Environmental and Social Management Plan (ESMP) – Sauteurs Health Centre

Design and Supervision for the Refurbishment of Mt. Gay Hospital, General Hospital (ICU & Rathdune), Sauteurs and St. David's Health Centres

The Government of Grenada, Ministry of Health, Wellness & Religious Affairs

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Client Name: **The Government of Grenada, Ministry of Health, Wellness & Religious Affairs**

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Acronyms and Abbreviations

Parties & Stakeholders

GoG	–	Government of Grenada
GSWMA	–	Grenada Solid Waste Management Authority
MHWRA	–	Ministry of Health, Wellness and Religious Affairs
MIT	–	Ministry of Mobilisation, Implementation and Transformation
OECS	–	The Organisation of Eastern Caribbean States
PAHO	–	The Pan American Health Organization
WBG	–	World Bank Group

Technical

D&SC	–	Design and Supervision Consultant
E&S	–	Environmental and Social
EHS	–	Environmental, Health and Safety
ESMF	–	Environmental and Social Management Framework
ESMP	–	Environmental and Social Management Plan
ESHS	–	Environment, Social, Health and Safety
GCC	–	General Contract Conditions
HVAC	–	Heating, Ventilation, and Air Conditioning
MSDS	–	Material Safety Data Sheet
OECSRHP	–	OECS Regional Health Project
PCU	–	Project Coordinator Unit
PIU	–	Project Implementation Unit
PPE	–	Personal Protective Equipment
TAMCC	–	T.A. Marryshow Community College
VOCs	–	Volatile Organic Compounds

1. INTRODUCTION

1.1 Background

The Government of Grenada (GoG) through the Ministry of Health, Wellness & Religious Affairs, (MHWRA) is implementing the OECS Regional Health Project (OECSRHP) through renovations works with funding from the World Bank with the objective to bring the Sauteurs Health Centre to the A70 Rating or upgraded to meet the Pan American Health Organization (PAHO) 'Smart' Health Facilities standard of being SAFE and GREEN using a toolkit and guidelines.

Details of the OECSRHP can be found on the Government of Grenada (GoG) and World Bank websites for the project. The purpose of the renovations and rehabilitation works is to upgrade and improve the clinic facilities and condition in accordance with PAHO 'SMART' protocols.

- Architectural, structural, civil, electrical and mechanical upgrades:
    - repairs to the structural elements of the four existing buildings on site;
    - new covered walkway between (a) the main Admin Building and the Nurses Residence and (b) Main Admin Building and the Maternity Ward;
    - pavement works to existing access road and reinstate surface drainage;
    - interior improvements featuring new wall, floor, and ceiling finishes, hurricane impact-resistant windows, new doors, and anti-microbial laminated cabinetry;
    - improvement of potable water and wastewater plumbing, and wastewater collection and treatment system;
    - improvement to electrical wiring, control systems, and power connections;
    - supply and installation of an emergency supply power (e.g. diesel generator);
    - improvement of Heating, Ventilation, and Air Conditioning (HVAC) systems using high efficiency units;
    - replacement of sanitary fixtures with water efficient, hospital-grade fixtures;
    - installation of solar systems (photovoltaic and water heating).
- Temporary relocation of services will take place at the T.A Marryshow Community College (TAMCC) Building Block

1.2 SMARTing Health Facilities

The SMART Hospital Project was funded by the UK Foreign, Commonwealth & Development Office (FCDO) [formerly the Department for International Development (DFID)] and implemented by PAHO. The project sought to develop resilient and climate-adapted health care facilities. Its stated aim is "to provide safer, greener health facilities to deliver care in disasters".

Detailed checklists are used to determine "safety" and "greenness" scores with recommendations to achieve a score to meet the objective of "SAFE + GREEN = SMART".

The Ministry of Health, Wellness and Religious Affairs (MHWRA) of the Government of Grenada and the Organization of Eastern Caribbean States (OECS) have adopted the SMARTing guidelines regarding improving the health care services infrastructure of the island and has therefore referred to such in the scope of this project.

This ESMP provides a due-diligence assessment of the work to be accomplished at Sauteurs Health Centre and lays out the environmental and social (E&S) measures to be undertaken during the upgrade works, to achieve compliance with applicable environmental and social safeguards requirements.

Based on the screening conducted for this project (see **Annex 1**) this Environmental and Social Management Plan (ESMP) is required to identify and appropriately manage environmental and social risks.

This ESMP provides guidelines and requirements to ensure the protection of construction workers, and the community from environmental and social risks associated with the renovation and rehabilitation works to upgrade the clinic. The ESMP seeks to ensure that the rehabilitation and operation of the facility is compliant with national and regional environmental regulations, and consistent with international best practices and World Bank safeguards policies, in accordance with the ESMF created for the project.

2. PROJECT DESCRIPTION

This section focuses on the existing conditions and specific works related to the rehabilitation of the building. General information of the environmental and social baseline conditions relevant to the Grenadian context has been provided in the ESMF.

The Grenada Smarting Hospitals project aims to transform key healthcare facilities across Grenada into modern, technologically advanced smart hospitals. This initiative will significantly enhance the quality of healthcare services, improve patient outcomes, and increase the overall efficiency and resilience of the health care system.

2.1 Project Scope and Background

The Sauteurs Health Centre renovation and rehabilitation works is to upgrade the clinic for the treatment of persons needing medical care. The facility provides care for patients and will be outfitted with all necessary medical equipment, furniture and fittings and ancillary structures. It is staffed with the necessary medical personnel including doctors, nurses including registered nurses and nursing aides, and other ancillary staff.

The works will consist of architectural, structural, civil, electrical and mechanical upgrades, namely:

a) repairs to the structural elements of the four existing buildings on site;

b) new covered walkway between (a) the main Admin Building and the Nurses Residence and (b) Main Admin Building and the Maternity Ward;

c) pavement works to existing access road and reinstate surface drainage;

d) interior improvements featuring new wall, floor, and ceiling finishes, hurricane impact-resistant windows, new doors, and anti-microbial laminated cabinetry;

e) improvement of potable water and wastewater plumbing, and wastewater collection and treatment system;

f) improvement to electrical wiring, control systems, and power connections;

g) supply and installation of an emergency supply power (e.g. diesel generator);

h) improvement of HVAC systems using high efficiency units;

i) replacement of sanitary fixtures with water efficient, hospital-grade fixtures;

j) installation of solar systems (photovoltaic and water heating).

2.2 Location and Description of Building

Sauteurs Health Clinic is located on the northern side of Grenada and was reported to have been built in the early 1980's during the primary health expansion program.

It consists of four one-storey buildings:

1. Main Administration Building (Gross Floor Area: 167 m^2 (1,800 ft^2))
2. Maternity Ward (Gross Floor Area: 62 m^2 (668 ft^2))
3. Nurse's Residence (Gross Floor Area: 85 m^2 (918 ft^2))
4. Environmental & Mental Health Building (Gross Floor Area: 85 m^2 (916 ft^2))

Full floor plans are provided in the Preliminary Design Drawings submitted under separate cover.

