

MINIMUM PERFORMANCE STANDARDS AND SPECIFICATIONS

SECTION I PURPOSE

The purpose of the Minimum Performance, Standards, and Parameters (MPSP), among others, is to:

1. Establish the MPSP that the Joint- Venture [JV] must comply with under the Contract Agreement with The San Juan City Government for the **MAKABAGONG SAN JUAN COMMUNITY: ECONOMIC HOUSING PROJECT** (hereinafter referred to as "*the Project*"), using the Implementing Rules and Regulations of Republic Act No. 11966 Public-Private Partnership (PPP) Code of the Philippines;
2. Ensure the Bidder's compliance with the Architectural, Engineering, and other Technical Guidelines and define performance standards for the Detailed Engineering Design (DED) of the Project.
3. Provide a quantifiable and verifiable basis for physical progress as a basis for Claims for Payments of the Contractor in accordance with standard accounting and auditing rules and regulations of the Procuring Entity.

SECTION II SCOPE OF WORKS

A. Project Components. The Bid Documents include the following components:

Component	Particulars
Architectural and Engineering Designs	Complete plans, drawings, specifications, BOQ and cost estimates, construction management, progress reports, and claims for payments and completion reports
Site Civil Works	Site drainage/flood control, site stabilization sanitary works forming part of the site civil works, pavements, and RROW improvements as applicable / needed, including pavement markings, etc., with pertinent plans and designs prepared by a Registered and Licensed Civil Engineer
Architectural Works	Masonry, finishes, partitions, acoustics, lighting, moisture protection / thermal, glazing, wood/plastics, fenestrations (doors & windows), with pertinent plans and designs prepared by a Registered and Licensed Architect

Structural Works	Building design according to the current NSCP (based on the 1997 Uniform Building Code and reference ASCE/SEI 7-10) are engineered for life and collapse prevention during major seismic events and should be able to resist earthquakes within the magnitude 7- 8.4 range without collapsing. Foundation, earthquake-proof and typhoon proof building, with pertinent plans and designs prepared by a Registered and Licensed Civil Engineer who specializes in structural design
Electrical Works	All electrical systems, including backup generator set with pertinent plans and designs prepared by a Registered and Licensed Professional Electrical Engineer
Mechanical Works	HVAC, fire protection, and elevator with pertinent plans and designs prepared by a Registered and Licensed Professional Mechanical Engineer
Plumbing Works	Water Tanks, Rainwater Tanks and supply systems with pertinent plans and designs prepared by a Registered and Licensed Master Plumber
Sanitary Works	Water Sewage, Sanitary, and disposal systems with pertinent plans and designs prepared by a Registered and Licensed Sanitary Engineer
Electronics Works	Conceptualize, design, test, and oversee the installation of communications and electronic systems that includes vertical and horizontal LAN cabling, FDAS, public address, CCTV system, and provision for data center/server room with pertinent plans and designs prepared by a Registered and Licensed Professional Electronics Engineer
Green Building Works	Compliance with San Juan City Green Building Code

B. Design Criteria

- a. Appearance Theme: Modern Architecture Design
- b. Minimum Gross Floor Area: 25,000 square meters
- c. Building Height: Variable
- d. Number of floors: 35 Storey
- e. Number of Parking: Adequate and/or Manageable
- f. Space Allocations to be considered in the preparation of the designs as follows:
 - o Residential Units 534 units
 - o Minimum Area for Residential Unit 24.00 square meters
 - o Commercial Units 5 units

a.2.1 All Structural Steel shall be in accordance with AISC specification for the design, fabrication and erection of structural steel for buildings.

248Mpa (36,000 psi)

A.2.2 All Structural shapes and plates shall conform to ASTM A36. The contractor shall submit certified mill test reports on certified reports of tests made by the fabricator or testing laboratory in accordance with ASTM A6 or or A568, As applicable, and the governing specification shall constitute sufficient evidence of conformity with ASTM standard. Additionally the fabricators shall provide an affidavit stating the structural steel furnished meets the requirements of the grade specified.

830 Mpa (120,000 psi)

a.2.3 All Structural high strength bolts shall conform to ASTM A325M or equivalent.

a.2.4 All mild steel anchor bolts, nuts and washer shall conform to the following.

