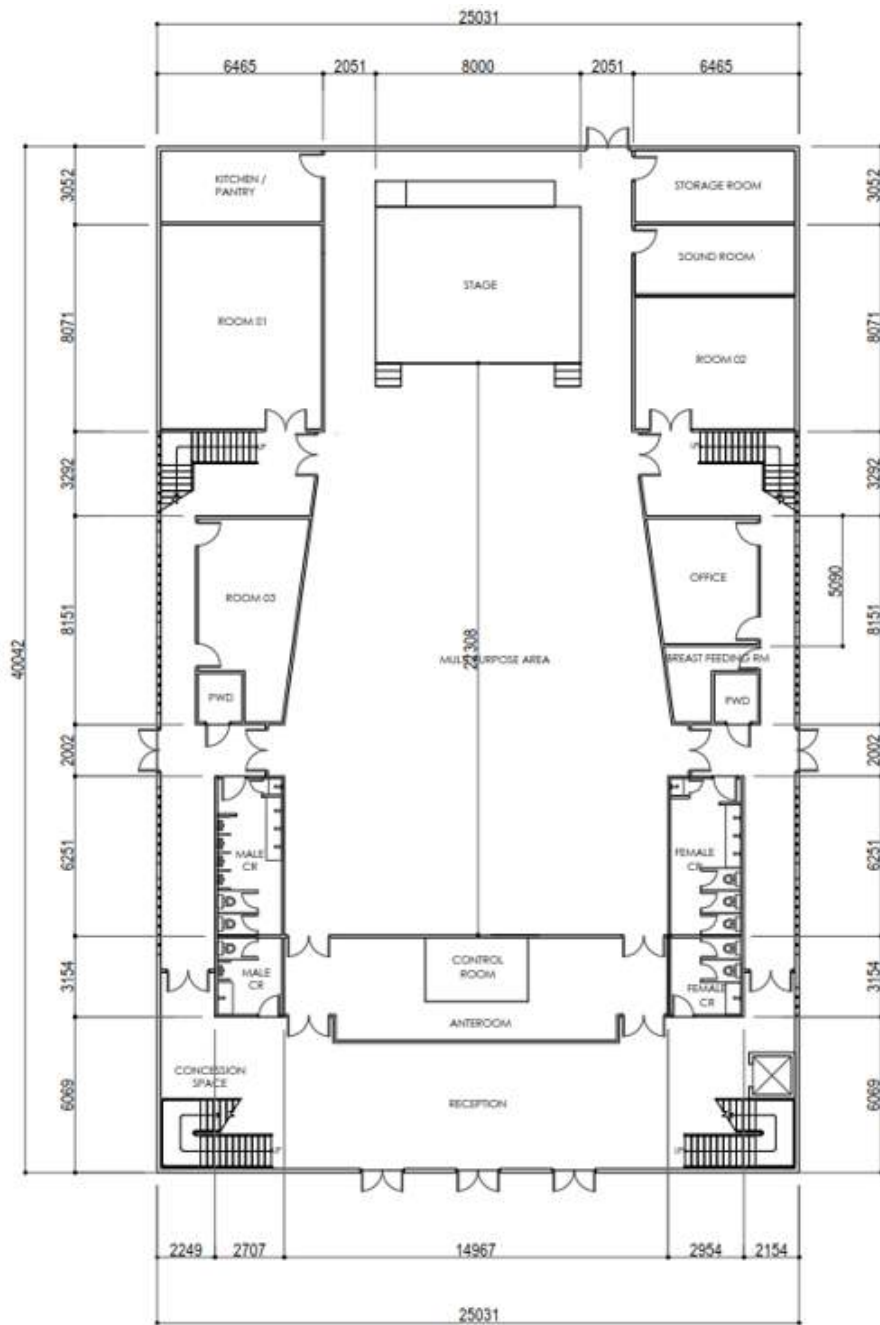
2.0 PROPOSED FLOOR PLANS AND SPACES



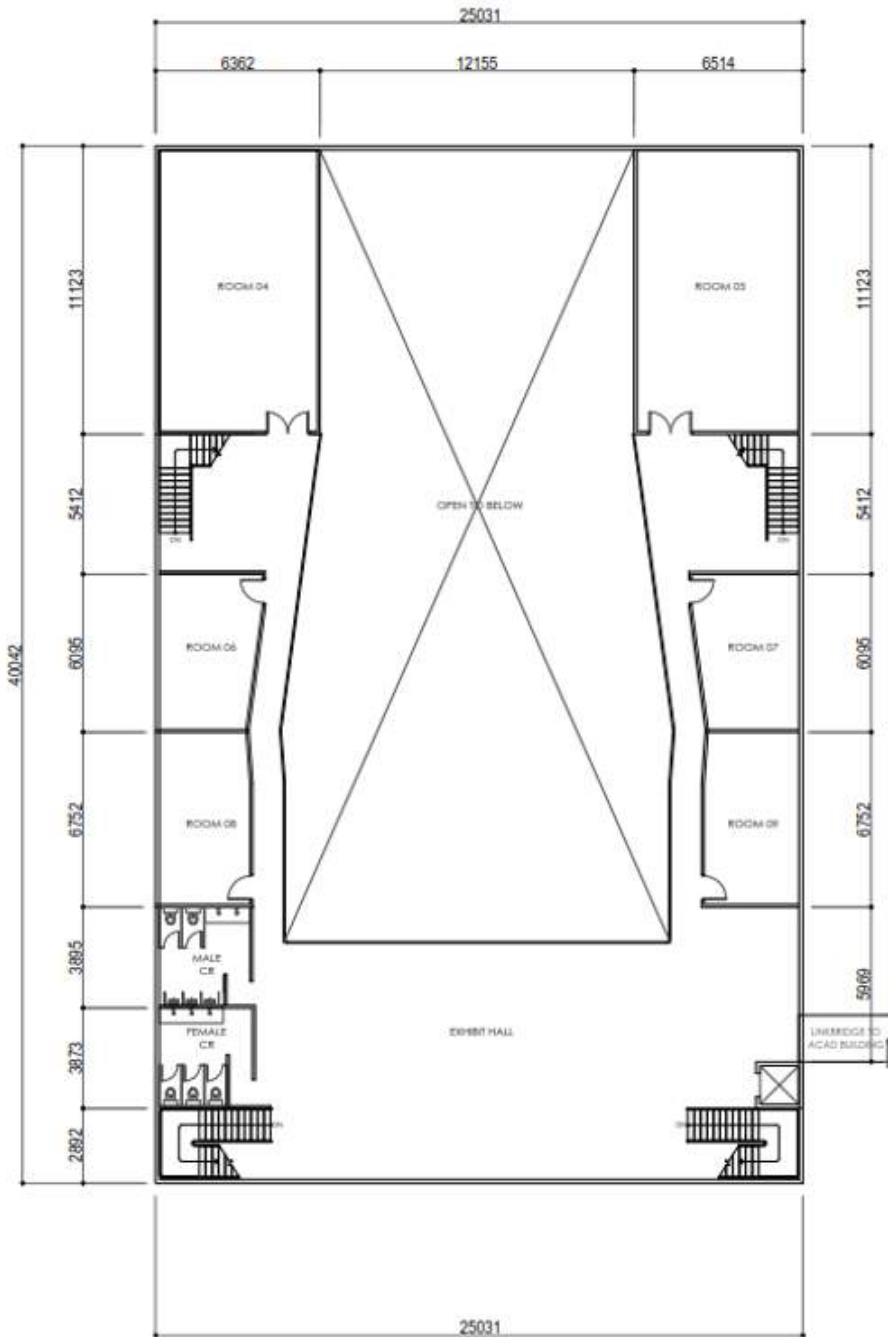
ACADEMIC BUILDING GROUND FLOOR	
Classrooms	Server room
Lecture Halls	Cafeteria
Learning Commons	Communal Bathroom for Faculty and Staff
College Secretary's Office	Communal Bathroom for Students
College Clinic	Security and Utility room

Read and accepted as part of the Contract:

Consultant Bidder



MULTI-PURPOSE BUILDING GROUND FLOOR	
Multi-purpose area	
Stage	
Kitchen / pantry	
Storage room	
Sound room	
Rooms (4)	
Breastfeeding room	
Office	
Male, female, PWD toilets	
Control room	
Anteroom	
Reception	
Concession space	



- MULTI-PURPOSE BUILDING**
- SECOND FLOOR**
- Rooms (6)
- Exhibit area
- Male and female toilets

Read and accepted as part of the Contract:

Consultant Bidder

3.0 PERSPECTIVES



**Proposed CSM Academic Building
Exterior Perspective**



Read and accepted as part of the Contract:

Consultant Bidder



**Proposed Multi-purpose Building
Exterior Perspective**



END OF ANNEX A-1

Read and accepted as part of the Contract:

Consultant Bidder

PART VI

ANNEX A-2 PRE-DESIGN QUESTIONNAIRE FOR END-USERS

1.0 ARCHITECTURAL PROGRAMMING

1.1 The Project Type

- a) The types of spaces frequently included in the building type:
- b) The space criteria (square meter per unit / person) for those spaces:
- c) Typical relationships of spaces for these functions:
- d) Typical costs per square meter for this building type:
- e) Present site conditions (adjacent building, access, parking, utilities) for this building type
- f) Technical, mechanical, electrical, security, or other issues unique to the project type.