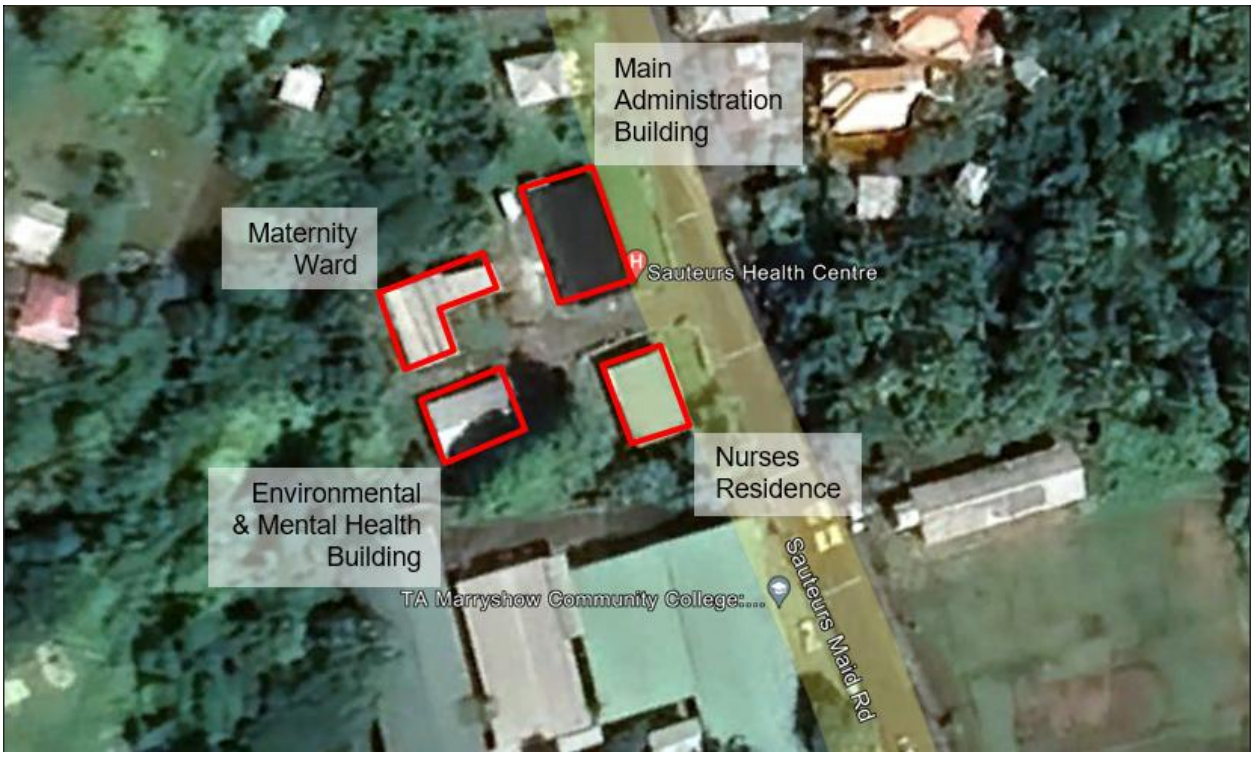

Figure 2-1: Showing Aerial View of Sauteurs Health Centre

Figure 2-2: Showing Entrance to Sauteurs Health Centre

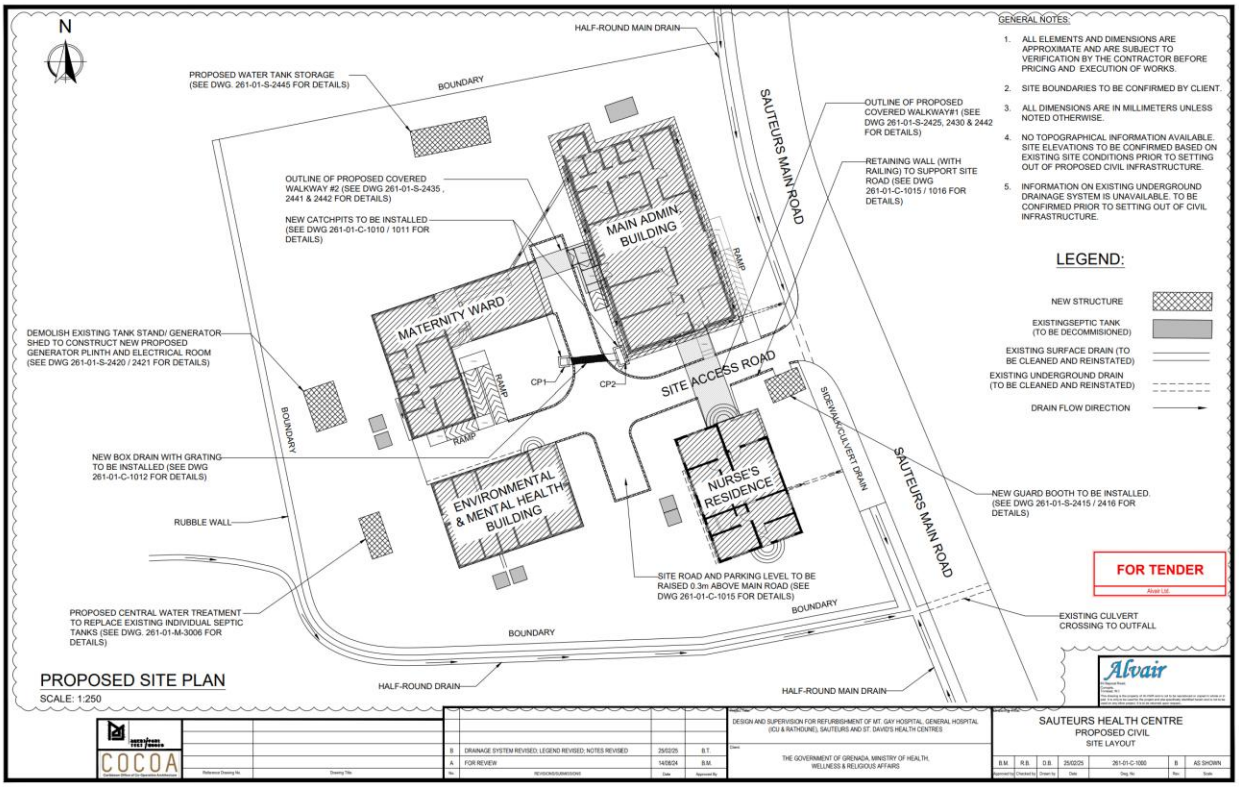

Figure 2-3: Showing Site Plan of Sauteurs Health Centre

2.3 Summary of Retrofitting and Rehabilitation of Building

The works will consist of architectural, structural, civil, electrical and mechanical upgrades, namely:

a) repairs to the structural elements of the four existing buildings on site;

b) new covered walkway between (a) the main Admin Building and the Nurses Residence and (b) Main Admin Building and the Maternity Ward;

c) pavement works to existing access road and reinstate surface drainage;

d) interior improvements featuring new wall, floor, and ceiling finishes, hurricane impact-resistant windows, new doors, and anti-microbial laminated cabinetry;

e) improvement of potable water and wastewater plumbing, and wastewater collection and treatment system;

f) improvement to electrical wiring, control systems, and power connections;

g) supply and installation of an emergency supply power (e.g. diesel generator);

h) improvement of HVAC systems using high efficiency units;

i) replacement of sanitary fixtures with water efficient, hospital-grade fixtures;

j) installation of solar systems (photovoltaic and water heating).

As further detailed in the tender drawings and bill of quantities, the proposed works to the site and buildings involve: replacement of roofs, emergency generators, water tank, installation of a new wastewater treatment plant, installing a main connection for electrical meter, 230 V electrical circuits, main panels, grounding works, lamp fixtures and wiring for socket outlets, among other improvements to plumbing, lighting, fire protection.

2.4 Operations and Decommissioning

The facility will be operated to cater for the needs of the health care system. Safety protocols for operations and maintenance will be provided by the equipment suppliers, along with training.

The facility contains a septic system for some wastewater disposal and follows the guidelines of the Solid Waste Management Authority for disposal of infectious materials. The wastewater will discharge to the existing septic tank and soak away system, which is reportedly in good condition. The septic tank and soak away will be inspected to ensure that the operation is adequate and there is no overflow or leakage.

Windows will be able to be opened for ventilation when needed due to power outage or another contingency, and to help prevent mould. Air conditioning will be operated within the rooms. Extractor fans will be set to run continuously in the bathrooms and storage rooms to provide for negative pressure and ensure that air flow is circulated in closed areas.

The grounds of the Sauteurs Health Centre are to be fenced and gated. The main entrance gate will be controlled and managed by the security of the facility. Workers for the renovation and rehabilitation works will enter and leave the grounds from this controlled entry to minimize interruptions to the clinic operations.

Any construction waste generated will be removed from site. Initially stored in metal bins and removed once bins are full, then trucked to the local garbage management facility managed by the Solid Waste Management Authority.

2.5 Operations Audit

This Health Safety and Environmental Audit is of the fire safety, health and safety of the environment and building and security awareness made for the benefit of the clinic staff and management, but not related to the construction work to be undertaken by the Contractor, but rather to be undertaken in the future at the discretion of the Government. The summary and recommendations of the Health Safety and Environmental audit is contained in **Annex #2**.

3. LEGAL AND ADMINISTRATIVE FRAMEWORK

3.1 National Legislations

Grenada has promulgated numerous laws, regulations, and policies that are relevant to small civil works. For a thorough discussion of these, please refer to the OECSRHP ESMF document, which also describes the various ministries and agencies and their respective roles.

Procedures for health facilities, the Solid Waste Management Act (2001) provides for the management of waste in conformance with best environmental practices. The Grenada Solid Waste Management Authority (GSWMA) has developed draft regulations for construction waste management..

