Nassau Cruise Port ltd. Festival Place Building Demolition Environmental Management Plan

Prepared for:
Bahamas Marine Construction.

Prepared By:
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Revision 2

Contents

1.0 INTRODUCTION

1.1 SCOPE, PURPOSE & OBJECTIVES OF DOCUMENT

The Nassau Cruise Port Ltd Festival Place Building Demolition Environmental Management Plan (EMP) defines the environmental management system measures, work practices and procedures that will be developed and implemented during the execution of the project with the specific objective of eliminating or ensuring the minimization of environmental impacts during the contractor's works.

The primary scope of works for The Nassau Cruise Port Ltd Festival Place Building Demolition (the project) is as follows:

- Removal of metal items
- Demolish concrete walls and blocks
- Demolish foundation
- Removal of solid waste
- Removal of hazardous waste

Furthermore, this EMP outlines the specific mitigation measures that will be implemented to eliminate or reduce any adverse environmental impacts associated with the contractor´s and sub-contractor's activities. The overall purpose of the EMP is to:

- Ensure contractor and subcontractor(s) commitment to minimize environmental and social effects.
- Document environmental and social concerns and implement appropriate protection measures.
- Provide guidance to the project management team regarding procedures for protecting the natural and social environment and minimizing social and environmental impacts.
- Provide relevant information and training regarding environmental and social issues, as and when required.
- Provide a reference to applicable legislative requirements.

Specific objectives include:

- To demolish the building considering safety to ensure the protection of the workers, public, adjacent property, and open water areas.
- To demolish the existing Nassau Cruise Port Ltd Building adopting the standard safety measures and segregate the debris into recyclable and non-recyclable for proper disposal and management of wastes.
- To separate out the potential hazardous materials and dispose with proper environmental management and safety.
- Transport and dispose materials which cannot be reused and recycled in a safe manner, and.
- Clearance of the site.

Works will be carried out over a seventy-two days (72), see appendix A for the complete schedule.