1.2 The Goals and Objectives

- a) Organizational Goals:
 - i. What are the goals of the end-user?
 - ii. Where do they see their organization headed?
 - iii. How does this project fit into this broad picture?
- b) Form and Image Goals:
 - i. What should be the aesthetic and psychological impact of the design?
 - ii. How should it relate to the surroundings?
 - iii. Should its image be similar to or distinct from its neighbors?
 - iv. From other buildings belonging to the owner that are located elsewhere?
 - v. Are there historic, cultural, and/or context implications?
 - vi. What is the aesthetic approach do you visualize for the interior of the building spaces?
- c) Function Goals:
 - i. What major functions will take place in the building?
 - ii. How many people are to be accommodated?
 - iii. How might the building design enhance or impact occupant interactions?
- d) Economic Goals:
 - i. What is the total project budget?
 - ii. What is the attitude toward initial costs versus long-range operating and maintenance costs?
 - iii. What level of quality is desired (often stated in relation to other existing projects)?
 - iv. What is the attitude toward conservation of resources and sustainability?
- e) Time Goals:
 - i. When is the project to be occupied?
 - ii. What types of changes are expected over the next 5, 10, 15, and 20 years?

1.3 Identify strategies

- a) Centralization and decentralization:
 - i. What function components are grouped together and which are segregated? For example, in some offices the copying function is centralized, while in others there are copiers for each department.
- b) Flexibility:
 - i. What types of changes are expected for various functions?

- ii. Do facilities need to change over a period of a few hours? A few days? An academic year?
- c) Flow:
 - i. What goods, services, and people move through the project?
 - ii. What is needed at each step of the way to accommodate that flow?
- d) Priorities and phasing:
 - i. What are the most important functions of the project?
 - ii. What could be added later?
 - iii. Are there ongoing existing operations that must be maintained?
- e) Levels of access:
 - i. Who is allowed where? What security levels are there?

2.0 Other relevant information

- a) Facility users, activities, and schedules:
 - i. How many people are doing each activity, and when are they doing it?
 - ii. What are the space criteria (square meters per unit / person) for the functions to take place?
- b) Equipment:
 - i. What equipment is necessary each activity?
 - ii. What is the size of the equipment?
 - iii. What are the energy usage and requirements?
- c) Design standards / codes:
 - i. What are the relevant codes and design standards that apply to the project?
- d) Projection:
 - i. What aspects of the project need to be projected into the future?
 - ii. What is the history of growth of each aspect that requires projection?
- e) Client's existing facility as a resource:
 - i. What are the activities the end-user is already participating to be housed in the new facility? Are the spaces provided satisfactory or lacking?
 - ii. Is there an available floor plan for the existing building? This can be used to determine the building efficiency (the ratio of existing net-to-gross area). This ratio is useful in establishing the building efficiency target for the new facility.

3.0 GAD Checklist for Infrastructure Projects

The following questions are General Analysis Questions set by the Office of Gender and Anti-Sexual Harassment. Please comply the questionnaire and you are free to add comments and qualitative answers and reasons behind assessments. Please put a corresponding check on columns 2a, 2b, or 2c for your answer.

Box 10. GAD checklist for designing and evaluating infrastructure projects

Dimension and question (col. 1)	Response (col. 2)			Score for the item/ element (col. 3)	Result or comment (col. 4)
	No (2a)	Partly yes (2b)	Yes (2c)		
Project identification					
1.0 <i>Participation of women and men in project identification</i> (max score: 2; for each item or question, 0.67)					
1.1 Has the project consulted women on the problem or issue that the intervention must solve and on the development of the solution? (possible scores: 0, 0.33, 0.67)					
1.2 Have women’s inputs been considered in the design of the project? (possible scores: 0, 0.33, 0.67)					
1.3 Are both women and men seen as stakeholders, partners, or agents of change in the project design? (possible scores: 0, 0.33, 0.67)					
2.0 <i>Collection of sex-disaggregated data and gender-related information prior to project design</i> (possible scores: 0, 1.0, 2.0) Has the project tapped sex-disaggregated data and gender-related information from secondary and primary sources at the project identification stage? OR, does the project document include sex-disaggregated and gender information in the analysis of the development issue or problem?					
3.0 <i>Conduct of gender analysis and identification of gender issues</i> (possible scores: 0, 1.0, 2.0) Has a gender analysis been done to identify gender issues prior to project design? OR, does the discussion of development issues in the project document include gender gaps that the project must address?					
Project design					
4.0 <i>Gender equality goals, outcomes, and outputs</i> (max score: 2; for each item, 1)					
4.1 Do project objectives explicitly refer to women and men? Do they target women’s and men’s need for infrastructure? (possible scores: 0, 0.5, 1.0)					

Dimension and question (col. 1)	Response (col. 2)			Score for the item/ element (col. 3)	Result or comment (col. 4)
	No (2a)	Partly yes (2b)	Yes (2c)		
4.2 Does the project have gender equality outputs or outcomes? (see examples in the text) (possible scores: 0, 0.5, 1.0)					
5.0 Matching of strategies with gender issues (max score: 2; for each item, 1)					
5.1 Do the strategies match the gender issues and gender equality goals identified? That is, will the activities or interventions reduce gender gaps and inequalities? (possible scores: 0, 0.5, 1.0)					
5.2 Does the project build on women's and men's knowledge and skills? (possible scores: 0, 0.5, 1.0)					
6.0 Gender analysis of the designed project (max score: 2)					
6.1 <i>Gender division of labor</i> (max score: 0.67; for each question, 0.33)					
6.1.1 Has the project considered whether the infrastructure or participation in the project will affect current activities and responsibilities of women and men, girls and boys? (possible scores: 0, 0.17, 0.33)					
6.1.2 Will the needs of women and men, including those affected by involuntary resettlement, be considered in the design of the infrastructure? (possible scores: 0, 0.17, 0.33)					
6.2 <i>Access to and control of resources</i> (max score: 0.67; for each question, 0.33)					
6.2.1 Will women and men have equal access to the infrastructure and other resources (including employment) distributed by the project? (possible scores: 0, 0.17, 0.33)					
6.2.2 Will women be involved in the decision making over rules for the use and operation and maintenance of the infrastructure or transport-related resources? (possible scores: 0, 0.17, 0.33)					
6.3 <i>Constraints</i> (max score: 0.67; for each item, 0.33)					
6.3.1 Is the proposed infrastructure socially or culturally acceptable and accessible to women? Or, can they use it? (possible scores: 0, 0.17, 0.33)					
6.3.2 Has the project designed measures to address constraints to equal participation and benefits of women and men? (possible scores: 0, 0.17, 0.33)					

Dimension and question (col. 1)	Response (col. 2)			Score for the item/ element (col. 3)	Result or comment (col. 4)
	No (2a)	Partly yes (2b)	Yes (2c)		
<p>7.0 Monitoring targets and indicators (possible scores: 0, 1.0, 2.0)</p> <p>Does the project include gender equality targets and indicators for welfare, access, consciousness raising, participation, and control? For instance, will the following gender differences be monitored:</p>					
<ul style="list-style-type: none"> - Utilization rate of the infrastructure or facility - Membership and leadership in users' organizations - Participation in training and similar project activities, by type of training or activity - Employment generated by the project - Loss of livelihood as a result of the project 					
<p>8.0 Sex-disaggregated database (possible scores: 0, 1.0, 2.0)</p> <p>Does the proposed project monitoring framework or plan include the collection of sex-disaggregated data?</p>					
<p>9.0 Resources (max score: 2; for each question, 1)</p>					
<p>9.1 Is the budget allotted by the project sufficient for gender equality promotion or integration? (possible scores: 0, 0.5, 1.0)</p>					
<p>9.2 Does the project have the expertise to integrate GAD or promote gender equality and women's empowerment? OR, will the project invest in building capacity for integrating GAD or promoting gender equality? (possible scores: 0, 0.5, 1.0)</p>					
<p>10.0 Relationship with the agency's GAD efforts (max score: 2; for each item or question, 0.67)</p>					
<p>10.1 Will the project build on or strengthen agency/PCW/government's commitment to the advancement of women? (possible scores: 0, 0.33, 0.67)</p>					
<p>10.2 Does the project have an exit plan that will ensure the sustainability of GAD efforts and benefits? (possible scores: 0, 0.33, 0.67)</p>					
<p>10.3 Will the project build on the initiatives or actions of other organizations in the area? (possible scores: 0, 0.33, 0.67)</p>					
<p>TOTAL GAD SCORE - PROJECT IDENTIFICATION AND DESIGN STAGES (Add the score for each of the 10 elements, or the figures in thickly bordered cells.)</p>					

END OF ANNEX A-2

ANNEX A-3 DETAILED DESIGN PARAMETERS

The commissioned Architect shall abide by the foregoing criteria and parameters for the Design of the UP Mindanao College of Science and Mathematics Academic Building at the UP Mindanao Campus.

1.0 GENERAL DRAWING GUIDELINES

- (a) All drawings shall be computer drafted. Drawings shall be submitted both in printed and electronic copies.
- (b) Keep the same orientation for all plans. The north orientation shall be indicated in all architectural plans. The orientation of the architectural plans shall be consistent with all the engineering plans.
- (c) Existing buildings and new works shall be clearly indicated and labelled in site plans.
- (d) Detailed plans shall have a scale not smaller than 1:50 meters.
- (e) Spot detailed plans, elevations and sections shall have a scale not smaller than 1:20 meters.
- (f) Avoid notes such as “see architectural detail” or “see structural”. Always refer with a callout to the specific detail drawing and sheet number.

