ENVIRONMENTAL MANAGEMENT PLAN

Ministry of Finance and Economic Planning

Government of St. Vincent and the Grenadines

Regional Disaster Vulnerability Reduction Production

CONSTRUCTION OF SATELLITE WAREHOUSE

BEQUIA

AUGUST 2017

Stewart Engineering Limited

Table of Contents

1. Summary

St. Vincent and the Grenadines (SVG) is one of the most hazardous prone countries in the Eastern Caribbean. Over the past two years the country experienced four episodes of flooding. Three major weather systems in the past four years cost the country in excess of 560 million EC dollars and twelve (12) lives. These statistics do not speak to the constant threat of volcanic eruptions, infectious diseases, plant pathogens, international trade regimes, global climate change, global economic uncertainties and new and emerging threats. St. Vincent and the Grenadines' vulnerability places the island state under the international radar as a country needing international support to strengthen its DRR capabilities[1].

In strengthening SVG's disaster risk reduction capabilities, the government has obtained World Bank funding to implement the Regional Disaster Vulnerability Reduction Project. One activity under this program is the construction of satellite warehouses to store emergency equipment and supplies to allow for quick and efficient response in times of disaster. One such warehouse is proposed to be built at Port Elizabeth in the Grenadines Island of Bequia.

The proposed works will broadly include but not limited to:

- The clearing of an existing site of grass and shrubs.
- The construction of a reinforced concrete structure, with administrative office, wash rooms and loading bay.
- Installation of storage shelves with ladder.
- Installation with cold storage facility.
- Installation of hurricane proof windows and doors.
- Construction of a chain link perimeter fence.

[1] St. Vincent and the Grenadines Country Profile, 2013.

1.1 Introduction

Four satellite ware houses are to be constructed in St. Vincent and the Grenadines, two (2) on the mainland located in Georgetown and Mesopotamia on the Windward side of the Island while the other two are to be built in the Grenadines Islands, one (1) in Union Island and the other in Bequia. These projects are to be implemented by the Government of St. Vincent and the Grenadines under the Regional Disaster Vulnerability Reduction Project (RDVRP) component one prevention and adaptation investments, financed through grants and credits provided by the World Bank and the Climate Investment Fund's Pilot Program for Climate Resilience (PPCR). The objective in constructing the satellite warehouse in Bequia is to provide quick and effective response and relief to people and areas that might experience damages to buildings, flooding, and landslides that may occur due to hurricanes or weather systems.

The satellite warehouse is to store emergency supplies of first responder's tools and equipment along with medical supplies. Administration of the warehouse at Port Elizabeth in the Grenadines Island of Bequia will be under the purview of the National Emergency Management Organisation (NEMO).

The warehouse will be a reinforced concrete structure with three sections of parapet concrete roofs with a loading bay at the front of the building. Internally, the main features of the floor plan will consist of an administrative office, male and female wash rooms, sorting area and a storage area equipped with shelves.

1.2 OBJECTIVE

The primary objective of this Environmental Protection Plan is to protect the natural and physical environment from unnecessary and irreversible damages due to construction activities. Also this plan seeks to ensure the health and safety of the working staff where the general public is protected throughout the life cycle of the project.

The secondary objective is to ensure corrective or remedial measures are applied to negative impacts that are unavoidable.

1.2 Project Design and Site Layout

The Port Elizabeth satellite warehouse site has an approximate area of 5,440 sq. ft. The site is bounded by a fourteen feet wide concrete road to the north separating it from the Bequia Community High School. The West is an area containing the Sunshine School and residential buildings.