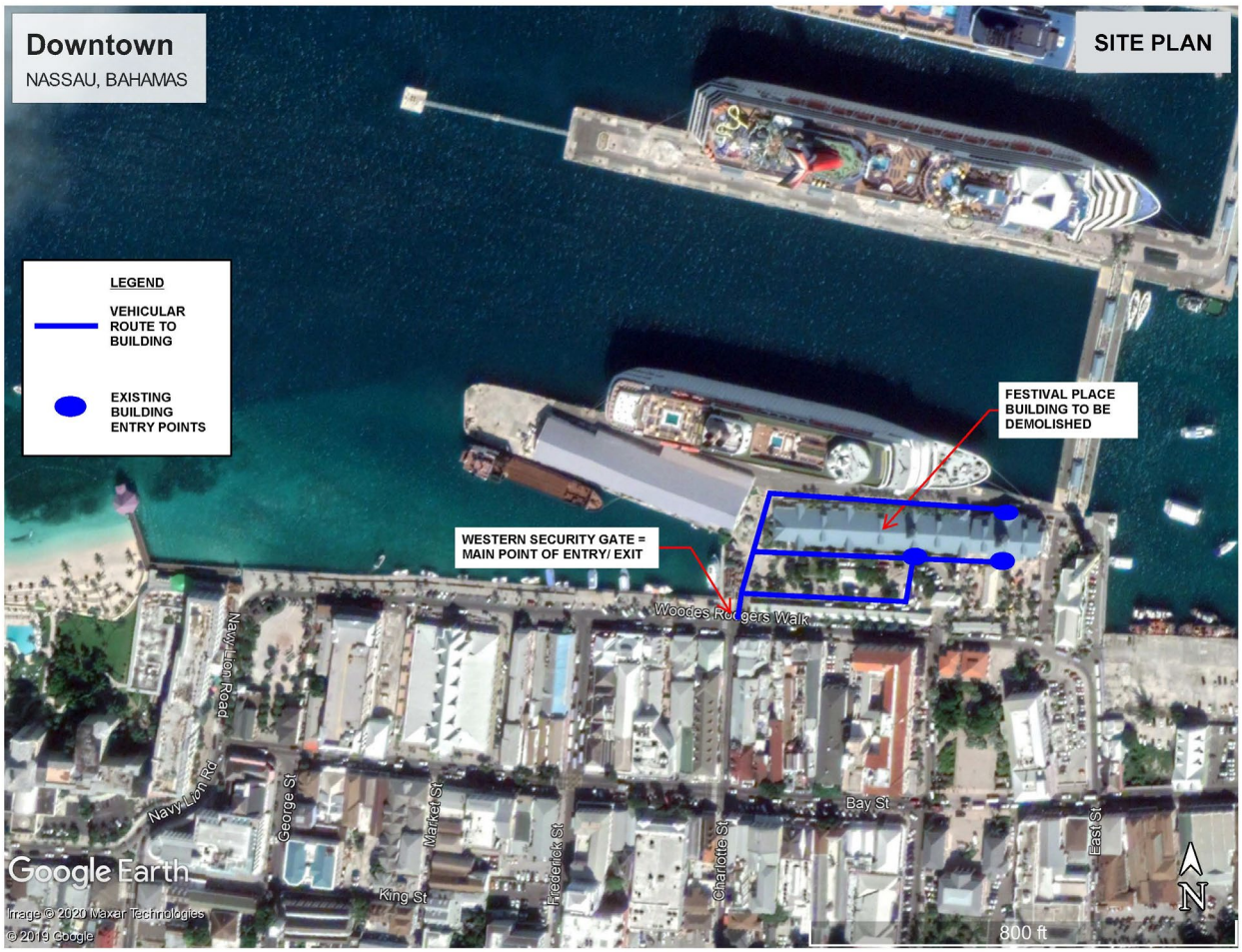


Figure 1: Site Location Plan

2.0 LAWS, REGULATIONS AND REQUIREMENTS

The contractor utilizes accepted regulatory standards as a minimum to protect the environment, the health and safety of all workers (contractor, subcontractor´s and third parties) working on the project, and any others who may be affected by the project activities.

Throughout the performance of the activities, the contractor will comply and ensure compliance of its subcontractors to these requirements as indicated in the following:

- environmental codes and regulations applicable to The Bahamas.
- contract environmental requirements.
- contractor internal environmental requirements.
- other industry standards such ISO, OSHA, and good practices where appropriate.

All subcontractors and project team members will be required to sign that they have received training on the contents of this EMP through the environmental induction presentation and booklet (See Appendix B).

2.1 National Environmental Codes and regulations applicable to The Bahamas

The project must comply with a range of national legislation, regulations, strategies, and policies to provide for the management of environmental effects. The following list identifies the Acts and all associated regulations that applies to the project activities where relevant.

Act Title	Year Enacted	Comments
Water & Sewerage Corporation Act	1976	This Act provides regulatory framework for the management of water resources in The Bahamas
Environmental Health Services Act	1987	This Act provides the framework for environmental regulations that will ensure compliance for the Project. The Act authorized the DEHS to develop regulations that prevent and control air pollution, soil contamination and preserve water quality.
Fisheries Resources (Jurisdiction and Conservation) Act and regulations	2006	This Act makes provision with respect to the conservation and management of the fishery resources of The Bahamas.
Wild Animals Protection Act	1968	This Act prohibits the taking, capturing, or hunting of any animal without a permit.
Wild Birds Protection Act	1952	This Act prohibits the taking, capturing, or hunting of any animal without a permit. Protects birds and eggs during closed season.
Conservation and Protection of the Physical Landscape of The Bahamas Act	1997	This Act protects physical landscape from environmental degradation, flooding, and removal of hills; regulates filling of wetlands, drainage basins or ponds; prohibits digging or removing sand from beaches and sand dunes; prevents harvesting or removing protected trees. To perform activities that may affect the physical landscape of The Bahamas, permits must be obtained for these activities. The Department of Physical Planning issues the permits and enforces the regulations.