1.1 SITE PLANS

The site plans shall have a scale not smaller than 1:200 meters.

1.2 FLOOR PLANS

- (a) All plans shall be 1:100 meters. The same scale shall be used for the rest of the architectural, structural, sanitary, plumbing, electrical and mechanical plans, except for each trade’s site plan, detailed plans and spot details.
- (b) Elevation callouts shall be indicated on the floor plans and shall be consistent with the elevation drawing.
- (c) Section line callouts on the floor plans shall be consistent with the section drawing.
- (d) Floor plans shall be indicated with boxed room callout numbers, including the callout for floor finishes and wall finishes.
- (e) Floor elevations shall be indicated in the floor plans. This shall be in reference to the natural grade line or the established finished floor lines of the adjoining existing buildings.
- (f) The location of mechanical equipment, e.g. air conditioning shall be indicated in the floor plans. This shall be consistent with the mechanical and electrical plans.
- (g) Door callouts shall be circles with proper numbering, e.g. D-01.
- (h) Window callouts shall be hexagons with the proper numbering, e.g. W-01.

1.3 ELEVATIONS AND SECTIONS

- (a) Finish floor lines and top of truss lines shall be consistent in all the elevations, sections and structural plans and details.
- (b) Floor-to-floor heights shall consider beam depths, mechanical ducting, cable trays and plumbing space above the ceiling, and optimum ceiling heights. Floor-to-floor heights shall not be less than the values indicated on the Schematic Plans.

1.4 REFLECTED CEILING PLANS

- (a) Reflected ceiling plans shall be indicated with boxed room callout numbers, including the callout for ceiling finishes and lighting fixtures.
- (b) Ceiling height relative and in reference to the finish floor line shall be indicated in the reflected ceiling plans in each room with boxed dimensions. This is to ensure that

the ceiling heights of all rooms are established whether or not reflected in the sections.

- (c) The description and location of the fixtures, e.g. lighting, smoke detectors, air condition vents, exhaust fans, in the reflected ceiling plans shall be consistent with the electrical and mechanical plans.

1.5 ROOF PLANS

Location of all downspouts shall be indicated in the roof plans. Direction of slope to drain rainwater shall likewise be indicated in the drawing with corresponding slope design. Accessories such as gutters and grated outlets detailed specification

1.6 DOORS AND WINDOWS

Door and window schedules shall indicate the type of door or window, the number of doors and windows, the location/s of the door or window, the materials and accessories included and other special specifications, e.g. color or finish.

1.7 DETAILS

- (a) Provide a minimum of one (1) section of a scale not smaller than 1:50 meters for each area preferably cut along the area with special construction design.
- (b) Provide spot detail plans, elevations and sections of a scale not smaller than 1:10 meters for special designs with aesthetic treatment and ornamentation.
- (c) Provide detail plan of a scale not smaller than 1:50 meters for all areas needing tile pattern, e.g. dwelling units, toilets, corridors, stairs, lobby, common areas, entrance walk, showing the position and pattern of tiles.
- (d) Centerline location of plumbing fixtures shall be indicated in detail plan with lines of reference and its corresponding dimensions. This is to indicate the exact locations of the plumbing/sanitary roughing-ins.

1.8 COORDINATION DRAWINGS

- (a) During design development only, provide colored coordination floor plans and reflected ceiling plans that show the overlays of all relevant disciplines. The scale should not be less than 1:100 meters, with each professional assigned a unique color. A legend identifying the discipline and line, or object colors shall be contained in each sheet.
- (b) Responses to reviewer comments shall be noted in the forms supplied by the Construction Manager. Approval to proceed with Construction Documents (For Construction) shall be confirmed after designer's responses to reviewer comments on the coordination drawings have been accepted.
- (c) Responses to reviewer's comments on Design Development documents shall be backchecked in the Construction Documents prior to implementation.

2.0 DRAWING QUALITY CONTROL

All drawings and specifications shall be signed and sealed by the licensed professional who performs quality control prior to submission of Design Development and For Construction deliverables.

2.1 SITE WORKS

The Master Site Development Plan shall include the following:

- (a) Contour and survey of the lot, including bearing and dimensions of the property lines
- (b) Road network, curbs and gutters, and sidewalks
- (c) Parking spaces
- (d) Reference location of existing trees, swales and waterways

- (e) Reference location and footprint of proposed and existing buildings, with the corresponding building names and dimensions, including distances between adjacent buildings, and distances between buildings and the nearest property lines
- (f) Reference location of utilities, e.g., water reservoirs, septic tanks, water treatment plant, powerhouse, transformers, waste storage area, security outposts.
- (g) A porte-cochere or covered drop-off area shall be provided at the main entrance of the building. Where required, covered walkways shall be provided for access and connection to other buildings.
- (h) Parking area shall be provided with grass pavers as surface material to promote natural water.
- (i) Ramps shall be provided in all main entrances of the buildings and other access opening to walkways leading to other buildings.
- (j) A rainwater catchment system for the structure shall be so designed to collect rainwater into one of the overhead water tanks and the cistern. Rainwater shall be used mainly for flushing of toilets and irrigation.
- (k) A septic tank shall be provided away from the cistern.

2.2 BUILDING ARCHITECTURAL WORKS

(a) FLOOR PLANS

- i. The structural, sanitary, plumbing, electrical and mechanical designs are required to refer to the architectural plans and specifications in case of discrepancies. If an engineering design will have any possible conflict or interference on the architectural design, the latter may be adjusted provided that the aesthetic value will not be compromised.
- ii. The architectural and engineering plans shall be consistent all throughout in terms of dimensions and locations of columns, beams, walls, roof line, conduits, ducts, pipes and fixtures, among others. Column and beam grid lines shall be consistent in all the architectural and engineering plans.
- iii. Verify and coordinate floor plans with the mechanical, electrical, and sanitary design about the requirements for mechanical rooms, AHU rooms, pipe chase, and other engineering requirements.
- iv. A separate public toilet shall be provided for persons with disability as required by BP 344, and a separate gender-neutral toilet to be designed for persons from the LGBTQI community.

(b) WALLS

- i. Exterior concrete walls shall be 200mm thick, while interior concrete walls shall be 150mm thick. This is indicative of the finished wall thickness including the plastering and tile works.
- ii. IP carvings shall decorate the façade of the structure and where agreed upon or approved by the University. The IP carvings shall be made of concrete or approved equivalent material.
- iii. Toilet wall tiles shall be at least 300mm x 300mm, unless otherwise specified or approved by the University. As much as possible, toilet wall dimensions shall be based on the modular sizing of tiles to avoid tile serujo and or excessive tile wastage.
- iv. Layout and work on wall and floor tiles must be aligned, plumb, level, and square.
- v. All edges, corners and intersections of toilet tiles, including the topmost tiles not reaching the ceiling shall be provided with polyvinyl chloride tile trims.
- vi. Tile color and design shall first be approved by the University before installation.

(c) FLOORS

- i. If floor tiles in two adjacent areas with different material, color or design meet at the door opening, the cut shall be located middle of the door thickness when in a closed position. Provide details in the floor pattern designs. Provide aluminum threshold, when required.
- ii. Floors at the openings of toilets for persons with disability shall be sloping. Indicate in the plans and sections.
- iii. Toilet floor tiles shall be at least 300mm x 300mm, unless otherwise specified or approved by the University. As much as possible, toilet dimensions shall be based on the modular sizing of tiles to avoid tile serujo and or excessive tile wastage.
- iv. Pantry floor tiles shall be at least 400mm x 400mm, unless otherwise specified. Pantry dimensions shall be based on the modular sizing of tiles to avoid tile serujo and or excessive tile wastage.
- v. Lobby and corridor floor tiles shall be at least 600mm x 600mm, unless otherwise specified. Tile type (i.e. glossy, non-skid, etc.) shall be as approved by the University.
- vi. Layout and work on wall and floor tiles must be aligned, plumb, level, and square.
- vii. All edges, corners, and intersections of toilet tiles shall be provided with polyvinyl chloride tile trims.
- viii. Tile color and design shall first be approved by the University before installation.

(d) CEILING WORKS

- i. Ceiling height should be maximized in all areas. Off-the-form smooth rubbed ceiling finish may only be used in utility areas such as electrical rooms, mechanical rooms, battery rooms, and the like.
- ii. Ceiling height should be planned to avoid conflicts between ductwork for exhaust, cable trays and plumbing. Determination of slab to slab height should consider beam depth which would limit the locations where room air supply and exhaust may run across.
- iii. Soffit of exterior beams and slabs shall have drip moulds to prevent damage due to water seeping into the eaves or ceiling. Section details shall be required to show the drip mould.
- iv. The direction of lighting fixtures shall be consistent in all building rooms with exterior windows.

