

3.0 Description of the Proposed Project

3.1 Project Features

The proposed project Master Plan is depicted in **Figure 8 - 3.3**.

3.1.1 Hotels

Secrets and Dreams Resorts will create a combination of two (2) separate hotel blocks. Each hotel will serve a different clientele, one for adults only and the other for families.

The Resort’s two hotels will be in the “5 STARS GRAND LUXURY” category and will be built within the coastal inland area of Kilgwyn Bay, south western area of Tobago. In each case, the two hotels will share the service areas, making the plot ratio of the land and its environmental impact much lower, because operationally they will work as a single hotel. This means that for each phase (2 hotels) there will be one centralized kitchen, one industrial area, one warehouse area, one personnel area etc. In each phase, one of the two hotels will be "Adults Only", with the objective of differentiating and diversifying the product.

The Resort, with a total of 500 rooms can be broken down as shown in **Table 11 - 3-1** below:

Table 11 - 3-1: Breakdown of Phases and Associated Number of Rooms.

Phase	Number of Rooms
Phase 1 – Hotel 1	300
Phase 2 – Hotel 2	200

With this number, category and type of hotels the density is lowered, making it more sustainable, exclusive and luxurious. The service and common areas will be concentrated in three levels to reduce the amount of land area used for construction.

This Resort will be, without a doubt, an example of integration with the environment and an economic engine for the creation of employment in the area, since being a luxury resort will contribute significantly to the development of the area.

DCM Architecture and Engineering, New Jersey, USA, was contracted to provide the conceptual master plans and engineering design for the hotel project. This was accomplished on the backdrop of a site investigation survey conducted by Optimal Geoscience and Engineering Solution Limited in February to March 2021.

The subsequent sections will provide a detail overview of the conceptual master plans and engineering designs of the proposed hotel project.

3.1.1.1 Description of Hotel I and II

The two hotels are located along the beach front.

HOTEL I (Refer to detailed Hotel Master Plan in *Appendix C1 - Design Legend, Floor Plans and Cross-sectional Design Views of the Proposed Hotel*)

It is an all-inclusive hotel designed for Families. Three buildings will be located to the south-west end of the property bordered to the north by the southern fringe of the mangrove.

On the ground floor all the rooms will have a garden and direct access to the pool, approximately 30 percent of them will have direct access to the pool. Three facades will have the rooms in the shape of a fish spike to guarantee direct views of the sea.

The 300 room types will be divided as follows: 220 Junior Suites, 60 Junior Suite Preferred Club, 12 Master Suites and 8 private Eco-Villas to the north just on the fringes of the southern mangrove boundary.

All rooms will be of the Junior Suite type with Bath Suite. That is, with bedroom and lounge area in the same space, and bathroom with separate toilet with couples' shower and bathtub integrated into the bedroom, with the possibility of giving privacy to the bathroom.

The rooms next to the connection cores will be superior Junior Suite rooms, 60 units.

The facades of these blocks will be horizontal, without visible columns, eliminated visual barriers to have the best view of the sea. The railings will be glass and will give a light appearance to the building. The terraces will be in semi-cantilever. Most rooms can enjoy the sunset.

Hotel I shall have a main pool for all guests, and a VIP pool for Preferred guests. The family villas will face the mangrove and will have private food and concierge services. All circulation decks and circulation pads will be surrounded with landscaping that will make use of endemic species, minimizing the heat island effect.

HOTEL II (Refer to detailed Hotel Master Plan in *Appendix C1 - Design Legend, Floor Plans and Cross-sectional Design Views of the Proposed Hotel*)

It is an all-inclusive hotel designed for Adults Only. It will consist of 1.5 buildings for guest rooms. Each building has a ground floor plus 2 levels. The resort includes 4 family villas that are 2 stories high. 90% of the rooms have a sea view and are of simple bay (room and corridor).

On the ground floor 90% of the rooms will have direct access to a swim-out pool. Approximately 10% percent of them will have access to an interior courtyard.

All rooms will be of the Junior Suite type. That is, with bedroom and lounge area in the same space, and bathroom with separate toilet with couples' shower and bathtub integrated into the bedroom, with the possibility of giving privacy to the bathroom.

The 200 room types will be divided as follows: 143 Junior Suites, 40 Junior Suite Preferred Club, 11 Master Suites, 4 Villas, and 2 Presidential Suites.

The facades of these blocks will be horizontal, without visible columns, eliminated visual barriers to have the best view of the sea. The railings will be glass and will give a light appearance to the building. The terraces will be in semi-cantilever. Most rooms can enjoy the ocean views.

Shared Facilities-Hotel I and Hotel II (*Refer to Appendix C1 - Design Legend, Floor Plans and Cross-sectional Design Views of the Proposed Hotel*)

The main building will include common areas like restaurants, bars, and entertainment activities. This building also includes all the back of the house support areas, which include administrative spaces, storage, maintenance facilities, foot preparation areas, as well as mechanical and electrical rooms. The back of the house areas will be shared with Hotel II. The main building also includes a conference center, 2 lobbies, and a spa.

All circulations will be open galleries that will be ventilated naturally with cross ventilation. The height of the common areas will be 4.50m, which will facilitate ventilation and ensure that a minimum height of 4.00m can be guaranteed in the airconditioned spaces.

Back of House – Auxiliary Operations

The Back of House is located between Hotel 1 and Hotel 2. It will house an office area, maintenance facilities, laundry, main kitchen, food storage areas, break rooms for employees, employee dining room, employee bathrooms, central air-condition room, loading docks and rubbish/garbage storage and removal area.

The laundry area will operate for 16 hours per day utilizing two shifts of 8 hours each seven days per week. Equipment will include washing machines, dryers, steamers, air compressor, stain remover, press machines and ironing tables.

Parking facilities, power, temporary waste storage and water treatment facility will be located on the northeastern end of the property.

Figure 7 - 3.2 shows the location of the Back of House Facilities and Infrastructure.

This Resort will be, without a doubt, an example of integration with the environment and an economic engine for the creation of employment in the area, since being a luxury resort will contribute significantly to the development of the area.



Figure 6 - 3.1: Proposed Dreams and Secrets Hotel Site Location Plan for Kilgwyn Bay.

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Contractor shall make no substitutions or structural changes or without written approval of the Architect.