Planning and Subdivision Act	2010	This Act provides for: A land use planning based development control system led by policy, land use designations and zoning Prevention of indiscriminate division and development of land Promotion of sustainable development in a healthy natural environment Maintenance and improvement of the quality of the physical and natural environment Protection and conservation of the natural and cultural heritage of The Bahamas Planning for the development and maintenance of safe and viable communities
The Merchant Shipping (Oil Pollution) Act	1976	The Act provides for the proper registration of ships, the control, regulation, and orderly development of merchant shipping in The Bahamas, proper qualification of seamen and regulation of employment conditions for seamen. These provisions Advocate ship safety and competency which prevent shipping accidents that can be detrimental to the marine environment as well in human casualties.
The Private Roads and Subdivision Act	1961	This Act enables the Department of Physical Planning to regulate road construction and subdivision development.
Disaster Preparedness Response Act	2006	This Act provides for a more effective organization of the mitigation of, preparedness for, response to and recovery from emergencies and disasters
Derelict Motor Vehicles Act	1967	This Act provides for the removal and disposal of abandoned and disused motor vehicles and for other purposes connected therewith.
The Environmental Planning and Protection Act	2019	The Act provides for the prevention or control of pollution, the regulation of activities and the administration, conservation, and sustainable use of the environment and for connected purposes.
The Environmental Protection (control of plastic pollution) Act	2019	This Act prohibits single use plastic food ware and non-biodegradable and biodegradable single use plastic bags; prohibit the release of balloons; regulate the use of compostable single use plastic bags and for connected matters.

The Ministry of the Environment Act	2019	This Act establishes the Ministry of the Environment to oversee the integrity of the environment of The Bahamas, to make the minister responsible therefore a corporation sole, to establish the environmental administration fund and the environmental trust fund and for matters connected thereto.
Health and Safety at Work Act	2002	This Act makes provisions relating to health and safety at work and for connected purposes. It details the general duties of employers and employees at work.
Emergency Powers (COVID-19) Regulations	2020	This is a national response to the global threat of COVID-19.

2.2 ISO 14000

The ISO 14000 is a set of industry standards that provide practical tools for companies and organizations of all kinds looking to manage their environmental responsibilities.

ISO 14001:2015 and its supporting standards such as ISO 14006:2011 focus on environmental systems to achieve this. The other standards in the family focus on specific approaches such as audits, communications, labeling and life cycle analysis, as well as environmental challenges such as climate change.

2.3 Occupational Safety and Health Administration (OSHA)

In the absence of specific health and safety construction regulations contractors should adhere to the Occupational Safety and Health Administration (OSHA) regulations. OSHA is an agency of the United States Department of Labor. OSHA's mission is to "assure safe and healthy working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance". The agency is also charged with enforcing a variety of whistleblower statutes and regulations. OSHA's workplace safety inspections have been shown to reduce injury rates and injury costs without adverse effects to employment, sales, credit ratings, or firm survival. Regulations such as the use of Personal Protective Equipment, housekeeping, safety training and education, fall protection and working in confined space etc.

3.0 ENVIRONMENTAL MANAGEMENT FRAMEWORK

This EMP and associated environmental documentation will be maintained and updated throughout the duration of the project. The Environmental Manager is responsible for incorporating the Owner's comments on this document as well as updating it to reflect new project information. Revisions to this document will be performed if:

- New project design parameters or construction methodologies are introduced

that could change the environmental impact or mitigation measures.
- Changing environmental requirements, commitments, or conditions by Local Authorities because of incidents and deviations.

4.0 SCOPE OF RESPONSIBILITIES

4.1 Roles and responsibilities

The overall responsibility of environmental management, monitoring and reporting lies with the Environmental Manager. The contractor is also required to ensure that all environmental requirements are duly implemented by its team and that they will work along with the Environmental Manager to ensure compliance with all requirements.

Descriptions of the key individuals with environmental responsibilities are described in the following paragraphs:

Project Manager – Kurt Smith (357-8286)

- The Project Manager (PM) has prime responsibility for quality on the project.
- Main point of contact for contract negotiations/ discussions
- Manages overall project
- Oversees that project remains within budget and on schedule
- Updates schedule as necessary
- The PM will ensure that in cooperation with the Quality Manager (QM)/ Site Engineer only use materials compliant with the Contract specification and which have been approved by the client will be used within the permanent works.
- The PM will ensure that the works are overseen by enough suitably experienced site supervisors, so that the works proceed at a satisfactory pace.
- The PM will nominate a member of his team who will attend the final inspection of the works as required.
- The PM – or his nominee – will submit copies of materials test reports to the Site Engineer.
- The PM will arrange for copies of all test reports and related documents to be kept at the site office and stored securely.
- The PM will ensure that materials are placed, compacted, and finished using equipment appropriate for the purpose, and that relevant methods are used in order to achieve the specified density, grade, fall and finish for each material type.
- They will nominate a responsible person who will notify the QM in a timely manner, of the day to day testing requirement at site so that the necessary number of tests of each material type is carried out.