(e) DOORS AND WINDOWS

- i. Major entry ways that require security shall have sturdy doors, e.g. wood panel and metal, installed with security access systems as required.
- ii. Minor entry ways that do not require security shall at least have wood flush doors.
- iii. All entrance doors to offices shall be frameless glass doors, unless approved otherwise.
- iv. Toilets and other wet areas shall have steel doors on steel frames.
- v. Fire escape doors should be provided with panic hardware and door closers and shall conform to the requirements of the Fire Code of the Philippines.
- vi. Aluminum frames of glass doors shall be powder-coated
- vii. Door jambs with no moulding/casing installed on concrete walls shall have construction grooves all around. Provide details.
- viii. Door finish and color shall first be approved by the University before application.
- ix. All doors and windows shall have reinforced concrete lintel beams. Provide details.
- x. All awning windows shall have powder-coated aluminum frames. Tint color, if any, shall be approved by the University before installation.

- xi. Windows with slots for window type air conditioning units shall be positioned in coordination with other windows in the same wall or side of the building.
- xii. Windowsills 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.
- xiii. Wall partitions facing or along the corridors shall be frame glass partitions, unless approved otherwise.

(f) STAIRS, RAMPS AND CORRIDORS

- i. Ramps for persons with disability shall have a slope not higher than 1:12. Handrails and clearances shall conform with the requirements of BP 344.
- ii. Grab rails shall be provided in the PWD toilets conforming to the requirements of BP 344.
- iii. All stair, ramp, balcony, and corridor railings shall be stainless steel tubes unless approved otherwise.
- iv. Regular stairs shall have risers at 150mm high and treads at 300mm wide. Handrails shall be at least 900mm high. Clearances shall conform to the requirements of the Fire Code of the Philippines.
- v. Corridors shall have a minimum unobstructed width of 1500mm. This shall be measured clear from the surface of the finished wall and not on-center of the rough CHB wall.
- vi. Corridors and exit doors shall conform to the requirements of the Fire Code of the Philippines.

(g) FIXTURES AND ACCESSORIES

- i. Electrical light switches shall be located by the knob side of the door.
- ii. Electrical light switches and outlets shall be installed plumb and level.
- iii. The backboxes of receptacles and switches shall be packed with expanding sealant prior to installation. The outside edges and screws on face plates or trims shall be sealed and wiped clean of excess sealant.
- iv. A drainage line shall be provided for window-type air conditioners.
- v. All plumbing and lighting fixtures shall be subject to the approval of the University prior to installation.

(h) ROOFING WORKS

- i. The section of the concrete roof gutters shall be designed, in case of a clogged downspout, so that the overflow of water will be directed outside of the building and not towards the eaves or interior ceiling to prevent any damage. Provide membrane-type and integral-type waterproofing. Provide details.
- ii. Avoid valley or inside gutters in roof design. But in cases required in aesthetic design, valley or inside gutters shall be in stainless steel or concrete gutters with membrane-type waterproofing, and the section shall be designed with a capacity for big volume to prevent any damage due to overflow. Provide details.
- iii. Parapets, designed as a roof protection from the winds, must be designed to satisfy the preceding parameters. Provide details.
- iv. Concrete roofs shall be provided with membrane-type and integral-type waterproofing. Where roof space is to be developed into a roof deck garden, the proper drainage, insulation, waterproofing, vapor/thermal barriers and irrigation system shall be put in place. Provide details and mock-ups for approval prior to installation.
- v. The slope of a hipped roof shall not be less than 14 degrees.
- vi. Access to the roof shall always be provided for maintenance and other purposes.

- vii. The roof structure shall be designed to carry the weight of 2-3 persons for cleaning and maintenance.
- viii. Roof shall be marked with paint to indicate where the maintenance staff can safely walk and stand on while cleaning.
- ix. Where concrete canopies are provided at the main entrance of the building, provide a slope of at least 5 degrees for proper drainage.
- x. Final paint color and shade shall first be approved by the University before application.

(i) PAINTING

- i. Painted ceiling shall be in flat latex finish, while cornices and mouldings shall be in gloss enamel finish unless otherwise noted.
- ii. Painted interior wall shall be at least in semi-gloss latex finish for rooms, unless specified to a higher type of paint.
- iii. Painted exterior wall shall be at least in moisture-resistant/water-repellant solvent-based paint finish, textured or smooth, unless otherwise specified.
- iv. Final paint color and shade shall first be approved by the University before application.

2.3 SPECIFIC REQUIREMENTS

- (a) Provide spot detail plan and sections of the following:
 - i. Stainless steel gutter, eaves, and parapet
 - ii. Ceiling – cove light (if provided), special connections and design, moldings, valances
 - iii. Stairs – handrail and baluster design
 - iv. Ramps – handrail design and floor pattern
 - v. Doors, windows, and gates – grille works
 - vi. Special Architectural Treatment and Design, e.g. façade design, special windows and doors
 - vii. Special Carpentry Works, e.g. partitions, cabinetry
 - viii. Other details as may be required
- (b) Provide Room Data Sheets, including detail floor plan, ceiling plan and sections in coordination with the requirements of the electrical, sanitary and mechanical designs

2.4 SUMMARY OF MATERIALS

- (a) Materials to be used shall be fire-resistant, non-toxic, moisture-resistant and termite-resistant, e.g. fiber cement board, light-gauge steel frame, polyvinyl chloride ceiling panels.
- (b) Wet areas, e.g. toilets and kitchen shall use non-skid/non-slip granite or vitrified ceramic floor tiles.
- (c) Heavy traffic areas, e.g. lobby, and corridor shall use heavy-duty vitrified ceramic floor tiles, seamless granite floor tiles or a higher type of floor material.
- (d) Vinyl floor tiles (if considered) shall be homogenous and not less than 2mm thick.
- (e) Ramps and stairs shall use non-skid/non-slip floor tiles, materials as specified.
- (f) Aluminum T-runners shall be powder coated.
- (g) Metal rod hangers with adjustable clips, and not galvanized iron wires, shall be used to support and suspend the aluminum T-runners and light gauge metal furring.
- (h) Roofing sheets shall be Ga. # 24 aluminum-coated, pre-painted, pre-formed and long-span.

2.5 DRAWING REQUIREMENTS

See Annex B-1 for Checklist.

3.0 CIVIL/STRUCTURAL DESIGN PARAMETERS

3.1 CODES AND STANDARDS

The Civil/Structural Design shall be in accordance with the following Laws, Codes and Standards.

3.2 SITE WORKS

GENERAL

Based on the Master Site Development Plan, provide where applicable complete design and details of road (concrete with curb gutter, including drainage) network, walkways parking areas and fencing.

- (a) The main driveway leading to the main entrance of the building shall be at least 4.00 meters wide with a minimum thickness of 200mm (8 inches). Concrete strength should be at least 3000psi. Roads shall be so designed to accommodate delivery vehicles.
- (b) Walkway should be at least 100mm thick with concrete strength of 2500psi. Ramps should be provided, instead of steps, for any change in elevations.
- (c) Parking area slabs should be at least 150mm thick with concrete strength of 3000psi.

3.3 BUILDINGS

- (a) The buildings should be designed using seismic importance factor of 1.25 for immediate occupancy category. Buildings should be designed in accordance with NSCP requirements using the appropriate magnitude and seismic source. Seismic gaps between buildings (old and new) should be properly observed.
- (b) The buildings should be designed also using wind importance factor appropriate to the site (especially for design of trusses/roofing system). Concrete gutters and parapet walls should be provided as additional protection to the roofing system during strong typhoons.
- (c) The structural designer should verify with Philippine Volcanology and Seismology (PHIVOLCS) the distance of the proposed building to the nearest active fault lines and with the DENR for geo-hazard mapping.
- (d) The structural designer is encouraged to use fire-resistive and non-toxic materials.
- (e) All columns shall be constructed with standard materials, plastered and painted.
- (f) Soil investigation (at least three bore holes) should be conducted to determine soil bearing capacity and recommended foundation system for the building.

3.4 SPECIFIC REQUIREMENTS

The following shall be provided:

- (a) Connection details of beam and columns following the requirements of NSCP on confined areas.
- (b) Connection of trusses to beams and columns.
- (c) Splicing details of reinforcing bars on columns and beams and the required bar cut-off points.

3.5 SUMMARY OF MATERIALS

- (a) Concrete shall be Portland cement and conforming to ASTM Specification C150, Type I to Type II.
- (b) Coarse Aggregates shall consist of washed gravel, crushed stone or rock or a combination thereof conforming to ASTM C33.
- (c) Concrete hollow blocks shall be a standard product of recognized manufacturer conforming to PNS 16 with at least 350psi strength.
- (d) Reinforcing bars shall conform with PNS Grade 60 for 16mm diameter and above and PNS Grade 40 for 12mm diameter and below.
- (e) Structural steel shall conform with ASTM A36.
- (f) Bolts and studs shall conform with ASTM A325.
- (g) Welding electrodes shall be E60 or E70 and conform with AWS D.1.1.

3.6 DRAWING REQUIREMENTS

See Annex B-1 for Checklist.

4.0 SANITARY/PLUMBING DESIGN PARAMETERS

4.1 CODES AND STANDARDS

The Sanitary/Plumbing Design shall be in accordance with the following Laws, Codes and Standards.