-Bolt ASTM A307 or equivalent

414Mpa (60,000 psi)

-Nut ASTM A563 or equivalent

-Washer ASTM F844 or equivalent

a.2.5 All Structural welding shall conform to E70XX

483Mpa (70,000 psi)

a.2.5.1 All Structural bolts shall conform to ASTM standards for chemical bolts and capsules. The capsule shall be epoxy acrylate and the anchor shall be zinc electro-plated

with chromate conversion coating.

a.2.6 All Splices and connections shall be designed for at least 125% of the capacity of the member being joined or a minimum of 6 kips.

a.2.6.1 High strength bolted connections shall be bearing type with bolt threads in the shear planes unless otherwise noted.

a.2.6.2 Bolt holes shall be as follows holes for high strength bolts and mild steel bolt shall be not more than 1.5mm larger in diameter of bolt used. Unless otherwise specified.

b. Architectural
o Walls

Prefabricated Reinforced Concrete Panel Partitions

Prefabricated modular wall panels system for exterior walls with waterproofing painted finish.

Concrete Hollow Blocks
Load Bearing (1700 psi)
Non-Load Bearing(500 psi)

Plain Cement plaster painted finish and ceramic tiles or approved equal on wet areas.

Dry Wall Partitions

Fiber Cement Boards on Metal Studs and framings, painted finish.

Toilet Partitions

Reinforced concrete hollow blocks CHB with Ceramic tiles finish and elastomeric paint finish for plain cement surfaces.

o Ceilings

Slab Soffits

Plain cement plaster, painted finish.

Drop Ceiling

Gypsum Board, Moisture resistant Gypsum Board for wet areas, painted finish.

o Floorings

Driveways and Sidewalks

Plain Cement Finish.

Vehicular Ramp

Non-Skid Cement Tiles or approved equal

Tile finishes

Homogenous, Ceramic, Wood Planks, Vinyl Tiles or any approved equal.

Tactiles (for BP344 compliance)	Embossed Ceramic, Cement Tiles or approved equal Directional floor tiles
o Paintings	
Concrete Interior surface	Semi-gloss latex roller finish.
Concrete Exterior surface	Flat Latex roller finish.
Metal surfaces	Lacquer-based, Quick Dry Enamel.
Wood surfaces	Lacquer-based, Quick Dry Enamel Wood-Stained Spray/ Duco finish or approved equal.
o Water Proofing	
For exterior firewalls	Elastomeric waterproofing or any approved equal.
For Toilets and Roof deck	Cementitious, Membrane, or any approved equal.
Roofing sheets & Gutter	GA 24 Prefabricated, Single Rib, Long span, and pre-painted. Prefabricated stainless steel sheet roof gutter.
Roof Insulation	12mm. thick, double-sided Aluminum Foam Insulation.
o Doors	
- Wood Panel Doors with Jamb complete with hardware and accessories	
- Powder Coated Aluminum Frame with Reflective Glass complete with accessories (for swing and sliding type).	
- Steel Doors with Panic Device Lock set and accessories.	
o Windows	
- Powder Coated Aluminum Frame with Reflective Glass complete with accessories (for awning and sliding type)	
o Grills and Fences	
Stair Railings	Stainless Steel.
Grilles & Frame	Galvanized Steel.
o Toilet Fixtures and Accessories	
- Water-efficient, Smart and Noise-controlled Fixtures including its accessories.	
o Lighting Fixtures	
- Energy-efficient, sensor-controlled, adequate lighting and illumination units and accessories commensurate with the area.	
o Signages	
Room Labels	Acrylic Medium or any approved equal.