A summary table is as follows:

Area	Sections of County laws and policies relevant to this project	Corresponding WB policy and standard
EIA Scope	Physical Planning and Development Control Act 23 of 2016 sec 22	OP. 4.01 and annexes
Public health law	Cap. 263 Public Health Act	
Waste Management Act	Cap 334 A Waste Management Act No. 16 of 2001	
Occupational health and safety	CAP 100 Factories Act No. 22 of 1973	
Building code and standards	OECS Building Code and Standards/Grenada Building code	
Public consultation for social and Environmental Impact Assessments	Part of the Environment and Social Impact Assessment (ESIA) process, Ministry Of Finance	OP 4.01

3.2 World Bank Social and Environmental Operational Policies

3.2.1 Safeguard Policies

The WBG has developed Safeguards Policies that guide the development of projects including the OECSRHP. Most relevant to the retrofitting is OP4.01 (Operational Policy 4.01), which requires environmental and social assessment of any proposed project activity. Accordingly, the ESMF was prepared for the OECSRHP as a general guidance document, and currently this ESMP has been prepared for the specific activity of clinic renovation / rehabilitation of the Sauteurs Health Centre.

There are other WBG safeguards policies that cover important aspects of the OECSRHP that are outlined in the table above.

3.2.2 EHS Guidelines

Environmental, Health and Safety (EHS) guidelines have also been prepared by the WBG. There are general guidelines that cover most activities related to construction projects for new facilities. Some parts

of these general guidelines are applicable to the renovation works, particularly such aspects as traffic safety, dust and noise control, worker health and safety, and control of runoff from work sites.

Also relevant to the renovation activity are the sector-specific WBG guidelines for Health Care Facilities, <Ref: https://documents1.worldbank.org/curated/en/118311496115696454/pdf/115328-WP-ENGLISH-Health-Care-Facilities-PUBLIC.pdf>, which cover waste minimization, waste segregation, handling and storage of wastes on site, and transport to the landfill.

4. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

General information of environmental and social baseline conditions relevant to the clinic rehabilitation is provided in the project ESMF document for Grenada.

Notwithstanding the numerous positive benefits, there is also a risk of negative impacts in the social and environmental areas if certain activities are not appropriately managed. The sections below describe those potential negative impacts from the perspective of renovation of the facility. Anticipated mitigation measures are discussed in Chapter 5.

4.1 Design and Construction

The Sauteurs Health Centre rehabilitation works had potential issues that were addressed. There were some risks that are inherent to its design and functions, including ventilation, wastewater, and treatment of demolition debris. The works will consist of architectural, structural, civil, electrical and mechanical upgrades, namely:

a) repairs to the structural elements of the four existing buildings on site;

b) new covered walkway between (a) the main Admin Building and the Nurses Residence and (b) Main Admin Building and the Maternity Ward;

c) pavement works to existing access road and reinstate surface drainage;

d) interior improvements featuring new wall, floor, and ceiling finishes, hurricane impact-resistant windows, new doors, and anti-microbial laminated cabinetry;

e) improvement of potable water and wastewater plumbing, and wastewater collection and treatment system;

f) improvement to electrical wiring, control systems, and power connections;

g) supply and installation of an emergency supply power (e.g. diesel generator);

h) improvement of HVAC systems using high efficiency units;

i) replacement of sanitary fixtures with water efficient, hospital-grade fixtures;

j) installation of solar systems (photovoltaic and water heating).

The buildings must have proper treatment of liquid waste. The toilets and sinks are connected to the existing septic tank and soak away (leach field) which were checked during the design of the rehabilitation works. Floor drains in examination rooms were directed away from flowing into open canals or ditches outside the building, a new septic system and soak away was constructed to handle the floor drain wash water. (e.g. CromaFlow CF15 to CF30 gallons per day).

Once the rehabilitation works begins, to avoid impacts, attention shall be given to preventative measures such as controlling concrete waste runoff, having safe areas for storing construction waste storage bins and placing debris in controlled areas for removal and disposal in designated landfills. Construction waste and debris will need to be disposed of properly as well as any hazardous material such as asbestos, chemicals, and items such as paint, adhesives or glue, plastics, and other solid waste or debris.

The delivery and placement of associated equipment can also reduce the impact on the neighbouring areas through increased traffic, dust and noise, stormwater runoff from disturbed areas or concrete mixing areas, inadequate debris disposal, and poor sanitary facilities on the work site was carefully monitored. There are also occupational health and safety risks typically associated with small civil works

such as those arising from not using safety equipment, or workers not properly managing heavy equipment.

If any medical waste is encountered during the demolition, it must be managed according to proper procedures, as outlined in Chapter 5.

4.2 Operation

Since medical operations within the Sauteurs Health Centre cannot occur during the renovation and construction works, the medical personnel and equipment within the facility will be relocated to the T.A. Marryshow Community College (TAMCC) Building Block in Sauteurs. Once operational, construction workers will be issued personal protective equipment (PPE) for use on site. The entrance and exit of trucks or vehicles carrying supplies will require access controls and security clearance. The security at the facility will need to be enhanced by barrier mechanisms such as fencing to prevent unauthorized access and keep the public out.

4.2.1 Relocation of the Sauteurs Health Centre to the T.A.M.C.C Building Block:

To safeguard the environment, the health and safety of staff and clients of the Wellness Centres, project staff and the general public, the following environmental and social health and safety (ESHS) aspects must be considered in determining or selecting a relocation site for continuation of services during the rehabilitation works, implemented under the OECS Regional Health Project.

Where a site presents a particular risk, mitigation measures to reduce the risk can be proposed.

Name of Project requiring relocation: Sauteurs Health Centre

Proposed relocation site: TAMCC Building Block

Area/Aspect	Yes	No	Proposed Mitigation Measure(s) to reduce risk
Road Access and Safety Does accessing the site pose a serious risk to pedestrians and vehicles?		✓	
Is there adequate space for parking?	✓		
Is there adequate space for traffic flow into and out of the location?	✓		
Are there separate entry and exit points?	✓		
Access to Building Are there safe and accessible pathways to the building?		✓	The building is located to the side of a playground area and such an establish walk way path must be defined with non-skid material.
Is the building accessible to persons with disabilities, particularly wheelchair bound patients?	✓		Construct a wooden Ramp to allow for wheel chair access to the main entrance of the building
Can the building be easily accessed by an ambulance?	✓		
Is the building located in an area with easy access to public transportation?	✓		

Internal Traffic Flow and Accessibility Is there sufficient space to allow for one way foot traffic?	✓		
Are there separate entry and exit points? Does the location have sufficient space for the clinic functions offered at the existing centre? Are there-	✓		
Accessible entry and exit points?	✓		
Accessible restrooms?		✓	Wash room facilities must retrofitted in the building
Accessible waiting areas?	✓		
Waste Water Disposal and Sewerage Are channels available for waste water to be disposed safely off the site?		✓	Waste water pipes will have to be connected to septic tank system.
Is the building connected to an appropriate sewage system to minimize spread of disease and infection?		✓	A septic and Soak away system will have to be constructed
Temporary Waste Storage Are areas available for safe, secure and segregated temporary solid waste storage?	✓		
Is there a mechanism for regular collection for disposal of solid waste?	✓		The waste will be collected by the same mechanism as the former health centre.
Fire Safety Does the site allow for easy access by fire personnel in the event of a fire?	✓		
Signage Is there adequate space to erect signage for public awareness?	✓		
Utilities Is there adequate lighting in the building?		✓	The electricals in the building must be accessed to add the required lighting necessary for operations
Is there adequate water supply in the building?		✓	The temporary relocation at TAMCC will need adequate water supply to be installed.
General Housekeeping and Maintenance Is the building capable of being kept clean to minimize cross infection/maintain health standards?	✓		The wooden floors can be sealed with waterproof and antimicrobial coatings to reduce porosity and facilitate effective cleaning. Additionally, installing an impervious overlay—such as sheet vinyl flooring—can further enhance hygiene by creating a smooth, non-porous surface suitable for routine disinfection in a healthcare setting.

