



THE URBAN DEVELOPMENT CORPORATION OF TRINIDAD AND TOBAGO LIMITED (UDECOTT)

REQUEST FOR PROPOSALS FOR THE CONSTRUCTION OF A MULTI-USE DEVELOPMENT AT MEMORIAL BLOCK- PHASE 1

The Urban Development Corporation of Trinidad and Tobago Limited (UDECOTT) invites suitably qualified and experienced entities to submit proposals for the **Construction of a Multi-Use Development at Memorial Block-Phase 1**.

Proponents are advised that in light of the proclamation of the Public Procurement and Disposal of Public Property Act, 2015 (as amended) on April 26, 2023 and in keeping with the requirements of the Office of Procurement Regulation (OPR), suppliers of goods, works and services, interested in conducting business with UDeCOTT must be registered on the OPR Procurement Depository. The relevant guidelines for registration can be found on the OPR website via <https://oprtd.org/procurement-depository/>. Therefore, UDeCOTT is inviting suitably qualified suppliers to register and apply for pre-qualification in the OPR's Procurement Depository for the following:

Line of Business Code: 72111101 - New apartment building construction service.

The RFP package will be provided electronically upon request, from **October 18, 2024 (excluding weekends and public holidays)**, between the hours of **9:00 a.m. to 4:00 p.m. (AST)**.

The successful supplier shall be chosen using a competitive selection process as set out in the Request for Proposal (RFP). Proponents are informed that submissions must include ALL the documents as set forth in the RFP. Failure to do so may result in disqualification.

INFORMATION SESSION AND SITE VISIT

An **Online Information Session** will be held via **Microsoft Teams** on **October 25, 2024, at 10:00 a.m.** This will be followed by a **Site Visit** on **October 25, 2024 at 1:30 p.m. at Memorial Plaza, Keate Street Port of Spain**. Interested parties are kindly asked to confirm their availability, together with the **names and preferred email addresses** of their representatives who will be in attendance, via email to tenders@udecott.com.

The deadline date for submissions is **November 14, 2024 at 2:30 (AST)**.

Please visit our website at udecott.com for further details and updates.

THE OFFICE OF THE CHIEF PROCUREMENT OFFICER

FREQUENTLY ASKED QUESTIONS (FAQs)

FOR THE CONSTRUCTION OF A MULTI-USE DEVELOPMENT AT MEMORIAL BLOCK- PHASE 1

What is the purpose of this Request for Proposal?

The purpose of this Request for Proposal is to identify and contract a suitably qualified and experienced contractor with the specialised expertise necessary to undertake the Project.

Are Proponents required to purchase the RFP package?

There will be no cost for the RFP package.

Are interested parties required to register with the Office of the Procurement Regulator?

Proponents are advised that in light of the proclamation of the Public Procurement and Disposal of Public Property Act, 2015, all proponent interested in conducting business with UDeCOTT must be registered on the OPR Procurement Depository. The relevant guidelines for registration can be found on the OPR website via <https://oprtd.org/procurement-depository/>. Proponents are required to apply for pre-qualification in the OPR's Procurement Depository for the following:

Line of Business Code: 72111101 - New apartment building construction service.

What is the Location of the site?

The Site is located at Memorial Plaza, Keate Street, Port of Spain.

Is it mandatory to attend the site visit and online information session?

Attendance to the site visit and online information session is **not** mandatory. It does however provide a greater understanding of the requirements of the RFP.

Are there any eligibility requirements for this Procurement Process?

In order to be eligible for evaluation and/or consideration to provide the Services, Proponents must be able to demonstrate the following:

- Incorporation or otherwise registered to do business in Trinidad and Tobago **prior** to the award of any contract for the provision of the Works, as evidenced by the Certificate of Incorporation or Registration (as applicable),
 - Submission of valid statutory clearance/compliance certificates, namely;
 - VAT Clearance Certificate; valid at the close of the tender
 - BIR Clearance Certificate; valid at the close of the tender
 - NIS Certificate of Compliance; valid at the close of the tender
 - Bid Bond of Two Million Trinidad and Tobago Dollars (TT\$2,000,000.00)

Are Proponents required to submit a Bid Bond with their Proposals?

This activity requires a Bid Bond in the value of Two Million Trinidad and Tobago Dollars (TT\$2,000,000.00).

What is the recommended team composition?

At a minimum, the proposed team should comprise the following:

1. Project Manager (1 No.)
2. Construction Manager
3. MEP Engineer (1 No.)
4. Civil/ Structural Engineer (1 No.)
5. Quantity Surveyor (1 No.)

