

**Terms of References**

**Consulting Services**

for the

**Design Parameters, Bill of Quantities and Tender Document**

for the

**Approved Designs, drawings, Bill of Quantities, TOR for renovation and Construction and Supervision**

of

**13 health facilities**

on the

**Health System support Project**

# SCOPE OF WORKS

## 1. BACKGROUND

The Ministry of Health has received a loan from the Inter-American Development Bank to support the Health Systems Strengthening for the Prevention & Care Management of Non-Communicable Diseases (NCD) Programme.

The programme objective is to improve the health of Jamaica's population by strengthening comprehensive policies for the prevention of Non-Communicable (Chronic) Diseases (NCDs) risk factors and improved access to an upgraded and integrated primary and secondary health network in prioritized areas with an emphasis on chronic disease management, that provide more efficient and higher quality care.

The Programme has two broad components as follows:

Policy – Based Component

Investment Component

The **Policy-Based Component** will look at policies that will consolidate regulatory measures to address the preventable causes of NCDs and to reorient health systems to address prevention and control of NCDs through a people-centred primary health chronic care model.

The **Investment Component**, in turn, will finance activities to consolidate integrated health networks and improve the management, quality and efficiency of health services. The Policy Based Component will benefit the Jamaican population at-large, while the Investment Component will have approximately 800,000 potential direct beneficiaries who reside in the catchment areas of the health services networks that will receive investments.

The Investment Programme has two (2) components and an allocation to support programme administration and evaluation:

### **Component 1 – Organization and consolidation of integrated health services networks**

This component will finance the purchase of medical equipment and the improvement of infrastructure for primary health care services in the catchment areas of three priority hospitals to increase their capacity in health promotion and disease prevention, especially regarding chronic, non-communicable diseases. The investments will focus on strengthening the diagnostic and screening capability as well as the clinical and resolute capacity of health clinics. This Component will further finance the upgrading and or expansion of three (3) hospitals selected on criteria relating to strategic role in the national hospital network, supply-demand gap analyses, and physical needs assessment. The hospitals will benefit from infrastructure upgrading and or expansion as well as modernization.

### **Sub-Component 1.1 – Strengthening Primary Care**

The purpose of this subcomponent is to increase the physical capacity for service provision at the primary care level in three (3) priority geographical areas. Approximately ten (10) health centres have been identified to receive investments in medical equipment and infrastructure refurbishment and expansion. The subcomponent will finance: (i) the preparation of building designs for the construction of new infrastructure on the sites of existing facilities (three centres), expansion of existing structures (four centres), and refurbishing (three centres); (ii) the physical works required for infrastructure improvement; (iii) the purchase of medical equipment including essential diagnostic and treatment items for NCDs, such as sphygmomanometers, electrocardiogram machines, pulse oximeters, defibrillators, computerized chemistry machines, etc.); (iv) engineering services for construction supervision; and (v) corrective and preventive maintenance of medical equipment

### **Sub-Component 1.2 – Increasing the Capacity and Efficiency of Hospital Services**

This subcomponent will address urgent needs to enhance patient safety and services in three (3) hospitals whose catchment areas contain the health centres identified in subcomponent 1.1. Financing from this subcomponent will be allocated to:

- (i) the building and engineering designs for the infrastructure improvement and expansion;
- (ii) the construction in three hospitals according to contracted plans and designs;
- (iii) the purchase of medical equipment to raise clinical capacity to partially account for existing demand;
- (iv) the purchase of imaging equipment, including computerized tomography machines;
- (v) purchase of industrial style laundry machines;
- (vi) construction supervision services; and
- (vii) the design and implementation of a corrective and preventive equipment maintenance programme.

### **Component 2 – Improvement of Management, Quality and Efficiency of Health Services**

This component will provide technical assistance to design and implement the Chronic Care Model (CCM) in the participating health services networks; to review and develop care pathways and protocols; and to prepare change management, continuous quality improvement and social media marketing for behaviour change strategies. It will also finance the implementation of the fourth Jamaica Health and Lifestyle Survey. This component will further support:

- (i) the creation of a strong foundation for a digital health ecosystem, including the adoption of standards for interoperability, system architecture, updated governance structure, and other key elements;
- (ii) the design and implementation of a sustainable Electronic Health Record (EHR) platform focusing on digitalization of key processes within the improved CCM; and

- (iii) the strengthening of telehealth/telemedicine/telementoring capacity to include chronic care management, and the establishment of norms and processes for its institutionalization.
- (iv) the strengthening of telehealth/telemedicine capacity through the expansion of the ECHO model, the inclusion of chronic care in the platform, and the establishment of norms and processes for its institutionalization.

The Loan also supports Programme Administration and Evaluation

### **Programme Administration and Evaluation**

This allocation will support the MOH in terms of strengthening its institutional capacity for project implementation. It will finance, inter alia, the consultants of the Project Execution Unit (PEU), specialized technical services, independent auditing, as well as surveys and studies regarding the implementation of the programme and evaluation of its impact. The PEU is structured to provide additional capability in the areas of project management, procurement, financial management, infrastructure upgrading, medical equipment specification, and health information technology. Technical and fiduciary staff from the MOH will work closely with the PEU specialists so that the MOH benefits from knowledge transfer and capacity strengthening

## **2. OBJECTIVES OF THE CONSULTANCY**

In keeping with Component 1 “Organization and consolidation of integrated health services networks”, the Programme aims to improve health services delivery in three (3) hospitals and ten (10) Health centres namely:

Hospitals:

- 1) Spanish Town Hospital
- 2) St. Ann’s Bay Hospital
- 3) May Pen Hospital

Health Centers:

- 4) St Jago Park
- 5) Old Harbour
- 6) Greater Portmore
- 7) St Ann Bay
- 8) Ocho Rios
- 9) Browns Town
- 10) Chapelton
- 11) Lionel Town
- 12) Maypen West
- 13) Mocho

The present work area in health centers and/or hospitals is sometimes inadequate to meet the needs of the population and/or Ministry of health plans especially in regards to NCDs. The main objectives of the Consultancy are to :

1. Assess the current state of the facilities and make recommendations for design plans and design parameters to improve the quality of healthcare delivery.
2. Develop Bill of Quantities and Tender Documents for construction supervision services (including the Draft Contract) for the procurement in accordance with the Building code (IBC) and PAHO/UNOPS Occupational Safety and Health Standards.
3. Develop Terms of Reference (TOR), for a Consultant to assess the environmental impact of the new/renovated health facilities and to prepare Environmental Examination Report
4. Provide advisory services to the PEU/MOH during the procurement of a Contractor, and in the evaluation of bids submitted by prospective bidders.

The consultant for the design phase will not be allowed to bid for the supervision or construction phases.

### **3. DESCRIPTION/SCOPE OF SERVICES**

It is expected that the consultant selected will have collaborative meetings with the PEU/MOH on all aspects of the scope of these services. Multiple meetings are expected in order to clarify and finalize the final deliverables.

The Consultant is required to provide ALL professional inputs, advice and support to the implementation of the project through the provision of appropriate and fit for purpose designs and costing estimates.

The consultant is expected to price each health facility design as line items in order for the client to be able to prioritise conduct the renovations/construction.

The Consulting Services shall involve the following list of activities:

#### **A. Assessment of the Existing health facilities /Locations**

1. Visit the sites and come to be familiarized with all aspects of the project; Site investigation and data collection - to accurately assess the current state. The Assessment shall take into consideration the preliminary information provided by the UNOPS report and in line with the overall MOH policy and strategic plans. Data collection shall involve meeting with all stakeholders and representative from MOH.
2. Review the initial budget estimate prepared for the detailed engineering design, construction supervision and construction of the health facilities assuming that the start of construction will be in 2020, and taking into consideration the recommended actions/plans for the existing building.
3. Estimate costs for interior design and landscaping.
4. Undertake Value Engineering / Value Analysis (VE/VA) on among others, the design of the new/renovated health facilities. while taking into account the type of structure and utilities (mechanical, electrical, plumbing etc.) and apply green/energy efficient concept designs.