4.2 SITE WORKS

GENERAL

Based on the Master Site Development Plan, the Site Works shall provide complete layout of the following:

- (a) Storm Drainage Network, indicating Drainage Manholes and Pipe Culverts;
- (b) Sewerage Pipe Network, indicating Sewage Manholes, Sewage Pipes and the location of the proposed Sewage Treatment Plant;
- (c) Water Supply Network, indicating the location of Water Service entrance, Cisterns, Elevated Water Tank and proposed Pump House.
- (d) The Storm Drainage Network shall accommodate the magnitude of peak rates of surface run-off including drainage coming from the building. The system shall be capable of handling the design flows routing to the designated outfall. For rainfall calculation and sizing of drainage pipes, refer to Table-D2, Appendix-D, National Plumbing Code of the Philippines and current rainfall record from PAG-ASA (156mm/hr).
- (e) The Sewerage Pipe Network design shall accommodate all sewage coming from all the facilities, conveyed by gravitational flow leading to the proposed or existing Sewage Treatment Plant.
- (f) The Water Supply Network shall include the provision of Fire Hydrants, accessible Drinking Fountain that will serve as testing point for safe and potable water supply.

4.3 BUILDING FACILITIES SANITARY/PLUMBING SYSTEM

(a) SEWER LINE AND VENT SYSTEM

- i. Provide complete Sewer Line and Vent System from all plumbing fixtures and floor drains, laid by gravity flow leading to the Sewage Treatment Plant (STP). For Demand Weight of Fixtures in Fixture Units, refer to Appendix-A, Table A-2, NPCP.

- ii. Provide exact location of toilet floor drains relative to the tile layout for approval of the University.

(b) WASTEWATER LINE AND VENT SYSTEM

For all wash areas dealing and generating with oil/grease, provide separate Waste Line and Vent System and solely tap to the proposed Grease Trap and then connect its effluent to the Sewage Treatment Plant. For Estimated Demand Weight of Fixtures in Fixture Units, refer to Appendix A, Table A-2, NPCP.

(c) WATER LINE SYSTEM

Provide complete cold water supply pipes to all plumbing fixtures. From the main water source to cistern tank, the water shall be pumped to the Elevated Water Tank (EWT) and conveyed to the fixtures by gravity system and or distributed to fixtures by transfer pumped with constant pressure through a Pneumatic Storage Tank, whichever is feasible.

(d) STORMWATER DRAINAGE SYSTEM

- i. Provide complete storm drainage system for all roofs, canopies, concrete ledges and balconies including condensate drains laid for gravity flow connected to a leader/pipe line leading to the natural ground level storm drainage network.
- ii. Rain water shall be collected in an overhead water tank and in a cistern. Rain water shall be used mainly for flushing of toilets and landscape irrigation.
- iii. Downspouts shall preferably be located for easy maintenance may either be embedded in the columns or installed on building surface using rectangular PVC downspouts that are paintable and properly secured with stainless clamps on building surface blending with the building design.
- iv. Provide Computation of Rain Water Catchment System Capacity as per Required by Davao City Rainwater Ordinance of 2009 (Ordinance # 0298-09).

(e) FLOOR DRAINS

Provide floor drains with trap for odor stopper for easy maintenance where needed to conveniently capture condensate areas.

4.4 SPECIFIC REQUIREMENTS

Provide details of the following:

- (a) Grease Trap
- (b) Cistern Tanks and Elevated Water Tanks (c/o Mechanical Engr)
- (c) Details for plumbing lines
- (d) Pump locations and vibration and noise controls.
- (e) Effluent treatment method

4.5 SUMMARY OF MATERIALS

- (a) *Sewer and vent pipes*: unplasticized Polyvinyl Chloride (uPVC) extra series 1000 conforming to ISO 3633 ASTM D2729 including trims and fittings
- (b) *Waste water and Storm drainage pipes*: downspouts, unplasticized Polyvinyl Chloride (uPVC) extra series 1000 conforming to ISO 3633 ASTM D2729 including trims and fittings (BPS Certified)
- (c) *Drainage pipes*: 250mm dia. and below, Non-Reinforced Concrete Pipe (NRCDP)
 - i. 300mm dia. and above, Reinforced Concrete Pipe (RCDP)

- (d) *Drainage manholes*: Street inlet/curb inlet, Traffic Type Reinforced Concrete
 - i. Area drain/catch basin, Reinforced Load Bearing CHB
- (e) *Sewage manholes*: Traffic Type Reinforced Concrete with Standard Steel Brass Cover
- (f) *Cleanouts*: Cast Iron Brass with counter sunk plug (BPS Certified)
- (g) *Floor drains/Deck drains*: Cast Iron Brass (BPS Certified)
- (h) *Gutter drains*: Cast Iron Dome Type Brass (BPS Certified)
- (i) *Cold Waterline pipes*: for buildings, Polypropylene Pn20 Fusion Weld Pipes including Trims and Fittings (BPS Certified)
- (j) *Trench grating*: Galvanized/Stainless Steel Iron grates
- (k) *Plumbing Fixtures including Trims, Fittings and accessories* (BPS Certified):
 - i. Water Closet – Tankless type, DFV
 - ii. Lavatory – Pedestal/Counter type with C-sprout spray faucet
 - iii. Urinal – Wall hung flush valve type

4.6 DRAWING REQUIREMENTS

See Annex B-1 for Checklist.

5.0 MECHANICAL DESIGN PARAMETERS

5.1 CODES AND STANDARDS

The Mechanical Design shall be in accordance with the following Laws, Codes and Standards.

5.2 SPECIFIC REQUIREMENTS

Provide details of the following:

- (a) Cistern tanks and elevated water tanks at mechanical penthouse.
- (b) Energy saving measures designed to decrease relative energy consumption.
- (c) Passive measures for providing indoor air comfort and monitoring indoor air quality.

5.3 DRAWING REQUIREMENTS

See Annex B-1 for Checklist.

6.0 ELECTRICAL DESIGN PARAMETERS

6.1 CODES AND STANDARDS

The Electrical Design shall be in accordance with the following Laws, Codes and Standards.

6.2 SITE WORKS

Based on the Master Site Development, the Site Works shall provide complete Electrical layout of the following:

- (a) KVA rating and other specifications of Transformer
- (b) Switchgear requirements
- (c) Panelboard Layout
- (d) Electrical Metering Devices
- (e) Service Conductors and Conduit Layout
- (f) Grounding System
- (g) Emergency Standby Generators
- (h) Street and Perimeter Lighting System

- (i) Lighting calculations for offices, meeting rooms
- (j) Energy saving measures to decrease relative energy consumption.

6.3 BUILDING FACILITIES ELECTRICAL SYSTEM

(a) LIGHTING SYSTEM

- i. Provide and install adequate normal branch circuits for Lighting Systems to all areas using the standard Lighting Design Analysis. Utilize the standard illumination requirements per area of concern using the preferred particular type of luminaires.
- ii. Provide LED lights for all areas, unless otherwise specified.

(b) POWER SYSTEM

- i. Provide and install adequate normal branch circuits for the Power System.
- ii. Provide sufficient wall and/or floor convenience outlets according to user requirements.
- iii. Provide convenience outlets, weatherproof if necessary, in public areas such as corridors, lobbies, etc.

(c) STANDBY/EMERGENCY SYSTEM

Provide and install adequate life safety and critical emergency branch circuits for lighting or utilization equipment connected to the alternate power source.

(d) AUXILIARY SYSTEM

- i. Provide and install provisions for the following Auxiliary System (to be centrally controlled in the Data Center):
 - 1) Communication System
 - Telephone System
 - Internet with Wi-Fi System
 - Public Address Paging System
 - Private Branch Exchange (PABX)
 - Closed Circuit Television System
 - Master or Cable Antenna Television
 - Fiber Optic Cable System
 - 2) Fire Detection and Alarm System
 - 3) Security System
- ii. Fire detection, alarm and sprinkler systems (if required) shall be provided in all rooms and common areas complete with smoke detectors.
- iii. Fire extinguishers in properly designed cabinets shall be provided at required locations.

(e) LIGHTNING PROTECTION SYSTEM

The building lightning protection system shall include roof-mounted air terminals grounding conductors, ground rods, conduits, clamps, and auxiliary equipment as required for a complete and operational lightning protection system.

(f) EARTHGROUNTING

The building electrical system should include earth-grounded connections. Equipment manufacturers may require earth-grounding and reliable power for special connections and services as may be indicated in the equipment manuals to serve as protection and safe operation.

6.4 SPECIFIC REQUIREMENTS

Provide details of the following:

- (a) Lighting Fixtures/Luminaires
- (b) Panel board and Circuit Breakers
- (c) Switchgear and other Metering Devices
- (d) Electrical Equipment and other Special Equipment
- (e) Installation and Termination of Auxiliary and other Special Devices and Equipment
- (f) Power and Telephone Hand holes (as may be required)
- (g) Pedestal and Service Entrance to building
- (h) Grounding System Layout
- (i) Others as may be required

6.5 SUMMARY OF MATERIALS

(a) GENERAL LIGHTING LUMINAIRES

Fixtures type shall be as indicated on the Lighting Layout Plan:

- i. LED lights shall be wall or ceiling mounted or recessed luminaires.
- ii. LED fixture housing shall be copper-free aluminum with epoxy powder coat paint finish and the lens material shall be heat and impact-resistant glass or polycarbonate.
- iii. Other special lighting requirements shall be as approved by the University.

(b) WIRING DEVICES

Wiring devices shall be non-automatic control devices, the contact is guaranteed by the pressure of the special spiral springs.