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**DREAMS & SECRETS
RESORT & SPA
TOBAGO**

PROJECT INFO:
Tyson Hall between Kilgwyn Bay
Road & Store Bay Local Road,
Tobago

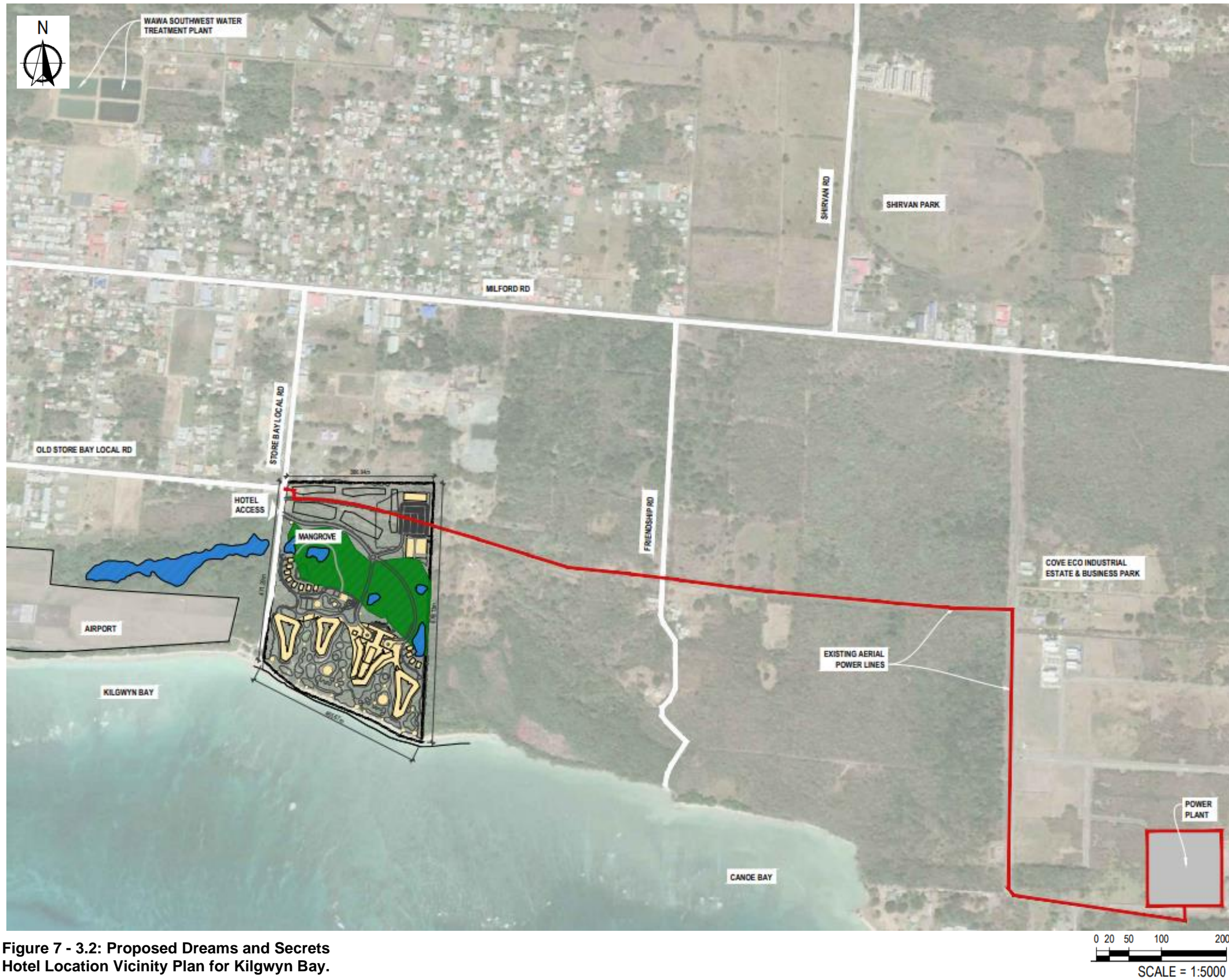


Figure 7 - 3.2: Proposed Dreams and Secrets Hotel Location Vicinity Plan for Kilgwyn Bay.

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Tyson Hall between Kilgwyn Bay
Road & Store Bay Local Road,
Tobago

**ENVIRONMENTAL MANAGEMENT
AUTHORITY APPLICATION**

SEPTEMBER 3, 2021

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DRAWN BY: **AB** CHECK BY: **AC**

ARCH D (24" x 36")
(609.6mm x 914.4mm)

AUGUST 17, 2021

**SITE PLAN
SURROUNDING
VICINITY**

SP-2



Figure 8 - 3.3: Proposed Dreams and Secrets Hotel Master Plan for Kilgwyn Bay.

PARCEL: 18.7258 Ha
TOTAL ROOMS: 500 u.
ROOMS PER HECTARE: 26.7 room/Ha

LEGEND

- ① BUILDING NUM.
- 1 STORY
- 2 STORIES
- 3 STORIES
- PROPERTY LINE
- BUILDING SETBACK LINE

BUILDING INFORMATION

BUILDING	STORIES	FOOT PRINT (m²)	TOTAL GROSS AREA (m²)
A	1	1,090.6	1,090.6
B1	1	1,227.5	1,227.5
B2	1	228.9	228.9
C1	1	176.0	176.0
C2	1	176.0	176.0
C3	1	176.0	176.0
C4	1	176.0	176.0
C5	1	176.0	176.0
C6	1	176.0	176.0
C7	1	176.0	176.0
C8	1	176.0	176.0
D	3	4,123.9	12,371.6
E	3	457.1	1,371.2
F	3	3,496.5	10,489.4
G1	2	3,874.7	7,749.3
G2	2	915.7	1,831.3
G3	1	3,857.7	3,857.7
G4	3	1,621.5	4,864.5
G5	3	2,182.4	6,547.3
G6	1	3,158.2	3,158.2
G7	1	742.8	742.8
G8	1	96.0	96.0
H	3	4,123.9	12,371.6
I1	1	176.0	176.0
I2	1	176.0	176.0
I3	1	176.0	176.0
I4	1	176.0	176.0
J	1	200.0	200.0
K	1	50.3	50.3
L	1	300.6	300.6
M1	1	75.0	75.0
M2	1	30.0	30.0
M3	1	40.0	40.0
M4	1	30.0	30.0
M5	1	420.0	420.0
M6	1	30.0	30.0
M7	1	15.0	15.0
M8	1	30.0	30.0
M9	1	40.0	40.0
N1	1	40.0	40.0
N2	1	30.0	30.0
N3	1	30.0	30.0
N4	1	30.0	30.0
N5	1	15.0	15.0
N6	1	420.0	420.0
N7	1	40.0	40.0
N8	1	40.0	40.0
N9	1	30.0	30.0
N10	1	75.0	75.0
O	2	1,200.0	2,400.0
P	1	30.0	30.0
TOTAL:		36,548.0	74,578.7

AREAS SUMMARY

	AREA (m²)	%
BUILDING FOOT PRINT	36548	20 %
PARKING LOT AND ROADS	17552	9 %
PAVED AREAS	20500	11 %
SUBTOTAL COVERED AREA	74600	40 %
	7.46 Ha	
POOLS	9735	5 %
BEACH	8131	4 %
MANGROVE (NATURAL PRESERVED WETLANDS)	32867	18 %
PRESERVED NATURAL LANDSCAPING (UNDEVELOPED)	34743	19 %
LANDSCAPED AREAS (DEVELOPED)	27182	15 %
SUBTOTAL	112658	60 %
PARCEL TOTAL	187258	100
	18.72 Ha	
	46.27 Acres	

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DRAWN BY: **AB** CHECK BY: **AC**

ARCH D (24" x 36") 1:50
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AUGUST 17, 2021

MASTER PLAN. BUILDING AREA SUMMARY

MP-1



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3.1.2 Site Development Strategy

The philosophy behind the master plan for this project is based on the premise to minimize the impact of the project to the natural conditions of the site. As such, this master plan limits the impact to the existing mangrove area to the construction of 2 secondary roads. The wetland areas will be preserved and included into the design of the project as a feature to highlight the natural beauty of this part of the island.