Additional Comments / General Assessment of the Location

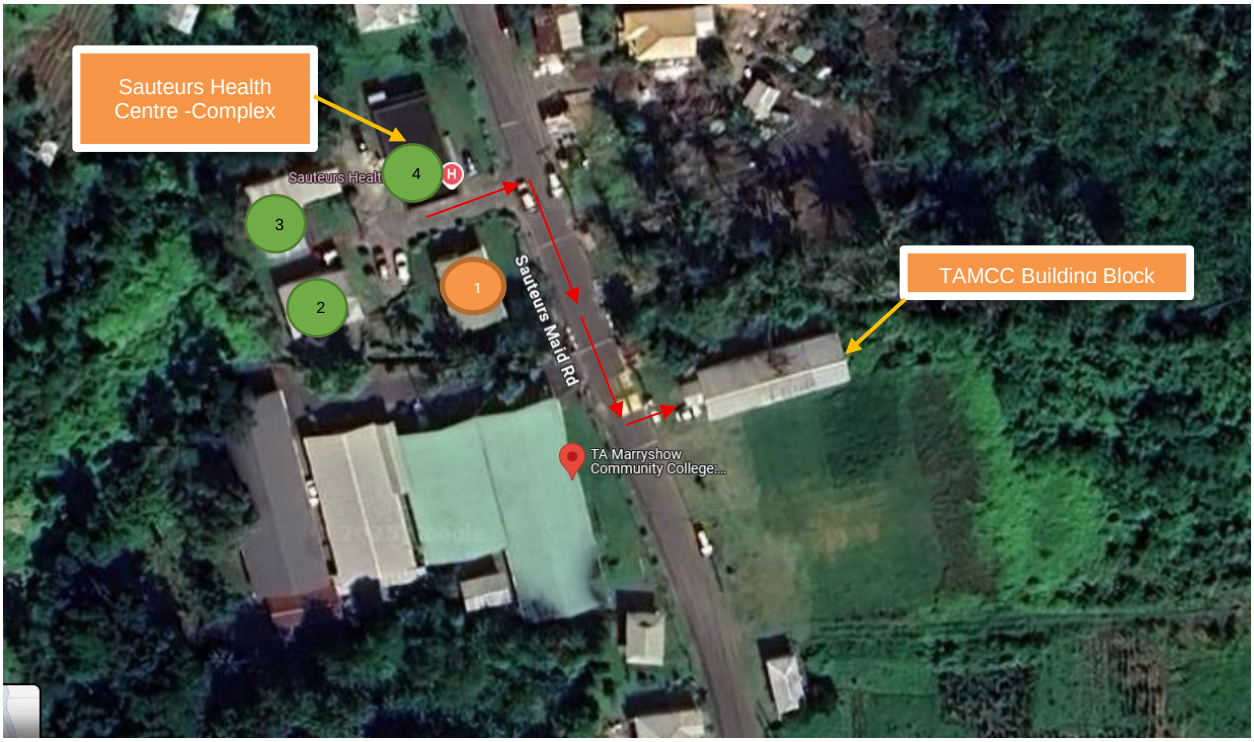

Figure 4-1: Map showing Existing Sauteurs Health Centre and Proposed Relocation Site: the existing TAMCC Building Block

4.2.2 Temporary Relocation of Sauteurs Health Centre – Environmental and Social Assessment

The Sauteurs Health Centre will be temporarily relocated to the T.A. Marryshow Community Building Block, situated along the Sauteurs Main Road, approximately a three-minute walk south of the existing facility. The site is directly opposite the T.A. Marryshow Community College and adjacent to an unused playground area. It offers direct access from the main road and includes ample parking facilities to support both patient and staff needs. The location was selected for its proximity, accessibility, and capacity to ensure uninterrupted service delivery during the retrofitting of the current health centre. The site is approximately a ten-minute drive from Sauteurs town, ensuring continuity of care for the surrounding communities.

The Sauteurs Health Centre serves a catchment population drawn from several rural communities within St. Patrick, including Mt. Rich, River Sallee, Chantimelle, and Levera. These communities have limited access to alternative healthcare services, making the centre a critical provider of primary care, maternal and child health services, chronic disease management, and outpatient care. The demographic profile includes elderly residents, women of reproductive age, and school-aged children. Utilization data from 2018 to 2024 indicates a steady increase in patient visits, rising from 2,148 in 2018 to 3,649 in 2024, totaling 20,006 client visits over the period. This upward trend underscores the centre's vital role in community-based healthcare delivery in northern Grenada.

4.2.3 Site Services and Infrastructure

Currently, the building has no direct connection to the national water supply, although water mains from the National Water and Sewerage Authority (NAWASA) run in the vicinity, allowing for feasible future

connection. Electrical power is connected and operational. The building was originally constructed as a temporary annex to the community college and thus lacks dedicated bathroom or washroom facilities, as it was envisioned that users would access amenities in the adjacent main college building. Internet connectivity is not installed within the building; however, broadband infrastructure exists in the area serving both the college and health centre, allowing for connection with minimal intervention.

The building is located within an unused playground area, providing ample space for parking and allowing for the demarcation of separate entrance and exit pathways for vehicular traffic, facilitating safe access for both regular and emergency vehicles.

4.2.4 Building Structure and Suitability

The building is a single-storey wooden structure comprising four large open compartments separated by partitions and connecting doors. These spaces were formerly used as classrooms, with one section serving as a library. The entire structure is constructed of painted plywood supported by a wooden frame.

Physical inspection revealed visible signs of wear and tear. Some portions of the building show rot, and there is evident water damage to internal ceiling boards requiring repair or replacement. Several flooring sections need replacement due to warping and deterioration. While the wall panels remain intact and the roof is generally sound, minor repairs to the roof sheeting are necessary due to a fallen tree that remains lodged on the structure.

The building benefits from good natural cross-ventilation, provided by large windows on opposite walls. However, the existing window styles may require upgrading to glass panes to improve natural lighting, which is critical for safe patient care and to reduce reliance on artificial lighting. Electrical lighting points exist but require assessment, with additional lighting installations necessary to meet healthcare standards.

Accessibility is currently inadequate, as the building does not accommodate persons with disabilities or those with mobility challenges. Construction of ramps and modification of entryways will be necessary to ensure compliance with accessibility requirements.

The wooden floors must be covered with vinyl or another smooth, easy-to-clean, and non-porous material to promote hygiene and facilitate effective infection control within the healthcare environment.

4.2.5 Environmental Considerations

The environmental setting of the temporary facility is generally favourable for healthcare service delivery. While situated near the main road, the presence of mature trees and dense vegetation acts as a natural barrier, minimizing noise intrusion. Given the low traffic volume typical of the surrounding residential and institutional area, external noise is unlikely to impact the quality of care or patient experience.

4.2.6 The Way forward

Although the building is currently in a generally dilapidated condition, retrofitting and repair works have been planned to make it suitable for temporary healthcare service delivery. Before the facility can be occupied, several key actions must be undertaken. Temporary water supply and sanitation systems need to be installed to support basic operations. Minor structural repairs to the roof and ceiling should be carried out, and windows and lighting must be upgraded to meet clinical standards. Vinyl flooring should be installed to ensure proper hygiene and infection control.

To improve accessibility, ramps and other access features must be constructed to accommodate individuals with disabilities. Internet connectivity must also be established to support digital health operations. Additionally, clear signage, designated traffic flow markings, and solid waste management systems should be implemented to ensure safe and efficient functioning. A temporary surface treatment

will be applied to the adjacent playground grounds to facilitate vehicular access during rainy weather conditions.

Figure 4-2: View from Main looking towards front of building

Figure 4-3: Side view of building

Figure 4-4: Drive way access to building

Figure 4-5: Showing walkway path

Figure 4-6: Showing internal open areas in building

Figure 4-7: Showing interior spaces with open windows

Figure 4-8: Showing main open spaces separated by door

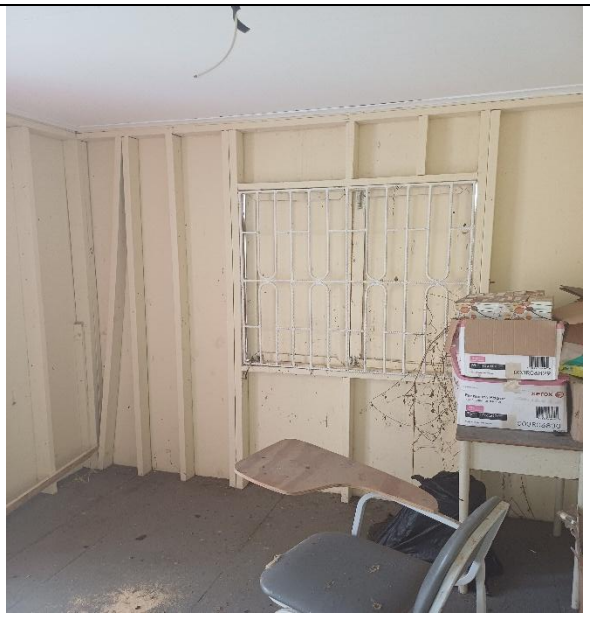

Figure 4-9: Interior space showing floor

Figure 4-10: Showing side view of building (Vegetative area)

Figure 4-11: Showing side view of building (Vegetative area)

Prepared By: Mrs. Kim Taylor -Permanent Secretary, Ministry of Health
Date: June 26, 2025

5. MITIGATION MEASURES

This section of the ESMP provides mitigation measures to address each of the risks identified during construction they are meant as a checklist for the operation and decommissioning phases they are meant as a plan to guide future efforts. The mitigation measures include the following:

a) Disposal of construction waste and debris; control of noise, dust and traffic; control of runoff; restrictions of public or visitor access or entry; and occupational health and safety for workers.

b) Training in occupational health and safety (equipment operations, Personal Protective Equipment) for public health staff, visitors and workers.