Directional Signs	Reflectorized, Illuminated Acrylic Medium or approved equal.
c. Electrical	
Conduits (Rough-Ins)	Polyvinyl Chloride (PVC), Rigid Steel Conduit (RSC), Intermediate Metal Conduit (IMT) or approved equal.
Wires and Cables	Stranded, THHN, THW/TW or approved equal.
Utility Box and Panel Box	PVC, GA 16 Pre-painted Prefabricated Panel.
Wiring Devices	NEMA and PEC standard.
Lighting Fixtures	Surface, Recessed, Pin Light, LED lamp or Bulbs, or approved equal, adequately lighting the area (common areas and facilities shall installed with sensors)
Panel Board/Circuit Breakers	Any approved equal to the specified Electrical schedule of Grounding/Bonding loads.
Generator Set	Automatic Transfer Switch, Switch Gear and other accessories specified in the electrical design analysis and voltage calculations.
d. Sanitary and Plumbing	
Sewer and Storm Drainage Pipes	Polyvinyl Chloride PVC Pipes and Fittings Series 1000 or approved equal. Painted, Color coded finish.
Potable Water lines, Pipes	Propylene Pipes and fittings (color white).
Recycled Water lines, Pipes	Propylene Pipes and fittings (color green).
All pump motors, pressure pump and tank	As specified in the approved sanitary/ plumbing design computations.
Sewage and Waste Water Treatment Plant	Commensurate with number of residential and commercial units including common areas, utilities and facilities.
e. Mechanical	
Pipes and Fittings	B.I., G.I pipes or approved equal.
Valves	Fire Code Compliant.

Sprinklers	Pendent, upright, and concealed sprinklers.
Elevators	Energy efficient, Regenerative Drive, Stand-By Sleep Mode or approve equal
Fire/Jockey Pump, Tank, Pressure Tank and accessories for Fire Protection System, Sewage Treatment Facility Motors and Accessories	specified in the approved Mechanical Design Computation.
f. Electronics and Communications	
Pipes and Fittings	PVC Pipes and Fittings Series 600.
Cable Trays	Pre-Painted, Prefabricated, Perforated wires and cable tray.
Wirings	Fiber Optic, CAT-5e, CAT-6e, or approved equal.
Sensor	FDAS, Wind and Digital Accelerograph
Communication System (Provide security Control Room in monitoring and integrating all electronics activities)	Telephone/Intercom System, CCTV, CATV and LAN.

D. Submittals

BASED ON PPP REQUIREMENTS

- a. Conceptual Design of the proposed project (architectural floor plans, perspective)

AFTER AWARD OF CONTRACT (30 DAYS)

Drawn in paper size of 20"x 30" -3 copies, Blueprints duly signed and sealed and CADD soft copy saved in an external drive.

- a. Architectural Plans and Details
- b. Structural Plan, Seismic Analysis and Design computations
- c. Electrical Plans, Design Analysis, Short Circuit Analysis, and Voltage Drop Calculations
- d. Sanitary and Plumbing Plans and Design Analysis
- e. Mechanical Plans and Design Analysis
- f. Electronic Plans and Design Analysis
- g. Fire Protection Plan and Fire Detection and Alarm System
- h. Materials and Technical Specifications
- i. Geotechnical Re-Survey Lot Plan of existing project location (after award)
- j. Soil Exploration Test Report and Analysis (after award)

SECTION III DESIGN STANDARDS AND SPECIFICATIONS

The Comparative Bid shall conform with minimum design requirements specified herein and shall observe the following design standards.

1. Architectural Design Parameters

A. Codes and Standards - Architectural Works shall be in accordance with the following Laws, Codes, and Standards.

a. Laws and Codes

- a.1. PD 1096 National Building Code of the Philippines
- a.2. Green Building Code of the Philippines
- a.3. BP 344 Accessibility Law and Revised IRR
- a.4. RA 9514 Fire Code of the Philippines
- a.5. Existing Local Codes and Ordinances
- a.6 Other laws that applicable to the project

b. Standards

- b.1. Philippine National Standards (PNS)
- b.2. DPWH Standard

B. 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 floor plans. The orientation of the architectural plans shall be consistent with all the engineering plans.
- c. Detailed plans shall have a scale not smaller than 1: 50 meters.
- d. Spot detailed plans, elevations, and sections shall have a scale not smaller than 1: 50 meters.

C. Floor Plans

- a. All plans shall be at a scale of 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. Section line callouts on the floor plans shall be consistent with the section drawing.
- c. Floor plans shall be indicated with boxed room callout numbers, including the callout for floor finishes and wall finishes.
- d. 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.

e. Door callouts shall be circles with the proper numbering, e.g., D-01.

f. Window callouts shall be hexagons with the proper numbering, e.g., W-01.