**B. Review of existing designs/ Floor plans already completed**

5. At least two (2) health centers have design drawings completed. These are to be reviewed in consultation with MOH representatives and cost estimates prepared for undertaking same works to completion.

**C. Preliminary Engineering surveys, investigations & Mapping**

6. Conduct soil boring tests, seismic analysis, surveys and investigations of the site including boundaries of the properties, elevations, contours, location and other pertinent data on existing buildings and improvements and maximize existing utilities.

The data gathered will be used to inform design parameters; architectural structural and otherwise.

**D. Preparation of conceptual designs**

7. Prepare conceptual designs which shall describe the general idea with regard to the planned buildings in consideration of the recommended proposed use of the space as outlined by the project and MOH policy.

**E. Preparation of Perspective Views (Interior and Exterior)**

8. Develop three (3) perspective views (exterior) of the new/renovated health facilities for consideration of the Ministry of Health and Regional health Authorities. Subsequently, develop one (1) perspective view of certain interior spaces that will fit the selected exterior view. The selected plans shall be incorporated in the tender documents for the procurement of construction contractor to ensure that the winning bidder for the construction of the new/renovated health facilities Buildings will not substantially deviate from the conceptual plan as envisioned by the design team. On approval of conceptual scheme from the MOH; prepare drawings and other documents for submission to statutory local authorities (Parish Councils).

**F. Preparation of Design Parameters**

9. Recommend the appropriate code (i.e. Jamaican building code/IBC or International Standard) to be adopted while taking into consideration the cost/budget and the requirements of each health facilities. Among others, the following should be considered:
  - a. Jamaica National Building Code;
  - b. Energy Efficient/Green Building design practices; and
  - c. Relevant Parish Council Specifications.
10. Prepare the Design Parameters/Design Drawings (based on recommended Codes/Standards) for the following:

- a. Architectural;

the firm will be responsible for the preparation and submission of a complete set of architectural drawings consisting of the following:

- Foundation Plan – showing the layout and dimensions of slab-on-grade, basement or crawlspace walls of the site plan which indicates how the underpinning structure of the building is supported by the Earth below it.
- Floor plan -Showing layouts with scale and dimensions of room sizes and wall lengths, including details of fixtures and finishes.
- Framing plan – depicting the frame and structures of walls, joists, trusses and beams which would reveal the structural strength and capacity of the building.
- Roof Plan –presenting the top view of the entire roof system, including the ridges, hips, valleys, rakes, and eaves, including the location of the gutters and downspouts
- Elevation – Showing the front, side, and rear exteriors of the building, providing a flat straight-on-view of the siding, windows, doors and the entire exterior of the building from the ground floor to the roof ridge.
- Cross-sections – Showing all the hidden details of the building through a cross section (imaginary line) through the middle of the structure so that the interior of the walls, floors, ceilings and roof can be examined.
- Construction Site Plan and Building Design– Showing the detailed construction plan of all buildings, as well as the location and general design of each building.
- Other Details – Highlighting specific areas of construction such as: foundation connections, door assemblies, and window installations, which require greater details.

b. Structural / Civil Works;

The Structural/Civil Engineer shall be responsible for the preparation of the following:

- Topographic surveys as required
- Develop an engineered site grading plan
- Develop a storm water management plan in compliance with the relevant Municipal Corporation Ordinances and NWA (if necessary)
- Plumbing and Drainage lead plans
- Soil Erosion and Sediment Control Plan
- With the site located so close to the coast designs should take into consideration the corrosive element from the salt air which can cause metal to corrode quickly. Therefore any exposed metal included in the design must be of aluminium or specially coated, etc.
- The infrastructure must be designed to withstand up to a category five hurricane winds
- The infrastructure must be able to withstand 8.0 earthquake on the Richter scale

- The infrastructure is designed using and meeting the requirements of the Metric Handbook Planning and Design Data and the International Building Code 2009 (IBC) Standards

The above plans shall comply with the applicable Parish Council's ordinance setting forth the requirements for the specific documents to be prepared by the consultant.

**STRUCTURAL ENGINEERING DRAWINGS TO INCLUDE:**

All structural plans and details including:

- Foundation plan, Floor plan and details
- Structural details for foundation, columns, beams, floor and roof slabs or footing details
- Stair Details
- Structured connection details between new and existing structures
- Plumbing layout, including details
- Ceiling plan showing lighting layout
- Bar bending schedule

As Built Drawings

- c. Sanitary / Plumbing;
- d. Mechanical Works;

The consultant shall be responsible for the preparation of the following:

- Design Drawings for system to be implemented as required by Project Manager- to include location drawings for all mechanical elements, plumbing, process piping and equipment, HVAC etc.
- Identify mechanical design criteria, prepare preliminary calculations and establish base load requirements for HVAC, plumbing and fire protection systems, etc.
- Consider materials and systems suitable to the project requirements. Consider the requirements of the other design professionals and provide the information they require
- Check applicable codes, regulations and restrictions, insurance requirements and other factors affecting the design of the project
- Establish, where appropriate, comparative information to be used in selection of mechanical systems for the project
- Prepare mechanical calculations to support all mechanical designs. The mechanical calculations should be prepared legibly and presentably and filed by the Mechanical Engineer for record purposes. Hard copy of input and output of any computer analysis should be included as well as



description of the software used. All calculations should state assumptions made and relevant codes used.

- Prepare and submit all parts manual, and relevant documentation for equipment.
- Provide certification documents for all pressure relief valves, instrumentation, lifting equipment etc. (depending on nature of project).
- Provide basic training on use and maintenance of equipment.

The above plans shall comply with the applicable Parish Council's ordinance setting forth the requirements for the specific documents.

#### **MECHANICAL DRAWINGS TO INCLUDE:**

- Generator room for commercial sized generator
- Sizing and location of tanks and treatment facilities for rainwater harvesting system and grey water system to be treated and reused as irrigation for landscaping purposes. Sizing and location of Irrigation Pipes for landscape use. (must be done in collaboration with the landscape architect)
- Design and location of HVAC systems
- Design, sizing and specifying the appropriate components/ materials for sterile zones such as the EMS room and Decontamination Room
- Design and location of pumps and accessories
- Sizing and location of pipes and all fixtures
- Designs should provide specifications for equipment, to include guarding of moving parts and other specifications to meet OSHA and other regulatory standards.
- Site layout and the location of the works to be constructed, plan views
- Dimensions and units gradients
- Detailed designs and cross-sectional profiles of the works
- Titles and scales that meet the required standards and units
- Adequate labeling
- Elevations that are referenced to meters
- Be dated and signed by the designer
- Two sets of final design drawings and an Electronic copy (mandatory)

Final Drawing sheet sizes (24"x36") or as required for Agency approvals and internal archiving.

Provide Technical Specifications that shall comply with Industry Design Standards and shall include the descriptions of the work items, material requirements, construction requirements and methods, methods of measurements. The sampling, testing and inspection requirements, and production and delivery requirements, shall be included in the specifications of applicable work items.

A schedule of rehabilitation/construction works:

- Include for Termite/Pest Eradication treatment with a minimum 5 years guarantee.
- e. Electrical; and
- f. Local Area Network (LAN).

The Electrical Engineer shall be responsible for the preparation of the following:

- Electrical Analyses, Studies and/or Reports
- Other special systems as necessary
- Floor plan layouts for all electrical systems should be provided. Complete electrical feeder sizing together with sizes, types, locations and capacities of all panel boards should be shown on these documents
- Schedules should be included to provide type and capacities of lighting fixtures, panel boards, motor equipment, devices, and electrical heating equipment
- Floor plan layouts for all electrical systems should be provided. Complete electrical feeder sizing together with sizes, types, locations and capacities of all panel boards should be shown

The above plans shall comply with the applicable ordinances by the relevant Municipal Corporation, setting forth the requirements for the specific documents to be prepared by the Consultant.