In order to accomplish this, the master plan has divided the site into 4 distinct areas of impact:

Area 1) Located at North portion of the site between the North edge and the Northern boundary of the existing mangrove. This area will be preserved and reforested to remain as a natural preservation area. The Eastern portion of Area 1 will be modified to accommodate the parking lot and support facilities.

Area 2) Includes the natural boundary of the existing mangrove. It will be preserved for its enjoyment and as part of the natural stormwater management system of the site.

Area 3) Located between the Southern border of the mangrove and the dune along the beach. This is the area that will undergo the majority of the impact to the sites topography and will accommodate the majority of the construction activities. Area 3 will be heavily landscaped with endemic species to be incorporated as an important feature of the design after the completion of construction.

Area 4) Located between the sand dune and the coastline and it encompasses the existing strip of beach and sand located on site. It is the intention of this master plan to maintain the beach as is and avoid major beach work to take place to preserve and enhance the natural beauty of the beach.

3.1.3 Storm Water Drainage and Hydrology

The concept allows the proposed site to drain through the use of bioswales to filter stormwater into the ground and retain particles from the roof runoff. The bioswales will be landscaped with endemic species and the overflow will drain freely into the mangrove forest and maintain its natural drainage pattern. Storm water from roofs will be connected in storage tanks located inside the courtyards of the hotel to be discharged into the bioswales. Surface water from bioswales will be directed towards 4 discharge points in the mangrove. An existing sluice canal will remain in place and will provide an additional discharge point. The topography in the pools and recreation decks will be modified to drain into native landscape absorption areas. A major design strategy is to decrease the velocity of the storm water runoff to avoid site erosion. (Refer to **Figure 14 - 3.9**)

3.1.4 Community Access

The master plan for this project preserves the existing public access road located between the property's West boundary and the airport. This road ends at the beach and will allow public access to members of the community for the enjoyment of the waterfront and the beach. This master plan does not include any access control at the end of such road. Access to the beach will be guaranteed for the enjoyment of the community. (Refer to **Figures 6 - 3.1, 7 - 3.2 and 8 - 3.3**)

3.1.5 Electricity Supply

Electricity supply will be obtained from the local public utility via an electrical line from Cove Power Plant, Cove Eco Industrial and Business Park. This power facility sits 1.2km due east of the proposed hotel site and carries a generating capacity from 84MW. 20MW of which is generated from General Electric dry low emission gas turbine. Tobago has an excess of 34MW of power available at this time, based on an average load demand of approximately

50MW. The estimated power demand from resorts when completed is estimated to be 500-650MWh/month. (Refer to **Figure 12 - 3.7**)

3.1.6 Potable Water

Potable water for the development will be sourced from the local public utility, Water and Sewerage Authority of Trinidad and Tobago (WASA). A breakdown of the potable water consumption rate is given below:

- Resort 1: 700 m³/day
- Resort 2: 466 m³/day

Total: 1,166 m³/day

Checks with the WASA have indicated that they are in a position to provide the water needed for the

resort. The Hillsborough Reservoir is the major source of drinking water for the island of Tobago. Located 36.5 metres (100 ft) above sea level, the reservoir is managed by Water and Sewerage Authority of Trinidad and Tobago. It has a capacity of about 1 million m³ (225 million gallons).

3.1.7 Water Storage

A cistern will be built to provide redundancy and meet the needs of drinking water and firefighting.

The water reserve (tank storage) will be 3 days of demand for the total 500 Rooms.

The cistern will be used for: (i) production process; (ii) human use in the event of an emergency; (iii) fire extinguishing purposes. The fire pump extraction points are installed at different heights to ensure its exclusive use for fire extinguishing purposes and, moreover,

this system allows use of the total tank capacity in case of fire. In case of fire, the system ensures the necessary flow rate supply for a minimum of 30 minutes (Level of Risk=Medium).

The location of the cistern will be on the first level of the industrial building located on the Northeast area of the site.

The source for water for site preparation and construction phase of proposed development will private truck borne water with temporary onsite tankage at usage of 100 m³/d. from local water providers (B.K. Holdings Limited, WASA etc.). (Refer to **Figure 12 - 3.7**)

3.1.8 Wastewater Treatment Plant

It is anticipated that wastewater will be collected on-site and directed to the nearest municipal wastewater treatment plant. The master plan allows for the eventual construction of an on-site water treatment plant in the event redundancy is required. A network of underground piping will collect wastewater from all buildings which will lead to the main collection points, which will be connected directly to the local water treatment plant. The hotel complex will have various pumping stations to force discharge from the lines. The following points summarize wastewater treatment as it pertains to the hotel complex:

- Rate of domestic waste water: 932 m³/day
- Proposed Method of Treatment: On-site treatment plant. Sequencing Batch Reactor (SBR) technology.
- Main disposal of treated water is the WASA South-west Tobago Facilities
- Courland Water Treatment Plant Capacity: 9,090 m³/day and Hillsborough-West Water Treatment Plant Capacity: 5,455 m³/day
- Secondary (back-up) disposal of treated water is the existing canal- point source testing on a agreed frequency between client and EMA. The discharge will be measured to ensure it consistently meets with effluent discharge standards prescribed by the Trinidad and Tobago Bureau of Standards and the Environmental Management Authority. The latter will be discussed in **Section 5.0 – Description of the Environment**.

Peripheral water courses will be maintained with minor alteration of natural water courses within the developed space (buildings, carparks, walk-paths, pools etc.); to be circumvented and supported with Storm water Drainage plan to allow redirection via the natural sloping landscape towards the SW into the pre-existing sluice canal. Natural drainage within the designated Mangrove areas will remain unaltered.

Solid waste will be disposed of by haulage to the municipal solid waste land fill at Studley Park managed by Tobago House of Assembly Division of Health and Social Services.

(Refer to **Figure 13 - 3.8**)

3.1.9 Roads

Access to both hotels will be through the Northwest of the property. An entrance gate will control vehicular access in and out of the property. The main road will be built along the North edge of the mangrove, following the natural boundary. The main road will arrive at a traffic circle that will distribute vehicles to 3 secondary roads. Secondary Road 1 will connect the traffic circle with the parking area located at the Northeast of the site. Secondary Road 2 will connect traffic to the Adults Only hotel in the Southeast of the site and to the South towards the Family Hotel. Secondary Road 3 will connect traffic to the Family Hotel II. Secondary Roads 2 & 3 will be built in part on stilts to minimize its impacts on the mangrove and allow for the natural flow of stormwater. Tertiary roads will connect all 3 buildings, villas, and guest areas with the main hotel buildings. It is planned that all traffic that enters tertiary roads will include electric vehicles (golf carts). It is planned that the majority of the traffic will occur between the entrance gate and the back of the house at the Northeast section of the site. Traffic between the traffic circle and the hotels shall be restricted to guest traffic and maintenance vehicles.