Site Engineer/ Quality Manager – Beverly Moss (422-0472) (Will also serve as Health and Safety Officer)

- The Site Engineer/ Quality Manager (SE/ QM) will assist in preparation and

implementation of project execution.

- Attends the Progress Meetings (Internal as well as with Client) and assist in preparation of Minutes of Meetings.
- The SE/QM will monitor work in progress and prepare reports of the status of each assignment.
- The SE/ QM will ensure all procedures and calculations are submitted to the client for review and approval.
- The SE/ QM coordinates materials and assists in the logistics, its shipment and receipt at construction site.
- The SE/ QM coordinates with all project related workers on day-today progress of work activities, site health & safety, procurement, and operations to ensure timely completion of the project.
- The SE/ QM will provide full support for the project.
- The SE/QM will also ensure that materials are placed and finished using equipment appropriate for the purpose and those relevant methods are used to achieve the specified finish for each material type.
- The SE/QM is responsible for setting out the works according to the line, level and grade shown on the contract drawings and for keeping records relating to his work.
- The SE/QM must ensure surveying staff has the relevant information and equipment to meet the needs of the survey department commitments on the project.
- The SE/QM will arrange surveys of the permanent works to be carried out so that the specified as-built drawings can be prepared.

Environmental Manager – Janeen Bullard (357-9262)

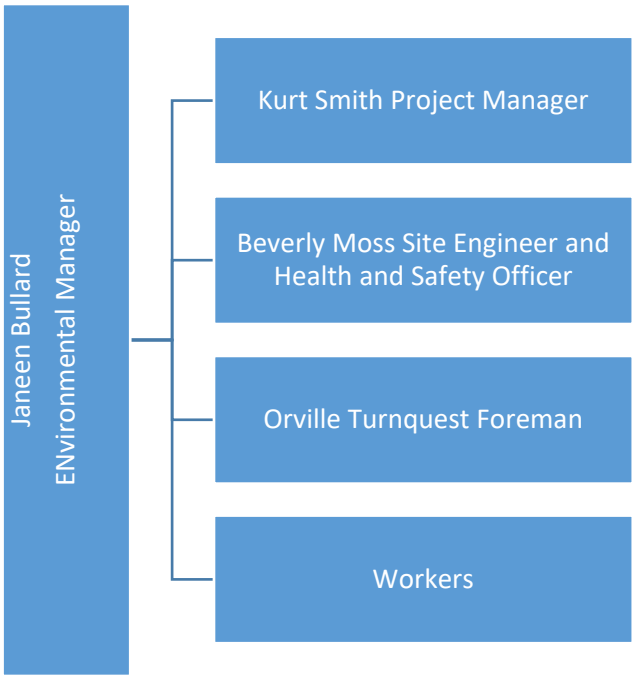
- The Environmental Manager (EM) will report to the Project Manager and be responsible for the following:
    - The EM will liaise with all other managers on the project to ensure environmental compliance.
    - The EM will identify environmental competence requirements for all staff working on the project and ensure delivery of environmental training to workers within the project team provision.
    - The EM will provide advice and liaise with the construction teams to ensure that environmental risks are identified, and appropriate controls are developed and included within method statements.
    - The EM will monitor and provide reporting based on the EMP criteria and liaise with all parties on any matters arising from non-compliance.
    - The EM will manage the environmental monitoring program, including noise, vibration and dust and review of the routine reports.
    - The EM will conduct daily site inspections.
    - The EM will provide reports, updates and any infractions to DEPP.
    - The EM will include Health and Safety matters in monthly report.

Health and Safety Officer (Orville Turnquest – 422-0124, Foreman, will serve as acting HSO in the absence of SE)

- The H&S Officer will report to the Project Manager and Environmental Manager.
- Enforce project Health and Safety Plan.