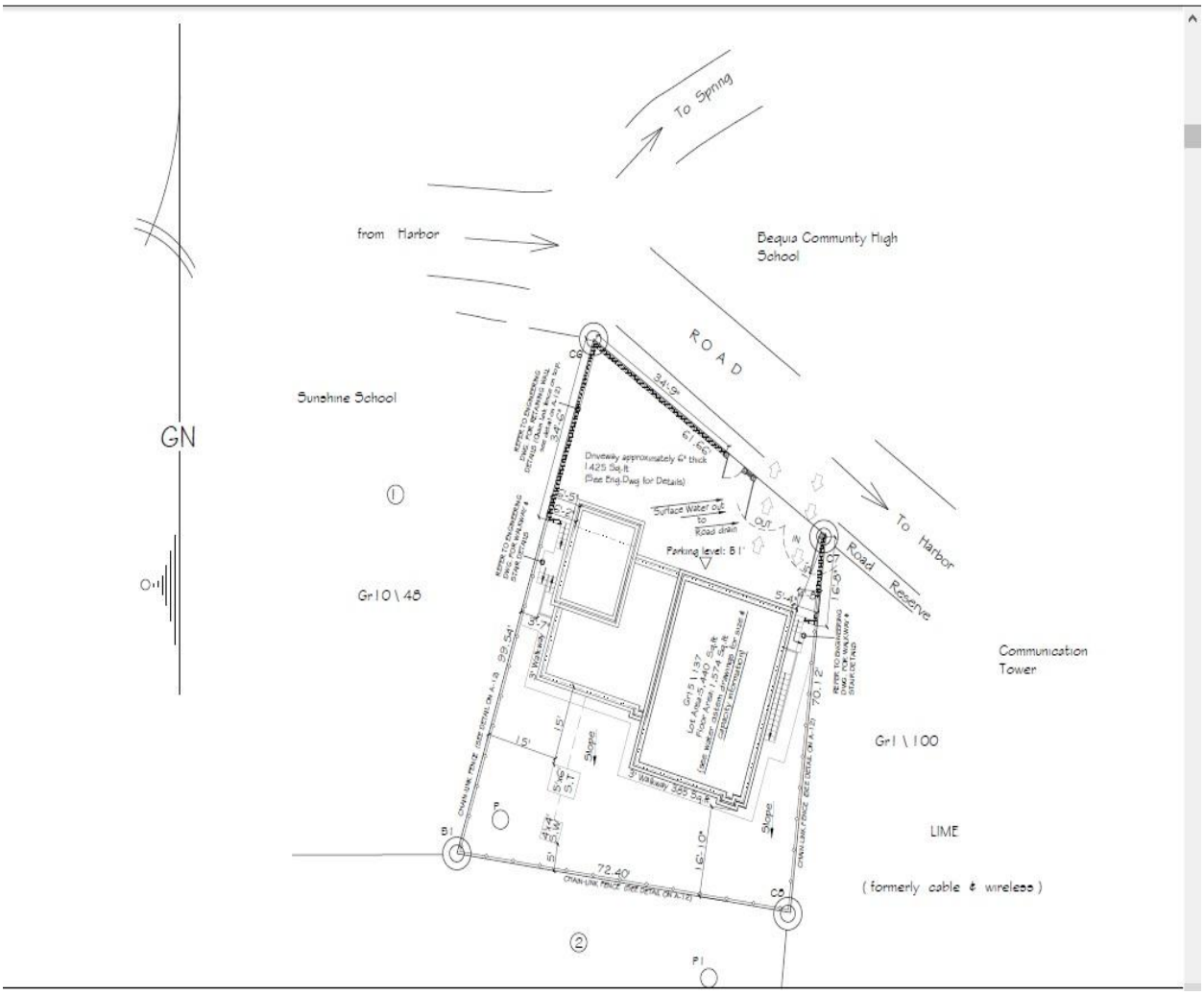

Figure 1: Site Plan

Figure 2: Location Plan

The warehouse will consist of three main areas, an administrative section of 216.76 sq. ft., a loading bay of 108.6 sq. ft., a sorting area of 121 sq. ft., a storage space of 820.8 sq. ft., a mechanical room of 44 sq. ft., and two water cisterns of total capacity 28,719.59 gallons.

1.3 Construction, Operation and Schedule

The Bequia Satellite Warehouse is likely to begin construction in October 2017, and is expected to be completed in six months. Once the Contractor has been selected after a process of national competitive bidding, the Contractor will be required to produce a construction method statement, project schedules and progress reports. An environmental control assessment plan will be prepared following the guidelines of the World Bank environmental framework.

There are other World Bank's operational policies that should be taken into account in the environmental assessment, especially:

OP 4.04 – Natural Habitats
OP 4.11 – Physical Cultural Resources
OP 4.36 – Forest

According with the EMF, the overall Regional Disaster Vulnerability Reduction Project (RDVRP) has not been deemed to have any major negative environmental impacts but because of the presence of the civil works with minor to moderate impacts, the project has been classified as a **Category B project**. The implementation of appropriate mitigation and management measures will assist in reducing any potential negative impacts from the various project components. This means that while there will be some negative impacts, they can be identified and managed through fairly standard means.

These simple projects would include an Environmental Management Plan (EMP), in accordance with Annex C of the World Bank's OP 4.01. The EMP is an instrument that details the measures to be taken during the implementation and operation of a project to eliminate or offset adverse environmental impacts, or to reduce them to acceptable levels, and the actions needed to implement these measures.

However, it will be found, as details emerge, that the possible environmental effects could be significant or that sensitive areas or natural habitats could be affected. In those cases, it is necessary to have an Environmental Impact Statement (EIS) to perform an Environmental Impact Assessment (EIA).

- The way to decide if the EMP is enough or if it is necessary to perform an EIA is a screening process, described in the EMF. The main tools are checklists, included as appendices in the EMF: Project Environmental Screening Checklist Form Part 1, Project and sponsor information. The applicant or project sponsor is responsible for the completion of this part.
- Project Environmental Screening Checklist Form Part 2. Preliminary screening of environmental impact. The Lead/Approving Agency is responsible for the completion of this part.

The EMF includes a sample table for "Identification of Complex/Sensitive Projects", useful as an advance of the screening process. In the following page the tables for the Bequia Satellite Warehouse project is included.