**ELECTRICAL/INSTRUMENTATION ENGINEERING DRAWINGS TO INCLUDE:**

- Complete electrical design to be submitted and approved by Government Electrical Inspectorate.
- Consider Lightning Arrestors and earthing details to Buildings according to the guidelines set out in the Jamaica Standard Specification for Electrical Installations (JS21).
- Electrical layout, including wiring diagrams, with circuit breakers and heights of fixtures.
- Service entry location; showing point of entry and distance from JPSCo. Service mains.
- Specification on the design and type of Stanchion to support the main cable and pothead.
- Reflective C
- Location of Invertor for PV Panels Power Supply
- Battery Room & Connection between JPS and Alternate Power Supply
- Ceiling plan showing lighting layout
- Location and size of the generator and generator room

- As Built Drawings
  - Instrumentation Earthing (grounding) distribution schematic drawing
  - Sizing and location of PV panels system or wind turbine or any other renewable energy system that is more suitable to the location
  - Location and size of power supply rooms and battery rooms
  - Sizing and location of audio-visual equipment and rooms for media and data coverage
  - Sizing and location of Information technology rooms and equipment such as servers
  - Two sets of final design drawings and an Electronic copy (mandatory)
- g. Any other requirements that the relevant Parish Council or Municipal authority may have in order to approve for construction.

The Design Parameters shall also take into consideration the following features of the new/renovated health facilities:

- a. Workspace requirements
- b. Fire Protection System
- c. Telecommunication System including Telephone, Direct Cable and Wi-fi ready facilities Communication lines for voice, data and security services shall be provided / distributed to all relevant area and/or floors where applicable.

This shall include current and future requirements for information services. A room for the information technology (IT) servers shall be provided per floor level (where applicable).

- d. Plumbing, drainage and water distribution system measures on water efficiency shall be considered, e.g. water efficiency in landscaping, storm water retention and management, etc. Water supply shall be drawn from the NWC main line and water pipes shall be connected from the source to all water fixtures located in the design parking areas. Elevated water tanks with sufficient storage for approximately 20 days supply for Hospitals and 3 days supply for Health centers. These shall be provided with appropriately sized pump/booster where necessary. A system for sustainable collection and treatment of water and wastewater shall also be part of the design.

It is expected that the designs/plans will have appropriate sewage disposal options and treatment plants if necessary.

- e. Security System; buildings will be installed with closed-circuit televisions (CCTVs) as part of its 24-Hour Security system as such designs shall include conduits/draw points for same.

- f. Building Management System to ensure the proper monitoring and synchronization of the utilities system for operational efficiency.
- g. Heating, ventilating and air-conditioning system (HVAC) shall follow available green/eco-efficient building design practices.
- h. Landscape and landscape irrigation solutions shall be provided as part of the design, grey water use shall be considered where possible.

**Exterior**

- Pedestrian-scaled architectural details in the design.
  - Parking area inclusive of disabled person's space.
  - Context sensitive building and site lighting and landscaping.
  - Storm water treatment/detention facilities.
  - Mechanical room (Generator room) for backup utility
  - Battery Room/ Solar Inverter Room for PV Panels
  - Lightning Arrestors and proper grounding of the building
  - Rainwater harvesting tanks and treatment zones
  - Solid waste management area (drums)
- i. Energy Efficiency considerations shall be used in building designs.
  - j. Building requirements for persons with disabilities shall be provided.
  - k. The final output shall be a set of approved drawings by MOH and parish council

**G. Preparation of Construction Schedule with Cost Estimates**

- 11. Prepare the preliminary construction schedule, with cost estimates, based on the preliminary design and cost estimates as determined by the Consultant and approved by the PEU.

**H. Preparation of Performance Specifications.**

- 12. Prepare the performance specifications and criteria and its means of measurement based on the operating outputs and in accordance with appropriate design and construction standards, legal and technical obligations and any other relevant government commitments as required by existing law and regulations.

These shall be drawn to ensure:

- a) common basis in the evaluation of the Contractor's bid, and
- b) quality performance of the building and utilities systems for its intended operational lifetime.
- c) Also to ensure that life cost is a factor in the final specification and evaluation.

**I. Preparation of TOR for Environmental Impact assessment**

13. Prepare TOR for an independent Initial Environmental Examination Report to assess the environmental impact of the new/renovated health facilities and identify the mitigation measures to address such impact.
14. The Consultant shall ensure that it conforms to the Environmental and Social management assessment & plan:

The key Program's risks and impacts estimated, are temporal and mainly related to demolition expansion and upgrading of infrastructure, as follows: (i) air emissions, dust, noise, and vibrations; generations of solid and liquid waste, construction debris, occupational health and safety risks, assessed as low; (ii) local food vendors' income potentially affected due to relocation of seller points in St. Ann's Bay Hospital, assessed as moderate; (iii) patients medical services' disruption, assessed as moderate. The ESMP defined the plans with the required mitigation measures for each risk and impact identified: (i) for potential impacts of vendors' income, the measures defined will avoid income losses with special attention to address vulnerable sellers' needs; (ii) and for the case of patients, the activities defined will ensure continuity of the medical services, avoiding health risks..

**J. Formulation of TOR and Tender Documents (including the Draft Contract)**

15. Prepare the TOR and Tender Documents (including the Draft Contract) for the Procurement of:
  - a) Contractor/contractors for the construction of new/renovated health facilities Building
  - b) Construction Supervision services.
16. The TOR should include at the minimum the following:
  - a. Objective;
  - b. Scope of works;
  - c. Budget estimates;
  - d. Deliverables;
  - e. Schedules of; construction, manpower requirements and payment;
  - f. Responsibilities of parties (including risk allocation);
  - g. Qualifications of the Contractor (including its key manpower requirements); and
  - h. Minimum performance specifications and standards, and criteria and method for evaluation.

#### **K. Provision of Advisory Services/Assistance during the Procurement Process**

17. Assist Ministry of Health/PEU during the procurement of the Construction Contractor and Supervision contractor by:
  - a. Conducting Market sounding and advise on market approach and risks for procurement
  - b. Attending Pre-Procurement Conference to assisting clarifying provisions in the Bid Documents and other technical questions relative to the construction and supervision components b. Assisting in the determination of additional requirements, if any, from bidders to better evaluate responsiveness to the bid documents;) –
  - c. Evaluation of eligibility requirements together with the Technical team;
  - d. Assistance in providing responses to technical queries from bidders for the construction phase , where required ;
  - e. Evaluation of bids (technical and financial) together with the technical team to determine responsiveness to the bidding document. co;
  - f. Negotiations – assistance in negotiating with the lowest compliant bidder.

#### **4. STUDY DURATION AND MAJOR ACTIVITIES**

The Consultancy Services will be implemented for a period of seven (7) months starting from the issuance of the Notice to Proceed (NTP).

#### **5. IMPLEMENTATION ARRANGEMENT**

1. Ministry of Health through the PEU will be the executing agency and main recipient for the Consultancy Services with the Project offices as focal point in implementing the services.
2. Coordination meetings will be conducted between the PEU/Ministry of Health and the Consultant for the duration of the activity, as may be needed, the expenses of which are to be charged to the Contract.
3. The Project manager PEU will provide the Consultant with the necessary documents/support to enable the performance of the activities.

#### **6. COST OF CONSULTANCY SERVICES**

The contract for this consultancy is a fixed price contract, inclusive of tax and other incidental expenses and printing of reports / deliverables.