- Identification of the hazards and risks relevant to the construction project through regular coordinated site inspections
- Facilitate site health and safety meetings
- Compiling project specific emergency response and preparedness plans
- Testing the effectiveness of the emergency response plans
- Conduct site safety inductions
- Investigate and report of project related incidents
- Maintenance of all records
- Participation in management reviews of the health and safety systems
- Review and update the health and safety plan

4.2 Organizational Chart



5.0 SUMMARY OF ENVIRONMENTAL MANAGEMENT PROGRAM

The environmental management tools below will be used as a part of the overall environmental management system to avoid, reduce, or mitigate environmental impacts associated with construction activities:

5.1 ENVIRONMENTAL MANAGEMENT PLAN

5.1.1 SITE MANAGEMENT

Site Inspections – a review of crucial parts of the Works ensuring that the works progress as intended, both in terms of quality and compliance (see site monitoring checklist Appendix C). The site inspections may include the following:

- Site Safety and Health
  Materials
- Groundwater Quality
- Solid/Hazardous Waste
  Management
- Dust & Air pollution
- Noise
- Miscellaneous
- Site Visits - a visit in an official capacity, i.e. Engineer representative to examine a site to determine construction conditions.
- Site Supervision of Works – includes overseers such the PM, SE, SS, and the Foreman.
- Environmental Control Measures - checks of items such turbidity, dust, and noise pollution.

5.1.2 TRAINING

- Site Induction – prior to a crew member being allowed on site information regarding the health, safety and environmental requirements are administered.
- Toolbox Talks – weekly meetings to reinforce the topics covered during the site induction.
- Site Signage – messages displayed on site to alert workers and community of surrounding works.

5.1.3 REPORTS

The following reports should be submitted to the client for review:

- Site Reports - prepared regularly by the SE during the construction phase and issued to the client.
- Incident Reports - reports accidents and dangerous occurrences during that may happened during contract works (see appendix D).
- Monthly Environmental Reports – reports the environmental standards on site and addresses any environmental concerns.

5.1.4 DOCUMENT REVIEW AND CONTRIBUTIONS

All method statements (See Appendix E) and other relevant documents are to be reviewed by the EM prior to the execution of works to ensure that all environmental mitigation

measures are considered.

5.1.5 MEETINGS

A gathering of necessary parties to discuss ongoing, upcoming works, or any issues incurred during works.

5.1.6 MONITORING

The Site Engineer (SE) will liaise with the Environmental Manager (EM) and ensure physical implementation of this EMP. The implementation will be supported by the Project Manager (PM), the Senior Surveyor (SS), and Foreman through the performance of periodical inspections and HSE meetings. Environmental formal inspections will occur weekly. Inspections will be conducted by the Environment Manager and Site Manager using the site monitoring checklist and in compliance with the Monitoring Plan. This inspection will also be done after intense or prolonged inclement weather.

Any issues identified during the regular monitoring are to be addressed by the SE and if need be are to be addressed with staff immediately or at daily toolbox talks. There is to be continued monitoring of the implementation of action items.

The Owner and BEST Commission (Bahamas Environment, Science and Technology Commission) will be notified and invited to attend inspections. Records of inspections will be available to all.

5.1.7 INCIDENT PROCEDURE

In the case of incidents, all aspects of the incident are to be addressed and entered to the relevant logs for appropriate review. The EM and PM shall be notified of any incident with actual or potential site impacts on the community or the biophysical environment immediately. The EM will make an assessment, determine any actions to be taken and notify The Department of Environmental Planning & Protection (DEPP). A detailed report will be submitted and measures to mitigate against any further occurrence. The PM will notify the Owner immediately. See appendix D for incident report form.

5.1.8 CHECKLIST FOR ENVIRONMENTAL STIPULATIONS

The Contractor, further to the above items will use the following as a guide for general execution of the works:

- ☐ There shall be clear demarcation of the extent of Contractor's work site(s) including demolition site, laydown area and material storage.
- ☐ Health and safety equipment (including protective clothing and boots) shall be available and in use at work sites and construction facilities/camps. First aid kits will be mandatory at all sites.
- ☐ Refueling sites shall be on concrete padding or lined and bunded to confine and mitigate the effects of spillage and will be protected from rainwater.
- ☐ Discharge of dust and fumes shall be minimized by constant wetting of loose material and there will be no burning on site.

- Noise abatement on construction sites shall minimize avoidable inconvenience to local populations.
- Dump trucks shall be equipped with tarpaulins or similar devices to prevent material spillage and roads will be kept clean of mud and construction debris.
- There will be no disposal of non-biodegradable materials on site. Oil collection traps will be in use in workshop areas.
- Used oils shall be containerized and transported to an approved local agent for safe disposal or transported with other scrap equipment to an approved facility.
- There shall be NO disposal on site.
- Spoils will be removed to the New Providence Ecology Park (NPEP) only; and
- The contractor shall remove all construction equipment and scrap waste from the site on completion.
- Hazardous materials will be separated and secured into a labelled 30 cubic foot container to be kept on site until filled. The waste will be disposed of at the NPEP.