D. Elevations and Sections

a. Finish floor lines shall be consistent in all the elevations, sections, and structural plans and details.

b. All dimensions and finishing materials shall be indicated in all elevations and sections and must be consistent with the specifications.

E. 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 to 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, fire sprinklers, air-conditioning vents, and exhaust fans, in the reflected ceiling plans shall be consistent with the electrical and mechanical plans.

F. Doors and Windows

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

G. Details

a. Provide a minimum of four (4) bay sections for the perimeter walls and roofing of a scale not smaller than 1:50 meters for each major building, preferably cut along the area with special construction design.

b. Provide spot detail plans, elevations, and sections of a scale not smaller than 1:20 meters for special designs with aesthetic treatment and ornamentation.

c. Provide detailed plans of a scale not smaller than 1:50 for all areas needing tile pattern, e.g., lobby, corridor, entrance walk, showing the position and pattern of tiles.

d. Centerline location of plumbing fixtures shall be indicated in detail plans with lines of reference and corresponding dimensions. This is to indicate the exact locations of the plumbing/sanitary rough-ins, including color or finish.

2. Building Architectural Works

A. Floor Plans

a. 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 has any possible conflict or interference with the architectural design, the latter may be adjusted, provided that the aesthetic value will not be compromised.

b. The architectural and engineering plans shall be consistent throughout in terms of dimensions and locations of columns, beams, walls, roof lines, conduits, ducts, pipes, and fixtures, among others. Column and beam grid lines shall also be consistent in all the architectural and engineering plans.

c. Verify and coordinate floor plans with the mechanical, electrical, and sanitary designs regarding mechanical rooms, AHU rooms, electrical rooms, pipe chases, and other engineering requirements.

d. Toilets shall have provisions and fixtures for people with disabilities as required by BP 344. If enough space is allowed, toilets specifically made and designated for people with disabilities are preferable.

e. Provide architectural layout.

B. Walls

a. Dry walls shall not be embedded with wet utilities.

b. Layout and work on the wall and floor tiles must be aligned, plumb, leveled, and squared.

c. Tile color and design shall be approved first before installation.

C. Floors

a. Floors at the openings of toilets for persons with disabilities shall be sloping. Indicate in the plans and sections.

b. Layout and work on wall and floor tiles must be aligned, plumb, leveled, and squared.

c. Tile color, size, and design shall be approved first before installation.

D. Ceiling Works

The room shall have a minimum false ceiling height: Cement board 3.5mm with metal furring frames with w-angle shadow line for ceiling with hangers.

E. Doors and Windows

a. Major rooms that require security shall have sturdy doors (e.g., wood panel and metal with a 2.5 mm thick stainless push plate).

b. Minor rooms that do not require security shall at least have wood flush doors with laminate.

c. 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.

d. Aluminum frames of glass doors and windows shall be in "analok brown" finish.

e. Door finish and color shall be approved first before application.

f. Windowsills shall be slightly sloped outwards to prevent damage to windows and paint due to water slippage.

g. All doors of a high-occupancy room shall be double-action swing doors, as required by the Fire Code of the Philippines.

F. Corridors

a. New corridors shall have a minimum unobstructed width of at least 1,500 mm. This shall be measured clear from the surface of the finished wall and not on-center of the rough CHB wall.

b. Corridors and exit doors shall conform to the requirements of the Fire Code of the Philippines.

G. Fixtures and Accessories

a. Three-way electrical light switches shall be provided at both ends of a long corridor.

b. Electrical light switches shall be located on the knob side of the door.

c. Electrical switches and outlets shall be installed plumb and level.

H. Painting

a. The painted ceiling shall be in antibacterial paint finish.

b. The painted interior wall shall be at least in semi-gloss paint finish for ordinary rooms, e.g., offices, unless specified to a higher type of paint.

c. The painted exterior wall shall be at least moisture-resistant/water-repellent paint finish, textured or smooth, unless otherwise specified.

d. The paint color and shade shall be approved first before application.

I. 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.

b. Wet areas, e.g., toilets and kitchens, shall use non-skid/non-slip vitrified ceramic floor tiles.