5.1 Phase 1: Design and Construction

The selection of the Sauteurs Health Centre site must consider community safety concerns. Once works begin, to avoid impacts, attention must be paid to preventative measures such as controlling runoff, having safe areas for construction waste storage bins, and adequate facilities for the collection, storage and eventual treatment of sanitary wastewater. Standard measures to avoid impacts from traffic, dust, and noise must be observed, as well as those dealing with occupational health and safety for site workers. In addition, construction waste and debris will need to be disposed of properly.

Table Construction Phase Impacts and Mitigation Measures

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
Environmental Quality Control	Dust / air quality (Moderate)	– Keep roads and paths free of debris to minimize dust. – Cover construction materials storage areas. – Suppress dust around construction site through regular water spraying and/or installation of dust screen enclosures. – Do not permit open burning of construction and other waste materials on site. – Regularly maintain construction vehicles and machinery to minimize air emissions. – Discourage excessive idling of construction vehicles on site. – Cover materials while being moved in construction vehicles off site.	Throughout Construction	Contractor	PIU	*GCC 18.3 (b)* covers this requirement.
	Noise	– Choose construction machinery and equipment with low noise levels if	Throughout Construction	Contractor	PIU	*GCC 18.3 Protection of the environment* *(a) The Contractor*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		utilizing. – During operations generators, air compressors and other powered mechanical equipment should be shielded, and equipment placed as far away from residential areas as possible. – Regularly maintain construction vehicles and machinery to avoid noise emissions. – Minimize construction vehicle speeds and use of horns especially at night.				*shall take all necessary measures to: protect the environment (both on and off the Site); and (b) limit damage and nuisance to people and property resulting from pollution, noise and other results of the Contractor's operations and/ or activities.*
	Water Pollution and Liquid Waste Management	– Construction-related liquid wastes must not be allowed to accumulate on or off-site, and flow uncontrollably off the site. – Runoff control measures such as hay bales and/or silt fences must be utilized to prevent damage to the ground from waste water, concrete wash water/ pressure washing runoff	Throughout Construction	Contractor	PIU	*GCC 18.3 covers this requirement.*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
	Sanitary facilities during construction	– Construction sites must be equipped with a toilet for workers.	Throughout Construction	Contractor	PIU	*18.2 and 18.3 covers this requirement.*
	Solid Waste Management During Construction	– Construction wastes should be separated into general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. – Contractors should minimize waste generation. – Construction waste should be collected and disposed properly off site to the approved landfill. – Records of waste disposal should be maintained as proof of proper management. – Whenever feasible contractors should reuse and recycle appropriate and viable materials.	Throughout Construction	Contractor	PIU	*GCC18.3 – Protection of the environment covers this requirement.*
Safety and Security	Traffic and Pedestrian Safety	– Contractors should put in place a traffic management system and conduct worker training to ensure safe public	Throughout Construction	Contractor	PIU	*GCC 9.3 sets out the requirement for the contractor to put in place everything necessary for safe*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
	Access Management	passage and to minimize traffic disruption by construction vehicles. – Where reasonably practicable all loading and unloading of construction vehicles should be within the site boundary. No parking or stockpiling of materials will be allowed along the public roadway. – No materials shall be stored so that they encroach on, or in any way adversely affect operation of, sections of roadway which are in use by the public or result in siltation or blockage of drains. – Deliveries and collections should be scheduled to coincide with normal working hours. – Access to and from construction sites should be organized to allow vehicles to enter and leave the site in a forward gear. – Adequate lighting must be provided onsite particularly if work is to proceed after				*use of roads.*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		hours. – Installation of proper signage and instructions. – Onsite personnel should wear high-visibility clothes and reflective vests. – Compliance with all guidelines and protocols established by the Department of Transport and Royal Grenada Police Force (RGPF). – Construction sites should be fully enclosed to protect the public and deter unauthorized entry. – Temporary safety fences should be appropriately high above ground level. – When necessary, a gate marshal should be deployed to ensure the safety of pedestrians using adjacent public footpaths. – Working hours should be adjusted to take into account local traffic patterns, avoiding major transport activities during busy periods. – Contractors should ensure				

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		safe and continuous access to the hospital and residences.				
Occupational and Community Health and Safety	Worker safety	The bidding document and contract will require that the content of the Health and Safety Manual as required by the GCC shall only be the ESHS Specifications annexed to this ESCOP document, unless otherwise instructed by the Supervising Engineer. In addition: – Skilled personnel should be engaged. – Appropriate sign-posting of construction sites should inform workers of rules and regulations to be followed. – Occupational health and safety training should be conducted regularly and reinforced by supervisory staff at construction sites. – Workers' PPE should comply with industry good practice (i.e., always hard hats and safety shoes, and as needed protective masks, safety glasses, hearing protection, and harnesses).	Throughout Construction	Contractor	PIU	*GCC 18.2 – sets out the safety requirements that the contractor will comply with. GCC 18.1, 9.4.2, 30.3 and 30.4 and contract Appendix B (Environmental and Social (E&S) Metrics for Progress Reports) are also applicable.* *As per GCC 9,1 qualified personnel must be engaged.* *As a minimum the Contractor will ensure that all workers participate in the general induction: General Induction for Construction Workers: Safety, Health and the Environment to be*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
	Slippage and Falling, Working at Heights	– Contractors should adopt low noise equipment and reduce mechanical noise at construction sites. – All staff on site will receive training on reducing the risk of slippage and falls. – Personnel will be required to wear appropriate PPE at all times. – Scaffolding and harnesses will be utilized for working at heights.				*found here, https://www.wbgkggtf.org/node/3823 shall be provided as training to all Contractor's Personnel. Each Contractor's Personnel shall receive the general induction prior to their start of any Works activity on site, and at least midway through the work period. Records of the general induction training provided shall be kept. The record shall include a copy of the induction given and as a minimum the following details:* • *Name and signature (or mark) of trainee* • *Employer/ organization they work for*
	Working with Hazardous Substances	– Staff are to be provided with adequate PPE and training for interactions with medical waste, fuels and other hazardous materials, including pesticides.				
	Exposure to VOCs	Painting and the use of chemicals with strong odours can have an adverse effect on the construction team and				

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		users of the facility. The following are therefore required: – Proper Use of PPE – Scheduling painting for periods when the facility will be closed – Use of water-based paints where possible				*Date of induction training attended* *GCC 18.2 – sets out the safety requirements that the contractor will comply with.* *GCC 18.3 protection of the environment is also relevant* *A specification will be included to ensure that paints and other chemicals with strong odours are utilised outside of the hospital's operating hours.*
	Working with Biomedical Waste	Onsite staff may encounter medical waste during renovation. In such cases: – The Contractor will follow the National Guidelines for the handling and disposal of bio- medical waste – The contractor will provide employees with adequate PPE and training for interactions with medical waste and other hazardous materials.				*GCC 18.2 is relevant*
	Security of public	The use of signage to inform the public of the ongoing				*GCC 18.2 and 29 set out the safety*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		works. The sign should include relevant information on the contractor, client, funding agency and the timeframe. The use of lights, guards, fencing etc. for protection of the works and for the safety and convenience of the public. – The contractor should procure the requisite insurances. – Undertake a public awareness campaign to inform the public of the works and the need to be vigilant and to adhere to security measures that are in place at the site. – Publicize the grievance mechanism at stakeholder engagements and during the public awareness campaign.				*requirements that the contractor will comply with.* *The PIU will undertake the communication with the public.*
	Risk of Social Conflict with the Contractor's personnel and the wider	– Any conflict between the onsite personnel and members of the public should be reported to the PIU and the relevant	Throughout Construction	Contractor	PIU	*GCC 9.4.1 and contract Appendix C cover this requirement.*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
	public.	authorities. – The Contractor should assign responsibility for dealing with complaints from the general public to the site foreman or supervisor. Reports will also be accepted during consultations with stakeholders and the wider public. – The Contractor should establish a Grievance Redress Mechanism (GRM) for the communities and workers which sets out the relevant dates, details of the complainant, the nature of the complaint, action taken, and other relevant details. – The contractor should take appropriate measures to ensure protection against discrimination. – The Contractor will maintain a CoC for all personnel, including the				*The COC in section IV (bidding Forms) will apply.* *GCC 26.1 covers this requirement.*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		sub-contractors for site activities. The CoC will form part of the workers' and sub-contractor contracts. Worker training shall include sensitization on the CoC and interactions with the general public. – The CoC will prohibit all forms of sexual exploitation and abuse and sexual harassment (SEA/SH). – Ensure protection against discrimination. – The GRM will have a channel for the uptake of grievances related to SEA/SH and gender-based violence (GBV).				
	Stakeholder Engagement	The Contractor shall: – Promote the GRM through ongoing community outreach and consultation.				