Proponents are to note that the responses provided as guidance to these Frequently Asked Questions does not relieve the Proponent of its obligation and responsibility to fulfil and comply with all requirements of the Request for Proposal.



PROJECT SCOPE OF WORKS

For

Design-Build/Construction Services for the La Savane Project

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BACKGROUND

The Government is seeking to improve and revitalize the capital city, and one of the key executions that would contribute to this urban revitalization initiative, is the development project, La Savane.

The project involves the development of approximately 12,800 sq. m. located within a transitional block, sandwiched between a blend of historically and nationally-significant public and private institutions, in prime real estate within Port of Spain. It consists of the construction of a Mixed-Use facility, which would include 134 Residential Units, Commercial units and two floors of basement parking.

UDECOTT is desirous of finding a Design-Build Contractor to Design and Build the facility under agreed terms of the contract. UDECOTT in turn would provide the land base and the necessary administrative requirements for urban development

DESIGN CONCEPT

This development can be classed as a noteworthy and prominent mixed use complex located on a valuable property aligned with and juxtaposed to Memorial Park. The development is situated in the midst of ongoing substantial property development which of itself is becoming a catalyst in transforming the desirability of the immediate built environment. The proximity to Memorial Park, the General Hospital, NAPA and the National museum all served by views beyond to the savannah creates a series of interesting and unique visual aspects that the design seeks to capture.

The project is composed of a combination of ten floors of accommodation seated on two basement levels of car-parking and infrastructure. The ten floors have a mix of one floor of commercial and nine floors of residential with an eleventh level being a roof top

level of residents' amenities such as an infinity pool, gym, squash court, club room and open landscaped decks. The nine floors of residential accommodation are comprised of 64 three bedroom, 48 - two bedroom and 16-one bedroom apartments. The tenth floor has the option of being laid out as a penthouse level comprising of 4 - four bedroom apartments and 2 - three bedroom apartments. Vertical transportation is served by a bank of two elevators reserved for residential accommodation and a single elevator for the commercial usage. Access for delivery is provided for via two goods elevators. Access and escape fire stairs requirements are achieved by three stairwells providing alternate options to the North, East and West. Please refer to the Conceptual Drawings.

DESIGN-BUILD CONTRACTOR RESPONSIBILITIES

1. Preparation of site surveys to determine the exact conditions of the Project Site and any other investigative surveys or assessments that may need to be completed as part of its proposal.
2. Preparation and submission of Designs and Drawings (Architectural, Civil/Structural Engineering, Mechanical, Electrical Engineering and Plumbing). Designs and drawings shall be completed to a level of detail, adequacy and completeness
3. As-built drawings
4. Product Specifications
5. Statutory Approvals (Fire, Electrical, WASA etc.)
6. Project Programme & Works Scheduling
7. Project Insurances
8. Project Delivery
9. Contract Management
10. Subcontractor Coordination and verification of works
11. Health Safety, Security and Environmental Management during the works
12. Site Waste Management and disposal

13. Preparation and submission of as built drawings, equipment guarantees/warranties, equipment manuals, test certificates.
14. Ensure all design are reviewed by UDeCOTT and the End User
15. Ensure a copy of all project drawings are issued to UDeCOTT
16. Ensure all product data/specifications are submitted to UDeCOTT for review
17. Where applicable, ensure that methodologies associated with Notice to Correct are submitted for UDeCOTT non-objection
18. Provide site office accommodation for the Engineer for the duration of the Project.

The Contractor shall provide site offices for use by the Employer and the Engineer. The provisions of the site offices, both for the Contractor and the Engineer, shall be provided at no cost to the Employer, since this is deem included and paid for under the Preliminaries in the Contractor's Proposal and must comply with the Laws.

The Engineer's site building shall comprise as follows:

- a) 1 site office, 12' x 16' minimum with air conditioning used by the Engineer and Employer;
- b) Access to 1 toilet room for the exclusive use by the Engineer and the Employer;
- c) The site office, equipment and furnishings shall be maintained by the Contractor in a clean and orderly condition, which includes washing of the floors, bathrooms and trash removal at least twice per week;
- d) The site offices and toilet room for the Engineer shall be equipped with keyed locks and the Contractor shall furnish a sets of keys to the Engineer;
- e) The site offices for the Engineer shall be furnished with the following furniture, fittings and equipment for the whole duration of the Works:
 - 2 (two) desks and 2 (two) deluxe chairs with swivel base on casters and adjustable arms, 2 (two) visitors chairs
 - 1 (one) white board, wall mounted, 36" x 48"
 - 1 (one) multifunction copier machine (copy, print, scan and fax) RICOH Aficio MP1600L or equivalent. The equipment is to be maintained for the duration of the project (supply of inks, cartridges

and paper at the Contractor's cost)

