

# ENVIROMENTAL MANAGEMENT PLAN FOR KINGSTOWN GOVERNMENT SCHOOL REFURBISHMENT



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## **Environmental Management Plan (EMP)**

An EMP is a site or project specific plan developed to ensure that appropriate environmental management practices are followed during a project's construction and/or operation.

An effective EMP should ensure:

- Application of best practice environmental management to a project
- The implementation of a project's EIA including its conditions of approval or consent
- Compliance with environmental legislation, and
- That environmental risks associated with a project are properly managed.

EMPs are valuable tools to:

- Define details of who, what, where and when environmental management and mitigation measures are to be implemented
- Provide government agencies and their contractors, developers and other stakeholders better on-site environmental management control over the life of project
- Allow proponents to ensure their contractors fulfil environmental obligations on their behalf, and
- Demonstrate due diligence.

## 1.0 BACKGROUND

### 1.1 INTRODUCTION

The Government of Saint Vincent and the Grenadines (GoSVG) has obtained assistance from the World Bank to develop a project to contribute to the reduction of vulnerability to natural hazards in Saint Vincent and the Grenadines. The proposed project is part of the Regional Disaster Vulnerability Reduction Program (RDVRP) Adaptable Program Lending (APL) for the East Caribbean Region.

The Disaster Vulnerability Reduction Project (DVRP) aims to measurably reduce vulnerability to natural hazards and climate change impacts and increase resilience in St. Vincent and the Grenadines. In this regard, the RDVRP will support the retrofitting of emergency shelters in an effort to secure lives. This action will strengthen the institutional capacity of the response agencies (NEMO and Ministry of Health Wellness and the Environment).

According to the Bank's Environmental Assessment (EA) Policy (Operational Policy OP 4.01), the DVR project is classified as Category B, meaning that environmental impacts for the type of work anticipated under the project are expected to be moderate in nature and can be managed through the application of appropriate engineering and management measures.

### 1.2 PROJECT DESCRIPTION

- Block A

- The main structure of Block A will be modified by the construction of an 8" shear wall along grid line (5) of the Ground Floor of Block A to improve the building's resistance to lateral loads. Also the existing timber roof frame will be strengthened and installation of new roof covering with satisfactory fixings and anchors to Block A.
- The walkway roofs will be reconstructed as a separate roof at a lower elevation;
- The existing windows and vent blocks will be replaced with industrial type aluminium louver windows.

- Block B

- The roof structure of Block B would be replaced with reinforced concrete tie beams at eave level to support a structural steel roof truss system

utilising galvanised steel purlins and profile steel sheets with screws fixed to the purlins.

- A new washroom block adjacent to Block A along with a covered walkway providing access from Block B will be constructed.
- A new "Kitchen and Tuck Shop / Storage Room" will be built to the west of Block B.
- The capacity of the drains will be increased by the construction of a low wall along the edge of the existing concrete pavement along the front of Block A.

### **1.2.1 Design and Site Layout**

The site for the Kingstown Government School has a total area of 26,276 sq. ft. (ref. Survey Plan – G4/100 – Fig.1). The site is bounded by Giles Street to the north, a 20ft. road reserve to the east, the Anglican Church Authority to the south and a Cinema to the west.