5.1.9 DOCUMENTATION

All documentation relative to and including this EMP will be maintained at the site office for the duration of the project. Reference documentation which includes contract documents, contractor's plans listed and associated records, reports, permits, procedures, and site instructions to be maintained for viewing by all parties of the Project. Any relative documentation will be available electronically.

5.1.10 SAFETY TRAINING

Site Inductions will be used as a means of educating all employees regarding the suitable PPE that is to be worn on site. All workers (including subcontractors) will receive induction/training.

5.1.11 Grievance Mechanism

Grievances can be emailed to info@nassaucruiseport.com. The NCP Communication Manager will forward grievances to respective departments within NCP. Grievances will be addressed within a two-week time period. Both grievances expressed by stakeholders and the response plan will be shared with the Department of Environmental Planning and Protection. Signage will be posted with the grievance mechanism. The comments and relative responses associated with the public grievance mechanism will be included in the environmental monthly reports.

6.0 POTENTIAL ENVIRONMENTAL IMPACTS

Long-term negative impacts to the natural resources in the area are not expected to occur because of the proposed work. Demolition will be closely monitored to prevent contamination of the adjacent marine habitats. Restoration of the construction site areas by the Contractor must be completed to ensure impacts to the environment are short term in nature.

The Contractor is also required to adhere to the guidelines established in this document, as listed in the sections of the EMP below.

Generally, the potential environmental issues associated with the project include the following:

Physical Impacts:
Air, Noise and Dust pollution
Land and Water Pollution
Disposal of demolished materials and other wastes
Disturbance to the local population in the vicinity and pedestrian
Vibration Impacts
Impacts from the Parking and vehicle movement

Socio-Economical and cultural Impacts
Safety for the workers
Traffic and inconvenience to pedestrians

Impacts during the Transportation and Disposal of Waste:
Impacts due to the frequent transportation of waste materials
Dust and noise associated with transportation
Occupational Health and Safety
Site selection for disposal of waste and debris

The Contractor will take particular care to avoid unnecessary disturbance or damage to the environment and will correct any condition which has resulted from the Contractor's operations and which constitutes, or which could result in, unnecessary damage or disturbance to property and the environment.

Potential environmental impacts and mitigation measures are summarized in the Register of Significant Impacts. Discussion of the main environmental concerns and mitigation measures for this project follows in Section 7.0.

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7.0 REGISTER OF SIGNIFICANT IMPACTS

Environmental impacts of the project are impacts to the natural communities and wildlife in the area that can be reasonably inferred, considering the footprint of impacts, and known habitats on-site. Other expected impacts are those related to normal construction and operation such as waste generation and disposal, fueling, use of potentially hazardous materials as well as other accidents or malfunctions, which may entail an environmental component. The Register of Significant Impacts considers potential impacts that maybe due to construction activities. The Register will be used in the development of method statements to proactively manage and mitigate potential impacts pertaining to the project. The Register of Significant Aspects and Impacts evaluates the potential impacts and assigns risk and magnitude scores. Risk Scores are measuring the likelihood of the impact occurring and is measured on a scale of 1-10 with 1 being unlikely to occur and 10 being highly likely to occur. Magnitude scores measures the scale of the impact if it occurs. Magnitude ranges are parameters are Low, Medium, and High.

Table 2: Register of Significant Impacts

Significant Aspect and Impact	**Activity**	**Potential Impact**	**Environmental Management Strategy**	**Risk Score**	**Magnitude Score**
CONSTRUCTION PHASE					
Air Pollution	Dismantling of the building	Dust	*Prior information to the adjacent offices regarding the demolishing process, scheduling of the activities etc. *Water spraying at the demolition site *Fencing/Install barriers to shield from dust and aggregates *Do not accumulate and burn waste at the site	10	High
Noise Pollution	Demolition	Sound intensity	*Avoid usage of machines/equipment with extra noise. *Carry out demolition activities	5	Medium