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		– Ensure that there is adequate stakeholder consultation. – Provide relevant contract-related information, as the Employer and/or Project Manager may reasonably request to conduct Stakeholder engagements. - Directly participate in Stakeholder engagements, as the Employer and/or Project Manager may reasonably request.				
Excavation	Collapse or cave -in Falls into the trench	– The Contractor will use measures to prevent cave-ins or collapses. – The Contractor will use barriers to prevent falls into any excavated areas. – Additional precautions will be taken at night to prevent falls.	During excavation	Contractor	PIU	*GCC 29.1, 27.3, 18.1, 18.2 covers this requirement. A specification will be included to ensure that the Contractor puts measures such as sturdy wire mesh, fencing, barricades, or other similar type of fencing in place to prevent persons falling into any trenches.*
Physical Cultural and Historical	Damage to chance finds or cultural	– The Contractor shall not damage archaeological sites, protected areas and				*GCC 19.1 is applicable to this section.*

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
Resources	heritage	cultural heritage. – If items of cultural or historical significance are unearthed or discovered, works must stop immediately, and the Supervision team must be informed. The Contractor will also notify the National Trust Department and other relevant agencies upon encountering any artefacts, remains or other notable objects immediately. – The Contractor shall follow the Chance Find Procedures and ensure that training is provided to all project workers on the Chance Find Procedures. – If human remains are unearthed, work must stop immediately and the Contractor must notify the Supervising Consultant who will inform the PIU. – The PIU will report the finding to the Police and the				

Area	Potential Impacts / Issues	Mitigation Measures	Monitoring Requirements	Responsibility for Mitigation	Responsibility for Monitoring and Supervision	Comments / Relevant GCC
		site will remain closed until an investigation is conducted and the all clear is given to resume work.				

6. PROJECT MANAGEMENT AND INSTITUTIONAL ARRANGEMENTS

6.1 ESMP Implementation Responsibilities

The overall responsibility for ensuring that the mitigation measures under this ESMP are implemented lies with the Project Implementation Unit (PIU) and the Project Coordinator. Ultimately the Ministry of Health in collaboration with the Ministry of Mobilisation, Implementation and Transformation (MIT) is responsible for implementing the works. Accordingly, the MIT will provide briefings to the contractor's team in relation to safety, accessing of work site, protocols to be followed for carrying out work in areas, and other requirements of the ESMP.

The MIT engaged a consulting firm to support the supervision of the works. The consulting firm will act as supervisor to document the contractor's compliance with all work specifications and reported to the PIU. The consulting firm will engage the services of an expert for daily monitoring of compliance.

The Contractor is required to have trained personnel as part of its team that are experienced in working within health facilities with ongoing operations. The Contractor is responsible for the on-ground implementation and ensuring compliance with the contract clauses, recommendations, and mitigative measures detailed for management of ESHS risks. The Contractor's personnel including environmental and social health and safety personnel are responsible for monthly ESHS reporting.

Monitoring will include weekly meetings to determine site changes, health, safety, social and environmental conditions, and the adequacy of the mitigative measures, and the overall ability of the contractor to execute the works as specified and in a sustainable manner.

6.2 Contractor Responsibilities

The general responsibilities of Contractors are described in the Contract and the ESMF, including standard environmental and social measures such as:

- Permits and Approvals
- Site Security
- Worker Occupational Health and Safety
- Noise Control
- Use and Management of Hazardous Materials, fuels, solvents and petroleum products
- Traffic Management
- Management of Standing Water
- Management of Solid Wastes, trash and debris
- Management of Liquid Wastes

Clauses incorporating these and other mitigation measures will be incorporated into construction contracts.

For purposes of cost estimation and budgeting, all contractors were made aware of the existence of the environmental mitigation measures and associated ESMP requirements and should include or have included for such in their cost items.

Reduced operations will continue at the site while the contractor executes the work. The Contractor's personnel will include among others environmental and social health and safety personnel that will be responsible for monthly ESHS reporting. The Social Health and Safety Expert will provide periodic training to the Contractor's team in relation to safety, accessing of work site, protocols to be followed for carrying out work in areas that may be close to the areas where patient services are offered.

6.3 Implementation Arrangements / Roles & Responsibilities

6.3.1 Construction

The Contractor will be responsible for executing the works in accordance with contractual requirements including ESHS matters. The Contractor will provide weekly reports that include ESHS matters to the Design and Supervision Consultant (D&SC), and that the D&SC will provide monthly reports that include ESHS matters to the PIU.

The D&SC will assess Contractor performance, inspect and report on ESHS matters, and recommend corrective actions.

The PIU (MIT) will monitor the contractor and D&SC, conduct independent monitoring and verification, lead community engagement and public information efforts, and serve as E&S liaison for all parties.

The Contractor is directly responsible for implementation of the contract in accordance with the GCCs and ESHS Specifications, and thereby deliver the requirements of the Contract. Day-to-day supervision and monitoring of compliance with requirements will be undertaken by the Supervision Consultant, who will inspect the works periodically to ensure that the Contractor is in compliance with approved documents.

The PIU's Environmental and Social Specialist will perform spot checks and periodic visits, to ensure that the Supervising Consultant is performing and holding the contractor to account for delivering to requirements. Collaborating agencies may also carry out monitoring, in connection with implementation of any of the project components, which fall under its jurisdiction.

Key responsibilities of each party are as follows:

The Project Implementation Unit (PIU) will be responsible for:

- Further the proper management of the E&S risks and impacts by ensuring that the Supervising Consultant is providing adequate oversight and reporting on ESHS issues.
- Engagement with project-affected peoples and other stakeholders,
- Evaluate the monitoring and supervision of project activities and ex-post evaluations.
- Publicising and managing the Grievance Redress Mechanism.
- Systematically documenting evidence of its activities and outcomes and providing information to the World Bank team as needed.
- Informing promptly the WB if significant incidents or accidents (defined as three days lost work time) occur.

The Design and Supervision Consultant (D&SC) will be responsible for:

- Identifying, evaluating, and addressing potential construction and operational ESHS risks.
- Final review of ESHS aspects of designs to ensure that they form a sound and comprehensive basis for addressing potential construction and operational ESHS.
- Preparation of ESHS Specifications for inclusion in the tender document and the subsequent works contract.
- Supervision of the Contractor's compliance with contractual obligations and the ESMP and ESHS Specifications, thereby ensuring that they are satisfactorily implemented.
- Reviewing and approving the Contractor's work plans, Method Statements, and other plans, and requiring revisions and updates as needed.
- Ensuring that Contractors are properly briefed in relation to the importance of ESHS matters during construction.

The Contractor will be responsible for:

- Complying with the ESHS provisions of the contract, including any subcontractor(s), to the satisfaction of the D&SC and PIU.
- Adopting and implementing the E&S Specifications to meet the requirements of the Contract
- Responding to the D&SC and PIU to describe how they will deliver the ESHS requirements of the Contract, in terms of the tools, equipment and methods they will use.
- The Contractor must assign a qualified, competent individual to serve as E&S Officer to be present on site as required and to ensure compliance with mitigation measures provided in the ESMP and fulfill the corresponding conditions in the contract.
- Additionally, the Contractor must provide an Accident Prevention Officer or Health and Safety Manager as required by the GCC.
- The Contractor is required to obey other national relevant legal regulations and laws.
- The Contractor will assume the costs during the construction phase for complying with the ESHS requirements as a subsidiary obligation of the main work activity, and not separated in the Bill of Quantities (BOQs).