Identification of Complex/ Sensitive Projects Bequia Satellite Ware House		
Characteristic of Sub-project or Activity	***Yes/No***	***Observations***
1. Does the project involve construction of new roads, or major rehabilitation of existing roads?	No	
1. Does the project involve dam construction, reconstruction, rehabilitation, or strengthening?	No	
2. Does the project involve hazardous materials management and disposal (e.g. asbestos, medical or infectious waste, solvents or gasoline) except small amounts normally used during construction?	No	There will not be direct usage of gasoline or diesel on the project except for being used by construction equipment. Spill pads will be on site.
3. Will the project significantly modify any coastal zone features, reef or marine features?	No	The project is not located in the vicinity of any coast line.
4. Could the project activities significantly affect any natural or protected areas or Forest Reserves located within 1 km (0.62 miles) of the project	No	
5. Could the project activities significantly affect the habitat of endangered species of plant or animals?	No	
6. Would the project impact or affect the habitat of endangered species of plants or animals?	No	
7. Is the project within proximity of noise sensitive receptors like hospitals or schools?	Yes	The Bequia Community High Secondary school & The School for Children with Special needs is located approximately 50m & 20m respectively from the proposed project.
8. Could the project adversely affect critical resources such as drinking water?	No	
9. Could the project adversely affect natural waterways (streams, rivers, or wetlands) by sedimentation, pollution, flooding, draining, or filling)?	No	
10. Would the works adversely affect cultural property, including archaeological and historic sites?	No	
11. Would the works require levelling and clearing of lands with natural habitat (those water or land areas where most of the original plant and animal's species are still present)?	No	
12. Does the project involve the use of introduced, non-native species?	No	
13. Does the project involve the use of pesticides, herbicides, or other agents to destroy pests?	No	
14. Does the project pose a high risk of causing landslides, slips, slumps, rock-falls, debris-flows, or excessive erosions?	No	
15. Will the project result in the violation of St. Vincent and the Grenadines law, international treaty, or Bank Policy?	No	

2. Permits and Approvals Requirement

St. Vincent and the Grenadines has enacted several pieces of environmental management legislation that has as its objective the protection, conservation, enhancement and restoration of the natural resource base of the country. The Town and Country Planning Act require that all development in the state apply for and obtain approval from the Physical Planning and Development Board before proceeding.

2.1 Legislative Framework

*The Town and Country Planning Ac*t (No.45, 1992) is designed to guide planning in St. Vincent & the Grenadines and falls under the jurisdiction of Ministry of Housing, Informal Human Settlement, Physical Planning , Lands and Surveys. Under the Act, Article 29, an Environmental Impact Assessment (EIA) for environmentally sensitive projects or activities is required. The Physical Planning Unit (PPU) has the legal authority for environmental management in general under this Act, including the evaluation of, the need for and level of EIA required.

Within this piece of legislation lies the authority of the Planning Department to "*make provision for the orderly development of land, the assessment of the environmental impacts of development, the grant of permission to develop land and for other powers to regulate the use of land, and for related matters.*" The Physical Planning Board has a cadre of experts drawn from the public and private sectors and has the authority to co-opt other relevant expertise as need be.

The Physical Planning Unit (PPU) is responsible for ensuring that project development occurs in accordance with the environmental and social standards of St. Vincent & the Grenadines. As part of its regular responsibilities, the PPU will review the EIA and development applications as well as oversee all other development control related matters, from inspection, to monitoring and enforcement.

This EIA is provided in accordance with the Physical Planning Unit approval process.

Other legislations with bearing on this development include:

The Public Health Act which makes provision for securing and maintaining of health in St. Vincent and the Grenadines. Part 8 of this Act speaks to the issue of nuisance. Any activity (waste disposal, construction, fires, etc.) that in the opinion of the Public Health Authority is injurious to health may be deemed a nuisance and necessary action taken to eliminate the threat.

The Litter Act No. 15 of 1991. (1) Without prejudice to any proceeding for an offence under section 3 or 4, where litter is left in or on any public place or any private premises in such circumstances as to cause, contribute to or tend to the defacement thereof, and when the authority considers that the premises viewed from a public road, street or highway, is unsightly or seriously detrimental to the amenities of the neighbourhood, the local authority may give notice in Form A or B of the Schedule to the person responsible for the littering or to the owner or occupier or other person having control of such place or premises, seven days shall be sufficient to prove that the letter containing the notice was properly addressed and posted.

A person who fails to comply with the requirements of a notice under subsection (1) is liable to a fine on summary conviction in a Magistrate's Court.

Noise Act No. 18 of 1988 makes new provisions in respect of the control of noise and vibration with a view to their abatement. Section 5 of the Act applies to work on construction; the erection, construction, alteration, repair or maintenance of buildings, structures or roads. Where it appears to the Board that works to which this section applies are being carried out on any premises, it may serve a notice imposing requirements as to the way the work is being carried out and may publish notice of the requirements in such a way as appears to it to be appropriate.

..1. *The Central Water and Sewerage Act No. 6* of 1978 establishes the Central Water and Sewerage Authority whose duties include investigating the water resources, formulate proposal for meeting existing and future water needs. The Act gives the CWSA broad powers to provide for the conservation, control, apportionment and use of water resources. The Act also makes provision for the investigation of water resources of St. Vincent and to advise and make recommendations to the Minister relating to

improvement, preservation, conservation, utilization and apportionment of those resources and provision of additional water supplies.

..2. *The Motor and Road Traffic Act and Regulations* are included in the Laws of St. Vincent and the Grenadines and are designed to regulate and control the flow of traffic. This is done by way of sign posts, markings, reflectors and bumps on the street's surface. The traffic branch of the Royal St. Vincent and the Grenadines Police Force is charged with enforcing these regulations.