The plan includes the preservation of the existing public access road located at the West border of the property. This road provides public access to the beach between the hotel site and the airport.

The existing temporary access road will be dismantled after the completion of the project.

Details of Access Roads and secondary footpaths are given below:

- Main: 275 in length. 8 m wide
- Secondary Road 1: 103 m in length. 6m wide. In stilts over mangrove
- Secondary Road 2: 264 m in length. 7m wide. In stilts over mangrove
- Secondary Road 3: 165 m in length. 7 m wide
- Existing Beach Public Access Road (Western boundary): 464 m in length 6m wide
- For mangrove foot path locations, dimensions and usage Refer to Master Plan LP-1

(Refer to **Figures 8 - 3.3, 11 - 3.6 and 12 - 3.7**)

3.1.10 Landscaping

The gardens and access roads will be reforested with native plants, greatly increasing the current forest of the land. There will be replanting of the possible trees that need to be removed by the construction. A landscaping plan will be prepared and submitted to the Agency for approval. Existing vegetation at the Southern edge of the property will be preserved as a natural barrier between the beach and the existing dune. Impact to this green barrier will be minimized to only allow access points into the pool decks. (Refer to **Figure 11 - 3.6**)

To highlight the beauty of the mangrove, the master plan includes the construction of a nature walk into the mangrove. This walk will be built on stilts. The following points summarize how the site will be utilized:

- Percentage of Covered Lot Area: 40 %
- Percentage of Open/Landscaped Area: 60%
- Total area Covered space paved areas $20,500/m^2 = 11\%$
- Untouched Mangrove: 32,867 m²
- Mangrove Area to be infringed: <12% from foot paths and secondary roads on stilts over mangrove

Material that results from Earthwork shall be reutilized for cut & fill material and Landscaping purposes. Applicant has operational and execution experience of aforementioned hotel projects that include but are not limited to: AMResorts Dreams Sapphire, Cancun Mexico, AMResorts Dreams Jade, Puerto Morelos, México, AMResorts Zoetry, Montego Bay, Jamaica and Marriott Amatterra, Trelawny, Jamaica.

Filling material is estimated at 98,515 m³/147,772 Ton. Cut and excavation material is estimated at 98,818 m³/148,227 Ton

3.1.11 Parking

A total of 200 parking spaces are allocated in the main parking lot located on the Northeast corner of the site. (Refer to **Figure 11 - 3.6**)

3.1.12 Fire Protection System

Firefighting Facilities on the property will include emergency lighting and signals, fire detection devices and alarms, portable fire extinguishers and an elaborate water extinguishing system. These are detailed below:

3.1.12.1 Emergency Lighting and Signals

An emergency system shall be provided for lighting the exit routes. This consists of an autonomous emergency lighting system, which will be activated automatically in case of interruption of the normal or backup power source. The lighting is done by means of autonomous emergency lamps with battery and directional lights or with ordinary luminaries of the building when they have emergency ballast. Emergency lighting will be placed along

the routes of evacuation, hallways, access to emergency exits, stairs, discharge of stairs and other means of evacuation. The emergency lighting shall have the following characteristics:

- Power Source Autonomy: 90 minutes
- Capacity: 10 lux average at the start and 1 lux along the tracks measured at ground level
- Capacity at the end of the battery charge: Average not less than 6 lux and 0.6 lux at the end of the duration of the illumination.

All exits and access routes shall be indicated by visible signs. Doors, hallways or stairs that do not lead to the exit, but which are in a way that can lead to mistakes, will be marked with signs or with the text "NO EXIT". The signs shall be of such size, color and shape as to be readily visible.

3.1.12.2 Fire Detection and Alarms

There will be a system of detection and alarm, which, in case of fire, will warn the occupants of the building in an early manner, by means of an audible and visual signal. The system shall be activated by smoke or temperature sensors, manual stations or an automatic sprinkler system and shall alert the occupants by audible and visual signals.

The detection and alarm system will consist of the following elements:

Activation Devices:

- Smoke detectors to be placed in all rooms susceptible to fire.
- Temperature detectors to be placed where smoke detectors are susceptible to false alarms (e.g. kitchens, garages).
- Manual fire alarm levers which allow the occupants to operate the alarm intentionally.

- Opening sensors in emergency doors.
- Flow sensors in the piping of the fixed system against fire.
- Start sensor in the fire pumps.

Advertising devices.

- Fire bell
- Strobe lights (flashing)
- Speakers
- Remote notification panels

Other components.

- Main control panel to be placed in a site with supervision and that is accessible
- Main power system.
- Auxiliary power system (backup battery).
- Control of automatic doors.
- Air conditioning control.
- Control of elevators.

3.1.12.3 Portable Fire Extinguishers

Portable extinguishers will be either carbon dioxide extinguishers of 4.54 kg for BC fires or dry chemical extinguishers of 4.54 kg for ABC fires.

3.1.12.4 Water Extinguishing System

Pump

System

The pumps of the Fire Pressure Group will be centrifugal pump units, driven by a diesel internal combustion engine, for which fuel reserves will allow their continuous operation for 8 hours. The pump system will be designed according to the requirements of the NFPA 20 edition 2010 or the equivalent in the most recent versions. Horizontal centrifugal pumps will always operate on load (positive suction). Horizontal centrifugal pumps with the possibility of downhole will not be permitted, even if they have priming reservoirs with automatic water replenishment.

The minimum flow rate to be guaranteed by the Fire Pressure group is described in **Table 12 - 3-2** below:

Table 12 - 3-2: Fire Pressure Group Flow.

Level of Risk	Flow (lpm)	Tank (m ³)	Flow (l/h)
High	3,600	480	216,000
Medium	1,800	240	108,000
Low	900	120	54,000

Supply

Tank

The water supply must be sufficient to supply the rated flow rate of the fire pump for at least 30 minutes. The tank can be shared for production processes and for firefighting, as long as the pump suction is installed at different heights so that the water reserve for use in the event of a casualty is always available and there is no possibility that it is used in the building's normal processes or services.

Piping

System

The piping system was designed taking into account the losses due to length, accessories, reference level, water supply and others. It consists of a system formed by a closed hydraulic circuit, allowing by means of valves that if one section is damaged, the intakes are fed by the other section. The maximum pressure at any time and at any point of the system must not exceed 24 bar (350 psi). The cabinets or hose connections will be equipped with the corresponding diameters for the type of system to be installed and distributed in each level so that from the cabinet to the farthest point to be protected inside the building is not more than 40 m.

Combination

Standpipe

Combination standpipes will have a check valve, in addition to the swing check valve that the Siamese combination standpipe has. It shall be installed in such a way as to be accessible to firefighters and not more than 30 meters from the power supply.

Manifold

Test

A test manifold will be installed according to the capacity of the pump, according to NFPA 20 edition

2010 or equivalent in the most recent versions. Each outlet will have a gate valve. The separation between mouths will be between 30 and 40 cm. A gate valve will be installed between the test manifold and the feed pipe for maintenance or repair.