The cost shall cover the following:

1. Remuneration/professional fees;

2. Incidental expenses – which would include costs for structural investigation of the existing building, engineering surveys and investigations and mapping, processing, support personnel/staff and other out-of-pocket expenses (e.g., supplies and materials, equipment, transportation/fuel, communication and coordination meetings)

## 7. REPORTING / DELIVERABLES AND PAYMENT SCHEDULE

1. Billing for remuneration/professional fees shall be in accordance with the following delivery schedule and subject to the usual Government of Jamaica accounting and auditing requirements:

<b>Deliverables</b>	<b>Timeline</b>	<b>Payment</b>
Inception Report and Work plan	Within two (2) weeks from receipt of NTP	10%
Submission of the Result of Assessment of the Existing health facilities	Within 2 months from receipt of NTP	10%
Submission of the Result of the Topographic and Boundary Survey, Soil Boring Test, Seismic Analysis and Electric Design Computations including the Design Parameters	Within three (3) months from receipt of NTP	10%
Perspective Views / Drawings,	Within four (4) months from receipt of NTP	20%
TORs and Tender / Bidding Documents including the Draft Contract for the Procurement of Construction Contractor and Supervision contractor	Within 4 months from receipt of NTP	10%
Submission of the detailed designs, Bill of Quantities including Schedule of Materials Approved drawings	Within six (6) months from receipt of NTP	25%
Final Report including Provision of Advisory Services	Within one (1) week after the Notice of Award (NOA) is issued to the winning Construction Contractor and Supervision contractor consultant	15%

The deliverables shall be submitted by the Consultant in two (2) hard copies to the PEU/Ministry of Health for review. An electronic/soft copy with relevant software to view (if not available to the PEU) shall be also submitted to PEU/Ministry of Health. Monthly progress reports shall also be submitted via email and 2 hard copies to the PEU/ Ministry of Health.

Description/Delivery Standards of Deliverables:

<b>Deliverables</b>	<b>Description/Performance Standard</b>
Inception Report and Work plan	The inception report shall include: <ol style="list-style-type: none"> <li>a. Initial findings</li> <li>b. Scope of the project and the rationale for the design proposed,</li> <li>c. Recommended construction time line</li> </ol>
Submission of the Result of Assessment of the Existing health facilities	Assessment should be in accordance with the PAHO UNOPS document and refined / expanded as required based on site visits.
Submission of the Result of the Topographic and Boundary Survey, Soil Boring Test, Seismic Analysis and Electric Design Computations including the Design Parameters	Prepared in accordance with the standards and all applicable codes and regulations
Perspective Views / Drawings	All designs shall comply with all applicable codes and ordinances, The services shall be performed in accordance with generally accepted professional standards, and all advice and consultation provided shall be within the architect's authority and capacity as a professional
TORs and Tender / Bidding Documents including the Draft Contract for the Procurement of Contractor	Terms of Reference to include Qualifications and Experience Requirements of Firm and Personnel and all standard components of a TOR. Documents are to be prepared in accordance with the IDB and GOJ guidelines.
Submission of the detailed designs, Bill of Quantities including Schedule of Materials and Approved drawings	All designs shall be in compliance with all applicable codes, ordinances and regulations as required. Designs and Drawings should include <ul style="list-style-type: none"> <li>• Relevant standards and specifications for design drawings (such as technical, environmental, mechanical etc.)</li> <li>• Concepts for all engineering systems, processes and schedule of drawings.</li> <li>• Final to-scale drawings for all systems, including at a minimum, site piping plan, major earthworks, electrical diagram, hydraulic schematic, etc.</li> <li>• Construction and operating cost estimates, schedules and WBS as necessary.</li> </ul>



<b>Deliverables</b>	<b>Description/Performance Standard</b>
	<ul style="list-style-type: none"> <li>• Material and equipment checklists.</li> <li>• Final engineering design calculations</li> <li>• the Detailed Bills of Quantities using the formats supplied.</li> </ul>
Final Report	Final Report on the consultancy including advisory services provided during the period.

## 2. Reporting Relationship

The consultancy firm will report to the Project Manager PEU. A committee will be established consisting of representatives from key stakeholder groups. The deliverables will be reviewed and accepted by this committee.

## 8. QUALIFICATIONS OF THE FIRM

Prospective Consultancy Firms must have:

- at least ten (10) years of similar and/or relevant experience related to this TOR. Similar Projects shall refer to contracts with scope of works related to the preparation of tender documents, architectural design and detailed engineering Relevant Projects shall refer to contracts with scope of works related to the preparation of tender documents, architectural design and detailed engineering of other vertical structures (government / public and private buildings) such as dams, port facilities, airport facilities and the like.
- At least five years' experience in the preparation of tender documents, architectural design and detailed engineering for the government/public buildings.

## 9. QUALIFICATION OF PERSONNEL

The proposed activities shall be undertaken by a Team composed of the following key experts and their corresponding qualifications:

<b>EXPERTS</b>	<b>QUALIFICATIONS</b>
<b>KEY EXPERTS :</b>	
Key Expert 1-Team Leader	Education: Bachelor's Degree in Architecture Experience: Structural Engineer or Architect with at least fifteen (15) years' experience in design, contract and project management of buildings or infrastructures, and preferably with experience in green building design. With at least three (3) projects of similar size and scope. Registered with relevant professional bodies
Key expert 2-Architect	Education: Bachelor's Degree in Architecture Experience: Architect with at least 10 years similar and relevant experience.

EXPERTS	QUALIFICATIONS
<b>KEY EXPERTS :</b>	
Key expert 3 Electrical Engineer	Education: Degree in Electrical Engineering, registered with a Professional Engineers Registration Board (PERB) Experience: Electrical Engineer with at least seven (7) years relevant experience in design and project or construction management of buildings Registered with relevant professional bodies
Other Experts proposed for the Assignment: (NB. Only key experts shall be evaluated.)	
Key expert 4 Mechanical Engineer	Education: Degree in Mechanical or Electrical Engineering Experience -at least 7 years relevant experience in design and project or construction management of buildings Registered with relevant professional bodies
ICT & Communications Engineer/Specialist	Education: BSC in ICT or other equivalent qualification Education : Electronic and Communications Engineer with at least 10 years relevant experience in design and construction management of buildings
Key expert 5 Quantity Surveyor	Education: Bachelor's Degree in Quantity Surveying. Experience: QS with at least 5 years' experience as a quantity surveyor on new and refurbished buildings.; and in contract management and administration.
Key expert 6 Draughtsman	Education: A diploma in drawing or its equivalent Experience : At least 2 years of experience drawing for an engineering firm AND ATLEAST ONE (1) YEAR EXPERIENCE DOING DRAWINGS OF SIMILAR

## 10. Other Requirements

1. Through his/her familiarisation with the location and condition of the site, confirm the technical and environmental specifications that will inform design criteria.
2. Following this first phase of 'User Input', the Consultant shall prepare technical drawings taking in to account the specific needs of the beneficiaries.

3. **Return to the PEU/MOH to share the technical drawings; to include 3D computer generated perspectives or 3D drawings shall be shared for easier understanding. Make adjustments to the drawings as needed in consultation with the relevant stakeholders.**
4. Prepare a detailed Bills of Quantities using agreed format on CDs.
5. Liaise with all relevant line ministries and agencies for input in final design. These line ministries and agencies should indicate their approval in writing of the **FINAL DESIGN**. In the case of approving agencies (Municipal Corporation, NEPA (as required)), drawings must be submitted for approval.
6. Investigate vehicular access to the site during construction and make recommendations for minimum (impact on traffic) works if required, supported by design and costing documents.

If the design affects private land, for example for the discharge of “concentrated” water from road drainage structures, agreement with the landowners must be secured to lead the water on or through the land’s natural water course. If no such agreement can be reached, an alternative discharge should be designed. Additional costs resulting from this alternative shall be calculated and reported in the design report.

The Consultant shall submit a statement that private land is not negatively affected or the agreement documents (if applicable) together with his Project documentation.