3.0 Environmental Impact Assessment

In keeping with the guidelines of the Environmental Management Framework for the RDVRP, the environmental impact assessment should examine baseline conditions and triggers for:

a) Air
b) Water bodies
c) Vegetation cover
d) Coastal resources
e) Traffic
f) Residential communities

These elements along with other relative concerns will be examined under the following captions:

1) Natural Resource setting
2) Social Considerations

3.1 Natural Resource Setting (Physical or Biotic Environment)

The warehouse is located at what may be defined as a residential community adjoining a commercial area. North of the proposed warehouse site is an access road and the Bequia Community High School. The area toward the East is occupied by a playing field, to the West by the Sunshine Pre-School and on the South by a residential area. The characteristics of the physical environment is therefore one of concrete buildings with galvanized roofs separated by concrete roads. The Caribbean Sea is a few hundred meters to the west and south of the site.

3.1.1 Air/Wind Circulation and Quality

Existing Condition: The prevailing winds across St. Vincent are the North-East Trade Winds generated over the Atlantic Ocean which is to the east of the proposed Satellite Warehouse. Hence, there is a steady influence of sea-breeze.

The air quality in the area is very good; the composition is standard and particulate matter minimal. However, this quality is occasionally compromised by fumes from vehicular exhaust but the condition does not persist given the steady movement of air characteristic of the island.

Anticipated Impact: This activity can add particulate matter to the air thus reducing its quality; dumping of sand and aggregate, pouring of powdered cement, dismantling the wooden roof frame and the breaking of concrete structures will all produce particulate matter that could be caught up in the air stream. Such particulate matter could constitute a nuisance for the adjacent community by falling on windows, furniture, and clothing left in the sun to dry. Additionally, persons predisposed to respiratory problems or migraines can be challenged by increased particulate matter in the air.

Proposed Mitigation: No construction material capable of producing dust will be left on the road way or uncovered on the premises. Sand and gravel will be wet at regular intervals or kept covered. Cutting of lumber with power saws will be done under covered sheds with ply wood screens; light cut jobs with hand saws can be done in the open but should be avoided at roof height. If large bags of cement are used they will be kept indoors and required amounts moved to mixer in appropriate sized storage skips.

Workers would be appropriately attired at all times especially for cutting wood, mixing cement or moving soil or gravel. These assignments require the workers to use dust masks and protective eye gear.

3.1.2 Soils and Topography

Existing Condition: The soil is a sandy loam atop a clayey base. The land is gently sloping and is about eighteen (18) metres above sea level. Approximately eight hundred (800) meters west of the site is the Princess Margaret Harbour. No river is in the vicinity of the site.

Anticipated Impacts: This proposed development will have little to no impact on soil or topography. The only earth works expected to be done is the excavation of foundation trenches to support reinforced concrete columns. Minimal soil movement will be associated with this activity. Any soil excavated will be used as fill so that there will be no removal of soil from the premises.

3.1.3 Water Resources

Existing Conditions: The Caribbean Sea is a few hundred metres to the east of the site. Potable water is mainly obtained by harvesting of rain water in this area; care must be taken to avoid waste water from contaminating the catchment area during and after construction (Fig. 4). The new constructed warehouse will have water storage cistern with a capacity of 28,719.59 Gallons.

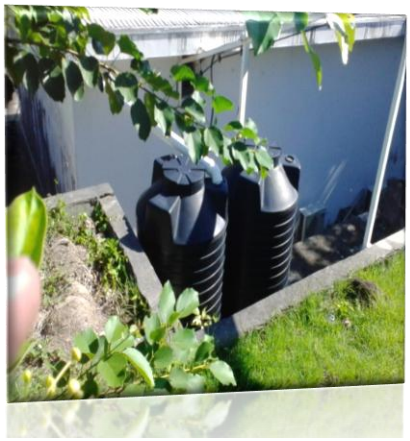

Figure 2: Existing Old Masonry Water Tank

Anticipated Impacts: Curb and slipper drains will be constructed around the perimeter of the building, and will be connected to curb and slipper drains at the south and east of the proposed site.

Proposed Mitigation. No debris from the construction site will be allowed to clog the existing drainage system.

The construction exercise will employ 'Green' techniques wherever possible. Rain water harvesting techniques will be done with the aid of a roof collection system consisting of PVC gutters connected to concrete water cisterns. This will effectively reduce the amount of runoff water entering the drains while providing water security.

3.1.4 Transportation

Existing Conditions: The main road ways pass to the north and south of the project site. The bypass road from the main road passes immediately in front of the project site. Vehicular traffic along the road is bi-directional. From the main road ways, smaller roads radiate into the community. One of these roads separates the site from the Community High School.

Anticipated Impacts: This construction work has the potential to disrupt the flow of traffic. There is not enough internal space on the compound to contain all of the material and equipment associated with this development along with parking for vehicles.

Proposed Mitigation: To avoid congestion on the road**,** the Contractor should ensure that trucks loading and unloading use the premises and not the public road. Alternative parking should be provided for workers and construction vehicles.

3.1.5 Land Use, Land Use Plans and Zoning

Existing Conditions: The Satellite Warehouse project will not make any changes to the land use during that time. This area is designated a residential zone.

Anticipated Impacts: The construction of the Satellite Warehouse will greatly improve the effectiveness of emergency responses. Given the number of emergencies experienced by St. Vincent & the Grenadines over the past decade and the warnings that global climate change can exacerbate this situation, it is reasonable to expect that this building will provide an important service to the communities.