Significant Aspect and Impact	Activity	Potential Impact	Environmental Management Strategy	Risk Score	Magnitude Score
			in stages, give adequate notice and information of activities to the adjoining stakeholders		
Pollution	Demolition	Waste accumulation	*In case of hazardous waste store in safe place and make the provision for management (see appendix F for Asbestos Removal Management Plan) *Demolition waste will be disposed of at the New Providence Ecology Park (NPEP)	10	High
Disturbance to the local Population and pedestrians	Demolition	Dust Access to surrounding areas	*Install corresponding signs, and security om site *Install fencing and screening to shield from dust and aggregates *Provide adequate lighting at demolition site for the night to prevent accident	5	Medium
Vibration Impact	Demolition	Noise pollution	*Precaution will be taken while using the machines and equipment, during demolition *All safety precautions adhered to for careful handling of machines and equipment and heavy vehicles like excavators and dump trucks during mechanical demolition	5	Medium

Significant Aspect and Impact	Activity	Potential Impact	Environmental Management Strategy	Risk Score	Magnitude Score
			*The contractor will inform the surrounding offices and community in prior to operations that bear the risk of nuisance and accidents.		
Traffic	Demolition and Transportation	Increased traffic	*Signage erected to inform traffic, pedestrians, and adjacent offices about the activities *Flagmen to manage the movement of traffic to and from site	5	Medium
Impacts due to the disposal of waste materials	Demolition	Increase of solid and hazardous waste	*The solid waste will be separated, and recyclables removed prior to demolition *The debris will be disposed at The New Providence Ecology Park (NPEP). *The waste management area is designated by NPEP before the demolition	10	High
Safety for the Demolition Workers	Demolition	Accidents and Injuries	*The mandatory use of PPE (helmets, safety belts, masks, gloves, and boot) by workers depending on nature of work. *All workers familiar with site emergency response plan and safety procedures.	10	High

Significant Aspect and Impact	Activity	Potential Impact	Environmental Management Strategy	Risk Score	Magnitude Score
			*All workers familiar with material handling procedures. *First responders identified and present on site.		
Human Health	Demolition	Exposure to asbestos	*An assessment prior to works to determine presence or absence of asbestos	5	High
Impacts due to the Transportation from the Demolition	Demolition and Transportation	Traffic obstruction and accidents	*The transportation of the waste and other materials should be in safe manner considering road traffic regulations. *The schedule for the transportation should be made not to coincide during peak traffic hours. *Safety measures to be considered while transporting the materials *Covering of the trucks with tarpaulins to prevent dust pollution and other hazards	9	High
Accident for transportation of dispose materials	Transportation and Disposal	Traffic Accidents	*The transportation of the waste and other materials should be in safe manner considering road traffic regulations.	6	High

Significant Aspect and Impact	Activity	Potential Impact	Environmental Management Strategy	Risk Score	Magnitude Score
Impacts on the existing public utilities near to the Festival Place Building	Demolition	Utility interruption	*Public utilities like road, electric poles, telecom poles will not be disturbed from the demolition activities	10	Low
Site selection for the disposal of waste and debris	Disposal	Exposure to mold Polution	*The disposal area will be selected prior to works *The disposal area will not be in an environmentally sensitive area *The site selection for disposal will be determined by the NPEP	10	Low

8.0 ENVIRONMENTAL PROTECTION AND MITIGATION

The Contractor must avoid unnecessary disturbance or damage to the environment and in the event of any such disturbance or damage, the Contractor must ensure the same is corrected. Mitigation to reduce the risk of impacting the surrounding environment is as follows:

8.1 CONSTRUCTION MANAGEMENT PLANS

8.1.1 WASTE MANAGEMENT PLAN

Solid Waste Management

Waste materials shall be removed and disposed of at the New Providence Ecology Park (NPEP).

The following practices and procedures will be applied:

- Ensure that an adequate number of appropriate waste containers are available on site.
- All spill clean-up material (i.e. used sorbent pads) will be stored in lined containment drums and disposed of at an approved facility.
- Hazardous waste will not be stored on site. As the material is collected from the building it will be immediately collected int garbage bins and/or dump trucks, seal or covered and transported to NPEP.
- Any portable toilet(s) that are on-site should be secured to avoid being knocked over by heavy winds and vandalism. They must be adequately maintained on a regular basis. Toilets must be located more than 150ft from the edge of the open water.
- If potentially contaminated soils or waters are encountered during the work, the contractor will contact the EM immediately. Contaminated soils or waters must be assessed by a qualified environmental consultant and disposed of off-site at a regulated facility.

