



S I N T M A A R T E N G E N E R A L H O S P I T A L

HEALTH, SAFETY & ENVIRONMENT PLAN Rev. 04

DESIGN & CONSTRUCTION PHASE

EMPLOYER:
SINT MAARTEN MEDICAL CENTER



EMPLOYER'S REPRESENTATIVE:
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GLOSSARY

HSE – Health, safety and environment

LPG – Liquefies petroleum gas

Main Contractor - INSO

MEP – Mechanical, electrical, plumbing

OHS – Occupational health and safety

PM – Project Manager

PPE – Personal protective equipment

PTW – Permit to work

SMMC - Sint Maarten Medical Center

SMGH - Sint Maarten General Hospital

Sub-Contractor – Contractors engaged directly by the main contractor, i.e. INSO

1. INTRODUCTION

INSO has been awarded a contract to design, build and maintain the New General Hospital in Sint Maarten on the 19th September 2016. Design & Build completion was originally scheduled for 36 months, but due to unforeseen circumstances, this period has been extended to cater for variations in design changes, primarily aimed at reinforcing the building to withstand a hurricane of category 5, i.e. 200 mph.

The New Hospital facility will have a capacity of 110 beds and will be built on the same location as the existing SMMC Hospital, at Cay Hill. It will be a modern, fully operational Hospital with sufficient parking space. Included in this contract is the supply and installation of medical equipment and furniture, as well as supplying and installation of the backup power plant and all related IT equipment/network (medical). Following construction and commissioning, INSO have been also contracted to maintain the facility for a period of 10 years with the possibility of an extension of additional 10 years (5+5 years).

In line with the employer's requirements, INSO has prepared this document to describe the approach it intends to adopt to minimize the impact during the construction and the operative phase of the project on employees' occupational health and safety, hospital staff, the neighboring community and the environment.

To effectively achieve this, INSO shall evaluate the impact of the project, at design stage, where long term mitigatory measures (including re-design) will be implemented to reduce any risks identified, during the construction phases where construction related risks will be managed through the provision of adequate resources and finally during the operational phase of the hospital during which INSO will be carrying out maintenance related activities at the hospital.

2. HEALTH, SAFETY & ENVIRONMENT OBJECTIVES

It is the intention of INSO that the project be designed and constructed in such a way that the risks and opportunities to the health and safety of all persons engaged in its construction, finishing and management are eliminated or reduced to a level which is acceptable under health and safety legislation. The identification of opportunities early in the project will allow the design the team to apply intellectual capital rather than financial capital to mitigate or avoid risks, thus benefiting the project.

In view of this, health and safety shall form an integral part of the project objectives and the client has pledged his full support to ensure that the project is executed in full compliance with the contractual requirements.

The health and safety strategic objectives and performance indicators are:

Objective	Performance indicator
Health, Safety and Environment will be given due prominence across all parts of the project.	Timely preparation of OHS plans and subsequent revisions; method statements, risk assessment, site inspections by management, signage, information posters, toolbox talks, etc.
The principles of prevention will be followed at all times, at the design, construction, use and maintenance of the premises.	Review project design, construction and maintenance against the general principles of prevention – see note 1.
The project will seek to achieve a zero harm and zero pollution status.	Number of lost time incidents and environmental incidents.
Everyone is responsible for ensuring the health, safety and environment strategy is applied at all times.	Leading by example, suggestion scheme, number of initiatives put forward from consideration by INSO HSE.
Cooperation and communication will extend across the whole project team and stakeholders.	Participation in meetings – kick-off, communication of risk assessment/ method statements, training hours, number of suggestions, worker participation in HSE initiatives, etc.

Note 1 - General principles of prevention

- a) the avoidance of risk;
- b) the identification of hazards associated with work;
- c) the evaluation of those risks which cannot be avoided;
- d) the control at source of those risks which cannot be avoided;
- e) the taking of all the necessary measures to reduce risk as much as reasonably practicable, including the replacement of the hazardous by the non-hazardous or by the less hazardous;
- f) giving collective protective measures priority over individual protective measures;
- g) adapting the work to the worker, particularly in so far as the design of work places, the choice of work equipment and the choice of working and production methods are concerned, in particular with a view to alleviating monotonous work and work at a predetermined work-rate, and to reducing their effect on health;
- h) by adapting to technical progress in the interest of occupational health and safety; and
- i) by the development of a coherent overall prevention policy which covers technology, the organisation of work, working conditions, social relationships and the influence of factors related to the working environment.

This is reflected in the INSO Integrated Quality, Environment, Health & Safety Policy reproduced overleaf:

INSO operates in the sector of the “turn-key” construction of civil and industrial buildings; design, supply, “turn-Key” installation of electromedical instrumentation packages and related maintenance; design, execution and maintenance of civil and industrial system.

INSO intends to strengthen its competitive position in the traditional areas and expand its action, aimed at new markets, thus reaffirming its entrepreneurial vocation, the guarantee of its presence on the markets as a living organism, able to generation. In carrying out its activities, **INSO** promotes the respect for the Environment, Social Accountability and the Health and Safety of its workers.

Moreover, it pledges to keep a constant quality level of its products/service in time, suited for the service requirements and the Customer’s contractual requests.

The general principles by which our Company is inspired in the execution of its activities, are the following:

- ✓ Identification of the reference stakeholders, and the analysis of their expectations and of the milieu in which they operate;
- ✓ Risk and opportunities analysis for each process;
- ✓ Improvement of the customer relationships and of the service offered;
- ✓ Improvement of the relationship with the suppliers and, more generally, with the stakeholders;
- ✓ The promotion of consultation and participation of workers in the development of the Company System;
- ✓ Compliance with law, rules and contractual specifications;
- ✓ Pursuit of the continuous improvement of quality results, of our environmental performance, of the protection of our workers’ health and safety and Social Accountability practices towards our workers and in supply chain;
- ✓ Implementation of training to ensure qualified personnel, aware of their role within the organization;
- ✓ Review of our Policy, in the light of internal and external changes, of the risks and opportunities assessment and the Management System.

We pursue goals through the implementation of an Integrated Management System, based on corporate processes and on a risk-based thinking approach, in conformity with the International Standards ISO9001, ISO 14001, ISO 45001 and SA8000, through which **INSO** commits to:

- ❑ Pursue such objectives;
- ❑ Define, where measurable, indicators for defined objectives;
- ❑ Systematically review its Policy, objectives, risk and opportunities assessment, and processes, in order to direct and focus the improvement actions;
- ❑ Implement the identified improvement actions.

INSO constantly monitors the pursuit of such commitments through the correct and punctual management of the Integrated System, included by all means in its business processes. The Executive Management is involved in the compliance with and implementation of these commitments.

The Executive Management ensures that this Corporate Policy be Documented, approved, kept active, periodically reviewed, given to all personnel and distributed to the public.

3. REFERENCES

The following documents were referred to during the compilation of the evaluations:

- Decrees I, II and III
- New St. Maarten General Hospital Environmental & Social Management Plan
- INSO Integrated Management System
- Project Management Plan
- Employer's requirements (IB008_Process Requirements)

4. THE PROJECT

4.1 PROJECT LOCATION

The new general hospital will be constructed on the same location as the existing hospital, Welgelegen Road 30 (known as Cay Hill). This location (hereinafter the SMMC location) has been zoned by Government as a Hospital. The land is owned by Government and SMMC has been given a long-term lease for the use of this land. Reference is made to figure 2.1 for the SMMC location.

The area adjacent to the current and new general hospital consists of mixed use of businesses, residencies and the following facilities:

- The Learning Unlimited School (LUS) located at Welgelegen Road #32, Cay Hill Dutch Caribbean, which is at the opposite of the new general hospital. The LUS is an US accredited school that provides the following classes (i) Kindergarten, (ii) Elementary school, (iii) Middle school and (iv) Upper School.
- The Asha Stevens Elementary School (ASES), located at Jackal Road #4 (Cay Hill) / Grapefruit Road #25 (St. Peters) which is also used as a public shelter and houses the Office of Disaster Management for post disaster management and administration.
- The island main Fire Brigade station that houses all essential equipment and communication facilities and fire trucks.
- The ambulance service which is the central station for the Island.
- The Raoul Illidge Sport Complex, and
- Several smaller public buildings like churches, community centre, sport schools etc.

