Project Name:
Sky House Guyana

Developer Name:
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Site Description

The site for the developmental works is located within the City of Georgetown, the address of the parcel of land is Lots 37 & 39 Area F Turkeyen. The property is located just off the Railway Embankment Road, north of the Arthur Chung Conference and Giftland Mall. The area in the immediate surrounding is a mix of residential and commercial buildings. The underlying material at the site is clay with organics. The apartment complex will receive all utility connections (GWI and GPL) from the access street east of the property, Third Street and the developer will construct concrete drains within the property to ensure adequate drainage of the complex.

Project Design

Overview

The project was envisioned and sponsored by Ramps Logistics Guyana, a leading supply chain management company in the Caribbean and Latin America. It was inspired by the emerging oil sector in Guyana and the increasing demand for high quality accommodations for the growing number of expatriates and young Guyanese professionals currently working and living in Georgetown. The name Sky House Guyana was inspired by the rooftop amenities provided by the complex and views of the ocean. The architecture of the building was done with a lot of emphasis to ensure it exemplified luxury given the nearby amenities and excellent location.

The developmental budget for the project is 5 million US dollars and is financed through a private bank loan. The building sits on a plot of land with dimensions 122ft x 99ft (0.28 acre), the building dimensions are 86ft x 78ft (6,785 sq.ft for each floor). The apartment building will have 16 self-contained apartments, 4 No on each floor and 25 car parking spaces on the ground floor, there will also be a gym, pool and green space on the roof top. Each two bedroom apartment will be approximately 1200 sq.ft and each three bedroom apartment will be 1800 sq.ft.

As with most developmental projects there are basic steps required for the successful implementation, for Sky House Guyana the following is envisaged:

- Design phase.
- Pre-construction phase
- Construction phase
- Operation phase

Design Phase

The preliminary design for the apartment complex was an iterative process as is the case with many projects, the aim was to balance cost with expectations. The design process investigated the feasibility of several building types and construction materials however in the end the final product was a five storey concrete and steel structure comprising of 16 self-contained apartments. The architect, structural and services engineer for the project are ACLA Architecture, KS&P and ENCO which have all prepared the design drawings for the project. An important step in this process was also to acquire all the relevant construction permits from the City Engineers, EPA and Ministry of Housing. The duration of this phase was approximately 12 months.

Pre-Construction Phase

This phase will encompass the site development works which includes clearing all vegetation and excavation of soft spots in the sub grade. Pile driving of 88 precast piles will also be done at this stage to allow for required load bearing capacity of the site.

Construction Phase

During this phase the 29,000 square feet apartment building will be erected. Almost all of the construction will be a combination of steel framing and reinforced concrete, hollow concrete blocks and precast walls. Works will start on the foundations first and proceed up to the roof level in stages. It is anticipated that 10-25 construction workers will be full time on the project during this stage. After the roof is installed, electrical and plumbing technicians will start on the installation of cables and pipes followed by finishing and external works. It is expected to have the building completed end of June 2023. The duration of this phase is expected to be 12 months.

Operation Phase

The operational phase of the project will be fairly mundane, with the only employees being a part time maintenance worker and a full time receptionist. It is anticipated that at any one time all of the apartments will be occupied by residents with all onsite parking provided for within the compound. The design life for the project is 30 years.

Utilities

The main electricity supply will come from the Guyana Power and Light (GPL) with backup power provided by a 250KVA stand by diesel generator. The generator will be equipped with the necessary mufflers and located in a sound proof enclosure. Water will be provided by Guyana Water Inc (GWI) from the Third Street access, there will be at least 17000 gallons of storage provided on the property to cater for interruptions in the service and 2000 gallons fire storage. Communications and data will be provided by Guyana Telephone and Telecommunications (GTT); the service connections will also come from the Third Street boundary.

All effluent will be drained using an underground treatment plant with the primary discharge point being the drain along Third Street and will follow recommendation by the GNBS and EPA.