## 11. DESIGNS CHECK LIST

DESIGN SPECIALITY	REMARKS
<b>ARCHITECTURE</b>	<p><b>1. Architectural review:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Design Code: The building is designed using and meeting the requirements of the Metric Handbook Planning and Design Data and the International Building Code 2009 (IBC) Standards Consider all other Jamaica applicable regulations and have clear reference to such standards and specifications</li> <li><input type="checkbox"/> Needs Validation Assessment</li> <li><input type="checkbox"/> Space program</li> <li><input type="checkbox"/> Critical dimensions to be checked</li> <li><input type="checkbox"/> Interior design</li> <li><input type="checkbox"/> Exterior facility design</li> <li><input type="checkbox"/> Means of evacuation</li> </ul> <p><b>2. Recommendations for</b></p>

DESIGN SPECIALITY	REMARKS
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provided architectural layout,</li> <li><input type="checkbox"/> Schematic designs and development drawings</li> <li><b>3. Design Philosophy:</b></li> <li><input type="checkbox"/> Reduction in environmental impacts is a priority, consider practical and affordable environmentally sustainable initiatives and measures</li> <li><input type="checkbox"/> Air movement to be consider by means on bioclimatic design considerations</li> <li><input type="checkbox"/> Water protection: rain, ground water</li> <li><input type="checkbox"/> Thermal resistance</li> <li><input type="checkbox"/> Daylighting and Artificial Lighting</li> <li><input type="checkbox"/> Exterior finishes should be durable and low-maintenance</li> <li><input type="checkbox"/> Acoustics</li> <li><input type="checkbox"/> Conventional reinforced concrete and block wall construction is desired, other low maintenance and cost effective, aesthetically pleasing construction systems and materials may be considered to lower costs</li> <li><input type="checkbox"/> Finishes: Durability and simplicity are desirable qualities</li> <li><input type="checkbox"/> Proper traffic management in the movement of emergency vehicles versus private and public vehicles must be considered and prioritized</li> <li><input type="checkbox"/> Consider salt corrosion prevention when specifying the use of metals.</li> <li><input type="checkbox"/> All external doors (and framing) for buildings must be metal with necessary finishes to protect corrosion by salt are and possible sea spray, wooden doors (and frames) are NOT acceptable for external use.</li> <li><b>4. Exterior:</b></li> <li><input type="checkbox"/> Pedestrian-scaled architectural details in the design.</li> <li><input type="checkbox"/> Exit/enter apron must be at least 4.57 Metres (15') longer than the longest apparatus to allow for safe turning radius.</li> <li><input type="checkbox"/> Parking area (per standard) provided for at least 5 (5) private vehicles and two (2) disabled persons only space.</li> <li><input type="checkbox"/> Context sensitive building and site lighting and landscaping.</li> <li><input type="checkbox"/> Storm water treatment/detention facilities.</li> <li><input type="checkbox"/> Battery Room/ Solar Inverter Room for PV Panels</li> <li><input type="checkbox"/> Lightening Arrestors and proper grounding of the building</li> <li><input type="checkbox"/> Solid waste management area (drums)</li> <li><b>5. Interior Elements :</b></li> <li><input type="checkbox"/> Walkway</li> <li><input type="checkbox"/> Class room</li> </ul>

DESIGN SPECIALITY	REMARKS
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Janitorial closet/ Store room</li> <li><input type="checkbox"/> Laundry room</li> <li><input type="checkbox"/> Small information technology room/closet</li> <li><input type="checkbox"/> Bathrooms to accommodate separate males and females</li> </ul> <p><b>6. Construction documents:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Architectural plans preparation,</li> <li><input type="checkbox"/> Details,</li> <li><input type="checkbox"/> Schedule of materials to be used for all components of the building,</li> <li><input type="checkbox"/> Building and room identification.</li> <li><input type="checkbox"/> Specifications.</li> <li><input type="checkbox"/> All drawings must be accompanied by a site plan, indicating the existing layout of the site as well as the layout on completion of works. The plans must capture the external works to be carried out.</li> </ul> <p><b>7. External Works:</b> form part of Site Drawings and should capture site items related to</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Paving,</li> <li><input type="checkbox"/> Locations for run off,</li> <li><input type="checkbox"/> Drainage,</li> <li><input type="checkbox"/> Green spaces,</li> <li><input type="checkbox"/> Walkways,</li> <li><input type="checkbox"/> Planting of trees,</li> <li><input type="checkbox"/> Outdoor lighting fixtures,</li> </ul> <p><b>8. Landscape design plans</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Drawings showing irrigation layout to vegetation</li> <li><input type="checkbox"/> Drawings showing external lighting fixtures and furniture layout</li> <li><input type="checkbox"/> Drawings showing the layout and specifications of plants and other external finishes to utilize</li> <li><input type="checkbox"/> Plants schedule</li> <li><input type="checkbox"/> Plants maintenance and care schedule</li> </ul> <p><b>9. Services needs review and layouts for:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Plumbing,</li> <li><input type="checkbox"/> Electrical,</li> <li><input type="checkbox"/> Lighting,</li> <li><input type="checkbox"/> Mechanical,</li> <li><input type="checkbox"/> Communications,</li> <li><input type="checkbox"/> Data,</li> <li><input type="checkbox"/> etc.</li> </ul> <p><b>10. Drawings minimum requirements:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> List of drawing sheets appropriately labelled.</li> <li><input type="checkbox"/> Two (2) set Final Drawings printed on 2' x 3' Velum and</li> </ul>

DESIGN SPECIALITY	REMARKS
	<p>Two (2) set blue print (consider up to a minimum of 20 sheets per drawing), signed and sealed by Architect, along with electronic (.dwg and .pdf) copies of drawings to be provided to client.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Site plan; illustrating boundaries, magnetic north, contour lines (or spot levels), position/location of buildings, trees or obstructions on the site, location of main services, plumbing and/or drainage layout (where appropriate)</li> <li><input type="checkbox"/> Floor plans Layout</li> <li><input type="checkbox"/> A minimum of four cross sections clearly showing levels, vertical heights, door and window heights</li> <li><input type="checkbox"/> Elevations as required</li> <li><input type="checkbox"/> Roof framing plan, details, (ridge, eave, sheet overlap/connection details, details where necessary to facilitate clarity of designs and design interpretation)</li> <li><input type="checkbox"/> Plumbing and electrical layouts</li> <li><input type="checkbox"/> Connection details between existing and new structures (if applicable)</li> <li><input type="checkbox"/> Door and window schedule, cross sections, carpentry details, cabinet details</li> <li><input type="checkbox"/> Plans of bathrooms and wall elevations to scale 1:20</li> <li><input type="checkbox"/> Finish schedule for floors, walls, ceilings and roofs</li> <li><input type="checkbox"/> Locks Schedule</li> <li><input type="checkbox"/> Access and boundary facilities, fence/ boundary wall and gates details (as required)</li> <li><input type="checkbox"/> Security Post/s design as needed</li> <li><input type="checkbox"/> Reflective Ceiling Plan</li> <li><input type="checkbox"/> Two (2) set approved drawings blue prints, Two (2) set negatives, Electronic copy (mandatory)</li> <li><input type="checkbox"/> Plans to meet the Ministry of Education Design Standards and Criteria</li> <li><input type="checkbox"/> All measurements in metric units</li> <li><input type="checkbox"/> All drawings to have legend explaining symbols</li> <li><input type="checkbox"/> All drawings to be dated, signed and sealed by Design Contractor</li> <li><input type="checkbox"/> All designs must conform to all applicable standards</li> <li><input type="checkbox"/> Summary sheet with legend to all drawings</li> <li><input type="checkbox"/> A legend to indicate changes to the drawings with date of these changes</li> <li><input type="checkbox"/> Design to be based on full topographic survey or spot levels as the site requires, to determine exact quantities</li> </ul> <p><b>11. Technical Specifications Document:</b> shall comply with Industry Design Standards and shall include the</p>