The SMMC complex is very central and is accessible via three main roads:

- From Simpson Bay area via the G.A. Arnell Boulevard
- From Philipsburg area via Little Bay Road
- From Philipsburg area via the A.J.C. Brouwer Road



IMAGE 1 – AERIAL VIEW OF THE PROJECT SITE

4.2 PROJECT DESCRIPTION & PHASING

The project consists of the construction of a new general hospital consisting of a modern multiple service operational facility consisting of 110 beds. After completion it will consist of the following:

- A Main Building (MB) with 5 stories of each between 3.300 and 4.000 square meters,
- An Additional Wing (AW) with 3 stories of each approximately 1,000 square meters,
- A Technical Building (TB),
- General parking area,
- A Parking garage of 4 to 5 floors,
- A Heliport, and
- Supply and installation of medical equipment, furniture, backup power plant and all IT related equipment/network (medical).

The construction of the new Main Building will be undertaken while the existing Hospital is fully operational. This Main Building will be completed upon approval and certification of all medical services and equipment at the same time the existing hospital is in operation. After transfer of all medical services to the new general hospital facility, the existing building will be demolished. After demolition the construction of the “additional wing”, main entrance, parking lots, parking garage and heliport and landscaping will follow.

The Project will be constructed in four main phases:

1: Includes all the steps and processes to complete design, permitting and site preparation including the following:

- Preliminary design
- LEED submission
- Permit applications
- Soil investigation
- Site preparation and staging
- Demolition and construction of the new wastewater treatment plant
- Final design

2: Construction of the new general hospital, which includes the Main Building and Technical Building, erected adjacent to the existing hospital. This Phase includes also retaining walls, drainages, services and access roads and can be divided into the following sub phases:

- Construction of the Main Building and Technical Building
- New Building Commissioning certificate.

3: Demolition of the existing hospital. This phase can be divided into the following sub phases:

- Moving into the Main Building
- Demolition of Existing Hospital

4: Construction of the main entrance and other facilities. This phase can be divided into the following sub phases:

- Construction Main Entrance Main building
- Construction Additional Wing
- Construction new parking lot
- Construction Parking Garage
- Construction Heliport

The timing of the above-mentioned phases is detailed in the program of works.

5. PROCESS APPROACH

5.1 DESIGN PHASE

5.1.1 DESIGNERS APPROACH

The designers of the project considered the location of the site and the needs of the various stakeholders effected by the project.

The new SMGH, will be built on an exceptional site for its landscape. At the foot of the mountains, this establishment comes to provide a strong and harmonious response to the changes it must face. It will become a unifying element to best welcome the needs of the hospital community and anticipate the future.

Structural resilience, occupant safety and environmentally quality were key drivers in the conceptual planning, design development and final architectural form of the new Main Building. This synergy of engineering, technology and architecture is communicated in the following ways:

Building Safety:

- The simple, compact design optimises structural performance y reducing the gross surface area exposed to the destructive wind forces while contributing to a clear spatial logic which demystifies way-finding, promotes a sense of familiarity and contributes to a calmness of mind.
- The façade is articulated as a homogenous plane of structural reinforced concrete and glazing designed to limit the damage than can occur when surface fixed architectural components can become dangerous missiles during hurricanes. Instead, the shading devices are packaged internally and are controllable by the user. The main building can resist wind loading exceeding 200 mph.
- The roof features a protective metal structure designed to protect mechanical plant from damage during high wind events. The device shades the roof thereby reducing solar gain.
- Base isolation technology is used to decouple the structure from the ground plane thereby providing resistance to earthquakes up to magnitude 6.0 on the Richter scale.
- Hospital plant and mechanical is isolated from the main building removing the risk of contamination, noise and other deleterious effects on staffer and patients.

Human Factors and Environment:

- The Patios deliver essential daylight deep in to the building's core for the well-being of its occupants while simultaneously increasing human comfort in a sustainable way by virtue of the low-pressure convective cooling inherent in the design. This highly effective concept makes possible natural ventilation of the Entrance Hall and general circulation of the ground floor.
- The lush planting and central positioning of the Patios removes the stress and anxiety often felt in hospitals by creating a tactile link to green space. The restorative

qualities of gardens are well documented and considered helpful toward a patient's sense of wellbeing while creating an environment for restful recovery.

- The design employs numerous design strategies to humanise the building and ensure a high quality environment for staffers and patients. Care has been taken to avoid the anonymity of the institutional setting through variation in architectural scale to influence mood and perception, the use of textures and materials to trigger memory, and the use of colour to brighten mood and calm anxiety.
- In direct comparison to the existing SMMC, solar gain through the roof plane is greatly reduced by vertically stacking the architectural programme. This design approach provides the additional benefit of simplifying general circulation and way-finding by eliminating long and circuitous corridors typical required to navigate single level institutions.
- Entry, circulation and the organisation of the internal volumes are clearly articulated. The value and importance of nature is expressed in the landscaped pedestrian boulevard motif which connects the user with the main entrance. The 'garden' narrative is repeated deep within the internal volume of the hospital creating relaxing vistas for all users.
- Public toilets are stacked vertically close to the primary circulation (elevators) which benefits users in an intuitive and logical way. Stacking services also supports and simplifies the maintenance of the building systems.

5.1.2 DESIGN RISK REVIEW

Many of the materials and methods that lead to the existence of health and safety hazards on site stem from the way things are designed. To achieve a zero-harm status for everyone involved in the project, it is necessary to identify and mitigate health and safety risks and opportunities at all stages of the project.

Throughout the development of the project, where possible, designs were reviewed and changed to eliminate and/or reduce health and safety risks in accordance with prevailing standards, the general principles of prevention and best practice.

It is the intention of the Health & Safety Consultants engaged by INSO to carry out this review with the project designers to understand the risks involved during construction and operation, including maintenance of the project.

The assessment identified risks during construction, operation and maintenance. These risks were then evaluated so that, where feasible, opportunities were taken advantage of to reduce or eliminate the risks by either redesign or by suggesting methods of work that are to be adopted by the contractors that will be eventually be engaged to construct the project or by the end user during operation and maintenance. These are recorded in the Risk Management Plan. A summary of the risks and opportunities is also reflected in the Construction Health & Safety Plan presented to the sub-contractors prior to engagement.

Through reference to the plans, a design review was carried out bearing in mind the needs of each stakeholder, i.e. the contractors, end user and maintenance personnel. The project was broken down into project phases as listed below:

PHASE 0

- Site construction – access in/out & security gate;
- Site fence, access construction and security;
- Acoustic soundproof panels insulation;
- Wheel and under body wash track;
- Construction welfare area (Site construction office, refectory area, changing room, temporary toilets and showers);
- Embankment excavation;
- Temporary rainwater ditch;
- Material Storage area;
- Disposal area and preparation area for steel;
- New water treatment plant and connects to the existing hospital;
- Tower cranes erection.

PHASE 1A

- New Water Treatment Plant & underground services to connect the SMMC Hospital;
- Embankment excavation;
- Completion of the retaining concrete wall and box drains;
- Installation of LPG and diesel underground tanks;
- Construction of trenches;
- Technical Building 1 – concrete activities;

PHASE 1B

- Utilities (Gebe and cable) extended to the delivery station;
- Gebe power supply delivery station and water meters;
- Excavation for the raft foundation;
- Drainages connected to the existing channel;
- Technical building 1 – completion concrete activities;
- Demolition of the existing treatment plant.

PHASE 1C/1D

- Construction Main Building up to completion;
- Completion Technical Building 1;
- Excavation to completion;
- Rainwater drainage system underground.

PHASE 1E

- Technical Building 2;
- Main building testing & commissioning;
- Technical building testing & commissioning;
- Retaining wall front façade;
- Services connected to the New General Hospital;
- Tower crane B dismantling;
- Ambulance & Technical access;
- External areas, landscape and driveways;
- Site Construction Office removal.

PHASE 1F

- Hand over Main Building;
- Hand over Technical Building 1;
- Hand over Technical Building 2.

PHASE 2A/2B

- Site preparation;
- Site fence and access construction relocated;
- Site construction office reduced;
- Site construction toilets reduced;
- Storage, security and deposit area relocated;
- Demolition of the SMMC Hospital;
- Visitors flow access modified;
- Erection of tower crane.

PHASE 3A

- Site fence modified;
- External concrete staircase;
- Storage and deposit area relocated;
- Excavation and construction of additional wing building;
- External entrance canopy;
- External parking areas and walkways;
- Landscape.

PHASE 3B

- Site construction office relocated;
- Site construction toilets relocated;
- Site fence modified;
- Storage and deposit area relocated;
- Helipad;
- External parking areas and walkways;
- Landscape;
- Dismantling of tower crane.

The **Risk Management Plan** is included in **Appendix A** and is intended to be a 'living' document since the risks need to be reevaluated as the detailed design is completed and when new methods of work are suggested by contractors engaged to work on the project.

