

Chapter 3: Detailed Description of Project

3.1 Description of Works

The works involved for this project comprise of the construction of:

- 70 rooms and 6 villas
- A restaurant, lounge, bar, reception desk, offices, water features, SPA, boutiques, boat house, toilet block and swimming pool.
- Stores, staff rooms, maintenance room.
- Driveway and parking spaces
- Sewer, water and electricity reticulations, treatment and desalination plants.

3.1.1 Main Public Area

The main building will comprise of the following:

- A reception desk, hotel management and administration offices.
- A welcome lounge.
- Boutiques

The swimming pool, toilet block, bar and restaurant will all be within a radius of 25 m from the main building. The boathouse is located about 31 m from the HWM.

The SPA is found close to the water features around which the room blocks and villas have been grouped.

The parkings, main gate, staff and service building (see technical yard) are located along the access road.

A full architectural layout of the buildings is shown in appendix F.

3.1.2 Resident Accommodation

The residential apartments are composed of 7 typical blocks. A typical block will have four rooms on GL and GL+1 and two rooms on GL+2. The total number of rooms per block is 10. The total number of rooms is 70.

3.1.3 Service Yard

The service yard shall be located 135 m from the high water mark and will house the following technical blocks:

- i. Transformer room, CEB control and metering cabin
- ii. Main Distribution Board
- iii. Water tank and pump room
- iv. Sewer treatment plant
- v. Standby generator and diesel tank
- vi. Desalination plant
- vii. LPG storage tank

3.2 Public Health Installation

3.2.1 Daily water demand

The daily domestic water demand of the development is estimated as 75m³ as follows:

Description	Assumptions	m ³ /day
Guest Rooms	200l/day * 100 guest rooms * 2 persons/room	40
Restaurants	200 persons * 30 l/meal * 3 meals/day	18
Swimming pool	450m ² * 20l/m ² evaporation losses	9
Staff	50 staff * 40l/day	2
Spa / Gym		6
	TOTAL	75

Domestic water shall be made available to the development by an on-site desalination plant. The plant shall have a treatment capacity of 75m³/day to meet 100% demand. The desalination plant shall operate on the principle of reverse osmosis. This would require the excavation of boreholes on the site in the service yard. Brackish water shall be pumped from one borehole, filtered and routed through reverse osmosis membrane to extract potable water. The remaining highly mineralised water shall be mixed with brackish water to lower the salinity level before disposal in the sea. The storage water tank shall be of capacity of 230m³ to cater for three days domestic water storage and a permanent reserve of 5m³ for fire fighting (hose reel system).

3.2.2 Incoming Power Supply

The total diversified electrical load for the project is estimated to be 400 kVA. A transformer of capacity 500 KVA shall be installed by the CEB. CEB Medium Voltage (MV) cable shall be routed to the transformer room located in the service yard with corresponding Low Voltage (LV) Control and Metering cabin.

3.2.3 Solid Wastes

Solid waste will be produced from the rooms, kitchen, bar, maintenance, etc. At a maximum rate of 150kg/d.

It shall be collected in bins and hauled away in appropriate lorries every scheduled day by an approved waste operator to the nearest transfer station at Poudre-D'or and thereafter to Mare -Chicose Landfill.

3.2.5 Communication

Provision for telephone outlets shall be provided in all guest rooms. An internal PABX system and billing system for external calls shall be provided. WIFI coverage shall be provided in all guest rooms, main building and around the swimming pool. A 20 pair

line from Mauritius Telecom shall be connected to the main distribution frame for communication facilities.