DESIGN SPECIALITY	REMARKS
	<p>descriptions of the work items, material requirements, construction requirements and methods, methods of measurements. The sampling, testing and inspection requirements, and production and delivery requirements, shall be included in the specifications of applicable work items.</p> <p><b>12. Planning and Building Permission</b></p>
<p><b>TOPOGRAPHICAL SURVEY</b></p>	<p><b>1. Topographic Survey</b> done by a Commissioned Land Surveyor</p> <p><b>2. Complete site inventory including:</b> utilities, adjacent buildings, septic tanks, absorption pits, manholes, NWC connections, entrances pathways, access survey, or any other information required to assess status and condition of the site.</p> <p><b>3. Drawing Requirements</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> All measurements in metric units</li> <li><input type="checkbox"/> All drawings to have legend explaining symbols</li> <li><input type="checkbox"/> All drawings to be dated, signed and sealed by Design-Build Contractor</li> <li><input type="checkbox"/> All designs must conform to all applicable standards</li> <li><input type="checkbox"/> Summary sheet with legend to all drawings</li> <li><input type="checkbox"/> A legend to indicate changes to the drawings with date of these changes</li> <li><input type="checkbox"/> Design to be based on full topographic survey or spot levels as the site requires, to determine exact quantities</li> </ul> <p><b>4.</b> Indication of what interventions are required</p>
<p><b>CIVIL ENGINEERING</b></p>	<p><b>1. Grading:</b> Develop an engineered site grading plan</p> <p><b>2. Storm water management plan:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Develop a storm water management plan in compliance with the relevant municipal corporation ordinances and NWA (if necessary)</li> </ul> <p><b>3. Environmental Impact Assessment:</b> steps to conform with Environmental Social and Management Plan (Where applicable)</p> <p><b>4. Drawing requirements:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> All measurements in metric units</li> <li><input type="checkbox"/> All drawings to have legend explaining symbols</li> <li><input type="checkbox"/> All drawings to be dated, signed and sealed by Design Contractor</li> <li><input type="checkbox"/> All designs must conform to all applicable standards</li> <li><input type="checkbox"/> Summary sheet with legend to all drawings</li> <li><input type="checkbox"/> A legend to indicate changes to the drawings with date of these changes</li> <li><input type="checkbox"/> Design to be based on full topographic survey or spot</li> </ul>

DESIGN SPECIALITY	REMARKS
	<p>levels as the site requires, to determine exact quantities</p> <p><b>5. Technical Specifications Document:</b> shall comply with Industry Design Standards and shall include the descriptions of the work items, material requirements, construction requirements and methods, methods of measurements. The sampling, testing and inspection requirements, and production and delivery requirements, shall be included in the specifications of applicable work items.</p>
<p><b>GEOTECHNICAL SURVEY AND REPORT</b></p>	<p><b>1. Code:</b> The building and external facilities are designed using and meeting the requirements of the Metric Handbook Planning and Design Data and the International Building Code 2009 (IBC) Standards Consider all other Jamaica applicable regulations and have clear reference to such standards and specifications</p> <p><b>2. Geotechnical survey and report minimum contents:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Soil exploration program</li> <li><input type="checkbox"/> Bores profile</li> <li><input type="checkbox"/> Water level</li> <li><input type="checkbox"/> Sample collection, laboratory tests</li> <li><input type="checkbox"/> Soil classification</li> <li><input type="checkbox"/> Seismic Zone Classification</li> <li><input type="checkbox"/> Bearing Capacity for buildings, tanks</li> <li><input type="checkbox"/> Excavation and construction recommendations</li> <li><input type="checkbox"/> Parameters for Foundation designs</li> <li><input type="checkbox"/> Settlement Analysis</li> <li><input type="checkbox"/> Pavement design parameters</li> </ul> <p><b>3. Foundation structural designs review and approval</b></p> <p><b>4. Site Visits and assistance during construction</b></p>
<p><b>STRUCTURAL DESIGN</b></p>	<p><b>1. Special requirements:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Buildings must be designed to withstand up to a category five hurricane winds</li> <li><input type="checkbox"/> Buildings must be able to withstand 8.0 earthquake on the Richter scale</li> <li><input type="checkbox"/> Where sites are located close to the coast designs should take into consideration the corrosive element from the salt air which can cause metal to corrode quickly. Therefore, any exposed metal included in the design must be of aluminum or specially coated, etc.</li> </ul> <p><b>2. Design Code:</b> the building is designed using and meeting the requirements of the <u>Metric Handbook Planning and Design Data</u> and the International Building Code 2009 (IBC) <u>Standards;</u> Local seismic zones, risks and parameters to be considered</p>



DESIGN SPECIALITY	REMARKS
	<p><b>3. Structural engineering drawings to include</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Foundation plan,</li> <li><input type="checkbox"/> Floor plan and details</li> <li><input type="checkbox"/> Structural details for foundation, columns, beams, floor and roof slabs or footing details, tanks, civil works structures</li> <li><input type="checkbox"/> Stair Details</li> <li><input type="checkbox"/> Structured connection details between new and existing structures</li> <li><input type="checkbox"/> Non-structural component seismic design</li> <li><input type="checkbox"/> Bar bending schedule</li> </ul> <p><b>4. Drawing requirements:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> All measurements in metric units</li> <li><input type="checkbox"/> All drawings to have legend explaining symbols</li> <li><input type="checkbox"/> All drawings to be dated, signed and sealed by Design Contractor</li> <li><input type="checkbox"/> All designs must conform to all applicable standards</li> <li><input type="checkbox"/> Summary sheet with legend to all drawings</li> <li><input type="checkbox"/> A legend to indicate changes to the drawings with date of these changes</li> <li><input type="checkbox"/> Design to be based on full topographic survey or spot levels as the site requires, to determine exact quantities</li> </ul> <p><b>5. Technical Specifications Document:</b> shall comply with Industry Design Standards and shall include the descriptions of the work items, material requirements, construction requirements and methods, methods of measurements. The sampling, testing and inspection requirements, and production and delivery requirements, shall be included in the specifications of applicable work items.</p>
<p><b>PLUMBING DESIGN</b></p>	<p><b>1. Design Code:</b> the building is designed using and meeting the requirements of the <u>Metric Handbook Planning and Design Data</u> and the International Building Code 2009 (IBC) <u>Standards</u></p> <p><b>2. Design Requirements:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> All Plumbing Engineering Drawings are to be coordinated with all disciplines; domestic water, sanitary and storm drainage, and other liquid conveyance systems shall be designed to avoid inappropriate juxtaposition with other utilities.</li> </ul> <p><b>3. Plumbing Systems design components</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Domestic Cold Water Service</li> <li><input type="checkbox"/> Domestic Water Service Pressure</li> </ul>

DESIGN SPECIALITY	REMARKS
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Domestic Water Booster Pumping System</li> <li><input type="checkbox"/> Domestic Hot Water Service</li> <li><input type="checkbox"/> Domestic Water Supply Equipment</li> <li><input type="checkbox"/> Plumbing Fixtures water supply</li> <li><input type="checkbox"/> Special Purpose Area Plumbing Systems</li> <li><input type="checkbox"/> Sanitary and Storm Drainage Systems</li> <li><input type="checkbox"/> Sanitary (Soil and Waste) Vent System</li> <li><input type="checkbox"/> Sanitary Floor Drains</li> <li><input type="checkbox"/> Grease Interceptors</li> <li><input type="checkbox"/> Rainwater System</li> <li><input type="checkbox"/> Roof Drainage</li> <li><input type="checkbox"/> Water storage tanks</li> <li><input type="checkbox"/> Automatic Sump Pumps</li> <li><input type="checkbox"/> Foundation and Subsoil Drainage</li> <li><input type="checkbox"/> Sand oil separators</li> <li><input type="checkbox"/> Automatic Sewage ejectors</li> <li><b>4. Plumbing drawings to include:</b></li> <li><input type="checkbox"/> Plumbing layouts and line diagrams for each system</li> <li><input type="checkbox"/> Vertical Chases and Shafts</li> <li><input type="checkbox"/> Plumbing Details</li> <li><input type="checkbox"/> Pipe supports</li> <li><input type="checkbox"/> Sizing and location of Irrigation Pipes for landscape use. (must be done in collaboration with the landscape architect)</li> <li><b>5. Drawing requirements:</b></li> <li><input type="checkbox"/> All measurements in metric units</li> <li><input type="checkbox"/> All drawings to have legend explaining symbols</li> <li><input type="checkbox"/> All drawings to be dated, signed and sealed by Design Contractor</li> <li><input type="checkbox"/> All designs must conform to all applicable standards</li> <li><input type="checkbox"/> Summary sheet with legend to all drawings</li> <li><input type="checkbox"/> A legend to indicate changes to the drawings with date of these changes</li> <li><input type="checkbox"/> Design to be based on full topographic survey or spot levels as the site requires, to determine exact quantities</li> <li><b>6. Technical Specifications Document:</b> shall comply with Industry Design Standards and shall include the descriptions of the work items, material requirements, construction requirements and methods, methods of measurements. The sampling, testing and inspection requirements, and production and delivery requirements, shall be included in the specifications of applicable work items.</li> </ul>