Proposed Mitigation: This development will not change the use or physical character of the area. However, during emergencies, the shelters in SVG are manned by security personnel; this scenario is expected to remain in place and to be improved to serve evacuees and resident community members better.

3.1.6 Community Facilities and Services

Existing Situations: The Satellite Warehouse will serve the entire Bequia Island. There is the Port Elizabeth Police Station, Secondary School and Community Centre Playing Field, the Community High School, the Port Elizabeth Harbour and several isolated residential buildings which form the setting in which the Warehouse will be built.

Anticipated Impacts: There will be no interruption to the operations of any of the administrative buildings, schools or community centre during construction works. The community high school adjacent to the construction site which is most likely to be affected by construction activities has the choice of accessing the school from two roads. The entrance to the school compound is accessible from several directions.

Proposed Mitigation: No construction activity will be allowed to interfere with the daily operations of the community facilities.

3.1.7 Aesthetic Resources and Community Character

Existing Conditions: The construction of the satellite warehouse will greatly improve the aesthetics of the area.

Anticipated Impacts: The newly constructed satellite warehouse will impact the character of the community in a positive way; by improving the aesthetics of the area, and property values can be enhanced.

Proposed Mitigation The building material and design will match the existing structures so that the building does not look out of place.

3.2 Social Consideration

This project will be constructed near to a residential area. Due consideration must be given to the comfort and convenience of residences. Consequently, noise, work hours, pedestrian safety and waste management will be carefully monitored.

3.2.1 Noise

Existing Condition: Apart from the noise associated with the school and intermittent noise associated with the vehicular traffic, the noise level in this community is very low and similar to all the surrounding communities. The occasional renovation and construction of houses is considered to be normal, is short lived and acceptable.

Anticipated Impact: The sound of heavy equipment on a construction site will not be much louder than that associated with the revving of vehicles using the road on which residents would have been accustomed to hearing. Construction noises of heavy vibrations, high-pitched ringing and dull heavy throbs are unusual and may be a nuisance to some residents, particularly older, retired persons who may sleep later in the morning or take an afternoon nap.

Proposed Mitigation: The use of heavy equipment (mainly trucks) will be restricted to regular working hours (8:00am to 4:00pm). If it becomes necessary to do otherwise, the residents will be notified at least one week in advance. Heavy equipment working on this site will be serviced before entering the site to ensure that exhaust pipes with silencers are properly in place. Vehicles will not be permitted to stand idle on site with their motors running.

3.2.2 Pedestrian Safety

Existing Conditions: There is designated grass reserved pedestrian walk-way in this area. Pedestrians are required to walk on the right hand side of the road facing the direction in which they are moving. This arrangement is so that pedestrians would face the vehicle coming towards them with less concern for the one behind them.

Anticipated Impact: This project can cause a temporary increase in vehicular traffic in the area so exposing pedestrians to some danger. Pedestrians walking close to the site will not be exposed to falling objects or stumble on objects lying on the ground.

Proposed Mitigation: Designated parking would be found for workers away from the bypass or side road. For further safety, security signs will be erected around the site.

3.2.3 Waste Management

Existing Conditions: There is in St. Vincent a National Solid Waste Management Unit (SWMU) with legislative authority to manage the collection and disposal of solid waste and to deal with persons or institutions failing to comply with the regulation. The SWMU do regular collection in all communities including the Island of Bequia.

Anticipated Impact: The construction exercise will produce a quantity of used and broken building material. If not managed, these can become unsightly garbage dumps where rodents and insects – disease vectors – breed.

Proposed Mitigation: Waste material will be taken to the national landfill site for proper disposal. The Contractor will supervise the removal of waste from the site ensuring that only authorized waste management companies/vehicle/personnel are used and that the waste is moved in closed or covered vehicles.

3.3 **Working Hours**: In general, construction work in SVG is an eight hour day between 7:00 am and 5:00 pm. Workers on this project will work between those times and not on Sundays. If there is to be a change in this timing it would only be for a short period of time and residents will be notified of this change. All efforts will be made to conduct work during day light hours.

3.4 **Cumulative Impacts:** When environmental impacts from normal community life (noise, water and electrical consumption, waste generation, and traffic) are added to new activities (building, refurbishing), the cumulative impact can lead to intolerable conditions. In this case, however, the cumulative impact is not expected to be much different from regular normal conditions. This is because residents in the area have become accustomed to the vehicular traffic. The difference would lie in the quality and timbre of the sounds (noise), the type of waste and the means of containment. Keeping the construction site contained will eliminate any concern about the waste, and mitigation measures will be put in place to deal with the traffic.

3.5 **Utilities:** The proposed building will be supplied by rain water harvesting, electricity from St. Vincent Electricity Company (VINLEC) and telephone service from LIME. Electricity and telephone connections will be made to the building through cables attached to poles planted at the side of roads and not on the property under consideration. These cables are not sufficiently close to any building to affect or be affected by works taking place on the roof of the new warehouse.

VINLEC will be asked to provide a safe temporary connection at an appropriate point to support the electricity needs on the work site. The Satellite Warehouse building will be inspected by the relevant competent authority before the electricity is installed.