- 1 (one) mini-refrigerator 4 cubic feet capacity 33"H x 18"W x 20"D
- 1 (one) water cooler to receive 18 litres bottled water (supply of paper cups and bottled water at the Contractor's cost)
- Independent high-speed internet access.
- All furniture, fittings and equipment shall be in good shape and commercial grade. All temporary structures, facilities and arrangements shall be removed by the Contractor at the completion of the Works.

ACCOMMODATION SCHEDULE

La Savane project design and construction should include the following accommodations illustrated in the schematic design.

In summary the key required spaces are as follows:

Parking:

- 373 spots with access control for the residential parking

Site Area:

- Landscaping
- Hardscaping
- Driveways
- Vehicle Circulation
- Pedestrian Circulation

Ground Floor Retail Spaces 18 (total) distributed as follows:

- 14 leasable units
- 4 kiosks

Apartments 134 (total) distributed as follows:

- 1-bed 16 units
- 2-bed 48 units
- 3-bed 64 units
- 3-bed penthouse suite 2 units
- 4-bed penthouse suite 4 units

Residential Amenities:

- Clubhouse
- Gym
- Infinity Pool & Pool Deck
- Outdoor Seating Area
- Jogging Track
- Landscaped Area
- Fire egress staircase
- Circulation
- Residential Lift Lobbies
 - with access control
 - with mail boxes for each apartment

Building Amenities:

- Lifts - passenger & goods
- CCTV to be terminated into a dedicated security room
- Fire command room
- Garbage chute area on each floor with a collection area in the basement

Below is an outline schedule of accommodation indicating the proposed sizing of required spaces:

LOCATION	AREA / sq. m.
BASEMENT PARKING LEVEL 1 (COMMERCIAL / RESIDENTIAL)	
RESIDENTIAL PARKING AREA	2517 sq. m.
RESIDENTIAL LOBBY	57.6 sq. m.
COMMERCIAL PARKING AREA	2345 sq. m.
COMMERCIAL LOBBY	51.27 sq. m.
SERVICE / INFRASTRUCTURE ROOMS	100 sq. m.
TOTAL	4 995.37 sq. m.

BASEMENT PARKING LEVEL 1 (COMMERCIAL / RESIDENTIAL)	AREA / sq. m.
PARKING AREA	6058
LIFT LOBBY	55.8
SERVICE / INFRASTRUCTURE ROOMS	67.3
TOTAL	6 181

LEVEL 1	AREA / sq. m.
LEASABLE AREA 1	1 137
LEASABLE AREA 2	2 143
LEASABLE AREA 3	3 118
LEASABLE AREA 4	4 128
LEASABLE AREA 5	118
LEASABLE AREA 6	130
LEASABLE AREA 7	136
LEASABLE AREA 8	143
LEASABLE AREA 9	137
LEASABLE AREA 10	128
LEASABLE AREA 11	118
LEASABLE AREA 12	130

LEASABLE AREA 13	118
LEASABLE AREA 14	136
KIOSK VILLAGE	1 081.5
GENERAL CIRCULATION	3 563.2
LANDSCAPED AREAS	709.45
TOTAL GROUND FLOOR	5 763
TOTAL SITE AREA	6 970

LEVELS 2	AREA / sq. m.
3 BEDROOM UNIT (8NO.)	140.26
2 BEDROOM UNIT (6NO.)	116.76
2 1 BEDROOM UNIT (2NO.)	85.7
SERVICE / INFRASTRUCTURE ROOMS	29
RESIDENTIAL LIFT LOBBY	49.2
FIRE STAIRCASES	49.6
CIRCULATION	280.8
EXTERNAL PATIOS	654.4
TOTAL	2 515.44

LEVELS 3-9	AREA PER LEVEL / sq. m.
3 BEDROOM UNIT (8NO. per floor)	140.26 per unit
2 BEDROOM UNIT (6NO. per floor)	116.76 per unit
1 BEDROOM UNIT (2NO. per floor)	85.7 per unit
SERVICE / INFRASTRUCTURE ROOMS	29
RESIDENTIAL LIFT LOBBY	49.2
FIRE STAIRCASES	49.6
CIRCULATION	280.8
TOTAL	751.32