- i. Switches shall be of 15A, 250V or 300V except as otherwise noted and approved. Terminals shall be screw-type or quick-connected type.
- ii. General use receptacle shall be 15A, 240V grounding type unless otherwise indicated on the drawings.
- iii. Special purpose receptacles shall be as required. Matching plugs shall be supplied. The End user's equipment list shall determine locations of special purpose receptacles.

(c) PANELBOARDS AND CIRCUIT BREAKERS

The Panel Board and Circuit Breakers shall be equipped with molded-case circuit breakers and shall be the type as indicated in the panel board schedule and details.

- i. Provide molded-case circuit breakers of frame, trip rating and interrupting capacity as shown on the drawings. The circuit breakers shall be quick-make, quick break, thermal-magnetic, trip-indicating and shall have common trip on all multiple breakers with internal trip mechanism.
- ii. All current-carrying parts of the panel boards shall be plated. Provide solid neutral (S/N) assembly when required. The assembly shall be isolated from the enclosure.
- iii. Circuit breakers for large equipment set-ups may be added for future so sizing of electrical equipment should be based on a fully occupied building.
- iv. Surface mounted raceways shall have a duplex receptacle spaced every 600 mm and circuit breakers shall be mounted on or at the raceways for safe shut-off during emergencies.
- v. All receptacles shall be commercial grade with brushed metal face plates.

- vi. All receptacles shall have labels or tags identifying the panel and circuit number as shown on the electrical power plans.
- vii. All electric outlets shall be color-coded, i.e. metallic grey or approved color for outlets connected to emergency power source/ back-up generator.
- viii. Sub-meters shall be provided for every office or space as required by the University.

(d) ELECTRICAL CONDUITS, BOXES AND FITTINGS

All conduits, boxes and fittings shall be standard rigid steel, zinc coated or galvanized.

- i. Rigid Steel Conduits (RSC)
- ii. Rigid Metal Conduits (RMC)
- iii. Intermediate Metal Conduits (IMC)
- iv. Electrical Metallic Tubing (EMT)
- v. Unplasticized PolyVinyl Chloride (uPVC) if required shall be Schedule 40.

(e) CONDUCTORS

Wires and cables shall be of the approved type and unless specified or indicated otherwise, all power and lighting conductors shall be insulated for 600 volts.

- i. The conductors used in the wiring system shall be of soft-annealed copper having a conductivity of not less than 98% of that of pure copper and insulated for 60°C temperature.
- ii. All conduits of convenience outlets and wire ways for lighting branch circuit homeruns shall be wired with a minimum of 3.5mm square in size.

(f) MASTER ANTENNA TELEVISION (MATV) AND CABLE TELEVISION (CATV) SYSTEM

- i. Install provisions for MATV and CATV wiring into program spaces or through cable tray and conduit pathways reserved for future connections.
- ii. There shall be individual trunking for master antenna and cable television rising in the building.

(g) STRUCTURED CABLING AND TELEPHONE SYSTEM

- i. Install provisions for telephone systems going into individual offices, meeting rooms.
- ii. Install provisions for structured cabling as specified.

(h) FIRE DETECTION AND ALARM SYSTEM (FDAS)

- i. The Fire Detection and Alarm System shall be of multiplex, microprocessor-controlled addressable or zonal conventional fire detection, alarm and communication system.
- ii. The system shall consist of full integration automatic fire detection, voice alarm communication and fire fighters telephone system.
- iii. The system shall consist of control station, mimic panel initiating and indicating devices, control modules and system of wirings.
- iv. Actuation of the protective signaling system shall occur by manual pull station, automatic smoke or heat detector, sprinkler flow switch and tamper switch.
- v. The system shall be able to monitor the status of flow switches, supervisory switches and blowers installed at the Sprinkler System risers. These monitoring points are also addressable or the conventional zonal in the same way as the detectors are making them easily recognizable at the control panel.

- vi. Occupant notification shall be accomplished automatically. Notification shall be the general, audible alarm type complying with the appropriate section of the NFPA.
 - vii. The system shall be installed with provision for future connection to the nearest fire services station in the locality.
 - viii. Fire alarm annunciators should comply with code requirements for the type of occupancy of the building.
- (i) SECURITY SYSTEM
- i. The Security System shall include intrusion detection and alarm, CCTV, access control or as may be required.
 - ii. Conduit pathways in concrete and access boxes must still be provided even if value engineering limits the amount of equipment in the base building construction.

6.6 DRAWING REQUIREMENTS

See Annex B-1 for Checklist.

END OF ANNEX A-3

PART VI ANNEX A-4

EVALUATION CRITERIA FOR DESIGN PROPOSAL - BREAKDOWN

PROJECT NAME: **PROPOSED COLLEGE OF SCIENCE AND MATHEMATICS ACADEMIC BUILDING**
 LOCATION: **UP Mindanao, Mintal, Tugbok District, Davao City**
 OWNER: **University of the Philippines Mindanao**

Name of Company: _____
 Representative: _____
 Contact Information: _____
 Date of Oral Presentation: _____

NOTES:

- Design Proposals that are awarded **75 points or higher** shall be considered as **PASSING** bids.
- Design Proposals that are awarded **74 points or less** shall be considered as **FAILING** bids.

Evaluation Criteria for Design Presentation and Methodology - Summary of Points		Assigned Points	Assigned Points	Actual Score
(scores to be announced to concerned bidders after BAC completes evaluation)				
A BUILDING AND SITE DESIGN CONCEPTS		17	17	
Project Brief: Comprehensive description of the following architecture and engineering concepts of the proposed facility in compliance with the University of the Philippines Development Principles and Design Guidelines:				
a. Sustainable building and green architecture and engineering concepts;			2	
b. Safe building and resilient design concepts in response to climate change;			2	
c. Natural ventilation and thermal comfort concepts;			2	
d. Energy savings concepts through day lighting, electric lighting, power consumption monitoring, and solar power harvesting and use;			2	
e. Water use efficiency concepts, water consumption monitoring, and rainwater harvesting and reuse;			2	
f. Expansibility and flexibility concepts;			2	
g. Occupational hazards and environmental health concepts;			2	
h. Site and culture sensitivity concepts; and			2	
i. Other applicable concepts (such as acoustical design features, etc.)			1	
B SCHEMATIC ARCHITECTURAL & ENGINEERING DESIGN PRESENTATION		16	16	
a. Site Development Plan with Landscaping			4	
b. Architectural Floor Plan/s (indicate materials and finishes)			4	
c. Architectural Sections showing schematic structural design and coordinated systems design (Mechanical, Electrical, Plumbing, Fire Protection - indicate materials and finishes)			4	
d. Schematic Plan of Multi-purpose Hall Area and Lobby			4	
C PERSPECTIVES		20	20	
a. Site and Exterior perspective/s Bird's Eye View			10	
b. Interior perspective/s showing the Lecture Halls with Indigenous Design Features			10	
D IMPLEMENTATION DOCUMENTS		29	29	
a. Realistic Design and Construction Schedule (GANTT, PERT/CPM & S-Curve) All in Level 1 only			12	
b. Design and Construction Methods			7	
c. Present initial Value engineering (VE) optimizing value for the money in projects and emphasizing the functional values of all design features and components.			10	
E ORGANIZATION AND QUALIFICATION OF DESIGN AND CONSTRUCTION TEAM		16	16	
a. Design Team Organization			8	
b. Design Team Personnel Experience			8	
F Online Submission of presentation together with Technical Proposal Forms listed above for TWG and CPDO Evaluation		2	2	
Total		100	100	100
Status (check one)		PASS	PASS	FAIL

END OF ANNEX A-4

Read and accepted as part of the Contract:

 Consultant Bidder

ANNEX B-1 CHECKLIST OF REQUIREMENTS

1.0 CHECKLIST OF REQUIREMENTS – DETAILED ARCHITECTURAL DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	ARCHITECTURAL DRAWINGS (as applicable)	
A – 1 (a...n)	Perspective, Site Development Plan, Vicinity Map/Location Plan (2.00 Kms. Radius), Table of Contents	
A – 2 (a...n)	Floor Plan/s (scale 1:100m minimum) including furniture layout when necessary	
A – 3 (a...n)	Four (4) Elevations (scale 1:100m minimum)	
A – 4 (a...n)	Two (2) Sections (scale 1:100m minimum) including spot details when necessary	
A – 5 (a...n)	Roof Plan/s showing downspouts (scale 1:100m minimum), including detail of gutter, downspout, etc.	
A – 6 (a...n)	Reflected Ceiling Plan/s (scale 1:100m minimum), including details	
A – 7 (a...n)	Details of Stairs, fire escapes/exits, accessible ramps, etc. (scale 1:50m), including details of railings, treads, risers, etc., in the form of plans, elevation/section (1:10m)	
A – 8 (a...n)	Details of Toilets (1:50 m) including accessible toilets in the form of plans, elevation/section	
A – 9 (a...n)	Details of specialized design features (scale 1:50 m) such as the laboratory and equipment layout plans, sections and details, and other design features	
A – 10 (a...n)	Details of specialized design features (scale 1:50 m) such as partitions, cabinets, etc. and accessible design features	
A – 11 (a...n)	Detail of typical bay section from lower ground to roof (scale 1:50 m)	
A – 12 (a...n)	Schedule of doors, gates, emergency exits, etc. (scale 1:50 m), including specifications for materials and hardware, fire-rating include spot details	
A – 13 (a...n)	Schedule of windows (scale 1:50 m), including specifications for materials and ironmongery, installation heights and reference, location, fire-rating	
A – 14 (a...n)	Schedule of finishes for interior and exterior floors, walls, ceilings	
	Architectural Technical Specifications and Materials Samples as required by UP	
	Architectural Scope of Works	
	Architectural Bill of Quantities	
* To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary)		
Evaluated by: _____ Architect		