Appendix 1: Screening Checklist

• **PART 1-PROJECT AND SPONSOR INFORMATION**
Name of Action/Project: Bequia Satellite Warehouse
Project Location :Port Elizabeth, Bequia, Saint Vincent
Name of Applicant or Sponsor: Telephone: PMUCPD
E-Mail:empcpd@svgcpd.com
Address: Bay Street
: Kingstown
: Saint Vincent
Brief Description of Proposed Action/Project: This project involves the construction of a reinforced concrete Satellite Warehouse. The works to be done includes construction of a reinforced concrete building, with office, loading, sorting, storage facilities and water storage, washroom and drainage systems.

SITE INFORMATION		
Total acreage of the site of the proposed action?	**5,440**	**Sq. ft**
Total acreage to be physically disturbed?	**5,440**	**Sq. ft**
Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor?	**5,440**	**Sq. ft**
LAND USE AND PLANS		
Check all land uses that occur on adjoining and near the proposed action.		
Urban		
Rural		
Industrial		
Residential		

Commercial			
Forest			
Agriculture			
Parkland			
Other, Specify:			
	Yes	**No**	**N/A**
Is the proposed action consistent with adjacent uses?			
Is the proposed action consistent with the predominant character of the existing built or natural landscape?			
Is the proposed action/project compatible with the National Development Plan and other development plans?			
Is the site of the proposed action located in or adjoin an environmentally sensitive or valuable area**?** **No**.			
If Yes, specify:			
TRAFFIC MANAGEMENT	**Yes**	**No**	**N/A**
Will the proposed action result in a substantial increase in traffic above present levels?			
Are public transportation service(s) available at or near the site of the proposed action?			
UTILITIES	**Yes**	**No**	**N/A**
Will the proposed action connect to an existing public water supply?			
Will improvements be necessary to allow for connection?			
Will the proposed action/project be able to connect to an existing roadway?			
Will improvements be necessary?			
Will project require the re-location of existing roadways, drainage and other utilities?			
Will the proposed action/project require connection to the electrical grid after construction?			
Will the proposed action connect to an existing wastewater utility?			
What method is proposed to handle sanitary wastewater?			

Please specify **Transportation to public landfill.**_____			
WATER	**Yes**	**No**	**N/A**
Will the proposed action/project require connection to water mains?			
Will the project include any water conservation devices/techniques?			
Will the project include any rainwater capturing devices?			
AESTHETICS AND CULTURAL RESOURCES			
Is the project site known to contain any scenic vistas or recreation area that is important to the community? **No**			
Is the proposed action located in an archaeological sensitive area? **No**			
ENVIRONMENTALLY SENSITIVE AREAS	**Yes**	**No**	**N/A**
Does any portion of the site of the proposed action, or lands adjoining contain wetlands or other water bodies?			
Would the proposed action physically alter, or encroach into, any existing wetland or water body?			
If Yes, identify the wetland or water body and extent of alterations?			Acres
VEGETATION			
Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:			
Shoreline/Beach			
Forest			
Farmland			
Pasture			
Wetland			
Urban			
Rural			
SENSITIVE OR THREATENED SPECIES	**Yes**	**No**	**N/A**
Does the site of the proposed action or surrounding sites contain any species of animal or plant that are known to be threatened or endangered? **No**			
STORMWATER/DRAINAGE	**Yes**	**No**	**N/A**

Will the proposed action create storm water discharge, either from point or non-point sources			
Will the storm water discharges flow to adjacent properties?			
Will the storm water discharges flow to offsite drainage?			
Will storm water flow to onsite conveyance or drainage features/devices?			
Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)?			
Please describe:			
NATURAL HAZARDS	**Yes**	**No**	**N/A**
Is the project site located in an area that is prone to flooding?			
Is the project site located in an area that is prone to landslides?			
Is the project located in an area that can be inundated by storm surge?			
In what volcanic hazard zone is the project located?	**iv**		
Is the project site located in a coastal area that can be impacted by coastal erosion due to sea level rise and/or strong wave action?			

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: _____

Date: _____

Signature: _____

APPENDIX 2

Project Environmental Screening Checklist Form - Part 2

Part 2 –Preliminary Screening of Environmental Impact. The Lead/Approving Agency is responsible for the completion of Part 2. Answer all of the following questions using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "*Have my responses been reasonable considering the scale and context of the proposed action*?"

LAND USE AND PLANS	**NO TO MINIMAL IMPACT**	**MODERATE IMPACT**	**LARGE IMPACT**
Will the proposed action create a material conflict with an adopted land use plan or surrounding uses?			
Will the proposed action result in a change in the use or intensity of use of land?			
Will the proposed action impair the character or quality of the existing community?			
Will the project conflict with any existing or planned adjacent uses?			
TRAFFIC MANAGEMENT			
Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure?			
UTILITIES			
Will major works be required to allow the project to connect to utilities?			
STORMWATER MANAGEMENT			

Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?			
Will storm water quality and quantity control devices/techniques be incorporated into project?			
SUSTAINABILITY			
Will the project incorporate any green/sustainable building practices/techniques?			
Will the project incorporate reasonably available energy conservation or renewable energy opportunities?			
Will the project incorporate energy conservation practices?			
Will the proposed action have an impact on existing water supplies?			
Will the project incorporate reasonably available water conservation fixtures/devices?			
Will the project incorporate water conservation practices?			
NATURAL RESOURCES			
Will the proposed action have an impact on environmentally sensitive areas (steep slopes, rivers, flood plains, unique habitats, etc)?			
Will the proposed action result in an adverse change to natural resources (e.g., forests, wetlands, water bodies, groundwater, air quality, flora and fauna)?			
Will the project result in a decrease in farmland?			