3.3 Hotel Infrastructure

3.3.1 The Sewerage System

A Moving Bed Bio Reactor (MBBR) type sewer treatment plant of capacity 60m³ shall be proposed to treat all the wastewater generated by the daily activities of the complex and re-use for irrigation and general cleaning purposes. The proposed wastewater treatment shall consist of the following stages:

- Primary anaerobic treatment: wastewater shall be retained for 24 hours in a primary settling tank to allow solid particles to settle down. The water then flows to the aerobic tank.
- Secondary aerobic treatment: living organisms and bacteria feed on residual organic materials in the wastewater. The organisms/bacteria are allowed to grow on immersed polypropylene support. The shape of the support considerably increases the area available for the organisms to grow, thereby increasing the efficiency of the process. Additionally, the supports are made out of recycled polypropylene. Air blowers located in the technical room of the STP diffuses air at the bottom of the tank to sustain the organisms.
- Clarifier: matters in suspension in the treated water are allowed to settle down at the bottom of the clarifier. Effective settling of solid matter is achieved by the conical shape of the clarifier. The clarified water is directed towards a prefiltration tank and the sludge is pumped to the primary settling tank.
- Tertiary treatment: the treated water is filtered and chlorinated to further eliminate bacteria and make it suitable for irrigation purposes as per the requirement of EPA 2002.

The sewer layout is shown in appendix B.

3.3.2 Access and Parking Spaces

3.3.2.1 Access

Presently, the access to the site is from the B13 public road, consisting of a tarred road (same access route as Bluemarine Attitude Hotel). According to the architectural layout, this same access will be used during the operation phase.

The driveway from the main entrance of the hotel leads to the parking spaces and to the guest drop-off area at the main building.

3.3.2.2 Parking Spaces

According to the site layout, the total number of car parks within the hotel boundaries is 29.

This number is in conformity with the provisions of Planning Policy Guidance, November 2006, which specifies

- 1 parking space for every 3 bedrooms; 26 spaces for 70 rooms and 6 villas.
- Taxi rank for hotel exceeding 60 rooms; 3 spaces for taxi.

3.3.3 The Stand-By Generator

In the event of a utility power failure, a standby generator of capacity 250 kVA shall cater for partial back-up. The generator shall be located in the service yard and shall be fitted with a weatherproof and sound attenuated canopy to limit the noise generated (compliant with Environmental Protection Act-EPA 2002). The base fuel tank of the generator shall be sized for 8h autonomy. A separate diesel tank shall also be provided for a total autonomy of 24h. A bund wall shall be constructed around the generator and diesel tank of retention capacity 10% above the fuel volume in the base and separate diesel tanks to avoid any risk of spillage.

3.3.4 Site Drainage

The drainage system shall be designed to be able to accommodate run-off water during a storm in the post-development phase. Since there is no nearby drainage system to which the hotel drainage system can be connected, the designed system should be self-sufficient and be able to dissipate run-off to the ground.

The water collection system will consist of PVC pipes and catchpits at regular intervals (each block can have a separate system) and will capture and channel run-off from building roofs, floor surfaces and any other impervious surfaces to the soakaway.

For a preliminary design, a maximum rainfall intensity of 100 mm/hr for an hour is assumed and 75% of the catchment has been assumed to be impervious.

Using the equation, $Q = CIA$

Where, Q (m^3/s): Catchment Flow

C: Runoff Coefficient – 0.75

I: Rainfall Intensity

A: Catchment Area under consideration (1 typical room block: $213 m^2$)

Therefore, $Q = 16 m^3/hr$

To be able to accommodate this run-off from the typical room blocks and other areas such as the car park, the system in appendix C has been designed. (See percolation test result in appendix E)

3.4 Architectural Details

The proposed project is situated in Anse La Raie and consists of a boutique/Hotel complex of villas and apartments with all its amenities. It consists of 6 villas and 70 rooms together with commercial facilities, and security services.

The plot coverage is within the 20.00 % coverage allowed. The remaining land will be used for access roads, footpaths, water features and green spaces.