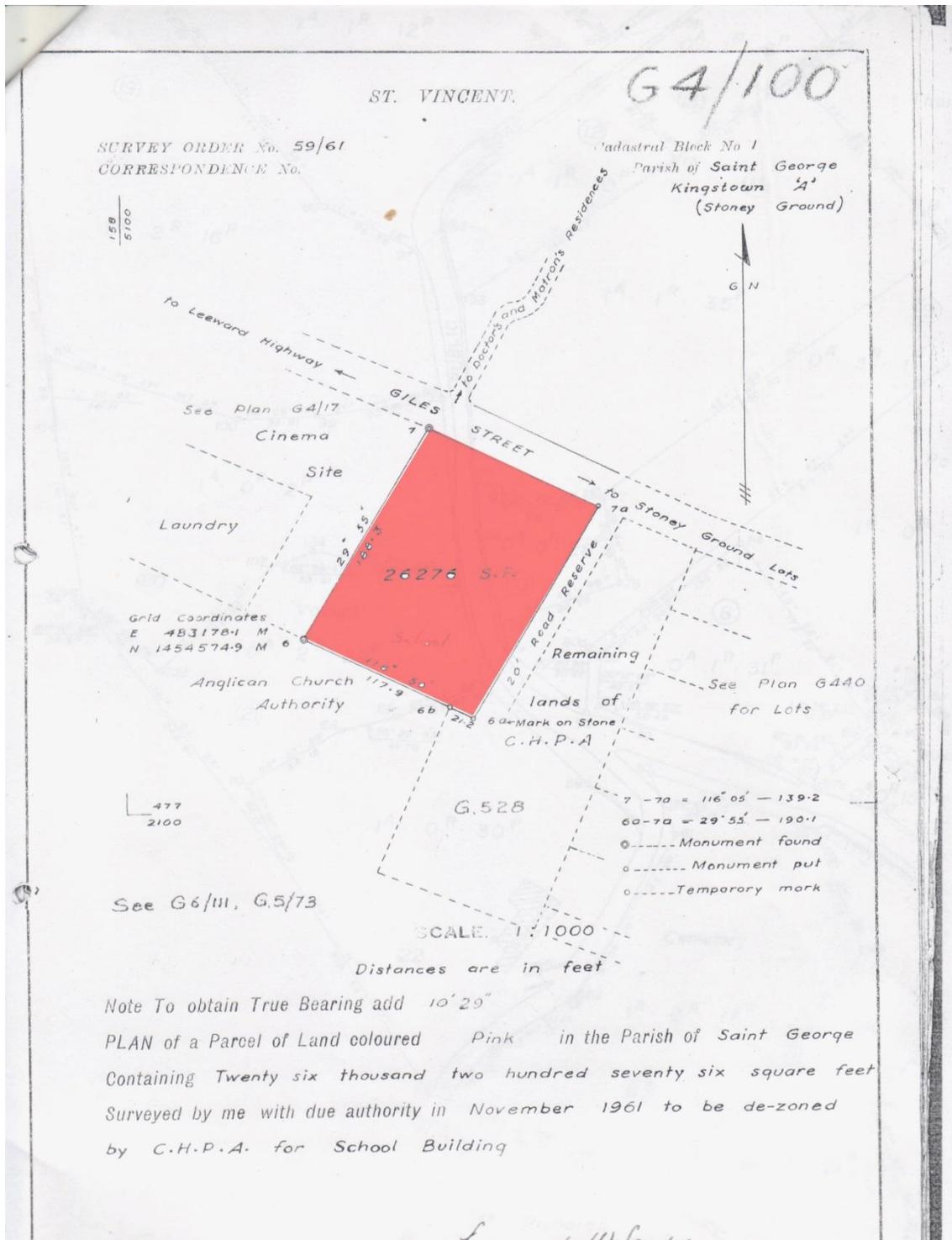


Figure 1: Site Plan

The school comprises two buildings: Block A (Fig 2) and Block B (Fig 3). Block A is a two storey rectangular building with a total floor area of approximately 4,770 square feet (s.f) and Block B is a single storey building with a total floor area of approximately 6,360 square feet

### 1.2.2 Construction Activities

The work to be undertaken involves:

- Removal of the timber framed gable roof covered with corrugated galvanised steel sheeting. Installation of new roof covering with satisfactory fixings and anchors to Block A;
- The construction of an 8” shear wall along grid line (5) of the Ground Floor of Block A. The walkway roofs to be reconstructed as a separate roof at lower elevations;
- Replacing the existing windows and vent blocks with industrial type aluminium louver windows;
- Replacing the roof in section B with reinforced concrete tie beams at eave level to support a structural steel roof truss system utilising galvanised steel purlins and profile steel sheets screws fixed to the purlins.
- Constructing a new wash rooms in block B.
- Improving the capacity of the existing drains.

## 2.0 ENVIRONMENTAL MANAGEMENT

### 2.1 ENVIRONMENTAL MANAGEMENT AND RESPONSIBILITY

The EIA for this project sets out obligations for the contractor as it relates to management of the site and activities to prevent or mitigate potential negative environmental impacts. These management responsibilities pertain mainly to containment, movement of products and protection of human health.

### 2.2 APPROVAL AND LICENSING REQUIREMENTS

**2.2.1 Permits:** Under the *Town and Country Planning Act*, authority is given to 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 act requires that Planning approval be obtained before any construction can legally be undertaken in SVG.

**2.2.2 Legislation:** St. Vincent and the Grenadines has legislations in place to address most environmental and social issues within the jurisdictions of respective ministries. The legislations considered most relevant to this project are summarized below.

**2.2.2.1 *The Town and Country Planning Act (No.45, 1992)*** is the principal legislation governing infrastructure development in St. Vincent. This Act guides the workings of the Physical Planning Unit (PPU) in SVG and falls under the jurisdiction of Ministry of Housing, Informal Human Settlements, Physical Planning, Lands and Surveys. Under the Act, Article 29, an EIA for environmentally sensitive projects or activities is required.

**2.2.2.2 *The Waste Management Act # 31*** of 2000 amended by Act # 26 of 2005 provides for the management of solid waste in conformity with best environmental practices.

**2.2.2.3 *The Environmental Health Services Act#14*** of 1991 makes provision for the conservation and maintenance of the environment in the interest of health generally and in particular to places frequented by the public.