The approach adopted is described in the attached flowchart, image 2.

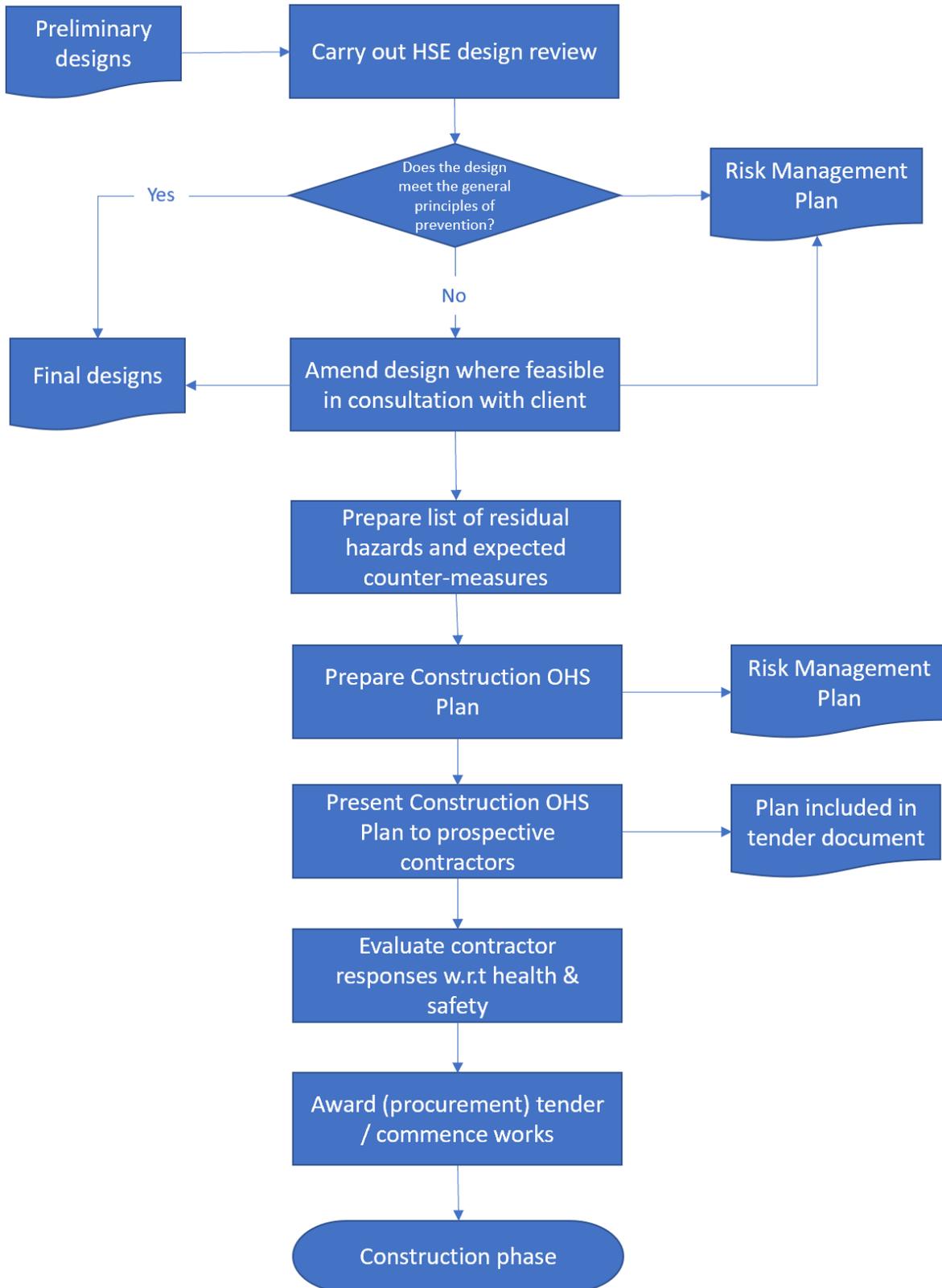


IMAGE 2 – DESIGN PHASE PROCESS FLOW CHART

5.2 CONSTRUCTION PHASE

The construction phase Occupational Safety and Health Management Plan documents the responsibilities of the Main Contractor and Sub-Contractors in meeting relevant statutory requirements, specifications and standards.

It defines the OHS objectives for the project and provides a framework for the implementation of the Main Contractor’s Occupational Safety and Health Policy.

This plan relates to all activities undertaken during the construction phase. The scope includes matters of OHS, emergency preparedness and response, incident and accident management, the prevention and management of risks and opportunities, coordination between the different parties involved in the construction phase, and specific hazards and risks associated with the workplace.

This plan is supported by documentation which is intended to provide a coordinated and consistent approach to managing OHS risks.

The approach adopted is described in the attached flowchart, image 3.