Read and accepted as part of the Contract:

Consultant Bidder

2.0 CHECKLIST OF REQUIREMENTS – DETAILED ARCHITECTURAL INTERIOR DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
 Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	ARCHITECTURAL INTERIOR DRAWINGS (as applicable)	
AID – 1 (a...n)	Floor Plans showing layout of floor finishes (scale 1:100m minimum)	
AID – 2 (a...n)	Interior Elevations and Sections showing wall patterns, ceiling sections, etc. (scale 1:100m minimum)	
AID – 3 (a...n)	Schedule of Finishes and Details	
AID – 4 (a...n)	Details of Partitions, Cabinets, Furniture, Ceiling and other Interior Design Features (scale 1:100 minimum)	
AID – 5 (a...n)	Schedule of Fixed Furniture and Details	
AID – 6 (a...n)	Paint Color Swatch Combinations	
AID – 7 (a...n)	Architectural Interior Perspective/s	
AID – 8 (a...n)	Key Plans for Locations in the building (dashed boundaries)	
AID – 9 (a...n)	Legends and symbols for Furniture and Equipment, Schedules	
AID – 10 (a...n)	Plans for Furnishings, Furniture and Equipment	
	Architectural Interior Design Technical Specifications with Materials Samples as required by UP	
	Architectural Interior Design Scope of Works	
	Architectural Interior Design Bill of Quantities	
	Program of Requirements	
<p>* To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary)</p> <p>Evaluated by: _____ Architect/ Interior Designer</p>		

Read and accepted as part of the Contract:

_____ Consultant Bidder

3.0 CHECKLIST OF REQUIREMENTS – DETAILED LANDSCAPE ARCHITECTURE DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
 Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	LANDSCAPE ARCHITECTURE DRAWINGS (as applicable)	
LA – 1 (a...n)	Site Development Staking Plan and Details	
LA – 2 (a...n)	Exterior Lighting Plan and Details	
LA – 3 (a...n)	Exterior Building Lighting and Details	
LA – 4 (a...n)	Schedule of Landscape Exterior Finishes and Details	
LA – 5 (a...n)	Other Spot details	
LA – 6 (a...n)	Landscape Architectural Perspective/s	
LA – 7 (a...n)	Planting Schedule and Plant Identification	
	Landscape Architecture Design Technical Specifications	
	Landscape Architecture Design Scope of Works	
	Landscape Architecture Design Bill of Quantities	
<p>* To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary)</p> <p>Evaluated by: _____ Landscape Architect</p>		

4.0 CHECKLIST OF REQUIREMENTS – STRUCTURAL DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
 Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	STRUCTURAL DRAWINGS (as applicable)	
S – 1 (a...n)	General Notes and Construction Standards	
S – 2 (a...n)	Site Plan, Vicinity Map	
S – 3 (a...n)	Foundation Plan/s (scale 1:100m minimum)	
S – 4 (a...n)	Floor Framing Plan/s (scale 1:100m minimum)	
S – 5 (a...n)	Roof Framing Plan (scale 1:100m minimum)	
S – 6 (a...n)	Schedule and Detail of Footings, Columns and Shear Walls	
S – 7 (a...n)	Schedule and Detail of FTB's, Girders, Beams and Floor Slabs, Wall Footings	
S – 8 (a...n)	Detail of Trusses	
S – 9 (a...n)	Details of Stairs, Ramps, Fire Exits	
S – 10 (a...n)	Other Spot details	
	Structural Analysis and Design Report	
	Seismic Analysis	
	Structural Technical Specifications	
	Structural Scope of Works	
	Structural Bill of Quantities	
<p>* To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary)</p> <p>Evaluated by: _____ Registered Structural Engineer</p>		

Read and accepted as part of the Contract:

_____ Consultant Bidder

5.0 CHECKLIST OF REQUIREMENTS – SANITARY/PLUMBING DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
 Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	PLUMBING/SANITARY DRAWINGS (as applicable)	
P – 1 (a...n)	General Notes and Legends, Location and Site Plan	
P – 2 (a...n)	Rainwater Collection Layout Plan, Calculation and Details	
P – 3 (a...n)	Storm Drainage Layout (scale 1:100m minimum) including actual length of tapping line to Main Drainage Line	
P – 4 (a...n)	Water Line Layout (scale 1:100m minimum) including actual length of tapping line from main source when applicable	
P – 5 (a...n)	Sewer line and Vent line layout (scale 1:100m minimum) including actual length of tapping line to septic tank or existing sewer line	
P – 6 (a...n)	Isometric Layout, showing Waterline, sewer line and drainage line	
P – 7 (a...n)	Detail of connections, catch basins, downspouts, etc.	
P – 8 (a...n)	Detail of Cistern: Schedule of Pumps	
P – 9 (a...n)	Detail of Septic Tank/Sewer Treatment Plant	
P – 10 (a...n)	Details Water Tank (scale 1:50m)	
P – 11 (a...n)	Sanitary/Plumbing Plans and Details	
P – 12 (a...n)	Schedule of Equipment and Loading Details & Other details	
	Design Analysis	
	Sanitary Technical Specifications	
	Sanitary Scope of Works	
	Sanitary Bill of Quantities	
<p>* To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary)</p>		
<p>Evaluated by: _____ Sanitary Engineer</p>		

Read and accepted as part of the Contract:

_____ Consultant Bidder

6.0 CHECKLIST OF REQUIREMENTS – ELECTRICAL DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
 Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	ELECTRICAL DRAWINGS (as applicable)	
E – 1 (a...n)	General Notes and/or specifications	
	Legends or Symbols	
E – 2 (a...n)	Location and Site Plan	
E – 3 (a...n)	Lighting and Receptacle Outlets Layout (scale 1:100m minimum) and details including Schedule of Lighting Fixtures and Control Devices	
E – 4 (a...n)	Power Layout (scale 1:100m minimum) and details including Schedule of Panels	
E – 5 (a...n)	Fire Sprinkler System Layout (scale 1:100m minimum) and details including Schedule of Equipment	
E – 6 (a...n)	Emergency Lighting Layout for Exits and Hallways (scale 1:100m minimum) and details including Schedule of Emergency Lighting Fixtures and Signages	
E – 7 (a...n)	Load Schedules, Design Analyses and Detail breakdown of Loads	
E – 8 (a...n)	Riser Diagrams, One Line Diagrams, Service Entrance Details	
E – 9 (a...n)	Theatre Orchestra Pit, Control Booth, Fly Tower and other Rooms Electrical Plans and Details	
E – 10 (a...n)	Other Details including and not restricted to wiring penetrations through fire-rated and acoustically-treated walls, section details of devices and wall plates located in exterior areas, containment areas, and office areas.	
Electrical Computation		
Electrical Technical Specifications		
Electrical Scope of Works		
Electrical Bill of Quantities		
<p>* To be marked as either <i>Complying</i> or <i>Non-Complying/Complete</i> or <i>Incomplete</i> by the evaluator or to be filled with supporting comments (use additional sheets if necessary)</p> <p>Evaluated by: _____ Registered Professional Electrical Engineer</p>		

Read and accepted as part of the Contract:

 Consultant Bidder

7.0 CHECKLIST OF REQUIREMENTS – ELECTRICAL AUXILIARIES DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
 Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	ELECTRICAL AUXILIARIES DRAWINGS (as applicable)	
EA – 1 (a...n)	General Notes and/or specifications	
	Legends or Symbols	
EA – 2 (a...n)	Location and Site Plan	
EA – 3 (a...n)	Telephone, Data and Wi-Fi Systems Layout, One Line Diagram (scale 1:100m minimum) and details including Schedule of Equipment	
EA – 4 (a...n)	Voice Over IP System Layout and Entrance Access System Layout (scale 1:100m minimum) and details including Schedule of Equipment	
EA – 5 (a...n)	Public Address and Sound Systems Layout, One Line Diagram (scale 1:100m minimum) and details including Schedule of Equipment	
EA – 6 (a...n)	Fire Detection and Alarm System (FDAS) Layout (scale 1:100m min.), One-Line Diagram and details including Schedule of Equipment, Specifications, and Legend	
EA – 7 (a...n)	Cable TV, Master Antenna TV and CCTV Layout, One Line Diagram (scale 1:100m minimum) and details including Schedule of Equipment, Specifications and Legend	
EA – 8 (a...n)	Building section details showing cable tray and wiring pathways in relation to the work of other trades	
EA – 9 (a...n)	Other Details including and not restricted to wiring penetrations through fire-rated walls, section details for devices located in exterior areas, containment areas, animal care areas, and office areas.	
EA – 10 (a...n)	Laboratories Electrical Auxiliaries Plans and Details	
EA – 11 (a...n)	Other details	
Electrical Auxiliaries Scope of Works		
Electrical Auxiliaries Technical Specifications		
Electrical Auxiliaries Bill of Quantities		
<p>* To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary)</p> <p>Evaluated by: _____ Registered/Professional Electronics & Communications Engineer</p>		