**2.2.2.4 *The Noise Act #18 of 1988.*** AN ACT to make new provisions in respect of the control of noise and vibration with a view to their abatement. Section 8 of this act makes provision for a noise abatement order and a noise abatement zone.

**2.2.2.5 *The draft Environmental Impact Assessment Regulations*** requires that any project that converts prime agriculture lands to non-agriculture use or impair the agricultural productivity of prime agricultural lands shall be subject to an EIA. S

#### 2.2.2.6 Regional Obligation

**2.2.2.6.1** St. Vincent and the Grenadines is a signatory to the St. Georges Declaration (SGD) of Principles on Environmental Sustainability in the OECS. Principle one of the SGD requires that participating countries integrate Social, Economic and Environmental Considerations into National Development

Policies, Plans and Programmes. Principle four calls for the participation of civil society in decision making while Principle thirteen call for protection and conservation of biodiversity.

#### **2.2.2.6.2 International Obligations**

**2.2.2.6.2.1 The United Nations Convention on Biological Diversity (UNCBD).** This convention seeks to protect the diversity of life and their supporting habitats. St. Vincent and the Grenadines has ratified this convention and is therefore obligated to protect its biological resources including marine life forms.

**2.2.2.6.2.2 The United Nations Convention to Combat Desertification (UNCCD).** St. Vincent and the Grenadines has ratified this convention and is currently developing its National Action Plan in line with the global strategy for the ten year period 2008 to 2018.

**2.2.2.6.2.3 The United Nations Framework Convention on Climate Change (UNFCCC).** St. Vincent and the Grenadines has ratified this convention and is in the process of preparing its Second National Communications for submission to the Secretariat of the UNFCCC. Under this convention, consideration is given to variability in weather pattern and the accompanying intense storms and floods. Accordingly, the built environment must reflect these imperatives.

### **2.3 EMERGENCY CONTACTS AND RESPONSE**

The contractor is required to have on site means of communicating with relevant authorities in the event of emergencies. Emergency Telephone numbers should be displayed and assessable to all on site. Relevant authorities include but are not limited to:

- The Milton Cato Memorial Hospital Emergency Unit
- The Police
- The fire service only if combustible products are stored or used on the construction site.
- The CWSA
- The St. Vincent Electricity Services (VINLEC).
- The Traffic Department of the Royal St. Vincent and the Grenadines Police force.

## **3.0 IMPLEMENTATION**

### **3.1 RISK ASSESSMENT**

Saint Vincent and the Grenadines is vulnerable to a number of natural hazards such as hurricanes, earthquakes, volcanic activity, drought, flooding, and landslides. The effects of these phenomena can be exacerbated by the activities of humans such as deforestation, poor building practices, and unplanned settlements in environmentally sensitive areas.

With the increased frequency of intense weather events resulting from climate change, the risk of extreme weather events occurring has increased significantly. Between April 2010 and December 2013, SVG has experienced at least five weather events that resulted in loss of property.

Construction work carries a high degree of risk; workers on scaffolds, moving of heavy equipment and exposure to chemicals are all high risk. The International Labour Organization (ILO) defines decent work as safe and having appropriate compensation. Worker safety is critical to any operation, therefore, mishandling of equipment, the improper storage and usage of various chemicals and construction materials on site, poor and unsafe working conditions, high levels of continuous noise and fumes, as well as inadequate safety equipment can cause serious injury and down time to the workers and project and should therefore be avoided. Best management practices should always be implemented as labour laws hold the employer responsible for the workers safety. Proper facilities will need to be provided for workers in the interest of the workers and the environment.

## 4.0 MONITOR AND REVIEW

### 4.1 ENVIRONMENTAL MONITORING

It is standard practice for the Physical Planning department to conduct site visits during building Construction to ensure compliance with approved plan and agreed building conditions. During such visits, the inspectors are expected to have a checklist and a log so that they can track progress or deviation from approved standards. Inspectors are encouraged to use the check list below as a tracking tool.

### 4.2 EMP implementation

Implementation of this Environmental Management Plan involves:

- i. Identification of critical work activities, the safety and environmental implications of these activities and ways to mitigate any negative impact which they may have;
- ii. Regular collaboration with the Contractor; and
- iii. Continuous review of the Environmental Management Plan to adjust to changes in the site conditions.
- iv. Continual monitoring of the impact on the environment due to the implementation of this project; provision of feedback to the client, throughout.