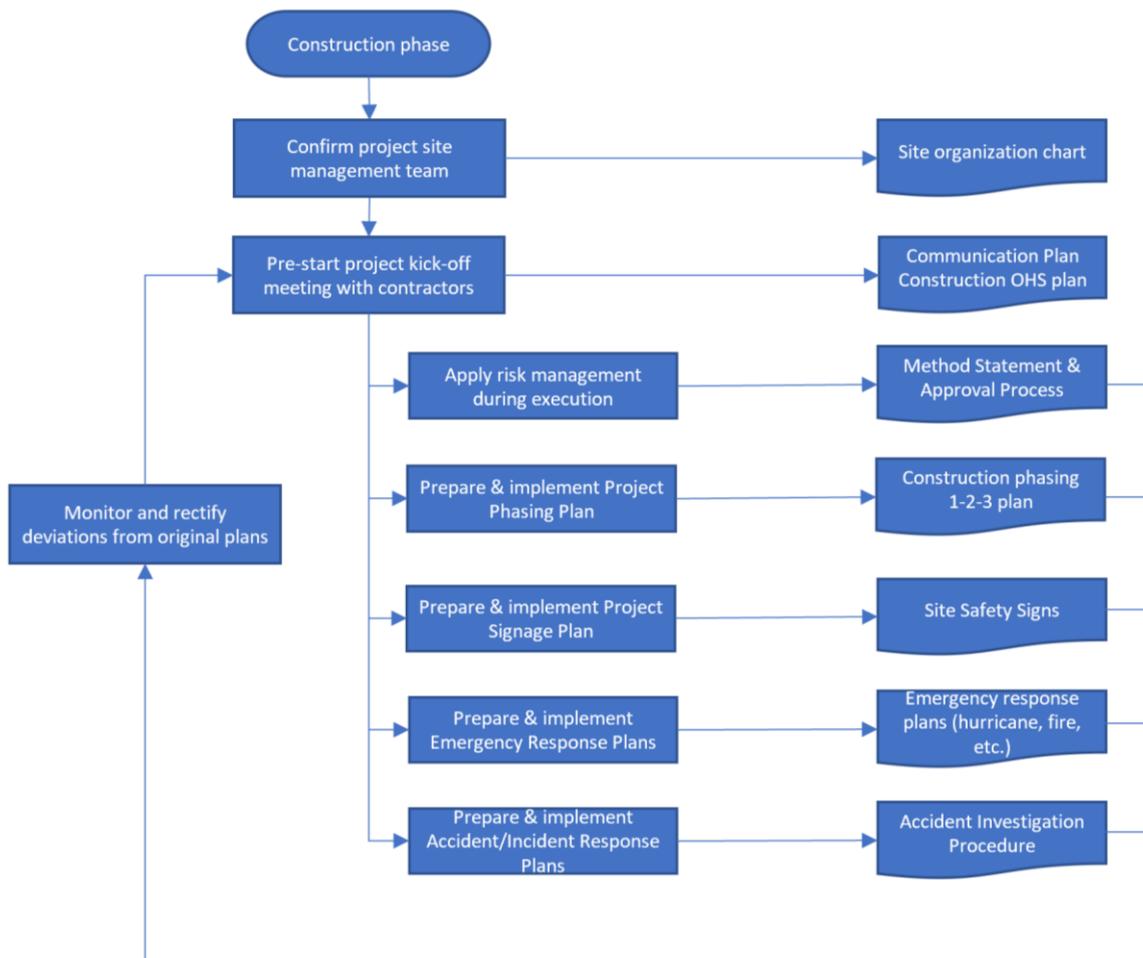


IMAGE 3 – CONSTRUCTION PHASE PROCESS FLOW CHART

5.2.1 PROJECT SPECIFIC HAZARDS AND EXPECTED COUNTERMEASURES

Note: The table below sets out the expected countermeasures based on the design stage risk assessment. The prospective sub-sub-contractor is to meet or exceed the countermeasures detailed below.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
PHASE 0 and 1A		
SMMC handover of site to INSO.	Disruption to routes used by the hospital's emergency services.	Defined traffic routes are to be prepared that are to be followed by sub-contractor during the works. Refer to ESMP Plan 01 – Construction Traffic Management Plan .
	Site construction area rather limited to store materials.	A storage area in the neighbourhood is to be identified.
Erection of site hoarding	Use of mobile lifting equipment, moving vehicles, etc.	All works related to the site hoarding will be carried out from within the designated site where the main building will be erected. Temporary hoarding will be erected until the permanent hoarding is completed.
	Noise emissions due to the works on the construction site adversely effecting the adjacent operating hospital.	Acoustic panels must be erected along the full length of the existing façade overlooking the work site. Refer to ESMP Plan 02 – Noise and Vibration Monitoring Plan .
	Functionality of the external AC units currently connected to the existing hospital has to be maintained.	Sufficient access between the noise panels and the AC units is needed for maintenance. Also, an access door to provide inspections.
	Unauthorised access.	Site security plan shall be followed, and security staff employed to guard the site even during non-working hours. Access during working hours will be controlled by identification ID. INSO will provide Site ID cards for all sub-contractors and workers involved in the project.
	Closure of emergency exit from existing hospital due to erection of hoarding.	INSO shall provide access into the construction site through its hoarding so as not to obstruct the hospital's exit. Measures will be taken to maintain a safe route from the hospital exit into the construction site.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
Construction of new wastewater treatment plant.	General construction related hazards.	Standard one storey building to be built near existing hospital. Apart from delineating the site with robust hoarding, sub-sub-contractors are to follow approved method statements.
Demolition of existing wastewater treatment plant.	Dust and noise emissions adversely effecting the adjacent operating hospital.	Acoustic panels must be erected along the full length of the existing façade overlooking the work site. Refer to ESMP Plan 02 – Noise and Vibration Monitoring Plan .
		Dust protection consisting of wooden temporary structure covered with PVC tarpaulins are to be erected. Refer to ESMP Plan 03 - Air Quality and Control Monitoring Plan .
	Use of heavy machinery.	Demolition method statement shall be followed. Work area shall be physically cordoned off.
Re-routing of existing drainage.	Exposure to biological agents during connecting to the new wastewater treatment plant.	Workers shall wear the necessary PPE as identified during the preparation of the method statement and risk assessment. Health surveillance of workers shall be necessary. Refer to ESMP 04 – Hazardous Materials Management Plan .
	Exposure to unpleasant odours (toxic gases), drainage outflows, etc.	Works shall be carried out in collaboration with the state utilities department to ensure that all drainage flows are cleaned. Gas monitoring shall be maintained throughout the works. Any entry to confined spaces shall follow a confined space entry permitting system. Exposed drainage shall be kept to a minimum to minimise odours.
	Installation of pipework, construction of manholes and other related drainage infrastructure. Measures, such as trench boxes, shall be utilised during excavation and laying of new drainage routes.	Works shall follow an approved method statement. All equipment used for the works shall be in good condition and compliant with local regulations.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
Construction of temporary sewage pipe to the new waste treatment plant.	Installation of pipework, construction of manholes and other related drainage infrastructure. Measures, such as trench boxes, shall be utilised during excavation and laying of new drainage routes.	Works shall follow an approved method statement. All equipment used for the works shall be in good condition and compliant with local regulations.
Excavation of embankment.	Uncontrolled collapse of spoil onto workers. Buried services.	Works shall follow an approved method statement. This will be prepared by the structural engineers based on the onsite surveys and soil investigation reports.
	Potential soil pollution on site due to diesel fuel or lubricants losses.	The identified area will be treated separately with the removal of the contaminated soil and taken to the dump. In presence of underground tanks, a spill kit will be utilized to prevent leaking fuel or lubricants spreading before they can be cleaned up. Refer to ESMP 04 – Hazardous Materials Management Plan .
Construction of perimeter retaining wall.	Uncontrolled collapse of soil onto workers.	Works shall follow an approved method statement. This will be prepared by the structural engineers based on the onsite surveys and soil investigation reports.
Waste generation.	Demolition and construction waste.	All waste on site shall be treated in accordance with an approved waste management plan. Refer to Appendix B - Site Safety Signs Layout Plan and ESMP 05 – Waste Management Plan
Existing LPG and Diesel tanks used for the SMMC Hospital	Possible damages during construction works.	To avoid risk of collision, a barrier needs to be constructed to protect around the existing tanks.
Construction of retaining wall in front of care complex.	Uncontrolled collapse of soil onto workers.	Works shall follow an approved method statement. This will be prepared by the structural engineers based on the onsite surveys and soil investigation reports.
Construction of logistics road.	Exposure to LPG & Diesel fuel stored in adjacent tanks.	Works shall follow an approved method statement. Physical protection shall be erected around tanks to prevent collision.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
	Oncoming traffic hampering emergency services using main road.	Traffic management signs to be erected. Heavy vehicles exiting the site will be guided by a traffic warden to minimise inconvenience to oncoming traffic.
Demolition of steps near Care Complex.	Exposure to heavy vehicles inside the site and along the main road.	Site hoarding will be erected to prevent access once steps are demolished. A pedestrian route will be provided for SMMC staff to the Care Complex via the main road. The security on duty will guide pedestrians across the site gate.
Erection of tower cranes.	Heavy lifting.	Works shall follow an approved method statement (lifting plan). All equipment used for the works shall be in good condition and compliant with local regulations.
Setting up of site offices and toilets.	Heavy lifting.	Works shall follow an approved lifting plan. All equipment used for the works shall be in good condition and compliant with local regulations.
	Hurricane.	Set up temporary utilities: an external generator will guarantee (limited) electricity for the construction works, and at least two external water tanks estimated in 1,000 Gal each to guarantee water on site. Refer to Appendix H & ESMP Plan 06 – Hurricane Plans.
Emergency access	Safety during site operations	An emergency exit on site construction is needed to evacuate people/access ambulance.
PHASE 1B		
Site clearance and excavation for raft foundation.	Uncontrolled collapse of spoil onto workers. Buried services.	Works shall follow an approved method statement. This will be prepared by the structural engineers based on the onsite surveys and soil investigation reports.
Relocation and connecting of utilities.	Contact with live services.	Lock-out/tag-out systems (i.e. physical isolation of services) shall be implemented in accordance with an approved safe system of work to be implemented.
Site clearance and excavation for raft foundation	Uncontrolled collapse of spoil onto workers. Buried services.	Works shall follow an approved method statement. This will be prepared by the structural engineers based on the onsite surveys and soil investigation reports.
Preparation of raft foundation reinforcement	Lifting of steel reinforcement. Manual handling of steel and repetitive activities during	Rebar shall be lifted as much as possible by cranes. Job rotation shall be employed to reduce exposure to repetitive activities.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
	construction of steel cages.	
PHASE 1C and 1D		
Concrete casting of raft foundation	Contact with hazardous substances, i.e. concrete and additives. Exposure to hand-arm vibration during use of vibratory concrete poker.	Personal protective equipment included long trousers, gloves and eye protection shall be worn. Concrete poker shall be held from designated points to minimise exposure to vibration.
Concrete trucks access in/out	Many concrete trucks coming in/out from the entrance of the building construction site access, with a result of intense flow of vehicles. Construction activities may affect traffic near the roundabout.	Access in/out from the site construction must always monitored by the security gate. With intense construction activities, a dedicated traffic coordinator is needed. Refer to ESMP Plan 01 – Construction Traffic Management Plan.
Construction of columns and beams	None other than standard work-related hazards.	As much as possible column steel cages shall be assembled on the ground and then lifted into position. Any other steel reinforcement done at height shall be done from fully boarded scaffolding equipped with internal access, toe boards and edge protection. Works shall follow an approved method statement. Column formwork shall be equipped with working platforms equipped with edge protection to all for safe access during concrete pouring. Works shall follow an approved method statement.
Flat slab construction.	Falls from height during laying of formwork supporting concrete slab.	Adjusting fall restraint systems shall be used during placing of formwork. Works shall follow an approved method statement.
External walls construction.	Falls from height during erection of concrete formwork.	As much as possible wall steel cages shall be assembled on the ground and then lifted into position. Any other steel reinforcement done at height shall be done from fully boarded scaffolding equipped with internal access, toe boards and edge protection. Works shall follow an approved method