DESIGN SPECIALITY	REMARKS
<b>ELECTRICAL DESIGN</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Design Code:</b> the building is designed using and meeting the requirements of the <u>Metric Handbook Planning and Design Data</u> and the International Building Code 2009 (IBC) Standards</li> <li><input type="checkbox"/> <b>Special requirements (Where Applicable):</b></li> <li><input type="checkbox"/> Mechanical room (Generator room) for backup utility</li> <li><input type="checkbox"/> Context sensitive building and site lighting and landscaping</li> <li><input type="checkbox"/> Battery Room/ Solar Inverter Room for PV Panels</li> <li><input type="checkbox"/> Lightning Arrestors and proper grounding of the building</li> <li><input type="checkbox"/> Provision of Alternative Energy Solutions</li> <li><input type="checkbox"/> Use of LED lighting throughout new building,</li> <li><input type="checkbox"/> Solar system to compliment power from utility company (where possible solar powered external lights within parking area),</li> <li><input type="checkbox"/> Use of solar lights with photo sensors must be explored for external security lighting.</li> <li><input type="checkbox"/> Provisions for use of Solar panels or wind turbines or any other possible renewable energy solution or a combination of each as would be ideal for the location</li> <li><input type="checkbox"/> <b>Other Special Purpose Systems</b></li> <li><input type="checkbox"/> Audio/Visual (A/V) presentation system in conference rooms and designated areas</li> <li><input type="checkbox"/> Video conferencing facilities in designated areas</li> <li><input type="checkbox"/> Empty conduit for roof mounted satellite antenna</li> <li><input type="checkbox"/> Entry door bell system</li> <li><input type="checkbox"/> Entry door intercom system</li> <li><input type="checkbox"/> <b>Design Requirements:</b></li> <li><input type="checkbox"/> Energy conservation is a requirement of all electrical systems.</li> <li><input type="checkbox"/> All Electrical Engineering Drawings are to be coordinated with all disciplines; electrical systems shall be designed to avoid inappropriate juxtaposition with other utilities</li> <li><input type="checkbox"/> Complete electrical design to be submitted and approved by Government Electrical Inspectorate.</li> <li><input type="checkbox"/> Consider Lightning Arrestors and earthing details to Buildings according to the guidelines set out in the Jamaica Standard Specification for Electrical Installations (JS21).</li> <li><input type="checkbox"/> <b>Electrical systems components to be designed(Where Applicable):</b></li> <li><input type="checkbox"/> Electrical Services</li> </ul>

DESIGN SPECIALITY	REMARKS
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Power Distribution Systems</li> <li><input type="checkbox"/> Emergency Power</li> <li><input type="checkbox"/> Lighting Fixtures</li> <li><input type="checkbox"/> Telephone Service</li> <li><input type="checkbox"/> Auxiliary Systems: fire alarm, communications (voice and data) and security systems</li> <li><input type="checkbox"/> Electric Service Metering</li> <li><input type="checkbox"/> Power Distribution</li> <li><input type="checkbox"/> Panelboards</li> <li><input type="checkbox"/> Computer Panelboards</li> <li><input type="checkbox"/> Panel schedules</li> <li><input type="checkbox"/> Feeders and Branch Circuits</li> <li><input type="checkbox"/> Conduit and wiring</li> <li><input type="checkbox"/> Transformers</li> <li><input type="checkbox"/> Power for motors and controls</li> <li><input type="checkbox"/> Motor Control Centers</li> <li><input type="checkbox"/> Electrical Closets</li> <li><input type="checkbox"/> Requirements for Computer Technology and Other</li> <li><input type="checkbox"/> Uninterruptible Power Supply (UPS)</li> <li><input type="checkbox"/> Maintenance Bypass Switch</li> <li><input type="checkbox"/> Harmonic Filters and Surge Suppressers</li> <li><input type="checkbox"/> Kitchen Electrical Requirements</li> <li><input type="checkbox"/> Interior Lighting and Lighting Controls</li> <li><input type="checkbox"/> Exit signs</li> <li><input type="checkbox"/> Emergency generator</li> <li><input type="checkbox"/> Telecommunications, Local Area Network (LAN) and Cable Television</li> <li><input type="checkbox"/> Grounding System</li> <li><input type="checkbox"/> Lightning Protection System</li> <li><input type="checkbox"/> <b>Electrical drawings to include:</b></li> <li><input type="checkbox"/> Line diagrams for each system</li> <li><input type="checkbox"/> Vertical Chases and Shafts</li> <li><input type="checkbox"/> Receptacle Outlets</li> <li><input type="checkbox"/> Fixture Outlets</li> <li><input type="checkbox"/> Show on the Drawings short circuit calculations for all significant points. <ul style="list-style-type: none"> <li>i. Fuses and circuit breakers shall be coordinated for selective tripping and selected for the interrupting capacity required.</li> <li>ii. The voltage drop shall not exceed the limits of Code.</li> </ul> </li> <li><input type="checkbox"/> Electrical layout, including wiring diagrams, with circuit breakers and heights of fixtures.</li> <li><input type="checkbox"/> Service entry location; showing point of entry and</li> </ul>

DESIGN SPECIALITY	REMARKS
	<p>distance from JPS Co. Service mains.</p> <ul style="list-style-type: none"> <li>□ Specification on the design and type of Stanchion to support the main cable and pothead.</li> <li>□ Reflective Ceiling Plan</li> <li>□ Location of Invertor for PV Panels Power Supply</li> <li>□ Battery Room &amp; Connection between JPS and Alternate Power Supply</li> <li>□ Ceiling plan showing lighting layout</li> <li>□ Location and size of the generator and generator room</li> <li>□ Sizing and location of audio-visual equipment and rooms for media and data coverage</li> <li>□ Sizing and location of Information technology rooms and equipment such as servers</li> <li>□ Location and size of power supply rooms and battery rooms</li> <li>□ Sizing and location of PV panels system or wind turbine or any other renewable energy system that is more suitable to the location</li> </ul> <p>□ <b>Drawing requirements:</b></p> <ul style="list-style-type: none"> <li>□ All measurements in metric units</li> <li>□ All drawings to have legend explaining symbols</li> <li>□ All drawings to be dated, signed and sealed by Design Consultant</li> <li>□ All designs must conform to all applicable standards</li> <li>□ Summary sheet with legend to all drawings</li> <li>□ A legend that will indicate changes to the drawings with date of these changes in future</li> </ul> <p>Design to be based on full topographic survey or spot levels as the site requires, to determine exact quantities</p> <ul style="list-style-type: none"> <li>□ <b>Technical Specifications Document:</b> shall comply with Industry Design Standards and shall include the descriptions of the work items, material requirements, construction requirements and methods, methods of measurements. The sampling, testing and inspection requirements, and production and delivery requirements, shall be included in the specifications of applicable work items.</li> </ul>
<b>MECHANICAL DESIGN</b>	<ol style="list-style-type: none"> <li>1. <b>Design Code:</b> the building is designed using and meeting the requirements of the <u>Metric Handbook Planning and Design Data</u> and the International Building Code 2009 (IBC) <u>Standards</u></li> <li>2. <b>Mechanical drawings to include:</b></li> </ol>