Will the project affect any endangered or threatened plant or animal species (on project or adjacent site)?			
AESTHETIC, CULTURAL AND HISTORICAL RESOURCES			
Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?			
Will the project result in the disturbance/removal of significant historical/cultural resources?			
PEST MANAGEMENT			
Will the project result in the increased use of chemicals used for the control/treatment of pests?			
Will the project employ the use of Integrated Pest Control?			

ENVIRONMENTAL CHECKLIST

The following checklist would be used by the Consultant when site inspections are conducted. Any "No" recorded represents a potential breach of regulation or indicates that improvements are needed. Details of nonconformity (NC) should be recorded in "Remarks". Any NC should be reported with reference to the checklist as coded. The responsible personnel should identify the root cause of NC and adopt appropriate corrective and preventive actions (CPA) for mitigation. Confirmation of the effectiveness of the CPA should be verified by Design consultant within an agreed time.

All significant findings are to be included in the Design consultant's monthly reports provided to the IA.

Construction stage / status during inspection : _____

Inspection Date : _____ **Inspection Time :** _____

Inspected by : _____ **Weather :** _____

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
1. Management				
1.1. Is the Site Supervisor nominated?				
1.2. Is a Complaints Register being maintained?				
1.3. Is site security adequate?				
1.4. Is there a site specific EMP?				
1.5. If yes, does it address all tasks and hazards?				
1.6. Are health and safety meetings regularly convened with contractor staff?				
1.7. Is a supervisor present during performance of potentially hazardous activities?				
1.8. Are certified drawings on site?				
1.9. Are insurances in place?				
2. First Aid				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
2.1. Is there a stocked and accessible First Aid Kit on site?				
2.2. Are emergency contact details available?				
2.3. Is emergency communication available?				
3. PPE				
3.1. Are workers equipped with PPE?				
3.2. Is PPE in good condition?				
3.3. Do workers wear dust masks when ambient air quality is not optimal?				
3.4. Are earmuffs worn during periods of excessive noise?				
4. **Working at heights**				
4.1. Are scaffolds and other work platforms complete and in good condition?				
4.2. Is fall protection equipment provided to all employees working above 2m?				
4.3. Is there edge protection at all edges where there is a risk that employees may fall off?				
5. Traffic/pedestrian movement				
5.1. Is access to adjacent properties properly addressed?				
5.2. Is pedestrian safety properly addressed?				
5.3. Is traffic management on and around the site adequate?				
6. Vehicles and Plant				
6.1. Are warning devices fitted and in working order (flashing lights, reversing alarm, warning signage)?				
7. Fire Hazards				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
7.1. Is there firefighting equipment available, accessible, adequate and maintained?				
8. Excavations, trenches and equipment				
8.1. Is topsoil reserved for reuse?				
8.2. Are excavations isolated to prevent accidental access?				
8.3. Are excavations exceeding 1.5m shored or benched?				
8.4. Is there safe means of access to and from excavations?				
8.5. Is there adequate protection to personnel in the excavation from falling material?				
8.6. Is excavated material placed a sufficient distance away from the excavation edge?				
8.7. Are slopes stabilised quickly, e.g. using seeding, mulching and bio engineering techniques?				
8.8. Are ladders and scaffolds adequately checked and in good working order?				
8.9. Are walkways cleared of trip and fall obstacles?				
8.10. Are adequate safety signs posted on site?				
9. Air Pollution/Dust Control				
9.1. Is the construction site watered to minimize dust generated?				
9.2. Are stockpiles of dusty materials (size with more than 20 bags cement) covered or watered?				
9.3. Is cement debagging undertaken in sheltered areas?				
9.4. Is concrete mixing undertaken in concrete mixing bays?				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
9.5. Are all vehicles carrying dusty loads covered/watered over prior to leaving the site?				
9.6. Are demolition work areas watered?				
9.7. Are dusty roads paved and/or sprayed with water?				
9.8. Is dust controlled during percussive drilling or rock breaking?				
9.9. Are plant and equipment well maintained? (if any black smoke is observed, indicate plant/equipment and location)				
9.10. Are there enclosures around the main dust-generating activities (e.g. grout mixing)?				
9.11. Is hoarding (not <2.4m) provided along boundaries and properly maintained (if any damage/opening observed, indicate location)?				
9.12. Are speed control measures applied (e.g. speed limit sign)?				
9.13. Others (specify)				
10. Water Pollution, Erosion and Sedimentation Control				
10.1. Do workers have adequate/separate sanitary facilities (septic tanks, chemical toilets or other facilities)?				
10.2. Do male and female workers use sanitary facilities provided?				
10.3. Are chemicals/hazardous materials such as fuel stored on site?				
10.4. Are they properly labeled and stored?				
10.5. Are chemical spill containment and response facilities and first aid facilities accessible to workers?				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
10.6. Are workers trained to respond to spills of materials they use?				
10.7. Is wastewater generated on site?				
10.8. Is any wastewater discharged to the storm drains?				
10.9. Is the wastewater being treated?				
10.10. Are wastewater treatment systems being used and properly maintained on site?				
10.11. Are precautions taken when working close to water course?				
10.12. Are adequate precautions in place for fuel and oil dispensing (e.g. spillage trays)?				