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
		statement. Wall formwork shall be equipped with working platforms equipped with edge protection to all for safe access during concrete pouring. Works shall follow an approved method statement.
High Lifts.	Use of multiple cranes on the same site. Uncertified and/or non-proprietary lifting accessories.	A detailed coordination plan shall be prepared detailing: - Mandatory centralised lifting equipment, devices and accessories register; - Coordination and rationalisation of the cranes on site to minimise the risk of interference and interaction; - Pre-designated competent operators, slingers and banksmen provided with electronic means of communication.
Floor penetrations.	Falls from height.	Floor penetrations in excess of 1 sqm shall be covered with robust coverings that are clearly sign-posted indicating the drop and be secured to prevent slippage. Larger penetrations shall be guard railed.
Temporary closure of interface between new building and new wing.	Exposure to damage by high winds.	Interface shall be temporary closed and sealed in accordance with a specifically designed solution.
PHASE 1E		
Testing and commissioning of main building and technical building.	Contact with live systems/poor coordination/etc.	A commissioning program shall be prepared detailing the sequence of works, which equipment/system will be commissioned first, etc. Isolation procedures and lock-out/tag-out systems are to form an integral part of the testing and commissioning phase.
Connecting of services with existing hospital.	Contact with live systems/poor coordination/etc.	A commissioning program shall be prepared detailing the sequence of works, which equipment/system will be commissioned first, etc. Isolation procedures and lock-out/tag-out systems are to form an integral part of the testing and commissioning phase.
External areas and driveways / landscaping	None other than standard work-related hazards.	Works shall follow an approved method statement.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
Technical building 2 for medical waste autoclave/shredder and equipment areas	Contact with live systems/poor coordination/etc.	A commissioning program shall be prepared detailing the sequence of works, which equipment/system will be commissioned first, etc. Isolation procedures and lock-out/tag-out systems are to form an integral part of the testing and commissioning phase.
Dismantling of tower crane B.	Heavy lifting.	Works shall follow an approved method statement (lifting plan). All equipment used for the works shall be in good condition and compliant with local regulations.
PHASE 1F		
Hand over and transfer hospital operations to new building.	Patients' safety may be at risk.	All construction activities shall cease to allow the safe relocation of patients.
PHASE 2A/2B		
Erection of site hoarding	Use of mobile lifting equipment, moving vehicles, etc.	All works related to the site hoarding will be carried out from within the designated site where the additional wing will be erected. Temporary hoarding will be erected until the permanent hoarding is completed.
	Noise emissions due to the works on the construction site adversely affecting the adjacent operating new hospital.	Acoustic panels remaining installed during demolition works. Refer to ESMP Plan 02 – Noise and Vibration Monitoring Plan .
	Unauthorised access.	Site will be physically cordoned off from the adjacent hospital prior to commencement of any works.
Demolition of existing old hospital.	Dust emissions adversely affecting the adjacent new operating hospital.	Dust protection consisting of wooden temporary structure covered with PVC tarpaulins. Refer to ESMP Plan 03 – Air Quality and Control Monitoring Plan .
	Use of heavy machinery.	Demolition method statement shall be followed. Work area shall be physically cordoned off.
	Exposure to biological agents in hospital duct system.	All MEP services shall be disinfected prior to commencing dismantling and disposal.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
	Possible exposure to asbestos.	Asbestos assessment report was included during the tender document. No asbestos was identified.
Waste generation	Demolition and construction waste.	All waste on site shall be treated in accordance with an approved waste management plan as specified in Appendix B - Site Safety Signs Layout Plan and ESMP Plan 05 – Waste Management Plan .
Erection of tower crane.	Heavy lifting.	Works shall follow an approved method statement (lifting plan). All equipment used for the works shall be in good condition and compliant with local regulations.
PHASE 3°		
Construction of columns and beams.	None other than standard work-related hazards.	As much as possible column steel cages shall be assembled on the ground and then lifted into position. Any other steel reinforcement done at height shall be done from fully boarded scaffolding equipped with internal access, toe boards and edge protection. Works shall follow an approved method statement.
		Column formwork shall be equipped with working platforms equipped with edge protection to all for safe access during concrete pouring. Works shall follow an approved method statement.
Flat slab construction.	Falls from height during laying of formwork supporting concrete slab.	Adjusting fall restraint systems shall be used during placing of formwork. Works shall follow an approved method statement.
External walls construction.	Falls from height during erection of concrete formwork.	As much as possible wall steel cages shall be assembled on the ground and then lifted into position. Any other steel reinforcement done at height shall be done from fully boarded scaffolding equipped with internal access, toe boards and edge protection. Works shall follow an approved method statement.
		Wall formwork shall be equipped with working platforms equipped with edge protection to all for safe access during concrete pouring. Works shall follow an approved method statement.
High Lifts.	Uncertified and/or non proprietary lifting accessories.	Mandatory centralised lifting equipment, devices and accessories register. Pre-designated competent operators, slingers and banksmen provided with

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
		electronic means of communication.
Floor penetrations.	Falls from height.	Floor penetrations in excess of 1 sqm shall be covered with robust coverings that are clearly sign-posted indicating the drop and be secured to prevent slippage. Larger penetrations shall be guard railed.
Dismantling of tower cranes.	Heavy lifting.	Works shall follow an approved method statement (lifting plan). All equipment used for the works shall be in good condition and compliant with local regulations.
Connecting of interface between new building and new wing.	Exposure to damage by high winds.	Connecting of both buildings shall be done in accordance with a specifically designed solution.
	Exposure to patients and hospital staff.	Temporary dry wall segregation shall be erected to isolate construction area from operation areas.
Heavy lifting.	Lifting of steel structures such as canopies above entrance, roofs, etc., as per design.	Lifts shall be done in segregated areas and in accordance with an approved lifting plan.
Visitors access.	Visitors access near construction activities is serious hazard.	Plan needs to be coordinated and approved by SMMC. Alternative temporary access for visitors is needed.
PHASE 3B		
Testing and commissioning of the Additional Wing.	Contact with live systems/poor coordination/etc.	A commissioning program shall be prepared detailing the sequence of works, which equipment/system will be commissioned first, etc. Isolation procedures and lock-out/tag-out systems are to form an integral part of the testing and commissioning phase.
Connecting up of services between the Additional Wing and Main Building.	Contact with live systems/poor coordination/etc.	A commissioning program shall be prepared detailing the sequence of works, which equipment/system will be commissioned first, etc. Isolation procedures and lock-out/tag-out systems are to form an integral part of the testing and commissioning phase.
External areas and driveways / landscaping.	None other than standard work-related hazards.	Works shall follow an approved method statement.

Feature, element, structure, 'process', or activity	Foreseeable hazards	Expected Countermeasures
Helipad and parking areas.	Heavy construction machinery carrying out ground works, site levelling, etc.	Works shall follow an approved method statement.

5.2.2 EXISTING OFF/ON-SITE CONDITIONS

As indicated in paragraph 4.2, the site abuts an operational hospital. Consequently, the sub-contractor is to be aware of the possible adverse effects caused by the project and take all the necessary precautions to minimise such effects.

It is understood that the existing land where the new hospital will be built is a greenfield site and therefore free from contamination. Also, the existing hospital will be free of hazardous substances prior to its demolition. It is however strongly recommended that the sub-contractor carries out a detailed survey of the premises to be able to prepare a thorough risk assessment and manage any residual risks.

Inevitably, different sub-contractors will be working simultaneously at some point in the project, and therefore the need for planning and cooperation between the different parties working in the areas is expected.

5.2.3 RESTRICTIONS THAT MAY AFFECT THE PROJECT

For technical or safety reasons, the project may not always be able to proceed as planned. In fact, the sub-contractor/s is expected to consider the time and period restrictions whilst planning works. Furthermore, all sub-contractors shall follow instructions issued as necessary by INSO Project Manager.

Generally, hours of work shall be in accordance to the permits issued or as agreed with the responsible authorities.

5.2.4 SITE LAYOUT AND MANAGEMENT

INSO has developed a detailed composite site layout plan showing temporary facility for the Project. The layouts covering the different phases are reflected in **Appendix C – Construction Phasing**.

5.2.5 SITE RULES AND REGULATIONS

As a minimum, the following rules shall apply to all persons on site, including visitors. Non-compliance will mean exclusion from site.

1. All personnel are required to wear a **Safety Helmet, Safety Footwear** and **High Visibility Vests or equivalent**. All Personal Protection Equipment (**PPE**) shall always be worn.