Exterior

Hydrants

This network will be responsible for the water supply of the fire network to all hydrants located outside the buildings. Hydrants will be considered as a source of backup water supply for fixed fire extinguishing systems. Hydrants will be located on the ring main at intervals to suitably direct water to the fire hazard they protect for hotel facilities.

The location and distribution of hydrants should be performed according to the following criteria:

- 1) The protected area for each hydrant will be covered by a radius of 40 m, measured horizontally from the location of the hydrant.
- 2) At least one of the Hydrants (if possible, at the entrance) must have a 100 mm outlet.
- 3) The distance between the location of each hydrant and the outer limit of the building or protected area, must be between 5 m and 15 m.
- 4) The hydrants will be located in easy-to-access areas.

3.1.13 Beach Works

There are no anticipated beach works as a part of this project.

3.1.14 Concrete Batching Plant

A private contractor will supply all the concrete for project from a batching plant to be installed on a site provided by the Client. The concrete will be supplied in 4 different classes:

- Concrete type 3.500 psi., Foundation Mix. (white sand/stone aggregates)
- Concrete type 3.500 psi., Wall Mix. (black sand/stone aggregates)
- Concrete type 4.000 psi., Foundation Mix.
- Concrete type 4.000 psi., Wall Mix.

It is estimated that the quantity of concrete to be supplied will be no less than 22, 937 m³ (30,000.00 cubic yards) over a period of 2 years.

The batching plant will be the brand Frumecar, which is electronically operated with wet mixer that guarantee mix quality. The supply of the concrete from the batching plant will be at a nominal capacity of 40 m³/hour. Normal working time will be 9 hours per day starting at 8:00 am (Monday to Saturday) for week 1, and Monday to Friday for week 2.

The private contractor will be responsible for:

1. The maintenance and operation of the Batching Plant for 24 months.

2. The procurement of raw materials (excluding the aggregates if the Client provides), supply, transport, pouring and internal quality control of concrete.
3. The necessary equipment associated to execute the effective concrete supply based on but not only:
 - Concrete trucks for the transport of concrete.
 - Internal Quality control laboratory for concrete testing.
 - Backhoe for movement of aggregates.
 - Generator on site, 170Kva for exclusively use of the batching plant.
 - Offices and storage room.

3.2 Logistics

The Northeast corner of the site will be utilized to situate the following facilities:

- a) Concrete Batching Plant
- b) General Materials Warehouse
- c) Cafeteria for 250 diners. (with enough space to expand to double that capacity).
- d) Field Offices for technical personnel.
- e) Taking advantage of the existing temporary access road, this road will become the main access during construction. The public access road on the West of the property shall be used to provide construction vehicle access to the main area of construction. A daily circulation of between 50 and 120 trucks and cars is estimated during construction.
- f) Four (4) Sanitary Modules (Work restrooms), with easy access to discharge everyday waste through sewage pipes. Due to their size and shape it will be easy to increase the number of sanitary modules according to the work requirements
(Figure 9 - 3.4)

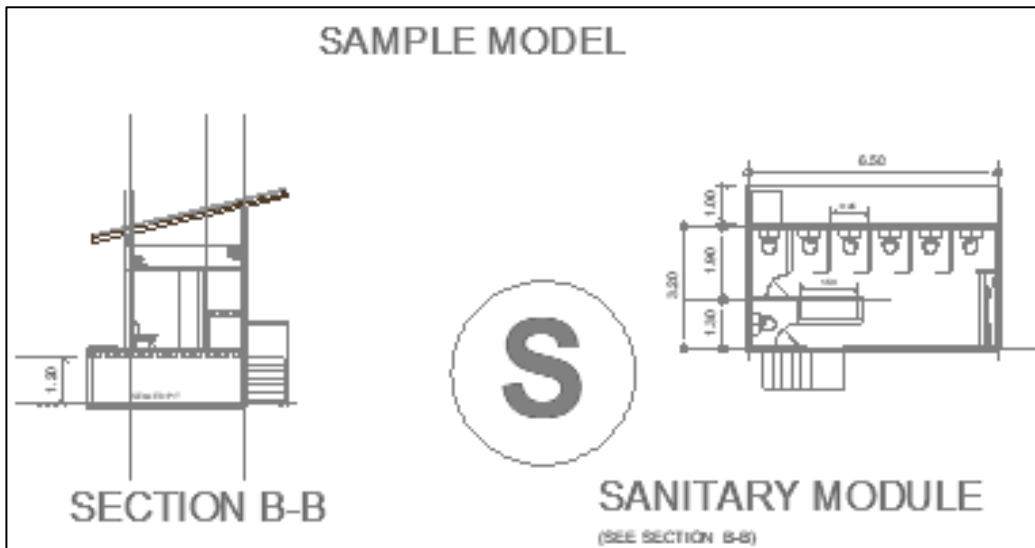


Figure 9 - 3.4: Sanitary Modules



GENERAL NOTES:

1. EXISTING DIRT ROAD TO BE PRESERVED DURING CONSTRUCTION ACTIVITIES ONLY. IT SHALL BE EQUIPPED WITH A VEHICLE TIRE WASH BAM AND CRUSHED STONE PAD.
2. ALL SITE INFORMATION HAS BEEN REFERENCED FROM REPORT ENTITLED: "PROPERTY PRE-CONSTRUCTION PARAMETER AND LAND USE SURVEY FOR THE 500 KEYS LUXURY HOTEL PROJECT SITUATED AT KILGWYN STATE, TOBAGO" PREPARED BY OPTIMAL GEOSCIENCE AND ENGINEERING.

SET BACKS:

- NORTH.....10 m
- EAST.....10 m
- WEST.....10 m
- COAST LINE.....30 m

ENVIRONMENTAL MANAGEMENT AUTHORITY APPLICATION

SEPTEMBER 3, 2021

DRAWN BY: **AB** CHECK BY: **AC**

ARCH D (24" x 36")
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AUGUST 17, 2021

SITE PLAN

SP-3



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**DREAMS & SECRETS
RESORT & SPA
TOBAGO**

PROJECT INFO:
Tyson Hall between Kilgwyn Bay
Road & Store Bay Local Road,
Tobago

Figure 10 - 3.5: Map Showing Site Plan.