- c. Heavy traffic areas, e.g., lobbies and corridors, shall use non-skid granolithic or granite floor tiles or a higher type of floor material.
- d. Ramps and stairs shall use non-skid/non-slip floor tiles and materials as specified.
- e. Cement board of 3.5 mm with metal furring frames; full-threaded support with shadowline and hangers.
- f. 8 mm diameter 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 furrings.

3. Design Parameters (Structural/Civil Works)

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

A. Codes

- a. National Structural Code of the Philippines (NSCP) 2015, Volume I
- b. National Building Code of the Philippines
- c. Accessibility Law
- d. Local Codes and Ordinances

B. Standards

- a. Philippine National Standard (PNS)
- b. DPWH Standard (Design Guidelines, Criteria, and Standards (DGCS) and Standard Specifications for Public Works & Highways (Blue Book))

3.2. Structural Design Criteria

- a. The site shall be soil investigated to determine the actual soil bearing capacity.
- b. In summary, site suitability, conformity with structural code, and shape and form subject to structural evaluation and monitoring shall be in effect.

4. Sanitary/Plumbing Design Parameters

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

4.1.1 Codes

- a. National Building Code of the Philippines
- b. Fire Code of the Philippines
- c. National Plumbing Code of the Philippines (NPCP)
- d. Sanitation Code of the Philippines
- e. Existing Local Codes and Ordinances.

4.1.2 Standards

- a. National Water Resources Board (NWRB)
- b. National Plumbers Association of the Philippines (NAMPAP)
- c. Philippine Society of Sanitary Engineers, Inc. (PSSE)

4.2 Building Facilities Sanitary/Plumbing System

4.2.1 Waterline System. Provide a complete water system, including pipes, fittings, and necessary accessories.

4.3 Summary of Materials

- a. Cold waterline pipes: for buildings, Polypropylene Pn16/Pn20 fusion weld pipes, including trims and fittings (BPS Certified)
- b. Plumbing fixtures, including trims, fittings, and accessories (BPS Certified)
- c. Water closet - tank button-type flush
- d. Lavatory - (pedestal/counter type) / semi-pedestal with faucet
- e. Urinal - wall-hung flush valve/lever/push button

5. Mechanical Works and Design Parameters

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

5.1.1 Codes

- a. National Building Code of the Philippines
- b. New Fire Code of the Philippines
- c. Mechanical Engineering Code of the Philippines (ME Code)
- d. Existing Local Government Codes and Ordinances

5.1.2 Standards

- a. Philippine National Standards (PNS)
- c. Underwriters Laboratory (UL) and Factory Mutual (FM)
- d. International Electrotechnical Commission (IEC) 1988
- e. Fire Code of the Philippines (RA 9514)
- f. American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE).
- g. DPWH Standard

5.2 Ventilation and Air Conditioning System

5.2.1 The Ventilation and Air Conditioning System shall be composed of complete plans and drawings of the following:

- a. General Notes, Legends, and Symbols including Schematic Diagram of the Ventilation and Air Conditioning System;
- b. Floor Layout of the Ventilation and Air Conditioning System indicating the capacity and location of the air conditioners and fans.

c. Duct layout indicating duct sizes, route, and location of the dampers, diffusers, return air register, hangers, and sway braces.

d. Refrigerant piping layout indicating pipe sizes, location of valves, hangers, and sway braces.

e. Equipment Schedule and Detail drawings of Air Conditioners and Ventilating System.

e.1 Centralized air conditioning and ventilation will be used only if feasible.

e.2 Maintain an air change rate greater than or equal to 7-10 air changes per hour.

e.3 Ceiling exhaust fans shall be provided in all toilets.

6. Electrical Design Parameters

6.1 The Electrical System Design Parameters shall be in accordance with the following Codes and Standards.

a. Codes

a1. Latest Edition of the Philippine Electrical Code

a2. National Electrical Code

a3. New Fire Code of the Philippines

a4. National Building Code of the Philippines and Its New

a5. Existing Local Codes and Ordinances

b. Standards

b1. Bureau of Product Standards (BPS)

b2. Underwriters Laboratory (UL)

b3. National Fire Protection Association

b4. International Electro-Mechanical Commission (IEC)

b5. Illumination Engineering Society (IES)

b6. National Electrical Manufacturer's Association (NEMA)

6.2 Site Works

Based on the proposed project plan, a complete Electrical Layout shall be provided with the following:

a. Panel board Layout

b. Electrical Devices

c. Service Conductors and Conduit Layout

d. Grounding System

6.3 Building Facilities Electrical System

a. Lighting System.