2. Every accident and dangerous event must be reported to INSO.
3. Any person found to be interfering with or misusing fixtures, fittings or equipment provided in the interest of health, safety and welfare, would be excluded from the site.
4. **Smoking** will only be allowed in designated areas.
5. **Visitors** must report to the security site office and will be allowed entry at the Client's/INSO's discretion. Whilst on site, visitors are to wear the appropriate **PPE**.
6. **Vehicle Drivers** must always wear a safety helmet when outside their vehicle. Vehicles are not to be reversed in construction areas unless under the control of an authorised banksman.
7. Safety signs and notices must be followed.
8. Permission must be obtained from INSO prior to any photography or video filming on site.
9. All site personnel, for their own safety and for the safety of others, are required to fully comply with their employers / site **Safety Programme**.
10. Site fire and emergency alarms, equipment and instructions are designed to protect life. They must be followed.
11. Ladders are only to be used as work platforms for tasks of short duration and only if no alternative means of access is readily available. Ladders must always be secured to a structure or securely 'footed' by another person whilst in use.
12. No person other than a designated and qualified / approved electrician is to make electrical connections / disconnections, other than at approved plugs and sockets, or make alteration to the temporary electrical supply.
13. The consumption of alcohol and drugs is prohibited.
14. No person is to operate any mechanical plant or equipment unless they have been trained and have been certified as competent.
15. Any mechanical plant or equipment found to be defective is not to be used.
16. Food is only to be consumed in the designated mess areas.
17. No personnel shall indulge in fighting, horseplay or practical jokes within the site perimeter.
18. No personnel shall access the areas occupied by SMMC without permission.

5.2.6 ANTI-HARASSMENT POLICY

The Client and INSO are committed in all areas to providing a work environment that is free from harassment. Harassment based upon an individual's sex, race, ethnicity, national origin, age, religion or any other legally protected characteristics will not be tolerated. Consequently, sub-contractor/s are expected and required to abide by this policy. Failure to do so may result in the expulsion of the defaulting worker.

5.2.7 STAFF AND LABOUR

Sub-contractors will comply with all the relevant labour laws applicable to the sub-contractor's personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration and will allow them to all their legal rights. The sub-contractor's personnel will be obliged to follow and to apply all applicable Laws, including those concerning safety at work.

The sub-contractor will ensure that for the duration of the project all staff remain in possession of visas and/or work permit for Sint Maarten as well as to make arrangements for engagement of all its staff, local or foreign, and for their payment, housing, feeding and transportation.

The rates of wages and observed conditions of labour, which be not lower than those established for the trade or construction industry in Sint Maarten, will be paid by the sub-contractor.

Before entering on site and starting of the performance of work, all employees must be trained on health and safety measures. This shall include:

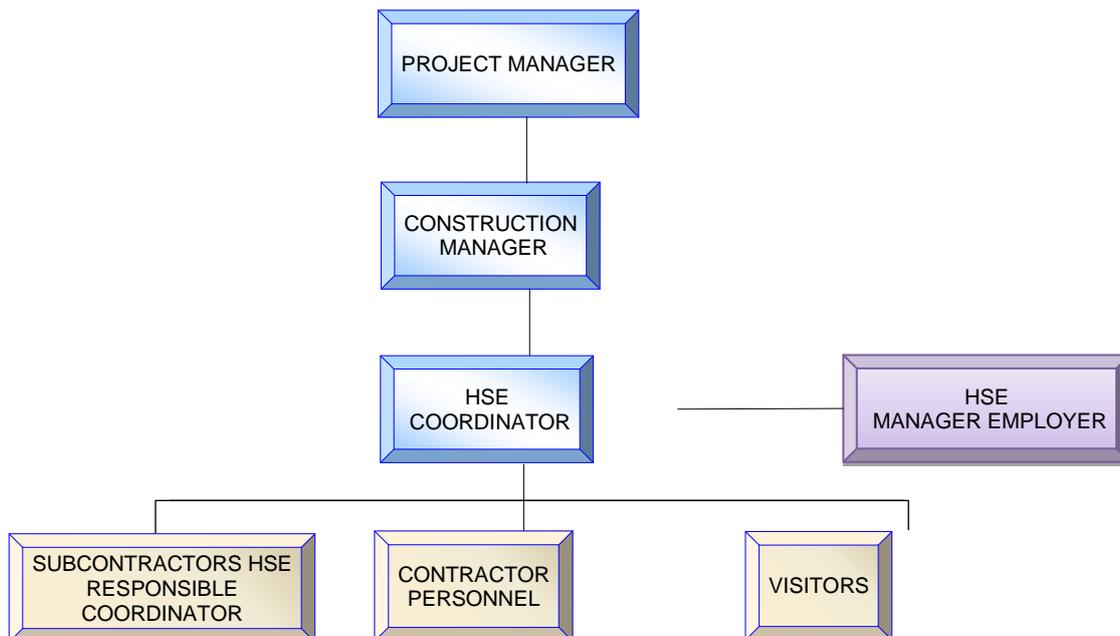
- General occupational health and safety responsibilities;
- Identifying hazards in the workplace and managing risk;
- First aid arrangements
- Use of personal protective equipment
- Site rules, etc.

The sub-contractor will effect and maintain insurance against liability for claims, damages, losses and expenses arising from injury, sickness, disease or death of any person employed by the sub-contractor or any other of the sub-contractor’s personnel.

Moreover, the sub-contractor will affect and maintain compulsory social insurances for its employees: SZV, OV, AOV/AWW, AVBZ. For any person working on the project for which before mentioned is not applicable (due to residency, height of income or expat status) the sub-contractor will effect and maintain private medical insurance covering hospitalization, specialists, family physician, pharmacy, ambulance, air-ambulance, repatriation of mortal remains in full.

5.2.8 MANAGEMENT AND RESPONSIBILITIES

5.2.8.1 INSO’S MANAGEMENT STRUCTURE



5.2.8.2 DIRECTION AND ON-SITE MANAGEMENT

On-site management shall lie within the remit of INSO's Project Manager. Site management shall amend the project plan as required such that the works to be executed are evaluated and discussed with the relevant personnel. The HSE Manager shall be kept informed of future works so that any high risk activities may be identified and planned beforehand.

Sub-contractors shall manage all the activities within their area of control and shall follow instructions and recommendations issued by INSO Management to prevent hazards and minimise related risks.

5.2.8.3 RESPONSIBILITIES PERTAINING TO SAFETY

5.2.8.3.1 INSO PROJECT MANAGER (PM)

The PM duties in terms of HSE are to manage and ensure following:

- The organization of the site;
- The choice of machinery and equipment defining the site layout;
- Planning and programming phases of work in order to ensure compliance with the measures necessary for the safety and health of workers;
- The selection and arrangement of temporary works;
- The presentation of the necessary complaints to the competent authority, before the opening of new sites and for any continuations of those already in place;
- Drawing as necessary, before the commencement of the work, in collaboration with the prevention and protection service, the Health, Safety and Environment Plan in compliance with the risk assessment document prepared by the company;
- That appropriate measures are taken in order to avoid that the adopted technical measures may result in a risk to public health or in a degradation of the environment, periodically verifying the continued absence of risk;
- That all the necessary measures for fire prevention and evacuation of the workplace has been taken.
- That all the prevention measures are promptly updated in relation to changes in organization and production that are relevant to health and safety at work, or in relation to the degree of evolution of the techniques of prevention and protection;
- To promote, in case of entrusting part of the work to sub-contractors, the coordination of sub-contractors and self employed workers, and their cooperation for the implementation of the preventive and protection measures against work risks and accidents during working activities subject of the contract and that the actions to prevent and protect against hazards at work are coordinated also in order to eliminate the risks due to interferences between the work of several companies involved;
- The site access has been arranged with clearly visible and identifiable signs;
- The workers are protected against atmospheric influences which could impair their safety and their health;
- The care of the conditions for the removal of hazardous materials, prior, where appropriate, the coordination with the client or the project supervisor;
- Care of the safety signs on site.