MANGROVE DISCOVER PATH (PROPOSED)

MANGROVE ENCROACHMENT

	AREA (m ²)	%
MANGROVE (NATURAL PRESERVED WETLANDS)	32867	100
MANGROVE ENCROACHMENT:		
SECONDARY ROAD 2 (ON STILTS)	2007	6 %
SECONDARY ROAD 3 (ON STILTS)	763	2 %
MANGROVE DISCOVER PATH 1 (ON STILTS)	690	2 %
MANGROVE DISCOVER PATH 2 (ON STILTS)	120	0.4 %
LAZY RIVER	260	1 %
TOTAL MANGROVE ENCROACHMENT	3840	12 %

NOTES:

- 1 ACCESS/VIEW CUTS REQUIRES REMOVAL OF EXISTING VEGETATION
- 2 PRESERVED EXISTING VEGETATION

ROAD DESCRIPTION

	WIDTH	LONG
MAIN ACCESS ROAD	8.0m	275.1m
TEMPORARY SERVICE ROAD	5.0m	307.7m
SECONDARY ROAD 1	5.0m	183.4m
SECONDARY ROAD 2 (ON STILTS)	7.0m	264.3m
SECONDARY ROAD 3 (ON STILTS)	7.0m	194.8m
EXISTING PUBLIC ACCESS ROAD	5.0m	463.9m

SITE IMAGES:



PARCEL: 18.7258 Ha
 TOTAL ROOMS: 500 u.
 ROOMS PER HECTARE: 26.7 room/Ha

NOT FOR CONSTRUCTION

AREAS SUMMARY

	AREA (m ²)	%
BUILDING FOOT PRINT	36548	20 %
PARKING LOT AND ROADS	17552	9 %
PAVED AREAS	20500	11 %
SUBTOTAL COVERED AREA	74600	40 %
	7.46 Ha	
POOLS	9735	5 %
BEACH	8131	4 %
MANGROVE (NATURAL PRESERVED WETLANDS)	32867	18 %
PRESERVED NATURAL LANDSCAPING (UNDEVELOPED)	34743	19 %
LANDSCAPED AREAS (DEVELOPED)	27182	15 %
SUBTOTAL	112698	60 %
PARCEL TOTAL	187258	100
	18.72 Ha	0.0 %
	46.27 Acres	0.0 %

ENVIRONMENTAL MANAGEMENT AUTHORITY APPLICATION
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LANDSCAPE SITE PLAN. AREA SUMMARY

LP-1

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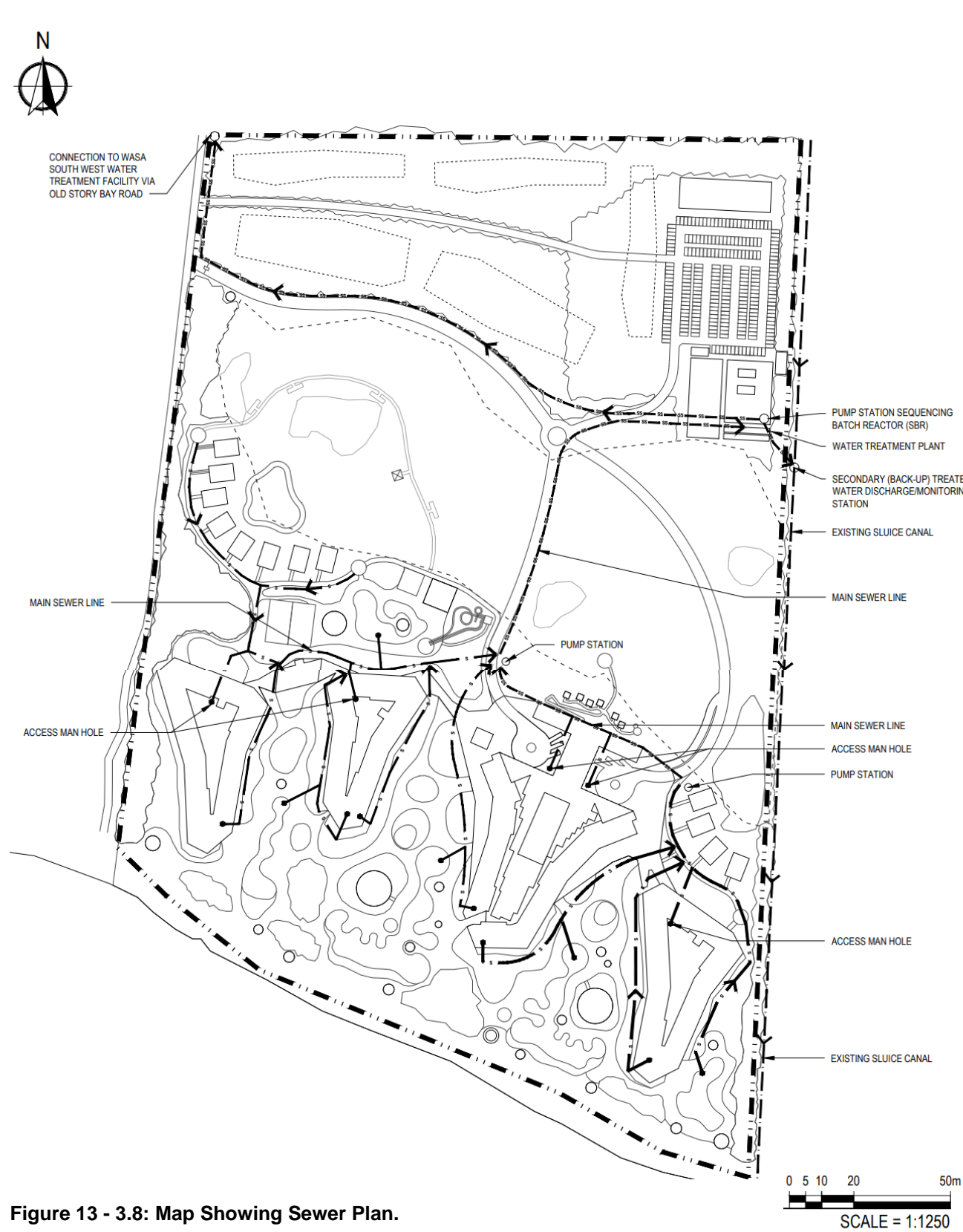
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DREAMS & SECRETS RESORT & SPA TOBAGO

PROJECT INFO:
 Tyson Hall between Kilgwyn Bay Road & Store Bay Local Road, Tobago

Figure 11 - 3.6: Map Showing Landscape Site Plan.



GENERAL NOTES

- ON-SITE SBR SHALL DISCHARGE TREATED WATER INTO PUBLIC SEWER TOWARDS BON ACCORD TREATMENT FACILITY AS A BACK-UP, SBR CAN DISCHARGE TREATED WATER INTO EXISTING SLUDGE CANAL.
- ESTIMATED RATE OF WASTE WATER= ±932M³/DAY. RATE INCLUDES ALL WASTE WATER FROM THE RESORT INCLUDING RESTROOMS, KITCHENS, POOLS & LAUNDRY FACILITIES

LEGEND

- SS — SS — MAIN SEWER LINE
- + — SEWER LATERAL
- - - - SLUDGE CANAL

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△
△
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SEWER MANAGEMENT SITE PLAN

SW-1

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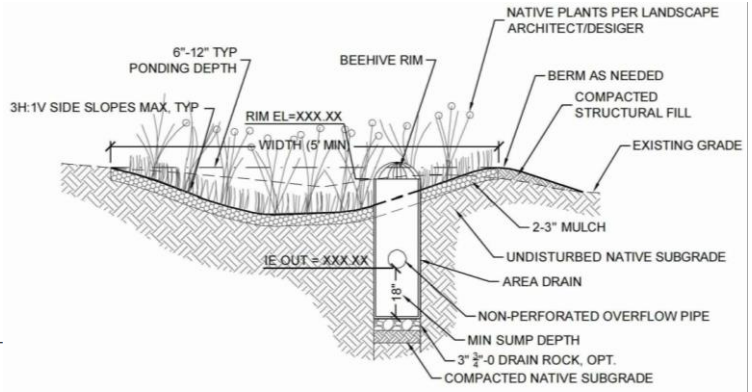
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Figure 13 - 3.8: Map Showing Sewer Plan.