LEVELS 10 – PENTHOUSE LEVEL	AREA / sq. m.
4 BEDROOM UNIT (4NO. per floor)	387.84 per unit
3 BEDROOM UNIT (2NO. per floor)	200.29 per unit
SERVICE / INFRASTRUCTURE ROOMS	26.18
RESIDENTIAL LIFT LOBBY	49.2
FIRE STAIRCASES	49.6
CIRCULATION	274.76
TOTAL	2 248

ROOF TERRACE LEVEL	AREA / sq. m.
CLUBHOUSE	291.7
GYM	226.42
POOL / POOL DECK AREA	190
OUTDOOR SEATING AREAS	352
JOGGING TRACK	294.15
LANDSCAPED AREA	613
FIRE STAIRCASES	82.62
CIRCULATION	2 85.9
RESIDENTIAL LIFT LOBBY	49.2
TOTAL	2 385

SUMMARY	AREA / sq. m.
BASEMENT PARKING 1	4 995.37
BASEMENT PARKING 2	6 181.00
LEVEL 1	5 763
LEVEL 2	3 057.04
LEVEL 3-9	19 221.12
LEVEL 10 – PENTHOUSE LEVEL	2 248
ROOF TERRANCE LEVEL	2 385
TOTAL NET BUILDING AREA	43 850.53

OUTLINE FINISHING SPECIFICATIONS

Outline Specifications have been provided on pages 2, 3, 4, 5 & 6 of the conceptual design; these outline specifications define the expected finishes for the following:

1. Basement Parking Area
2. Ground Floor/ Commercial Space
3. Residential Levels
4. Roof Terrace Level
5. Roof Top Level

They should guide and be incorporated into the proponent's design proposal.

UDeCOTT would like proponents to pay particular attention to the finishes in the apartment units. Rendered images, outline specifications and performance specifications have been provided to illustrate the proposed apartment finishes. Based on these UDeCOTT is providing a list that contains the minimum expectation for the architectural finishes of the apartment units as follows:

Floors

- Porcelain Floor tiles

Walls

- Painted Walls
- Porcelain wall tiles in washrooms - with tiles extending to the full room height in shower areas

Kitchens

- Quartz counters
- Upper and lower kitchen cabinets with a seamless water resistant finish or solid hardwood or a combination of these elements.
- Stainless steel under mounted sink

Bathrooms

- Quartz counters
- Porcelain wall tiles in washrooms - with tiles extending to the full room height in shower areas

- Modern with a seamless water resistant finish or solid hardwood or a combination of these elements.
- Frameless glass shower enclosures/ partitions

Doors

- Solid timber doors (exterior)
- Semi-solid timber doors (interior)

Ceilings

- Gypsum ceilings and bulkheads
- Recessed LED light fixtures

Plumbing Fixtures & Fittings

- Commercial grade plumbing fixtures & fittings

Each proponent is expected to provide a finishes proposal for the entire project which supplies information on proposed brands and/or specifications of the finishes/ paints/ building elements etc. being proposed.

DESIGN REQUIREMENTS

Preparation and submission of Designs and Drawings (in accordance with the “Design-Build Proposal /Approach”) shall include the following: -

1. Designs and drawings shall be completed to a level of detail, adequacy and completeness which will be acceptable for submission to the Town & Country Planning Division (TCPD) to meet the requirements for Final Approval.
2. Technical Specifications (Materials and Workmanship, Codes)
3. Listing, Description and Layout of proposed basic furniture, fixtures and equipment.
4. Cut sheets for all plumbing, electrical, IT, fittings and fixtures and any special architectural features
5. Architectural and Engineering Designs and Drawings (plans, elevations, sections and details) shall include as required but not be limited to the following:

f) Site Plan –

- Site inspection especially areas that requires digging or the building of large structures.
- Site plan of the project showing location of applicable buildings, drives, and major mechanical equipment, parking and landscape elements.
- Clear delineation of the project limit lines where applicable
- Preliminary spot elevations
- Primary spot elevations
- Existing utilities
- Proposed utilities
- Site drainage
 - Site sections as needed to explain overall relationships
 - A coordinated drawing of the infrastructural elements