Environmental Effects

Most if not all the impacts of this project will be during the pre-construction and construction phases, these impacts and the appropriate mitigation / management measures are provided below.

Air Quality (Exhaust Emissions and Fugitive Dust)

Fugitive Dust

The project has the potential to generate dust at levels which can significantly affect the air quality within the project area. However, most of these impacts are expected to be localized and can either be prevented or reduced.

Dust will also be generated from several aspects of construction including:

a) Vehicles transporting aggregates, loading and off-loading of trucks and excavation activities.

b) Construction and operation of support facilities such as material stockpiles area.

c) Debris deposits from vehicles exiting construction zone.

Impacts associated with Fugitive Dust

- Dust generation would be greater during dry periods and will be influenced by construction activities, soil type, moisture content and wind speed.
- Workers and public exposed to prolong dust pollution can develop acute respiratory ailments and eye irritations.
- Dust emissions may also impair the line of sight of workers and road users which increases the possibilities of vehicle accidents and other safety concerns.
- Dust can also be generated from material stockpile as a result of wind, especially during dry conditions.

These impacts are controllable and are expected to be short-term and localised. When not managed they may present significant impacts.

Mitigation measures to reduce potential impacts associated with Fugitive Dust

The following measures would be implemented to reduce the impact of dust within the project environment:

- Equipment that produces significant quantities of dust to be sited away and downwind from homes and working environments.
- Personnel working within dusty environments (e.g. stockpile area and cement ransom) would be required to use dust masks or respirators or other necessary personal protective equipment (PPE).
- During dry periods, the access route to be monitored for dust particles becoming air-borne while vehicles and equipment are traversing. Periodic soaking will be administered if dust pollution arises.
- Loaded Trucks tray are to be covered when transporting material to minimize dust emission.
- Material stockpile to be kept to a minimum height to reduce wind action on materials. Maximum stockpiling height of 10 feet is recommended for materials susceptible to wind, and maximum stockpiling height of 15 feet for materials impervious to wind.
- All material stockpiles are to be properly covered, prevented any loose material to be carried away from wind or rain.

Exhaust emissions

Construction works will result in combustion emissions from the use of diesel and/or gasoline fired heavy duty equipment. Combustion emissions will be minimal, short-term and localised to the area of the vicinity of construction activities. Emission impacts are also expected to be unavoidable.

Mitigation measures to reduce potential impacts associated with exhaust emissions

- Maintaining construction equipment in accordance with manufacturer's specifications in order to operate at optimal efficiency to reduce excessive emissions.
- Maintenance log for equipment/machinery shall be utilised, documenting all maintenance actions that are performed (See appendix G).
- All equipment and machinery to be turned off once inactive.

Noise

Noise will be generated mainly from the use of fuel powered generators and heavy duty equipment and machinery during construction phase. These impacts are unavoidable and expected to be short-term and localised.

Impacts associated with Noise

Exposure to noise levels above the internationally accepted level of 90 decibels can cause noise induced hearing loss. Noise levels above the tolerable threshold of 72 decibels can result in fatigue, tiredness, low morale and decreased productivity.

Mitigation measures to reduce potential impacts associated with noise

During the construction phase, the Developer will mitigate the potential impacts from noise by:

- Keeping Noise levels within the EPA's established limit of 90 decibels during the day and 75 decibels at night.
- Employing best practices on-site to minimise occupational noise levels and provide noise protection equipment to employees.
- Procuring hearing protection such as ear plugs to employees exposed to high noise levels.
- Efforts will be made to ensure machinery and equipment are working efficiently and have installed the manufacturers required muffler devices where practical.
- Night works will be avoided, to the most practical extent.

Surface Water

Improper disposal of waste (liquid and solid) and mismanagement of fuel/lubricants can pose threat to the existing drain East of the property boundary.