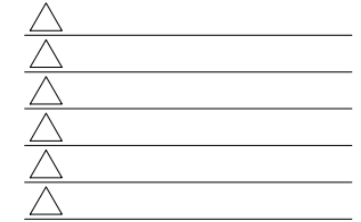


GENERAL NOTES

1. STORM WATER MANAGEMENT SYSTEM WILL DIVERT RAIN WATER TO ITS NATURAL COURSE VIA THE EXISTING SLUICE CANAL TOWARDS THE OCEAN, AS WELL AS TOWARDS THE MANGROVE. BIO-SWALE CHANNELS WILL BE INCORPORATED INTO THE LANDSCAPE TO REMOVE DEBRIS AND POLLUTION FROM STORM WATER.
2. VEHICLE WASH BAY AREA SHALL BE UTILIZED DURING CONSTRUCTION ACTIVITIES.



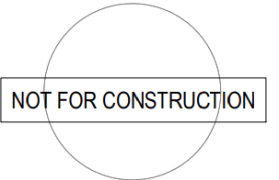
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STORM WATER CONTROL SITE PLAN

SC-1



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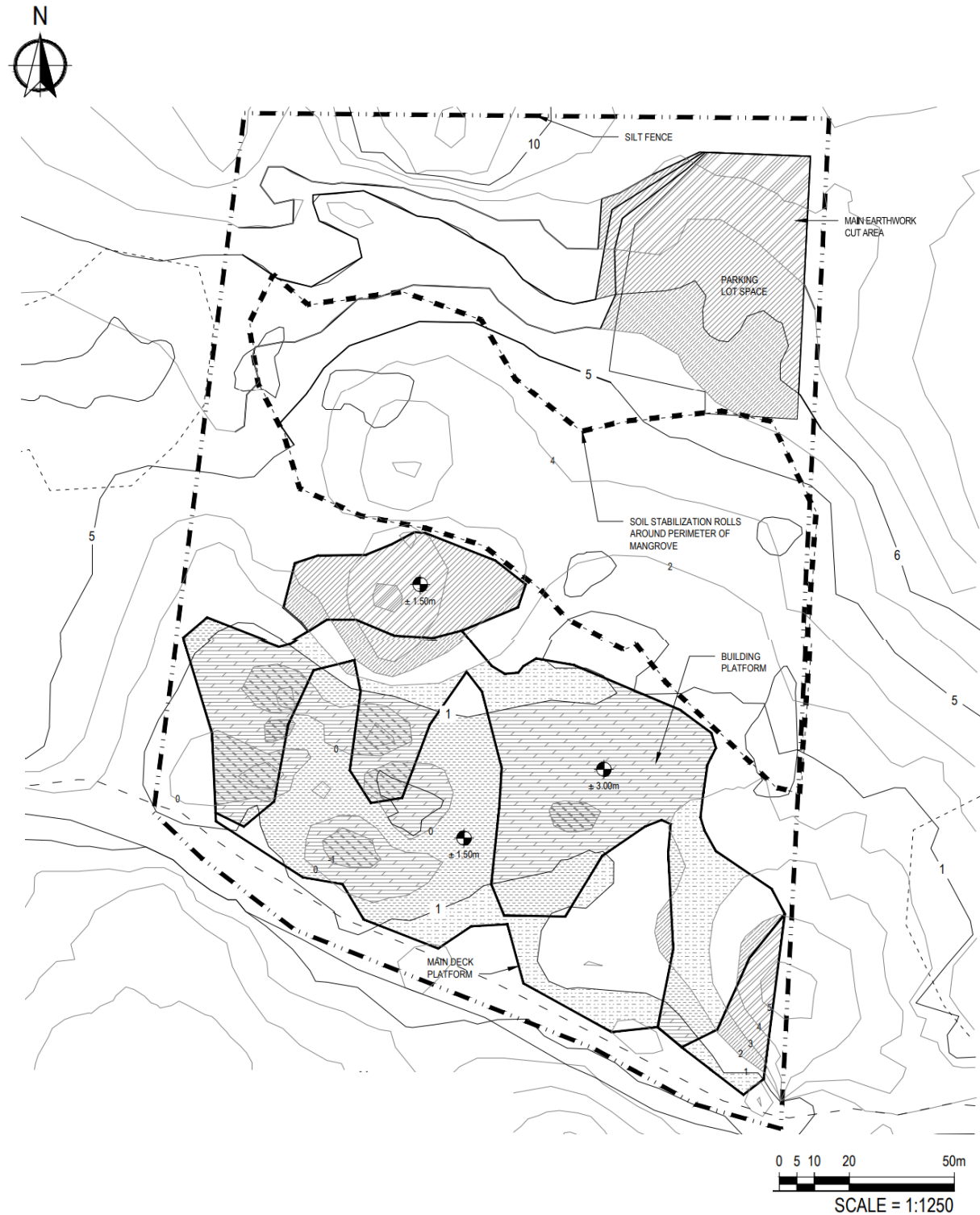
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Figure 14 - 3.9: Map Showing Storm Water Control Plan.

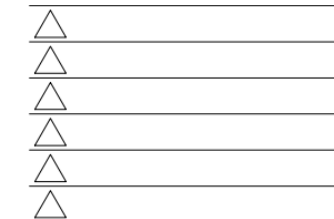


PLAN LEGEND	
CUT	
	4 m² CUT
	3 m² CUT
	2 m² CUT
	1 m² CUT
FILL	
	1 m² FILL
	2 m² FILL
	3 m² FILL
	4 m² FILL

	m³
FILL MATERIAL	98515
EXCAVATION EARTH WORK	77618
EXCAVATION FOUNDATIONS	21200
EXCAVATION TOTAL	98818

**ENVIRONMENTAL MANAGEMENT
AUTHORITY APPLICATION**

SEPTEMBER 3, 2021



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AUGUST 17, 2021

**SOIL EROSION +
SEDIMENT CONTROL
PLAN DURING
CONSTRUCTION**

SE-1

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Tobago

Figure 15 - 3.10: Map Showing Soil Erosion Control Plan.

3.2.1 Mangrove Boardwalks/Footpaths

The boardwalk will be constructed of heartwood timber and placed on wooden piles/stilts. It will be constructed by using manual labour and no heavy equipment will be used. Only timber piles of solid hardwood, free from decay and insect attack will be used and lumber will be dressed on all sides and shall be free of splits, cracks and defects. Lumber for the decking planks and rail posts shall be dressed and finished on all sides and edges.