DESIGN SPECIALITY	REMARKS
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Line diagrams for each system</li> <li><input type="checkbox"/> Vertical Chases and Shafts</li> <li><input type="checkbox"/> Generator room for commercial sized generator</li> <li><input type="checkbox"/> Sizing and location of tanks and treatment facilities for rainwater harvesting system and grey water system to be treated and reused as irrigation for landscaping purposes.</li> <li><input type="checkbox"/> Design and location of HVAC systems</li> <li><input type="checkbox"/> Design, sizing and specifying the appropriate components/ materials for sterile zones such as the EMS room and Decontamination Room</li> <li><input type="checkbox"/> Design, sizing and specifying pumps and appropriate components/materials etc.</li> <li><input type="checkbox"/> Design and specifications for hydraulic and pneumatic systems</li> <li><input type="checkbox"/> Welding and non-destructive examination specifications (ISO and ASME Standards as needed based on project)</li> </ul> <p><b>3. Drawing requirements:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> All measurements in metric units</li> <li><input type="checkbox"/> All drawings to have legend explaining symbols</li> <li><input type="checkbox"/> All drawings to be dated, signed and sealed by Design Consultant</li> <li><input type="checkbox"/> All designs must conform to all applicable standards</li> <li><input type="checkbox"/> Summary sheet with legend to all drawings</li> <li><input type="checkbox"/> A legend to indicate changes to the drawings with date of these changes</li> <li><input type="checkbox"/> Design to be based on full topographic survey or spot levels as the site requires, to determine exact quantities</li> </ul> <p><b>4. Technical Specifications Document:</b> shall comply with Industry Design Standards and shall include the descriptions of the work items, material requirements, construction requirements and methods, methods of measurements. The sampling, testing and inspection requirements, and production and delivery requirements, shall be included in the specifications of applicable work items.</p>
<b>COST ESTIMATION</b>	<p><b>1. Rate Building:</b>, the Contractor will be required to develop rates for items in accordance with the Jamaican Standard Method of Measurement (JSMM) for building works. Additionally, the consultant will be required to provide the labor, material and equipment inputs for the new items of work(s), as required to build the rate for the smallest unit of said item of work(s).</p> <p><b>2. Standards:</b></p>

DESIGN SPECIALITY	REMARKS
	<ul style="list-style-type: none"> <li>□ Bills of Quantity shall not include Prime Cost Sums and can only include provisional sums where absolutely necessary.</li> <li>□ The appendices shall carry a 'List of Drawings' from which the Bill of Quantities was prepared.</li> <li>□ Each page of the Bill of Quantities shall carry a footer indicating the total prices on that particular page and read “carried to collection”.</li> <li>□ The Bills of Quantities shall carry a general summary</li> </ul> <p><b>3. A Bills of Quantities covering all works:</b></p> <ul style="list-style-type: none"> <li>□ Bills of Quantities in agreed format, using Jamaican Standard Method of Measurement (JSMM) for works.</li> <li>□ All quantities are to be measured in metric units and rounded off to two decimal places.</li> <li>□ The Bills of Quantities shall not include Prime Cost Sums, and can only include Provisional Sums where absolutely necessary (i.e. only for works or for costs which cannot be entirely foreseen, quantified or detailed at the time tendering documents are prepared). The justification for <b>ALL</b> Provisional Sums must be outlined in a separate document, accompanying the Bills of Quantities.</li> <li>□ Engineering Services and external works shall be priced and not billed as a lump sum.</li> <li>□ Preliminaries should be properly priced.</li> <li>□ All provisional sums must be justified on a separate document.</li> <li>□ The Appendices shall carry a ‘List of Drawings’ from which the Bills of Quantities was prepared.</li> <li>□ Each page shall carry a footer indicating the total of prices on that particular page. This footer shall read ‘Carried to Collection”.</li> <li>□ The Bills of Quantities shall carry a General Summary.</li> <li>□ A printed copy of the priced Bills of Quantities should be submitted in electronic format.</li> <li>□ Maintenance Plan comprising an inventory of the number and types of fixtures, surface areas and other amenities with a schedule of frequency and cycle of maintenance of the inventory listing.</li> <li>□ External Works must be detailed in Bills of Quantities.</li> </ul> <p><b>4. Cost Estimate</b></p> <ul style="list-style-type: none"> <li>□ Prepare Work Breakdown Structure</li> <li>□ Develop a cost database for materials, equipment &amp; tools, labor, transportation supported on reference prices and quotations</li> </ul>

DESIGN SPECIALITY	REMARKS
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Define productivity rates</li> <li><input type="checkbox"/> Prepare Unit Price Analysis</li> <li><input type="checkbox"/> Determine Risks and Set Contingency</li> <li><input type="checkbox"/> Determine Overhead and Administrative Costs</li> <li><input type="checkbox"/> Develop the cost estimation</li> <li><input type="checkbox"/> Validate contents and assumptions</li> <li><input type="checkbox"/> Reconcile estimate with</li> <li><input type="checkbox"/> Consider Value Engineering Review</li> <li><input type="checkbox"/> Lists of possible reductions and cost optimization</li> <li><input type="checkbox"/> Document and present results</li> </ul>
<b>SCHEDULE</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Choice of Technology and Construction Method</li> <li><input type="checkbox"/> Defining Work Tasks</li> <li><input type="checkbox"/> Defining Precedence Relationships Among Activities</li> <li><input type="checkbox"/> Estimating Activity Durations</li> <li><input type="checkbox"/> Estimating Resource Requirements for Work Activities</li> <li><input type="checkbox"/> Review constrictions</li> <li><input type="checkbox"/> Develop the schedule in Gantt chart</li> <li><input type="checkbox"/> Review critical path</li> <li><input type="checkbox"/> Optimize of schedule</li> </ul>





**MINISTRY OF HEALTH  
REQUEST FOR EXPRESSIONS OF INTEREST**

**JAMAICA**

**Support for the Health Systems Strengthening for the Prevention and Care  
Management of Non-Communicable Diseases Programme**

**Loan No: JA-L1049**

**Assignment Title: Consulting Services for the development of Design Parameters, Drawings Bill of  
Quantities and Tender Document for renovation, construction and supervision of 13 Health Facilities.**

The Government of Jamaica (GOJ) has received financing from the Inter-American Development Bank (IDB) toward the cost of the Support for the Health Systems Strengthening for the Prevention and Care Management of Non-Communicable Diseases Programme, and intends to apply part of the proceeds for consulting services. The Programme development objective is to improve the health of Jamaica's population by strengthening comprehensive policies for the prevention of Non-Communicable (Chronic) Diseases (NCDs) risk factors and improved access to an upgraded and integrated primary and secondary health network in prioritized areas.

The consulting services ("the Services") includes (1) assessing the current state of the facilities and making recommendations for design plans and design parameters to improve the quality of healthcare delivery; (2) developing Bill of Quantities and Tender Documents for construction supervision services; (3) developing Terms of Reference (TOR) for a Consultant to assess and report on the environmental impact of the new/renovated health facilities; (4) Providing advisory services to the Ministry. The consultancy will have duration of 7 months.

The Ministry of Health now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

- Ten (10) years of similar and/or relevant experience in architectural design and detailed engineering of vertical structures (government / public and private buildings) such as dams, port facilities, airport facilities and similar structures.
- At least five years experience in the preparation of tender documents, architectural design and detailed engineering for government/public buildings.

The attention of interested Consultants is drawn to paragraph 1.9 of the IDB's: Policies for the Selection and Contracting of Consultants financed by the Inter-American Development Bank GN-2350-9, March 2011, setting forth the IDB's policy on conflict of interest.

Consultants may associate with other firms to enhance their qualifications, but should indicate clearly whether the association is in the form of a joint venture and/or a sub-consultancy. In the case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected.

A Consultant will be selected in accordance with the Quality and Cost Based Selection (QCBS) Method set out in the IDB's Policies.

Further information and Clarifications to the Request for Expressions of Interests can be obtained by sending an email to [hsspproject@moh.gov.jm](mailto:hsspproject@moh.gov.jm); or mail to the address below. The detailed Terms of Reference for the Consultancy Service is available on the website of the Ministry of Health at [www.moh.gov.jm](http://www.moh.gov.jm).

Expressions of interest along with the Firm's registration certificate must be delivered in a written form to the address below (in person, or by mail, or by e-mail) by **May 15, 2019 at 5:00PM.**

THE PROCUREMENT MANAGEMENT SPECIALIST  
SUPPORT FOR THE HEALTH SYSTEMS STRENGTHENING FOR THE PREVENTION AND CARE  
MANAGEMENT OF NON-COMMUNICABLE DISEASES PROGRAMME

Ministry of Health  
10A Chelsea Avenue  
Kingston 5, Jamaica W.I.  
Tel: (876) 633-7467  
E-mail: [hsspproject@moh.gov.jm](mailto:hsspproject@moh.gov.jm)