5.2.8.3.2 INSO CONSTRUCTION MANAGER

The Construction Manager duties in terms of HSE are to manage and ensure following:

- The direction of the work site;
- The direction and coordination of activities carried out by the employees and sub-contractors;
- The cooperation for the implementation of the prevention and protection measures against hazards at work and the coordination of prevention and protection actions from occupational hazards. The purpose of this cooperation is to eliminate the risks due to interferences between the activities performed by the various companies involved in case the Subcontractors are engaged on the Site;
- The monitoring and verification that all staff comply with the regulations and the provisions with regards to occupational safety and health as well as to ensure the compliance with the procedures contained in the executive and operational security plan;
- Moreover, the Construction Manager's duty is to ensure that all workers use the appropriate PPE, giving instructions and suspending the operations in case of serious and imminent hazard, until the implementation of the proper adjustments has been verified;
- The adoption of measures to control the risk situations in case of emergency, immediately informing exposed workers and giving instructions so that they, in case of serious, imminent and unavoidable hazard, can leave the job or the danger zone;
- The technical controls of the supplies, on the processing and the execution of the final checks;
- The verification that the equipment presents on site has been mounted/installed in compliance with the approved plans and resulting by the assembly instructions and/or following the executive project. The Construction Manager ensures that the devices used for safety and health protection of the workers have not been tampered and removed as well as the periodical checks are duly performed as required by law. Moreover, the Construction Manager ensures that the assembly, disassembly and use of the equipment is performed by appropriate staff adequately informed and educated about the conditions of safe use in foreseeable abnormal situations providing, for the staff of his/her own company, to give, if necessary, such information and instructions. For equipment that requires special knowledge and responsibility the Construction Manager ensures that the operators have received adequate and specific training that enables them to use such equipment in a suitable and safe way even in relation to hazards caused by other people;
- To take into account, when entrusting tasks to employees, their capacity and conditions in relation to their health and safety;
- The distribution to employees of the necessary personal protective equipment, hearing the head of the prevention and protection service;
- The adoption of appropriate measures to ensure that only workers who have received adequate instructions and training can have access to specific areas that could expose them to a serious and specific risk;
- To require the compliance, by all the individual employees, to the existing rules as well as to the corporate safety and occupational hygiene provisions and the correct use of collective means of protection and personal protective equipment available to them;
- To adopt measures to control risk situations in case of emergency and to give instructions to workers in case of serious, imminent and unavoidable hazard, in order to leave the job or the dangerous zone;

- To inform as soon as possible the workers exposed to a serious and immediate hazard about the risk and the steps taken or to be taken for the sake of protection;
- Refrain, except where duly justified by the need to protect the health and safety, from requiring workers to resume their activities in a work situation where there remains a serious and imminent danger;
- To enable the workers to verify the correct application of safety and health protection measures;
- To collaborate with the PM in taking appropriate measures to prevent that the adopted technical measures may result in a risk to public health or in an environmental degradation, periodically verifying the continued absence of risk;
- To collaborate with the office staff in collecting the necessary data, in relation to their powers, for statistical and informational purposes, related to work accidents involving absence from work of at least one day, excluding the day of the event and, for insurance purposes, the information relating to accidents involving absence from work for more than three days;
- To take the necessary measures for the purposes of fire prevention and evacuation of the workplace, as well as for the case of immediate and serious threat;
- To provide the workers with appropriate identification card, containing particulars of the worker and the indication of the employer;
- That the workers for whom there is an obligation of health surveillance are not used for the specific job function without the appropriate judgment of suitability;
- To promote, in case of entrusting part of the work to sub-contractors, the coordination of sub-contractors and self-employed workers and their cooperation for the implementation of the preventive and protection measures against work risks and accidents during working activities subject of the contract and that the actions to prevent and protect against hazards at work are coordinated also in order to eliminate the risks due to interferences between the work of several companies involved;
- To duly check, in case of entrusting the work to sub-contractors, the congruity of the health and safety plan of the contracting companies compared to his/her own one just before the transmission of such plans to the coordinator for the execution;
- That the site access has been arranged with clearly visible and identifiable modalities;
- The arrangement or the piling of materials or equipment in a safe manner, in particular preventing their collapsing or overturning;
- The protection of workers against atmospheric influences which could impair their safety and their health;
- The care of the conditions for the removal of hazardous materials, prior, where appropriate, the coordination with the client or the project supervisor;
- That the storage and removal of waste and debris are carried out properly;
- Care of the safety signs on site;
- The adoption of the necessary organizational measures and the usage of the appropriate means, in particular mechanical equipment, to avoid the need for manual handling of loads by workers and, in case such handling is not avoidable, the adoption of the necessary organizational measures in order to reduce the risk involved in manual handling of loads.

5.2.8.3.3 INSO HSE MANAGER

HSE Manager is responsible for identifying the risk factors, evaluating risks and identifying the safety and health measures of the work environments in compliance with current standards and based on their specific knowledge of the company's organization:

- Elaborating the preventive and protective measures, within their realm of responsibility and systems for controlling said measures;
- Elaborating safety procedures for the various company operations;
- Proposals related to informational and training programs for workers;
- Taking part in consultations regarding the protection of occupational health and safety;
- Providing workers with the information on:
 - a) Health and safety risks associated with the company's general operations;
 - b) The protective and preventive measures and activities adopted;
 - c) Specific risks they are exposed to in relation to the activities performed, safety standards and company policies on the matter;
 - d) Dangers associated with the use of dangerous substances and preparations, based on the safety data forms provisioned by current regulations and technical standards;
 - e) Procedures concerning first aid, firefighting procedures and the evacuation of workers;
 - f) The names of the persons in charge of the prevention and protection service and the occupational physician;
 - g) The names of the workers assigned to applying the measures specified;

5.2.8.3.4 SUB-CONTRACTORS

- a. Familiarize themselves with the health and safety plan and ensure that appropriate parts of the plan are communicated to their employees, any sub-contractors and employees of sub-contractors which will carry out work within their area of control;
- b. Cooperate with the INSO Project Manager and Construction Manager in its fulfilment of its health and safety duties and take the necessary steps to ensure the like cooperation of employees;
- c. Collaborate with INSO HSE Manager to prepare and make readily available method statements and risk assessments for all activities carried out on the project, taking into account the working environment, other personnel present and any other factors that can adversely affect their work with the consequence of possible harm or damage;
- d. Comply with their legal and moral health, safety and food hygiene duties;
- e. Ensure that they carry out their work in their area of control in such a manner as not to put either themselves or any other persons on or about the premises at risk

5.2.8.3.5 SUB-CONTRACTOR'S PERSONNEL / SITE WORKERS / VISITORS

Every person must:

- Take care of his/her own safety and health as well as the safety and health of all the other people present on the Site who may be affected by his/her actions or omissions;
- Follow the Construction Manager's indications for what pertains to his/her duties, for the purpose of individual and general safety;

- Correctly use the tools, devices, machinery, dangerous substances, means of transportation and all the other site equipment as well as all the protection devices at their disposal and under the instructions of the Construction Manager;
- Immediately inform any possible lack of means and devices assigned to them, as well as any other possible dangerous conditions they have come to know, directly acting, in case of urgencies and under their possibilities, to eliminate or reduce such lacks or hazards and promptly informing the Site Manager;
- Not remove, without authorization, protection, control or alert devices and must not perform, on his/her own initiative, any task not specifically pertaining to his/her duties or any task that may compromise his/her or someone else's safety;
- Fulfil all the obligations imposed by the competent authorities or, in any case, the obligations necessary to protect the workers' safety and health.

6. COMMUNICATIONS AND CO-OPERATION

This Health and Safety Plan or relevant sections of it constitute the initial information for Sub-contractors.

- The risks associated with activities shall be considered by the executing party noted in caption during their risk assessments so that safe systems of work can be established.
- Sub-contractors will be informed of the risks arising from the location, operational interfaces and environment relevant to their work during periodic meetings.

6.1 COMMUNICATION OF THE PLAN

Communication of the contents of this plan will be through distribution of the plan and the methods set out in the subsequent paragraphs. Key issues addressed in subsequent revised plans will be high-lighted and communicated as necessary.

The plan will be formally issued to sub-contractors and other recipients as necessary and a confirmation of receipt shall be requested.

6.2 ARRANGEMENTS FOR COMMUNICATION

6.2.1 COMMUNICATION WITH INSO

The communication of health and safety issues will take the form of the following:

- Project Health & Safety pre-start meeting with every sub-contractor
- Safety meetings with sub-contractors' Project Managers
- Formal correspondence (instructions, meeting minutes, violations, etc.)
- Management by walking about

6.2.2 COMMUNICATION WITH SUB-CONTRACTORS AND TRAINING OF SITE WORKERS

It is the responsibility of the Sub-contractor to communicate and train his employees and to ensure that they follow suit.

If the selected sub-contractors do not possess the skills and knowledge to use and follow the construction techniques and materials necessary for construction, INSO HSE Manager shall prepare detailed method statements covering the main activities. These documents shall then be used as material for the delivery of short courses to the sub-contractors' workers to ensure that they achieve the necessary skills and competencies. The method statements shall also be assessed for risks and findings communicated accordingly. Evidence of such communication shall be maintained by the Sub-contractor.