Provide and install adequate normal branch circuits for the Lighting System in all areas using the standard Lighting Design Analysis. Utilize the standard illumination requirements per area of concern using the preferred type of luminaires.

b. Power System.

Provide and install adequate normal branch circuits for the Power System.

c. Standby/Emergency System.

Provide and install adequate equipment, life safety, and critical emergency branch circuits for lighting and utilization equipment connected to the alternate power source. The tapping point shall be within the project's perimeter.

d. Auxiliary System.

Provide and install the following Auxiliary Systems for the whole building:

d1. Communication System

d1.1 Telephone System

d1.2 Local Area Network System in critical/selected areas

d2. Fire Detection and Alarm System

e. Provide the following details:

- Lighting Fixtures/Luminaires
- Panelboard and Circuit Breakers
- Electrical Equipment
- Power and Telephone Handholes (as may be required)

6.4 Summary of Materials

a. General Lighting Luminaires. Fixture types shall be as indicated on the Lighting Layout Plan.

a1. Troffer luminaires in general areas

a2. Downlights and pin lights shall be of heavy gauge spun aluminum equipped with lamps as indicated in the drawings.

a3. Other special lighting requirements shall be as approved by the implementing agency.

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

b1. Switches shall be of 15A, 250V or 300V, except as otherwise noted and approved. Terminals shall be screw-type or quick-connected type.

b2. General-use receptacles shall be 15A, 240V grounding type unless otherwise indicated in the drawings.

c. Panel Boards and Circuit Breakers. The panel boards and circuit breakers shall be equipped with molded-case circuit breakers and shall be of the type indicated in the panel board schedule and details.

c1. Provide molded-case circuit breakers of frame, trip rating, and interrupting capacity as shown in the drawings. The circuit breakers shall be quick break,

trip-indicating, and shall have a common trip on all multiple breakers with an internal trip mechanism.

c2. 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.

d. Electrical Conduits, Boxes, and Fittings. All conduits, boxes, and fittings shall be standard rigid steel, zinc-coated, or galvanized.

d1. Rigid Steel Conduits (RSC)

d2. Rigid Metal Conduits (RMC)

d3. Intermediate Metal Conduits (IMC)

d4. Electrical Metallic Tubing (EMT)

d5. Unplasticized Polyvinyl Chloride (uPVC), if required, shall be scheduled 40.

e. Conductors: Wires and cables shall be of the approved type unless specified or indicated otherwise. 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.

f. Fire Detection and Alarm System.

e1. The Fire Detection and Alarm System shall be zonal addressable fire detection.

e2. The signaling system shall occur via a manual pull station, and fire detection shall be by automatic smoke or heat detectors, sprinkler flow switches, and tamper switches.

7. Installation and Workmanship

7.1 The Key Personnel of the Contractor shall be specialists highly skilled in their respective trades, performing all labor according to first-class standards. The PSP shall assign a full-time Project Engineer/Architect at the job site during the construction of the project.

7.2 All works to be subcontracted shall be declared by the Contractor in its Technical Proposal and shall be approved by the CITY.

7.3 The Contractor shall rectify, resubmit, and review any errors, omissions, inconsistencies, inadequacies, or failures that do not comply with the requirements at its own cost. If the Contractor wishes to modify any design or document that has been previously submitted, reviewed, and approved, the Contractor shall notify the CITY within a reasonable period of time and shall shoulder the cost of such changes.

SECTION IV BUILDING OPERATION AND MAINTENANCE

A. Utility Consumption Obligation

1. Electricity

2. Water

B. System Maintenance (any part, component and or the determined to be unserviceable must be replaced, rehabilitate and or modernize.

1. Elevators (Quarterly Maintenance Report)
2. Waterline distribution and Cistern (Annual Disinfection)
3. Sewage Treatment Plant
4. Electrical Lighting and Power on Common areas
5. Generator and Equipment's
6. Electronics and Mechanicals

C. Manpower Services

1. Janitorial and Maintenance
2. Security