g) Construction Plans

- Plans showing proposed structural system and structural elements

- Key dimensions, bay sizes and overall dimensions
 - General notes indicating major extent of materials and any special conditions or equipment
 - Overhead items noted
 - Building sections keyed
 - Key Project limit lines noted if not otherwise clear
 - Preliminary finish schedule
 - Area summary
- h) Sections
- Major vertical heights
- i) Elevations
- All elevations with extent of finishes detailed
 - All materials called out in notes
 - Floor lines indicated
 - Overall dimensions
 - Set-backs and overhangs indicated
 - Relationship to existing and finished grade clearly shown
- j) Structural
- Comprehensive evaluation, analysis and design report of the proposed structural systems and elements.
 - Structural system description of any applicable alterations
 - One line drawing of any applicable floor and roof framing plans
 - Typical member sizes noted
 - Structural Details of all connections and special conditions (large spans, cantilevers, etc.)
- k) MEP
- Comprehensive evaluation, analysis and design reports of the proposed MEP systems
 - Preliminary system selection
 - Energy sources identified, entrances noted on architectural drawings
 - Equipment requirements included in architectural drawings

- Utility corridors and riser spaces sized and indicated on architectural drawings
 - Special features noted on electrical drawings
 - One line system schematics over architectural plans
 - Mechanical - Air Conditioning System, Ventilation
 - Electrical
 - Main Infrastructure – Power and Telecommunications
 - I. Supply & Distribution System
 - II. Lighting – Internal and External systems
 - III. Power Systems
 - IV. Telecommunication System - telephone, internet and television service.
 - V. Information Technology Systems
 - VI. Fire Alarm System
 - VII. Security System
 - Plumbing
 - I. Potable Water System Potable Water Booster Pump
 - II. Water Storage
 - III. Pipework
 - IV. Hot water System
 - V. Sanitary Waste and Vent System
 - VI. Sanitary Fixtures
6. All designs shall be prepared in accordance and in compliance with the guidelines, regulations and statutory requirements of all Governmental Statutory and Regulatory Agencies, which include:
- a) Town & Country Planning Division (TCPD)
 - b) Water and Sewerage Authority (WASA)
 - c) Trinidad and Tobago Electricity Commission (T&TEC)
 - d) Port of Spain City Corporation
 - e) Local Health Authorities

- f) Ministry of Works and Transport (MOWT - Designs Branch, Highways and Drainage Division
 - g) Division, Traffic Management Branch and other applicable Divisions)
 - h) Regional Corporations
 - i) Trinidad and Tobago Fire Services
 - j) Environmental Management Authority (EMA)
 - k) Telecommunications Services of Trinidad & Tobago (TSTT)
 - l) Cable Company
7. The Proponent shall assume full responsibility for the professional quality, completeness, accuracy and co-ordination of all design documents and its conformance with all applicable laws, rules, regulations and orders governing said work.
8. All design documents (including drawings, plans, schedules, equipment manuals etc.) shall describe with specificity all elements, details, components, materials, and other information necessary for the complete construction of the Works and the delivery of the Works fully functional and operational for its intended purposes, including compliance/satisfaction of all testing, permitting, qualifications, certifications, validations, and obtaining regulatory certification and approvals by all applicable regulatory authorities required to render the Project and all its components operational and functionally and legally usable for their intended purpose.
9. The Proponent shall perform all Design Services described in, contemplated by, inferable from, or necessary or desirable to achieve the objectives specifically stated in the Scope of Works and in the Employer's requirements and the Contract, including all Design Services necessary for the Project to be properly constructed by the Contractor and used by the Employer in accordance with all applicable guidelines, requirements and standards.
10. All design and construction documents shall be prepared using the English (metric) system, unless otherwise specified in the Contract.

11. All design planning, approach and method should take into consideration sustainability. Sustainable construction should aim in creating a balance in the environmental factors of the construction process and operations where the planning, designing and construction of buildings are carried out based on not only the relevant ecological principles but also by employing efficiency in energy usage, the use of sustainable development practices and the implementation of green technology.
12. Design services shall be performed by licensed design professionals. The standard of care for architectural and engineering services performed shall be the highest degree of care and skill used by design professionals practicing under the same time and locality conditions
13. As-built drawings for architectural, Civil/Structural Engineering, Mechanical, Electrical Engineering and Plumbing
14. The proposed codes and standards to be used in the designs include the following:

Architectural designs

- | | |
|----------------------------|--|
| PLANNING | <ul style="list-style-type: none"> • Town and Country Planning Regulations • Regional Corporation Regulations |
| BUILDINGS/
STRUCTURES | <ul style="list-style-type: none"> • International Building Code (IBC) 2018. • AWPA U1 – User Specification for Treated Wood: 2012 • American Society of Civil Engineers code ASCE-7-05 • International Building Code (IBC) for earthquake loading using equivalent static analysis and compared to CUBIC. A peak ground acceleration of 0.4g shall be used. • American National Standards Institute (ANSI) • American Concrete Institute ACI 318 • American Institute of Steel Construction (AISC manuals) • ASHRAE Standard 189.1 • BOMA 2017 Standard for Office Buildings: Standard Methods of Measurement ANSI/BOMA Z65.1-2017 |
| OFFICE
FURNITURE | <ul style="list-style-type: none"> • The Suite of BIFMA Standards for commercial office furniture |
| LIFE SAFETY | <ul style="list-style-type: none"> • NFPA 101-2015 – Life Safety Code • NFPA 1-2015 – Fire Code |
| UNIVERSAL
ACCESSIBILITY | <ul style="list-style-type: none"> • Accessible and Usable Buildings and Facilities ANSI A117.1:2014 |
| SUSTAINABILITY | <ul style="list-style-type: none"> • LEED v4 Guidelines |
| LOCAL
REGULATIONS | <ul style="list-style-type: none"> • GORTT Office Outfitting Policy • The Occupational Safety and Health Act 1, 2004 as amended 2006 |

Structural Engineering Designs

VERTICAL LOADS	American Society of Civil Engineers (ASCE): ASCE 7-05 Minimum Design Loads for Buildings and Other Structure
EARTHQUAKE LOADS	ASCE 7-05 and International Building Code (IBC) 2009 - (Refer to Seismic Research Unit website http://www.uwiseismic.com/Maps.aspx for Hazard Maps of Trinidad and Tobago -2475 year Return Period)
WIND LOADS	ASCE 7-05 (Trinidad 117mph, Tobago 130mph – 3 sec. Gust for Trinidad and Tobago)
REINFORCED CONCRETE	American Concrete Institute (ACI): ACI 318-08 or latest Building Code Requirements for Structural Concrete
STRUCTURAL STEEL	American Institute of Steel Construction (AISC): Manual of Steel Construction (Load & Resistance Factor Design), Specification for Structural Steel Buildings (AISC 360-10), AISC 341 – 10 including Supplement No. 1 dated 2006 (Seismic Provisions for Structural Steel Buildings AISC 358 - 10 including Supplement No. 1 dated 2009 (Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications
STRUCTURAL MASONRY	ACI 530-05 / ASCE 5-05 / TMS 402-02
STEEL REINFORCEMENT	ASTM A615 GR 60 – $F_y = 60$ ksi, $F_u = 75$ ksi
STRUCTURAL STEEL MATERIAL:	ASTM A992 – $F_y = 50$ ksi (Wide Flange and Hot Rolled Sections) ASTM A36 – $F_y = 36$ ksi (Plates)
OTHER STANDARDS	ASTM – American Society for Testing and Materials
IMPORTANT NOTE:	<ul style="list-style-type: none"> • The structural designs should comply to the Ministry of Works and Infrastructure latest Structural Design Guidelines for Trinidad & Tobago • All structural drawings should be stamped and signed with

a registered

- Civil / Structural Engineer's Board of Engineers' stamp of T&T.
- All designs must be accompanied by structural design calculations which must include the following:
 - Design Data Sheet
 - Design Methodology Sheet with assumptions made in the modelling of the structure.
 - Drawing of the complete mathematical model used in the structural (manual or computer) analysis.
 - Clear input and output data.
 - An electronic copy of the computer structural model.

LOCAL REGULATIONS

- Trinidad and Tobago Standard - Recommendations for the Design of Building – TTS 16 90 400 (1978)
- National Building Code of Trinidad & Tobago
- BAPE WIND CODE (1981)
- Wind Speed Maps for the Caribbean for Application with the Wind Load Provisions of ASCE 7 shall be used to determine reference velocities as defined in ASCE 7.

Mechanical and Electrical Engineering Designs

ELECTRICAL

- ANSI C37.13 – 2015 Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures
- ANSI C37.14 - 2015 Standard for DC (3200 V and below) Power Circuit Breakers Used in Enclosures
- ANSI C57.12.00 – 2010 Standard for General Requirements for Liquid-Immersed Distribution, Power, And Regulating Transformers
- ANSI C57.12.01 – 2015 Standard for General Requirements for Dry-Type Distribution and Power Transformers

- ANSI C63.12 – 2015 Standard Recommended Practice for Electromagnetic Compatibility Limits and Test Levels
- ANSI C80.1 - 2015 Electrical Rigid Steel Conduit
- ANSI C80.3 - 2015 Electrical Metallic Tubing - Steel (EMT-S)
- ANSI C80.6 - 2018 Electrical Intermediate Metal Conduit