7. STAKEHOLDER ENGAGEMENT

7.1 Disclosure of ESMP

The ESMP will be published on the GoG website <http://www.gov.gd> with a copy viewing at the offices of the MIT, the Project Implementation Unit and the World Bank website https://www.worldbank.org .

The Contractor shall keep a printed copy of the ESMP on site.

7.2 Community Engagement

The works in particular the external works will not require a rigorous or formal community engagement because relatively minor works will take place entirely within an existing Health Centre ground, thus there will be insignificant potential impact to neighbourhoods or community members. However, consultations will be done internally with governmental institutions through meetings, emails and discussions to design the most safe and appropriate work strategies, to verify the ESMP due-diligence, and ensure compliance during the operations phase. For ongoing projects in the future (for example, worker training), consultations will be conducted with institutional stakeholders through the same mediums. In addition, any updated ESMP or additional information (if required) will be disclosed through the Ministry of Health and the Government of Grenada websites.

7.3 Grievance and Redress Mechanism

The Grievance Redress Mechanism (GRM) developed for the OECS Regional Health Project (P168539) was applicable to the rehabilitation of the Sauteurs Health Centre. The GRM is described in detailed in a stand-alone document available at: www.gov.gd

Grievances can be submitted through the following channels:

Channel	Details
In person	1. Permanent Secretary Ministry of Health, Wellness and Religious Affairs 2nd Floor Ministerial Complex Sir Eric Matthew Gairy Botanical gardens Tanteen, St. George, Grenada 2. During public/community interaction Project Manager, OECS Regional Health Project
Email	ps@health.gov.gd, min- healthgrenada@spiceisle.com
Telephone	(473) 440 -2649 /3485
Letter	1. Permanent Secretary Ministry of Health, Wellness and Religious Affairs 2nd Floor Ministerial Complex Sir Eric Matthew Gairy Botanical gardens Tanteen, St. George, Grenada

All grievances submitted through the available channels were accepted, considered and responded to in a timely manner. The GRM was socialized with stakeholders through emails and meetings with governmental and institutional stakeholders.

Yours Truly,

Prepared by:

……

Approved by:

……

8. ANNEXES

8.1 Annex 1. Accident/Incident Reporting Form

B1: Incident / Accident Details			
Project Site:			
Date of Incident / Accident:	**Time:**	**Date Reported:**	**Time Reported:**
Reported by:	**Reported to:**	**Notification Type: Email/'phone call/media notice/other**	
Full Name of Contractor:		**Full Name of Subcontractor:**	

B2: Type of incident / Accident (please check all that apply)
Fatality ☐ Lost Time Injury ☐ Displacement Without Due Process ☐ Acts of Violence/Protest ☐ **Environmental pollution incident ☐ structure failure ☐ Other ☐**

B3: Description/Narrative of Incident / Accident
I. Details of the Incident / Accident
II. What were the conditions or circumstances under which the incident occurred (if known)?

III.	***Are the basic facts of the incident clear, or are there conflicting versions? What are those versions?***
IV.	***Is the incident still ongoing, or is it contained?***
V.	***Have any relevant authorities been informed? Who was informed?***

B4: Actions taken to contain the incident /Accident			
Short Description of Action	**Responsible Party**	**Expected Date**	**Status**
Have the works been suspended?	**Yes ☐;**		**No ☐;**

Please attach a copy of the instruction suspending the works.

B5: What support has been provided to affected people

B6: Injury Information	
Injured Employee	
Name:	**Job Title:**

Job at time of Injury:
Type of Employment **Full – time ☐ Part – time ☐ Temporary ☐ Other ☐**
Length of time employed with the Company:
Length of time in current position at the time of the incident:
Description and severity of injury:
Location at the time of the incident/accident
Date and time of incident / Accident:

8.2 Annex 2. Operations Audit

This Health Safety and Environmental Audit is based on a review of the available information related to the Sauteurs Health Centre, and a remote site visit by the Safeguards Specialist assigned to the project by the GoG. It outlines the non-conformances observed and provides recommendations to rectify the problems.

Areas of Inspection:

a) Fire Safety

b) Health and Safety

c) Security Awareness

8.2.1 Fire Safety:

- Only one (1) Portable fire extinguisher was seen in the building.
- Oxygen cylinders were found improperly labelled and stored.
- No fire alarm system installed.
- No emergency exits seen or labelled.
- No fire drills have been conducted or recorded.
- Flammable liquids are stored in the dressing room and the pharmacy room, which are not properly ventilated.

8.2.1.1 Recommendations Fire Safety:

The following should be implemented:

- Fire Detection System:
    - Upgrade the current fire detection system to ensure it meets the latest safety standards and regulations.
    - Install new, advanced smoke detectors and heat detectors throughout the building to enhance early fire detection capabilities.
    - Implement a regular maintenance and testing schedule for all fire detection equipment to ensure functionality and compliance.
- Fire Extinguishers:
    - Install appropriately rated fire extinguishers in strategic locations within the clinic and throughout the building.
    - Ensure fire extinguishers are easily accessible and clearly marked.
    - Conduct regular inspections and maintenance of fire extinguishers to ensure they are in good working condition.
    - Training: Conduct comprehensive training sessions for all personnel on the proper use of fire extinguishers, including practical demonstrations and hands-on practice.

- Exit Signs and Pull Stations:
    - Install illuminated exit signs above all exit doors to guide occupants to safety in case of an emergency.
    - Ensure exit signs are visible from all areas within the clinic and other parts of the building.
    - Install manual fire alarm pull stations at key locations, including near exit doors, to allow for immediate activation of the fire alarm system.
- Emergency and Backup Lighting:
    - Install emergency and backup lighting in the clinic and other critical areas of the buildings to provide illumination in the event of a power failure.
    - Ensure emergency lighting is tested regularly and maintained to ensure reliability during emergencies.
- Emergency Evacuation Plans:
    - Develop comprehensive emergency evacuation plans for the clinic and the entire building.
    - Post evacuation plans in visible locations within the clinic and other common areas.
    - Conduct regular evacuation drills to familiarize staff and occupants with the evacuation procedures.
    - Doors for emergency exit to be outfitted with the appropriate door hardware.
- Records and Maintenance:
    - Maintain detailed records of all fire safety equipment inspections, maintenance, and testing.
    - Implement a schedule for regular inspections and maintenance of all fire and life safety systems to ensure compliance with safety regulations.
- Fire and Life Safety Inspections:
    - Carry out all fire and life safety inspections and thorough inspections and ensure compliance with all relevant safety standards.
    - Schedule periodic inspections to identify and address any potential safety issues promptly.

By implementing these recommendations, we can significantly enhance the fire and life safety measures within the Sauteurs Health centre and the entire building, ensuring the safety and well-being of all occupants.

8.2.2 Occupational Health and Safety:

- Flammable Materials Storage: Fuel (5 gallon gasoline containers) were not properly stored
- Old Vehicle Tires were seen ion the shed where the ambulances were parked. These are a potential breeding area for mosquitoes.

- The Sluice Room sink finished in small ceramic tiles may foster microbial growth and compromise infection control.
- Autoclave should not be in the same room as the Fridges etc., and not under the AC unit. The AC Evaporator unit also drops condensate onto the switch located directly below the Evaporator.

Figure 8-1:Showing AC Unit and Autoclave

- Storage Room: This room was being used to store aseptic medical supplies (bandages, gloves, medicine, etc.) as well as cleaning products. However, this room exhibited severe (brown) mould growth on the shelf walls and had a high disturbing odour.

Figure 8-2: Showing Mould Growth in Storage Room

Hazards

1. Medicine, bandages, etc. rendered void from contamination by mould and mould spores.

2. Nosocomial infection of patients by contaminated supplies/medicine.

- Vaccine Storage: A chest type refrigerator for vaccine storage was observed to be frosted over with ice and at a temperature of -20 °C instead of the required temperature of between +4 °C and +8 °C. Also, this refrigerator was directly wired to a solar powered controller and could not be disconnected for de-frosting or servicing. Vaccine storage is important for this Health Centre given the remote location at the northern side of Grenada.