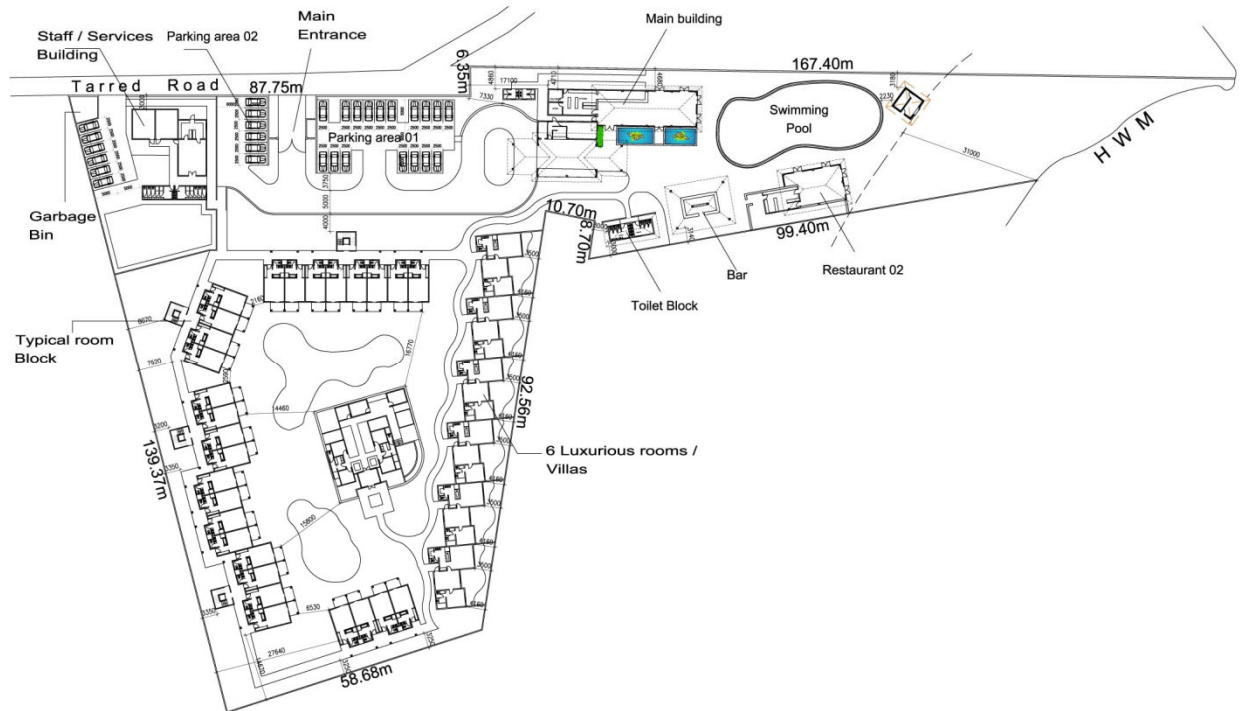


Figure 3: Master Site Plan

A full set of architectural drawing can be found annexed to this document.

3.4.1 Residential Apartments/Villas/Spa

The residential apartments are composed of 7 typical blocks located on ground, first and second floor. A typical block will have four rooms per floor and two rooms on G+2. The total number of units per block is 10. The total number of units is 70.

The surface area of a typical room is 46.38 m² (excluding terrace). The blocks are located around green areas and ponds placed at irregular intervals to allow the blending of the blocks into the landscaping. The surface area of the private villa is 101.50 m² and consists of a master bedroom a lobby and a smaller bedroom with its attached bathroom. These villas have their living room are orientated away from the residential blocks for more privacy.

The Spa is located between the villas and the blocks to act as a buffer. It consists of 6 massage rooms, a main reception area as well as a heated swimming pool with hamman and sauna. The boundary wall of the spa will be clad in stone and will be hidden by plants so as to minimize the built space in the residential area.

3.4.3 Other buildings

The boathouse is situated next to the 30m from the high water mark. This building will serve for all nautical activities.

A toilet block is situated to the main activity area hidden with plants.

All the service buildings are situated away from the beach side, next to the parking area. The storage areas, service building, loading unloading bays, toilet/mess are next to the service entrance.