Read and accepted as part of the Contract:

 Consultant Bidder

8.0 CHECKLIST OF REQUIREMENTS – MECHANICAL DESIGN

Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation

Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)

Project :
 Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

SHEET NUMBER	SHEET CONTENTS	REMARKS*
	MECHANICAL DRAWINGS (as applicable)	
M – 1 (a...n)	General Notes and Legends	
M – 2 (a...n)	Floor Plans/Isometric Drawings (scale 1:100m minimum) showing Fire Suppression Systems including sprinkler system (if required), wet stand pipe, dry standpipe and other installations, specifications, legend	
M – 3 (a...n)	Floor Plan showing location of Fire Extinguishers (scale 1:100 minimum) and details including Complete Fire Hose Cabinet with firefighting equipment	
M – 4 (a...n)	Floor Plans/Isometric Drawings (scale 1:100m minimum) of Room Exhaust Ventilation System and Details	
M – 5 (a...n)	Floor Plans/Isometric Drawings (scale 1:100m minimum) of Air Supply Systems and Details	
M – 6 (a...n)	Floor Plans for Building Monitoring System (BMS) and Building Alarm System (BAS)	
M – 7 (a...n)	Detail Sections through Corridors serving the Theatre and its support facilities showing ductwork and piping in relation to the work of other trades.	
M – 8 (a...n)	Detail of Other Machinery/Equipment (scale 1:50)	
M – 9 (a...n)	Longitudinal and Transverse Section of Building (scale 1:100m) showing manner of support of machines/equipment	
M – 10 (a...n)	Mechanical Plans and Details, Pump Design Analysis and Calculations	
M – 11 (a...n)	Other Details including and not restricted to wiring penetrations through fire-rated and acoustically-treated walls, section details for devices located in exterior areas, and office areas.	
M – 12 (a...n)	Schedules including valves, air handling units, air conditioning units, chillers, and other HVAC equipment for ventilation areas, General Notes, Specs, Legend	
	Mechanical Technical Specifications	
	Mechanical Scope of Works	
	Mechanical Bill of Quantities	
<p>* To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary)</p> <p>Evaluated by: _____ Registered Professional Mechanical Engineer</p>		

END OF ANNEX B-1

Read and accepted as part of the Contract:

 Consultant Bidder

PROJECT:
 LOCATION : UP MINDANAO CAMPUS, MINTAL, DAVAO CITY
 OWNER : UP MINDANAO
 SUBJECT : BILL OF QUANTITIES & COST ESTIMATES (SUMMARY)
 TOTAL FLOOR AREA :
 DATE :
 DURATION :

SUMMARY

Item No.	Items of Work	Qty.	Unit	DIRECT COST			INDIRECT COST				Total	Unit Cost	
				Materials	Labor / Equipment	TOTAL DIRECT	Mark-ups (___%)		Total Mark-ups	eVAT (___%)			TOTAL INDIRECT
							OCM (___%)	Profit (___%)					
1.0	General Requirements		lot										
2.0	Siteworks		lot										
3.0	Structural Concrete		lot										
4.0	Masonry		lot										
5.0	Metals		lot										
6.0	Woods and Plastics		lot										
7.0	Thermal and Moisture		lot										
8.0	Openings (Doors & Windows)		lot										
9.0	Finishes		lot										
10.0	Specialties		lot										
11.0	Plumbing Works		lot										
12.0	Electrical Works		lot										
	TOTAL												

Prepared by:

Checked by:

Recommending Approval:

Approved:

Architect Designer

CHERRYLYN D. CABRERA, DM HumRes
 Chief, Campus Planning & Devt Office

Prof. DOMINICA D. DACERA, Ph.D.
 Dean, CSM 25 Jan. 2021

Prof. KAREN JOYCE G. CAYAMANDA, Ph.D.
 Vice Chancellor for Administration

Prof. LARRY N. DIGAL, Ph.D.
 Chancellor

PROJECT :
 LOCATION : UP MINDANAO CAMPUS, MINTAL, DAVAO CITY
 OWNER : UP MINDANAO
 SUBJECT : BILL OF QUANTITIES & DETAILED COST ESTIMATES
 TOTAL FLOOR AREA: _____
 DATE : _____
 DURATION : _____

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	DIRECT COST				INDIRECT COST				TOTAL COST	UNIT COST
				Materials		Labor / Equip.	Total DIRECT	Mark-ups (___%)		EVat (___%)	Total INDIRECT		
				Unit Cost	Total Cost			OCM (___%)	Profit (___%)				
1.0	General Requirements												
	1.1												
	1.2												
2.0	Siteworks												
3.0	Structural Concrete												
4.0	Masonry												
5.0	Metals												
6.0	Woods and Plastics												
7.0	Thermal and Moisture												
8.0	Openings (Doors & Windows)												
9.0	Finishes												
10.0	Specialties												
11.0	Plumbing Works												
12.0	Electrical Works												
TOTAL													

Prepared by:

Checked by:

Recommending Approval:

Approved:

Architect Designer

CHERRYLYN D. CABRERA, DM HumRes
 Chief, Campus Planning & Devt Office

Prof. DOMINICA D. DACERA, Ph.D.
 Dean, CSM 25 Jan. 2021

Prof. KAREN JOYCE G. CAYAMANDA, Ph.D.
 Vice Chancellor for Administration

Prof. LARRY N. DIGAL, Ph.D.
 Chancellor

ANNEX B-4 UNIT PRICE ANALYSIS TEMPLATE

The Proponent/Bidder shall draw up a Unit Price Analysis (UPA) for each of the pay item of his/her design using the attached template. Other details of the template shall be issued to the Consultant.

Project : **CHSS CULTURAL COMPLEX PH2 - PERFORMING ARTS THEATRE**

Location : UP MINDANAO CAMPUS, MINTAL, TUGBOK DISTRICT, DAVAO CITY

Project Title						
University of the Philippines Mindanao UP Mintal, Tugbok District, Davao City						
DETAILED PRICE ESTIMATES						
ITEM NO.					Quantity	Unit
Name of BOQ Item						
MATERIALS COST						
Name	Specification Dimension	Quantity	Unit	Unit Price	Amount	Unit Price Component
Sub-Total A						
EQUIPMENT COST						
Name/Model	Capacity HP Prod Rate	No. of Days/Hrs	No. of Days/Hours	Daily/Hourly Rate	Amount	Unit Price Component
Sub-Total B						
LABOR COST						
Designation	Production Rate	Numbers	No. of Days/Hours	Daily/Hourly Rate	Amount	Unit Price Component
Sub-Total C						
TOTAL DIRECT COST: D = A + B + C						
Workdays to Complete				Overhead/Contingency/ Profit/Mark-Up		_____ %
Calendar days to Complete						
OCM		E1		_____ %	F = D*E1	
Customs Duties (if applicable)		E2		_____ %	G = A*E2	
PROFIT		E3		_____ %	H = D*E3	
Total Compulsory Items					I = F+G+H	
VAT						
VAT		E4		_____ %	J = (D+I)*E4	
Total Indirect Costs					K = I+J	
Signature						
Total Cost of Item					L = D+K	
Unit Cost of Item					M = L/Q	

END OF ANNEX B-4

Read and accepted as part of the Contract:

Consultant Bidder

Republic of the Philippines
University of the Philippines Mindanao
Mintal, Tugbok District, Davao City
Telefax 293-0016
www.upmin.edu.ph
bac.upmindanao@upmin.edu.ph

Contract Reference Number: _____
Name of the Contract: _____
Location of the Contract: UP Mindanao Campus, Mintal, Tugbok District, Davao City
Standard Form Number: _____

APPROVED BUDGET FOR CONTRACT (ABC)

(Project Name)

Number of Storey: _____
Floor Area : _____

Contract Duration: _____

ITEM NO.	DESCRIPTION	QTY.	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN %		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST (per sq.m.)
					OCM	PROF.	TOTAL %	VALUE				
[1]	[2]	[3]	[4]	[5]	[6] _____%	[7] _____%	[8] (6)+(7)	[9] (5)X(8)	[10] (____%[(5)+(9)])	[11] (9)+(10)	[12] (5)+(11)	[13] (12)/(3)
1.0	General Requirements	1.00	lot									
2.0	Siteworks	1.00	lot									
3.0	Structural Concrete	1.00	lot									
4.0	Masonry	1.00	lot									
5.0	Metals	1.00	lot									
6.0	Woods and Plastics	1.00	lot									
7.0	Thermal and Moisture	1.00	lot									
8.0	Openings (Doors & Windows)	1.00	lot									
9.0	Finishes	1.00	lot									
10.0	Specialties	1.00	lot									
11.0	Plumbing Works	1.00	lot									
12.0	Electrical Works	1.00	lot									
ITEM TOTAL												

Prepared by:

Checked by:

Recommending Approval:

Approved:

Architect Designer

CHERRYLYN D. CABRERA, DM HumRes
Chief, Campus Planning & Devt Office

Prof. DOMINICA D. DACERA, Ph.D.
Dean, CSM 25 Jan. 2021

Prof. KAREN JOYCE G. CAYAMANDA, Ph.D.
Vice Chancellor for Administration

Prof. LARRY N. DIGAL, Ph.D.
Chancellor