Communication may take the following forms:

- Daily contact on site
- Toolbox talks
- Signs and signage
- Training

6.2.3 ARRANGEMENTS FOR ENSURING CO-OPERATION BETWEEN SUB-CONTRACTORS AND ENSURING SITE SAFETY

It is the responsibility of the Sub-contractor in consultation with INSO to ensure that activities are coordinated to minimise risks.

Whenever the project time plan permits, workplaces shall be handed over to a sub-contractor following a formal handover procedure. The sub-contractor confirms that the site is clean, safe and in a state that allows him to execute the expected work. The sub-contractor shall maintain the work area clean, safe and organised throughout the works and follow the same procedure when handing over the work site back to INSO, or to other sub-contractors.

Where more than one sub-contractor shares the same premises, INSO shall nominate/appoint one sub-contractor to maintain the workplace safe through the allocation of suitable resources and distribute related costs accordingly.

Sub-contractors are to pay attention and take due note of activities in the general vicinity in the interest of minimising interface risks. They are to cooperate and respect other sub-contractors and bring to the attention of their respective project manager/INSO if they feel that certain activities may pose certain risks. In cases where a sub-contractor is late in handing over the site to another sub-contractor, INSO shall have the right to go ahead with the possession of the area in question provided that safety measures are taken to ensure the safety of the receiving sub-contractor. Any costs incurred to make the site safe shall be borne by the late sub-contractor.

Details on communication are provided in **Appendix D – HSE Communication Plan**.

6.2.4 COMMUNICATION OF GRIEVANCES AND COMPLAINTS

INSO has prepared a document to define the framework it shall adopt for the management and implementation of a centralized mechanism for addressing specific grievance instances.

This document (**ESMP Plan 05 – Grievance Redress Mechanism (GRM)**), defines the framework for ensuring the welfare of all personnel connected with the Project as well as mitigation measures for protecting the environment. The GRM outlines a process for documenting and addressing project grievances (and complaints) that may be raised by affected persons or groups regarding specific project activities, environmental and social performance, the engagement process, and/or unanticipated social impacts resulting from project activities.

It describes the scope, procedural steps and specifies the roles and responsibilities of the participants involved. The GRM is a 'living document' and shall be subject to revisions based on conditions encountered during the project works and feedback from stakeholders.

7. ARRANGEMENTS FOR DEALING WITH ACTIVITIES WITH RISK TO HEALTH & SAFETY

Due to the type of project and the various constraints and risks posed by the activities, specific method statements accompanied by risk assessments are to be prepared by the respective sub-contractors. Details are provided in **Appendix E - HSE Method Statement & Approval Process**.

7.1 PERMIT-TO-WORK

Permit-to-work shall be implemented where deemed necessary. The areas/activities controlled by this procedure shall be (but not limited to):

- Hot Work in non-designated areas
- Excavation
- Work at Height except for routine activities
- Work on live electrical systems
- Demolition

8. EMERGENCY PLANNING

The HSE Manager together with the Client shall coordinate the emergency requirements for the site. This plan shall be communicated using the most appropriate means as the situation may dictate.

Each sub-contractor is required to provide suitable and sufficient resources to comply with the requirements of the fire safety plan, including manpower, equipment, training, monitoring and fire safety advice.

Each sub-contractor must take note and allow for the following requirements:

- All personnel must be informed about the requirements of the fire prevention arrangements in place once communicated
- If required, each sub-contractor must appoint fire marshals to direct all persons under their control in the event of an emergency
- Each sub-contractor is to keep an account on the quantity and whereabouts of his employees and any sub-sub-contractors or self-employed he might have engaged.
- All hot works must be undertaken under the strict requirements of a hot works permit accompanied by specific fire extinguisher
- At a frequency set by INSO/Client, all personnel are required to cooperate during fire drills
- All combustible packaging and debris is to be removed and taken to specifically designated areas and clearly sign-posted.
- Hazardous chemicals (mainly flammable) are to be stored in appropriate stores provided with ventilation. Quantities are to be kept to a minimum.
- Compressed gas cylinders are to be stored in designated areas where available
- Smoking will be restricted to designated areas

ESMP 08 - Emergency Plans, covers the following emergencies:

- Injury
- Fire or Explosion
- Evacuation
- Bomb Threat
- Earthquake
- Accidental Pollution

Appendix H & ESMP Plan 06 – Hurricane Plans.

8.1 INCIDENT REPORTING AND INVESTIGATION

For the scope of this project, the term ‘incident’ shall mean:

- Any accident involving a person absent for work for more than 3 consecutive days
- Near miss situations which could have had resulted in harm
- Traffic accidents on site
- Collapse of structure
- Falls from height
- Failure of equipment which could have had serious consequences
- Fire
- Others as may be indicated

8.1.1 REPORTING AND INVESTIGATION

The affected party shall inform the Project Manager and HSE Manager of any incidents on site by the quickest possible means. The affected party will complete an incident report and submit to INSO for further investigation.

The composition of the investigation team shall be determined by the HSE Manager in accordance with the severity of the incident.

The incident investigation shall be recorded, and the following noted:

- Incident details
- Persons involved (victims, witnesses, etc.)
- Full details and nature of injuries
- Details of the treatment received both on and off site
- Circumstances leading up to the accident
- Circumstances of the accident
- Direct reasons of the accident
- Indirect reasons of the accident (lack of supervision, training, lack of communication, etc.)
- Measures taken to prevent a re-occurrence of the accident

- Details of how the preventative measures have been communicated to those who could be affected.

Recommendations (corrective and preventive action) shall be assigned an owner and recorded on an action plan. The HSE Manager shall ensure that these are addressed in a timely manner.

A written report shall be available within 5 working days detailing all the above.

9. WELFARE AND COMMUNITY HEALTH & SAFETY

Sub-contractors shall be expected to provide adequate welfare facilities as required by law.

Refer to **ESMP Plan 09 - Community Health Safety and Security Plan**.

9.1 SOCIAL CHAPTER

A number of institutions in St. Maarten are responsible for the application of several social security laws. In general, social security premiums are withheld and paid over by the employer (the contractor and sub-contractor). Contributions may be due in respect of:

- Sickness insurance (ZV): insures employees with an income under a certain threshold for the costs of medical care and loss of income as a consequence of sickness.
- Accident insurance (OV): obliges employers to insure their employees for the costs of medical care and loss of income as a consequence of an accident at work.
- Social insurance for specific health expenses (AVBZ): bears part of the medical expenses in special circumstances.

10. FIRST AID

Sub-contractors with greater than 10 operatives on site are to provide their own qualified First Aider, together with an additional qualified First Aider for every additional 50 men. The names and contact details of these persons are to be communicated to all concerned using appropriate signage. In the case of sub-contractors having less than 10 men on site, they are to appoint a person to take charge of the situation relating to an injured or ill employee who will need help from a medical practitioner or nurse and of the equipment and facilities relating to the giving of first aid.

Sub-contractors shall also provide fully equipped first aid boxes and ensure that arrangements are in place to maintain them readily accessible and well stocked.

11. PERFORMANCE MONITORING

The following form the basis against which the sub-contractors' OH&S performance will be monitoring:

- Legal requirements
- The health and safety rules contained within the plan
- The procedure for sub-contractor selection and management of Trades
- Adherence to method statements and control measures

Refer to **Appendix I - HSE Monitoring and Inspections Plan**

Note that INSO reserves the right to enforce as follows:

- Immediate suspension of the works until the situation is made safe;
- Suspension of works until an activity assessment or method statement is submitted;
- Send off offending worker;
- Others depending on severity.

12. PROJECT PLAN REVIEW

This health and safety plan shall be reviewed, updated and developed throughout the life of the project with the programme for construction as necessary.

13.0 ATTACHMENTS

Appendix A - Risk Management Plan

Appendix B - Site Safety Signs Layout Plan

Appendix C – Construction Phasing

Appendix D – HSE Communication Plan

Appendix E - HSE Method Statement & Approval Process

Appendix H – Hurricane Plan

Appendix I - HSE Monitoring and Inspections Plan

ESMP Plan 01 - Construction Traffic Management Plan

ESMP Plan 02 - Noise Control and Monitoring Plan

ESMP Plan 03 - Air Quality Control and Monitoring Plan

ESMP Plan 04 - Hazardous Materials Management Plan

ESMP Plan 05 - Waste Management Plan

ESMP Plan 06 - Hurricane Plan for the Construction Phase

ESMP Plan 07 - Grievance Redress Mechanism

EMSP Plan 08 - Emergency Preparedness and Response Plan

ESMP Plan 09 - Community Health, Safety and Security Management Plan