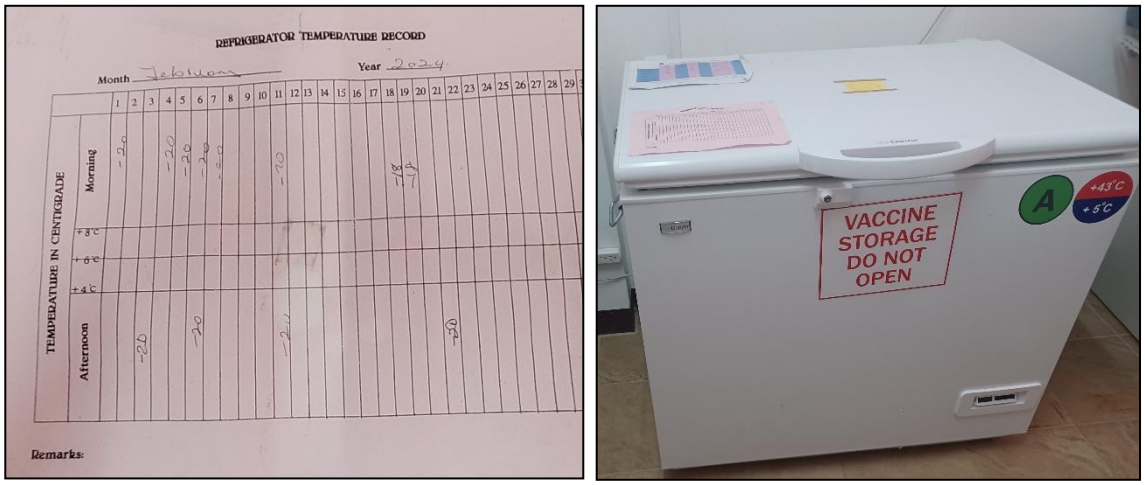

Figure 8-3: Showing Vaccine Storage (and Temperatures out of Range)

Hazards

1. Reduced vaccine storage capacity of the Sauteurs Health Centre.
2. Vaccines rendered void by malfunctioning refrigerator.

- Bio-waste is not stored in secure, leak-proof containers.
- Bio-waste containers are not stored away from public access.
- Bio-waste is being collected by unauthorized personnel and transported in a private vehicle.
- No records of bio-waste disposal were seen. No schedule of collection days are known to the Nurses so no proper preparations made for collection.
- Medical waste is not segregated and is stored in black garbage bags.
- Hazardous materials are not stored properly or labelled.
- No records of a Material Safety Data Sheet (MSDS) were seen.
- No regular health and safety training has been conducted for employees over the past 5 years.

Figure 8-4: Showing 5L Safety Box and Bin

5L Safety Box to store sharp materials. Black Bag in Bin in used to collect other Bio-waste materials

8.2.2.1 Recommendations Health and Safety:

- Store Flammable containers in a separate building area from the Health Centre. Ensure all flammable materials are stored in appropriate, secure, and clearly labelled containers.
- Remove and properly dispose of old tires to reduce the risk of mosquito breeding and associated health concerns
- Sluice room
    - Reconstruct/replace sink with a seamless, durable, washable finish (eq. stainless steel)
- Storage Room
    - Ascertain source of humidity (e.g. water leaks, wet mops, condensate from adjacent air-conditioned rooms). Install an exhaust ventilation fan to allow for air circulation.
    - Dedicate separate room for aseptic storage with air conditioning.
    - Clean and sanitize storage room of mould and dedicate only for cleaning supplies, with ventilation.
- Vaccine Storage
    - Check and service refrigerator; replace if faulty.
    - Install plug and socket for refrigerator (subject to its supply voltage).
    - Solar controller to have a utility supply connection for night operation.
    - Install digital temperature recorder and alarm for vaccine storage
- Secure Bio-Waste Storage

- Design and ensure a proper schedule for Safety Boxes Bio-waste collection is enforced so Nurses can prepare the necessary waste and colour code for safe collection.
- Ensure bio-waste is collected and transported by authorized personnel using appropriate vehicles, following a regular scheduled program to minimise hazards to the public and Centre users
- Ensure the Safety Boxes for sharp objects are stored in a secured location away from the public and unauthorised personnel.

- Proper Disposal of Sharp Objects:
  - Use approved sharps containers for the disposal of sharp objects.
- Segregation of Medical Waste:
  - Segregate medical waste according to guidelines and avoid using black garbage bags for hazardous materials.
- Safe Storage of Hazardous Materials:

  Properly label and store hazardous materials in designated areas.
- Maintain Dry Floors:
  - Ensure floors are kept dry to prevent slips and falls.
  - Provide a separate storage tank to collect and treat contaminated wastewater.
- Availability of MSDS:
  - Keep updated Material Safety Data Sheets (MSDS) readily available for all hazardous Substances.
- Health and Safety Training:
  - Conduct regular health and safety training sessions for all employees.
- Improve Facility Conditions:
  - Clean mould to minimise respiratory illness
  - Service AC units both Evaporators and Condensers. Insulation on some copper lines need replacing, this will reduce electricity expenses.

Figure 8-5: Showing Grass on the Condenser

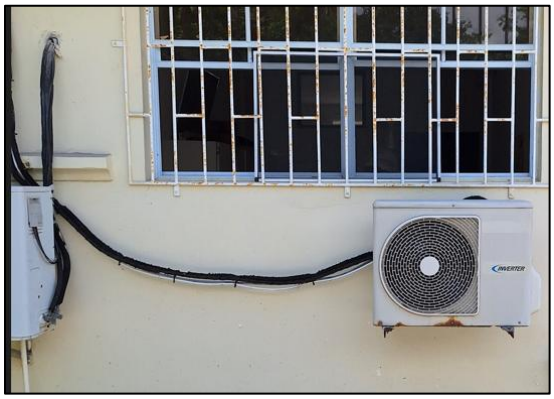

Figure 8-6: Showing Insulation on Copper tubing needs replacing

- Office:
  - Ensure the dentist chair is repaired or replaced.
  - Relocate items from emergency exits, passage areas or pathways.

Figure 8-7: Showing Emergency Exit blocked by Medical equipment

8.2.3 Security Awareness:

- Security fence around the compound needs to be upgraded. There is a Security Guard on duty, however, the staff and patients are not protected from unauthorised persons entering the compound.
- Install appropriate signage at the entrance gate and throughout the health centre to guide visitors and prevent unauthorized access

8.2.3.1 Recommendations Security Awareness:

- Install appropriate signage at the entrance gate and throughout the health centre to guide visitors and prevent unauthorized access

8.2.4 Wastewater Collection, Treatment and Disposal

Observations:

The wastewater plumbing was not to code (viz. no re-vents). Sullage plumbing was directed to shallow surface drain (note: health risk of contaminated water) and soil wastewater was directed to a septic type system for treatment. It should be noted that there was no centralized wastewater treatment system, as each building had its own septic system. This "duplication" of septic tanks was not optimal for maintenance. In some areas, building sewers remained vulnerable to damage as they lay exposed above the ground due to the erosion of the soil as was discussed above for the water distribution.

There were no details or maintenance records of the septic system to review. From visual observation it appeared to be comprised of a primary tank and absorption system. Disinfection of overflows from the septic system could not be ascertained.

8.2.4.1 Awareness:

- Sinks used in the Operating and Doctor's Rooms drain directly into the public drains.
- Wastewater from mopping the floors is poured directly into sinks that drain into public drains

8.2.4.2 Recommendations:

- Sullage plumbing should be collected in a special holding tank and treated before being allowed to flow into the public drains.
- Reinstate wastewater plumbing to code with proper re-vents, supports, hangars, etc.
- Construct centralized septic system to treat all wastewater and to replace the individual septic tanks.

Figure 8-8: Showing Sullage flow into outer drains

Figure 8-9: Showing Sink in Operating Room flowing into outside drains

- Fiberglas Holding tanks with a capacity of approximately 1500 to 3000gpd (gallons per day could be installed to treat the Bio-hazard wastewater). For example CromaFlow CF15 to CF30 systems have been installed in similar hospitals within the Caribbean, both in Trinidad and Barbados.

Fiberglass tanks as shown below could be used to treat wastewater before the water is drained into the public drains

Chlorine Disinfection Tanks (CFL)

CROMAFLOW Wastewater Treatment Systems applications may include the necessity for disinfection of treated effluent by means of chlorination. Non-corrosive fiberglass tanks are available to suit most volumes up through 75,000 GPD. Capacities of the chlorine contact tanks have been equated to treatment and discharge volume of the appropriate batch units with consideration for a minimum thirty (30) minute detention time in the chlorine contact tanks.

- Addition of UV disinfectors for any discharge of excess treated effluent could be incorporated. Chlorine could be used as a disinfectant.

8.2.5 Conclusions:

The inspection of Sauteurs Health Centre revealed several critical issues concerning fire safety, health and safety, and security awareness. Immediate action is required to address these findings and ensure the safety and well-being of staff and patients. Implementing the recommended measures will help in maintaining a safe and compliant healthcare environment.