10.13. Are vehicles and plant serviced on site?				
10.14. Are measures provided to properly direct surface drainage to silt removal facilities (e.g. by provision of earth bunds / U-channels)?				
10.15. Are existing drains adequately cleaned or new drainage system constructed?				
10.16. Is water adequately re-channeled to control water flow?				
10.17. Are drainage channels and manholes free of silt and sediment?				
10.18. Are control measures such as silt fencing, vegetative barriers in place in place to prevent contamination of water courses?				
10.19. Are sedimentation traps/ponds free of silt and sediment?				
10.20. Are all manholes on-site covered and sealed?				
10.21. Are measures in place to prevent washing out of aggregate stockpiles?				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
10.22. Are vehicles and plant cleaned before leaving the site?				
10.23. Are wheel washing facilities well maintained to prevent overflow, flooding sediment?				
10.24. Is sand and silt settled out in wheel washing bay and removed?				
10.25. Is the public road/area around the site entrance and site hoarding kept clean and free of muddy water?				
10.26. Others (specify)				
11. Noise Control				
11.1. Is the work only taking place between 7 am and 7 pm, week days?				
11.2. Has work outside of these hours been approved by the project manager?				
11.3. Are conditions of approval of work outside these hours being complied with?				
11.4. Do air compressors and generators operate with doors closed?				
11.5. Is idle plant/equipment turned off or throttled down?				
11.6. Are any noise mitigation measures adopted (e.g. use of noise barrier / enclosure)?				
11.7. Were residents of the neighbouring community advised in advance of potentially noisy conditions?				
11.8. Others (specify)				
12. Waste Management				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
12.1. Is the site kept clean and tidy (e.g. litter free, good housekeeping)?				
12.2. Are inert and non-inert wastes contained separately?				
12.3. Are separated labelled containers/ approved areas provided for facilitating recycling and waste segregation e.g. waste oils, green waste?				
12.4. Are fuel tanks and drums of toxic and hazardous materials stored within a diked area or trailer and away from any watercourse, ditch or storm drain?				
12.5. Are construction wastes / recyclable wastes and general refuse removed off site regularly?				
12.6. Is construction waste or rubble disposed of at an approved landfill regularly (at least once monthly)?				
12.7. Are construction wastes collected and disposed of properly?				
12.8. Are workers using the bins for waste disposal?				
12.9. Are chemical wastes, if any, collected and disposed of properly?				
12.10. Are chemical wastes properly stored and labelled?				
12.11. Are oil drums and plant/equipment provided with drip trays?				
12.12. Are drip trays free of oil and water?				
12.13. Is there any oil spillage? Is the contaminated soil cleaned up immediately?				
12.14. Is litter, foam or other objectionable matters in nearby drain cleaned?				
12.15. Are asbestos wastes or mould/rat/bat contaminated materials present on site?				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
12.16. Are asbestos wastes or mould/rat/bat contaminated materials handled in accordance with national guidelines/best practice?				
12.17. Others (specify)				
13. Storage of Chemicals and Dangerous Goods (DG)				
13.1. Are chemicals/hazardous materials such as fuel, pesticides, stored on site?				
13.2. Are there MSDS available for Chemicals and DG in use?				
13.3. What types and quantities of DG are stored?				
13.4. Are they properly labeled and stored?				
13.5. Are adequate safety controls in place as outlined in the MSDS?				
13.6. Are proper measures in place to control oil spillage during maintenance or to control other chemicals spillage (e.g. drip trays)?				
13.7. Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?				
13.8. Are workers trained to respond to spills of materials they use?				
13.9. Others (specify)				
14. Protection of Flora, Fauna and Historical Heritage				
14.1. Are disturbance to terrestrial flora minimized (e.g. plants to be preserved)?				
14.2. Are disturbance to terrestrial fauna minimized (if rare species identified)?				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
14.3. Does any historical heritage exist on site?				
14.4. If historical heritage exists on site, have appropriate measures been taken to preserve it?				
14.5. Others (specify)				
15. Resource Conservation				
15.1. Is water recycled wherever possible for dust suppression?				
15.2. Is water pipe leakage and wastage prevented?				
15.3. Are diesel-powered plant and equipment shut off while not in use to reduce excessive use?				
15.4. Are energy conservation practices adopted?				
15.5. Are aggregate materials obtained from an approved source?				
15.6. Is the source of aggregate material verified?				
15.7. Are materials stored in good condition to prevent deterioration and wastage (e.g. covered, separated)?				
15.8. Others (specify)				
16. Emergency Preparedness and Response				
16.1. Is the site adequately lit?				
16.2. Are fire extinguishers / fighting facilities properly maintained and not expired?				

Inspection Items	Implemented?		NA	Remarks (specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
	Yes	No		
16.3. Are fire escapes not blocked / obstructed?				
16.4. Have there been any accidents on site?				
16.5. Are accidents and incidents (including sexual harassment) reported to the relevant authority, and reviewed with corrective & preventive actions identified, actioned and recorded?				
16.6. Others (specify)				

Signature of Site Inspector _____ Date _____

Reviewed by Design Consultant _____ Date _____

Improvement Request:

Project _____ Site Location _____

Inspection Date _____ Inspected by _____