HVAC

- ASHRAE Handbook—HVAC Applications, 2019
- ASHRAE Handbook—HVAC Systems and Equipment, 2020
- ASHRAE 55 – 2017 Thermal Environmental Conditions for Human Occupancy
- ASHRAE 62.1 - 2019 Ventilation for Acceptable Indoor Air Quality
- ASHRAE 90.1 - 2019 Energy Standard for Buildings except Low-Rise Residential Buildings
- ASHRAE Standard 90.4 - 2019 Energy Standard for Data Centres
- ASHRAE Standard 170 - 2021 Ventilation of Health Care Facilities
- ASHRAE Standard 185.1 - 2020 Method of Testing UV-C Lights for Use in Air-Handling Units or Air Ducts to Inactivate Airborne Microorganisms
- ASHRAE Standard 202-2018 Commissioning Process for Buildings and Systems
- ASHRAE 2020 Smart Grid Application Guide: Integrating Facilities with The Electric Grid
- ASME A17.1 / CSA B44 – 2019 Safety Code for Elevators and Escalators

PLUMBING

- ASME B31 – Standards of Pressure Piping
- ASME B31.3 – 2020 Process Piping

- ASME B31.8 - 2018 Gas Transmission and Distribution Piping Systems
- ASME B31.9 – 20120 Building Services Piping
- ASME B31.12 - 2019 Standard on Hydrogen Piping and Pipelines
- Health Technical Memorandum 01-01 Management and Decontamination of Surgical Instruments (medical devices) used in Acute Care
- Health Technical Memorandum 02-01 Medical Gas Pipeline Systems
- Health Technical Memorandum 03-01 Specialized Ventilation for Healthcare Premises
- Health Technical Memorandum 04-01 Safe Water in Healthcare Premises
- Health Technical Memorandum 08-02 Lifts
- ICC IFC 2021 International Fire Code
- ICC IPC 2021 International Plumbing Code
- ICC IMC 2021 International Mechanical Code
- ICC IFGC 2021 International Fuel Gas Code
- ICC IECC 2021 International Energy Conservation Code
- ICC IPSDC 2021 International Private Sewerage Disposal Code
- ICC ISPSC 2021 International Swimming Pool and Spa Code
- ASME B16 – Standards of Pipes and Fittings
- ICEA Class H Flexible Cables
- IEEE 730 Software QA Plans
- IEEE 830 Recommended Practice for Software Requirements Specifications
- NFPA 10 – 2018 Standards on Portable Fire Extinguishers
- NFPA 13 – 2019 Standard for the Installation of Sprinkler System
- NFPA 14 - 2019 Standard for the Installation of Standpipes and Hose Systems

- NFPA 15 – 2022 Standard water spray fixed systems for fire protection
- NFPA 17 – 2021 Standard for Dry Chemical Extinguishing Systems
- NFPA 17A – 2021 Standard for Wet Chemical Extinguishing Systems
- NFPA 20 – 2019 Standard for the Installation of Stationary Pumps for Fire Protection
- NFPA 22 – 2018 Standard for Water Tanks for Private Fire Protection
- NFPA 24 – 2022 Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 45 – 2019 Standard on Fire Protection for Laboratories Using Chemicals

LIFE SAFETY

- NFPA 54 – 2021 National Fuel Gas Code
- NFPA 58 – 2020 Liquefied Petroleum Gas Code
- NFPA 59 – 2021 Utility LP-Gas Plant Code
- NFPA 59A – 2019 Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)
- NFPA 70 – 2020 National Electric Code
- NFPA 72 – 2019 National Fire Alarm and Signalling Code
- NFPA 75 – 2020 Standard for the Fire Protection of Information Technology Equipment
- NFPA 88A – 2019 Standard for Parking Structures
- NFPA 90A – 2021 Standard for the Installation of Air-Conditioning and Ventilating Systems
- NFPA 91 – 2020 Standard for Exhaust Systems for Air Conveying of Vapours, Gases, Mists, and Particulate Solids
- NFPA 92 – 2021 Standard for Smoke Control Systems