Mitigation measures to reduce potential impacts associated with surface water pollution

In order to protect water courses and the quality, the developer shall:

- Locate and properly cover material stock-piles and excavated materials in a designated area, away from water bodies to prevent excessive soil deposits.
- Waste storage stockpiles or stockpiled material shall not be placed within 10m of any watercourse and shall have a toe berm construction around.
- Minimize and contain suspended sediment (i.e., Non-Filterable Residue, NFR) within the immediate zone of construction.
- Undertake appropriate containment measures during concrete pours to ensure that uncured concrete or concrete leachate does not enter any watercourse or drainage. Preventative methods include sediment traps.

- Place pumps and generators on bermed polyethylene sheeting to prevent hydraulic fluid and/or fuel leaks from entering water bodies.
- Ensure that a perimeter RC drain is constructed in the early stages to collect all run off from the project site.

Management of liquid and solid waste

The project will generate waste during the construction stage, if not managed properly, can result in soil and water contamination, contribute to ill health, and affect the aesthetic of the area. This plan will ensure that waste generated during construction is handled in a way
The following are some of the materials that can be expected to generate during construction:

- Stripped Vegetation
- Concrete forms
- Dimension lumber
- Packing materials
- Containers for various construction materials (e.g. concrete and steel)
- Pallets
- Plastics
- Waste oil, filters, lubricants and hydraulic fluids
- Concrete
- Food
- Sewage

Impacts associated with the improper disposal of waste

- Waste heap piles often present an eye sore and can affect the aesthetic of any environment.
- The improper disposal of waste, especially food waste can increase the potential of Occupational Safety & Health hazards and also result in unpleasant odours and the attraction of vermin.
- Mismanagement of waste can lead to secondary sources of pollution and contamination of land and water.

Mitigation measures to reduce potential impacts associated with improper waste disposal

- Reduce the amount of waste required to be managed. Therefore, avenues of reusing 'waste' materials will be explored in situ.
- Waste generated will be segregated into organic wastes (vegetation, top-soil); inert waste such as plastics, food boxes, rubber, etc.; and hazardous waste. Inert and hazardous wastes will be stored in covered bins.
- Waste generated at the construction site will be collected and transported to designated Landfill by the Developer. Preferably, Hags Bosch Landfill, East Bank Demerara, given the closer distance among landfills.

- Segregated waste disposal bins will be maintained at ancillary facilities.

Domestic waste

- Burning of waste materials and littering around construction zone will be prohibited.
- Frequent clean-ups will be done by the Developer to ensure work ground is kept tidy.
- Daily housekeeping to be done.
- Bins will be available onsite for storage of waste materials. Domestic Waste will not accumulate for more than 7 days on site. The Developer will transport waste materials to designated Landfill weekly.
- Poorly kept garbage receptacles may harbour pest and even diseases carrying vectors. Developer is advised to do weekly washing of garbage receptacles.

Sanitary waste water/sewage waste

- Suitable number of Portable Toilet will be will be installed at the worksite and will be routinely (weekly) serviced.
- Waste storage area will be located away from water body to prevent secondary entry and possible pollution/contamination.

Construction Waste

- Construction debris and other waste will not accumulate on the construction site for more than 30 days.
- The developer will remove twice weekly to prevent accumulation. The Developer must be cognizant of the fact that storage space on the site is limited and storage of large stockpiles is not ideal.
- The developer will explore all possible avenues for the reuse of construction waste as far as possible.

Concrete Waste

- Fresh concrete or cement will be isolated from any designated watercourse for 48 hours after placement. Containers or trucks carrying cement or fresh concrete will be washed at a site approved by the Supervisor's Representative.
- Concrete waste, including wastewaters from batching or cleaning, will only be disposed of at approved and designated disposal sites. All cement-contaminated wastewater from cleaning or mixing is to be considered toxic, and must be prevented from entering any watercourse for at least 48 hours to allow the water to reach neutral pH.