3.2.2 Equipment and Materials Private Villas

To complete the proposed private villas construction (along the southern fringes of the Mangrove - **Figure 11 - 3.6**), the following equipment and materials will be needed:

- Either one (1) hammer attached to crane/excavator OR one (1) Auger cast pile rig – for piling installation.
- Two (2) Medium-sized excavators – For removing, loading, placing and handling boulders.
- Two (2) Front end loaders – For loading, removing, placing and transporting material onsite
- Small Mangrove Floating Barge floats – for turbidity barrier management
- Boulders
- Auger cast piles
- Timber pilings and structures

3.2.3 Access Roads and Stockpiling Material

This stage of the construction requires the identification of an access route for the carting of construction material to the site as well as waste material from the construction process. **Figure 11 - 3.6** shows the construction layout and landscape plan for the project, site access roads and construction locations. From **Figure 11 - 3.6**, the access route will be aligned with the existing entrance for the hotel, then follow the parking lot to the northern pathway that will be converted to a wider roadway, and finally, to the area

of the northern boundary will be used also be used for temporary stockpile area with turbidity barriers during construction. Additionally, the access route will then run perpendicular to the beach and end at the coastline/berm setback. The stockpile areas will use the green areas along the northern boundary of the site. The stockpile area will be prepared with a suitable working surface of compacted gravel fill. The stockpile area will be used for:

- Site Office
- Storage of Equipment when not in use
- Storage of imported or manufactured sand
- Storage of boulders
- Storage of waste material destined for landfill/disposal facility
- Drainage area of excavated material

3.2.4 Turbidity Monitoring

Turbidity barriers will be used around all works occurring in and around the mangrove and sluice canal environments to minimize leakage of silty material to ecologically sensitive areas. Turbidity will also be monitored daily at two locations of each work area where there is construction (or as per EMA permit/guidelines). Where turbidity measurements surpass EMA standards in these sensitive areas, work will stop until normal conditions recover, as per EMA and Trinidad and Tobago Bureau of Standards guidelines. Mangrove and Sluice Canal turbidity barriers shall be deployed and anchored in accordance with manufacturer's instructions to surround any and all areas where construction works will create turbidity in these sensitive environments. All necessary measures will be taken to ensure that the barrier is maintained in position during the work and is effective in retaining all suspended sediment and debris. The Contractor will remove trapped floating debris as required to ensure proper functioning of the barrier. The height of the barriers shall cover at least 50% of the deployment depth up to a maximum height of 1.0m, unless the conditions at the site dictate otherwise to ensure that all suspended sediments are effectively contained. The turbidity barrier shall have the appropriate floats, weights and anchorage system to allow for adequate containment of turbidity.

3.2.5 Equipment and Materials Main Hotel Buildings

To complete the proposed beach and shoreline works, the following equipment and materials will be needed:

- Two (2) Medium-sized excavators – For removing, loading, placing and handling boulders, fill, sand and other materials
- Two (2) Front end loaders – For loading, removing, placing and transporting material onsite
- Two (2) Hydraulic Suction Dredge Pump Assembles - for clearing of silty areas and hydraulic removal and transport of sandy/silty material

- Two (2) Cement Mixers – to mix concrete
- Mangrove and Sluice Canal Barge Floats - turbidity barrier management
- Trucks – for material transport
- Boulders
- Sand sourced from either manufactured, dredged or imported sand source.
- Fill material
- Filter fabric/Geotextile

3.3 Project Phasing and Scheduling

*(Refer to **Appendix C3 - Project Gantt Chart Phasing**)*

The construction of the first phase is anticipated to take 18 – 24 months after which there will be a 1- year break and the construction of the second phase will commence with that phase anticipated to take an additional 18 – 24 months.

- Phase 1 - Hotel 1 (Adults only) – 300 rooms
- Phase 2 – Hotel 2 (Families) – 200 rooms

3.4 Hotel Operations

3.4.1 Employment

Once fully operational (Hotel I and II), Dreams and Secrets Resorts expects to employ approximately 2,852 persons. The expected staffing for the operational phase of approximately 2,582 persons should result in approximately 4,763 indirect and 1,797 induced jobs.

3.4.2 Energy Conservation Strategies

Tobago's electrical load demand is increasing rapidly, some 3MW per year, and hotels are generally energy intensive. The proposed Dreams and Secrets Resorts will incorporate several energy saving practices and technology to conserve on energy use and reduce costs. These will include:

- All rooms will be lit by Light Emitting Diodes (LED) technology
- The other areas of the hotel will be LED type or low power consumption CFL (Compact Fluorescent Lamp)
- In every room there will be sensors that cut off the supply of air conditioning and some electrical circuits in the room when no detected any presence

- The room air conditioning will be stopped in the event of a window/patio door opening although the sensor might indicate a presence
- All air conditioning pipe will be coated with 1 inch of thermal insulation to reduce heat loss and therefore more efficient operation of the air conditioner

3.4.3 Water Conservation Strategies

Tobago over the years have been experiencing water shortages especially during extreme summer months due to droughts. This has become more acute as the years pass by; therefore, water conservation strategies have become more critical.

This Project has incorporated water conservation features with the use of low consumption equipment. These include:

- Dual flush toilets with half (0.8 us gals) and full flush (1.6 us gals). This compares well with toilets in the 1980s that used approximately 3.5 us gals or traditional ones that used up to approximately 7 us gals.
- The faucets that will be used have water reducer (aerators) incorporated. This has the effect of restricting the maximum flow rate from the faucet. Typically, low flow bathroom faucets range from 0.5 – 1.5 us gpm (1.9 – 5.7 l/min).

In addition to these conservation features, treated wastewater effluent from the wastewater treatment plant will be used for irrigation around the property. This will result in a reduction in the water demand of the new resorts.

3.5 Decommissioning

At the time of decommissioning, the following activities will aim to satisfy the health, safety and environmental issues associated with the closing of the construction site in a manner which mitigates any adverse environmental impact:

1. Advanced notification (2 weeks) to relevant local authorities (EMA, THA, Public Utilities and Airports Authority) of near completion of construction and potential change in status of the site.
2. Final notification to relevant local authorities of completion of construction and change in status of the site to that of an operational hotel resort.
3. Notification to property neighbors and the immediate surrounding Tyson Hall-Canaan-Bon Accord residential community will occur 1 week before decommissioning activities commence.
4. Security personnel will be present at all times, as it would be during normal construction phase until the decommissioning has been completed. Signage will be clearly posted at the entrance of the facility alerting the public that the facility is "Closed" and the area is "Restricted."
5. Vehicular and pedestrian access will be restricted to only personnel necessary to carry out the activities associated with decommissioning activities. Flag persons will continue to remain at the entrance to regulate any heavy equipment entering or exiting the site as during the construction period.
6. All access will be via the posted security personnel and recorded in the security log.
7. All equipment and material used during construction will be removed from the site.
8. Administrative office structures will be transported off the property (no permanent structures would be constructed).
9. Portable toilets and hand wash facility leased would expire and returned to the operator.
10. All material stockpiles will be utilized in the construction process and the remainder removed from the site.

11. All solid waste and debris on site and in the marine environment will be removed and disposed of by licensed contracted municipal waste operators at an approved disposal site.

The estimated timeline for decommissioning activities is 1-2 months after each construction phase (Phase I and II) is complete.