- NFPA 99 – 2021 Health Care Facilities Code
- NFPA 101 - 2021 Life Safety Code
- NFPA 110 – 2022 Standard for Emergency and Standby Power Systems
- NFPA 111 – 2022 Standard on Stored Electrical Energy Emergency and Standby Power Systems
- NFPA 418 – 2021 Standard for Heliports
- NFPA 780 – 2020 Standard for the Installation of Lightning Protection Systems
- NFPA 820 – 2020 Standard for Fire Protection in Wastewater Treatment and Collection Facilities
- NFPA 900 – 2019 Building Energy Code

LOCAL
REGULATIONS

- Requirements of the OSH Authority in accordance with the OSH Act 2004 with amendments of 2006
- Requirements of the EMA of Trinidad and Tobago & Water Pollution Rules 2019
- Requirements of the Trinidad and Tobago Fire Service (TTFS), Ministry of National Security of Trinidad and Tobago
- Requirements of the Electrical Inspectorate Division, Ministry of Public Utilities of Trinidad and Tobago
- Requirements of the Public Health Department in accordance with the Public Health Ordinance Act
- SMACNA HVAC Duct Construction Standards
- The National Plumbing Code of Trinidad and Tobago
- Trinidad & Tobago Electricity Commission Wiring for Light & Power 8th Edition
- Trinidad & Tobago Electrical Wiring Code Part 1 - Low Voltage Installations (TTS 171: Part 1: 2015)
- Trinidad & Tobago Electrical Wiring Code Part 2 - High Voltage Installations (TTS 171: Part 2: 2002)

- Trinidad & Tobago Electrical Wiring Code Part 3 – Renewable Energy Systems and Interconnection Requirements (TTS 171: Part 3: 2011)
- Workplace Design – Lighting of Indoor work places – Specification (TTS 611-2008)
- Water and Sewerage Authority Guidelines for Design and Construction of Water and Wastewater Systems in Trinidad and Tobago

Testing

Testing will be carried out in accordance with the tests/inspections described in the Quality Control Plan and the Technical Specifications (Materials and Workmanship). The Proponent shall always ensure that materials and equipment are examined and tested for compliance with the specifications and quality control is then performed at the recommended frequency. Materials must be tested for compliance with stipulated specifications both at source and once it is delivered to site.

The Proponent shall prepare and submit a description of all the relevant tests and time periods for the testing of Materials and Works. These include but are not limited to steel reinforcement bar, reinforced concrete, masonry, structural steel, welding.

Workmanship Compliance Checks will include:

- a) checking, inspecting, examining and measuring;
- b) trials and demonstrations;
- c) fine testing carried out by manufacturers and suppliers in compliance with a specified standard or specification; and
- d) Testing of equipment (air conditioning units, transformers, generators etc.)

All materials used or supplied shall be accompanied by valid and approved material certificates, tests and inspection reports. The minimum extent of examination and testing to be carried out and the acceptance levels/codes shall be specified by suppliers in the purchase order and/or subcontract documents.

An inspection schedule/plan shall be developed by the Proponent for procured equipment and materials. The Proponent's Construction Inspectors and Construction Supervisors shall carry out inspection surveillance activities. These include but may not be limited to; witnessing tests, verifying documentation and inspections/examinations. From these activities, reports shall be developed recording progress, findings, non-conformance and resolutions.

Materials, fitting and fixtures shall be inspected by the Proponent, upon receipt from the suppliers, for compliance with the technical requirements and regulations, including availability of required documentation and markings. If materials and/or documents do not comply, then they shall be clearly identified and if possible, segregated until further action is determined. Material deliveries shall be checked against shipping documents (dispatch note, freight note, and delivery receipt) for type and quantity, and for obvious transport damage, and to ensure that markings correspond to the order specification.

A Material Receiving Notice (MRN) shall be completed if the checks are satisfactory. Material that has been checked and accepted shall be stored according to type and class of material so as to effectively prevent damage and/or error of use. Sub-Consultants and Sub-Contractors shall be required to assign qualified/experienced inspection personnel to carry out all required examinations and tests in accordance with an agreed quality plan (inspection and test plan). These activities shall be carried out in accordance with the agreed procedures and guides and result in the appropriate reports. The Proponent's Construction Inspector and Construction Supervisor shall monitor the quality control activities of its Sub-Consultants and Sub-Contractors and carry out his own examination of material, equipment and documentation to the necessary degree to determine the state of acceptance.

The Proponent shall ensure that the Employer and/or inspection authorities are given sufficient notice to witness the final inspection and tests, if required (egg. Pressure testing of water lines, testing of elevators, generators, sewer lines). The Client shall retain the design rights and other intellectual property rights and copyright of all documents prepared by the Proponent in the course of the Proponent's engagement.