***Safety on the site will be a collective responsibility of all parties – management, employees and the Physical Planning Unit.***

#### 4.2.1 Personnel

- i. Personal safety equipment must be worn on the project site at all times. These include safety glasses for eye protection, hard hats, respiratory masks, gloves and safety shoes as appropriate.
- ii. The unlawful manufacture, distribution dispensing, possession, or use of an illegal or controlled substance, and abuse of prescribed drugs, is prohibited in the workplace. All employees shall abide by the rules of this policy.
- iii. Employees shall inform the supervisor if he/she is taking strong prescription drugs that make them drowsy and/or warn against driving or using machinery.
- iv. Employees shall maintain a clean job site, and their working area free from rubbish, debris and clutter.
- v. Employers shall appoint within the rank of employees a trained site safety representative. The Safety Representative shall assume responsibility and ensure that the guidelines/checklists are adhered to for the safeguard of all personnel and the environment.

### 4.2.2 Monitoring Checklist

PROJECT IMPACT	REQUIRED ACTION (MITIGATION)	RESPONSIBLE PARTY	TIME FRAME
Excavation and Earth Works resulting in dust and spill unto adjoining premises	<ul style="list-style-type: none"> <li>• Installation of silt fences.</li> <li>Removal of unwanted top soil as soon as possible.</li> </ul>	Contractor	At project inception.
Traffic obstruction	<ul style="list-style-type: none"> <li>• No curb side parking for workers or trucks conducting business with the project</li> <li>• All loading and unloading will be done on the KGS premises</li> <li>•</li> </ul>	Contractor  Contractor	Daily  Daily
	<ul style="list-style-type: none"> <li>•</li> </ul>		

Noise	<ul style="list-style-type: none"> <li>• The contractor will notify the residents of the building time frame and actions i.e: time of arrival of heavy equipment, duration of use, daily working hours and any change in daily routine.</li> <li>• Heavy equipment will work only during regular work hours and not on weekends.</li> <li>• No equipment will be allow to stand with their engine idle (engine running) when not in use.</li> </ul>	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p>	<p>At start of project</p> <p>Throughout the project life</p> <p>Throughout the project life</p>
Dust impacting air quality	<ul style="list-style-type: none"> <li>• Any mounds of earth, sand, or aggregate related to this construction will be covered or kept wet.</li> <li>• All activities with the potential to produce dust will be minimized and dust control measures implemented</li> <li>• Cement and fine aggregate will be kept covered until needed. When need, care would be taken to minimize dust.</li> </ul>	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p>	<p>Daily</p> <p>Daly</p> <p>Daily</p>

<p>Solid and Liquid Waste</p>	<ul style="list-style-type: none"> <li>Waste collection and disposal pathways and sites will be identified for all major waste types expected from construction activities.</li> <li>All waste will be collected by licensed collectors and disposed of properly in approved landfills.</li> <li>Trucks moving waste and construction aggregate will cover their cargo</li> <li>The toilet facilities at the school will be available to workers</li> <li>The surface drains around the school will be expanded and covered.</li> </ul>	<p>Contractor and Solid Waste</p> <p>Contractor and Waste collection Agency</p> <p>Contractor and transport agencies.</p> <p>Contractor</p>	<p>At Project inception</p> <p>Weekly</p> <p>At all times</p> <p>At an appropriate time in keeping with the construction plan.</p>
<p>Occupational Health and Safety</p>	<ul style="list-style-type: none"> <li>Workers must be fitted with necessary equipment as well as protective gear as per their specific tasks such as hard hats, overalls, gloves, goggles, boots, etc.</li> <li>The contractor must ensure that there are basic medical facilities on site and that there are staff trained in basic first aid.</li> </ul>	<p>Contractor and worker</p> <p>Contractor</p>	<p>At employment</p> <p>At all times</p>
<p>Records</p>	<ul style="list-style-type: none"> <li>Appropriate posting of information within</li> </ul>	<p>Contractor</p>	<p>At all times</p>

	<p>the site must be done to inform workers of key rules and regulations to follow.</p> <ul style="list-style-type: none"> <li>• Waste disposal records must be kept in project log</li> <li>• Material data safety sheet</li> </ul>	<p>Contractor</p> <p>Contractor</p>	<p>At all times</p> <p>At all times</p>
Pedestrian safety	<ul style="list-style-type: none"> <li>• Provision for safe passage of pedestrians where construction interferes with normal route.</li> <li>• Appropriate fencing will be installed to avoid pedestrian wandering into work area.</li> </ul>	<p>Contractor and Police traffic department</p> <p>Contractor and police traffic department</p>	<p>Whenever access is impeded</p> <p>At all times</p>

**4.3 CORRECTIVE ACTION**

Where and when ever a negative action is observed by the contractor or site inspector, corrective action should be taken as soon as possible. In the case of defective scaffolds or other physical support structures, work in that area should stop until the corrective actions taken. It is the responsibility of the contractor to ensure that corrective action is taken using established and acceptable methods and materials.

Any action that threatens health or life should be treated as an emergency and given priority action. Corrective action should be checked and cleared by the site inspector before work is allowed to continue.

All negative actions, the response/mitigation measure, persons involved and any impact should be recorded and kept in the project log.