Samples were collected and tested for pigeon feces, significant levels of two mold species – *Aspergillus* and *Stachybotrysat* the Florida based EMSL Laboratories using the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) and mold analysis which is accepted by the Department of Environmental Health Services (DEHS). The results from EMSL identified the building tested negative for asbestos but positive for roof panel tested positive for *Aspergillus* and *Stachybotrysat* (see appendix G for Festival Place Building Testing Results).

The materials will be removed using Environmental Protection Act (EPA) and OSHA recommended practices including PPE, engineering controls and containment and secured disposed of at NPEP on Tonique Williams Darling Highway.

8.1.5 NOISE AND LIGHT CONTROL PLAN

Noise and light disturbances due to construction activities need to be managed to reduce the impacts to the local community, particularly during the evening and overnight hours. Contractors should be aware of and identify any sources of noise or light disturbances and train all on-site workers to be aware of noise or light issues and how to minimize disturbances where possible. The level of noise, light and dust from construction plant operation shall be periodically assessed by the Contractor and the Client in relation to the significance of potential disturbance.

Noise

The Contractor will maintain equipment in good order to minimize extraneous noise. The general rule shall be that construction operations shall be restricted to daylight hours between 0700 hrs and 1900 hrs. Advanced notice will be given prior to commencement of work and where there is a reason to work outside these hours to speed up the progress of works. Any complaints from local communities concerning noise shall be reported to the Owner's Representative and steps taken wherever possible to conform to local wishes, for instance in relation to the specific timing of activities.

To manage noise impacts during construction hours, contractors shall utilize accepted noise control techniques, such as:

- Maintaining equipment in good working order.
- Implement the use of best available control technologies to reduce noise such as mufflers and silencers.
- Implement a speed limit to slow vehicles and limit noise generation.
- Turn off idling equipment when not in use.

Light:

If construction is to occur during hours when enough daylight is not available, and lighting of the work area is required, the Contractor is expected to manage excess lighting and glare by:

- Strategic placement of lights away from residential areas,
- Tilting lights downwards, and
- Using shielding to restrict the glare of lights.

8.1.6 DUST AND AIR POLLUTION PLAN

Dust

Construction impact minimization techniques to be implemented include:

- The immediate demolition site will be fenced and screened to contain dust and aggregates.
- Spray demolition, roads, and other surfaces as necessary with water to reduce dust generation. The building will be imploded so spraying will also be directed inwards.
- A water truck will be employed, as required, to dampen work areas, exposed debris, roads, and stockpiles to prevent the emission of excessive dust from the site.
- The hauling of material will be done from the direction the building is imploded. The

dump trucks will follow one route to limit access to the demolished building to reduce dust and increase safety.
- All access roads shall be periodically maintained by sweeping etc. to ensure they are free of debris.
- Trucks hauling material will be covered by a tarpaulin to prevent dust pollution and debris on the roads.

Air-borne pollution

The minimization of air-borne pollution is a key component for environment management of the site. Construction phase air quality impacts shall be minimized or avoided by incorporation of air quality control measures. The installation and application of air quality controls during the construction phase shall be in accordance with the following principles:

- All equipment used and all facilities erected on site are to be designed and operated to control the excessive emission of dust, fumes, and any other air impurity into the atmosphere.
- Contractor/Subcontractors will maintain all construction equipment to reduce exhaust emissions.
- The Engineer will visually monitor levels of dust deposition and air quality, the effectiveness of dust emission controls and the construction site and the impacts of any nuisance on adjoining properties.
- All staff will be equipped with PPE such as full-face respirators and disposable overalls where appropriate.

Mold

- To control mold a clean room will be created to decontaminate personnel and material before entering and leaving the site
- Air scrubbers will be used
- Materials will be bagged before leaving the building
- Bagged materials will immediately be placed in a garbage bin which will be sealed with plastic sheeting and transported for handling at the NPEP. (See appendix F for further mold removal methodology.)

A major contributor to the air-borne pollution will be particle mater (PM) pollution mainly created by dust. There will be no actual measurement of particle amounts but will be determined visually. Air ambient standards will be based on the United States Environmental Protection Agency standards. Currently, the EPA has primary and secondary standards for PM2.5 (annual average standards with levels of 12.0 µg/m3 and 15.0 µg/m3, respectively; 24-hour standards with 98th percentile forms and levels of 35 µg/m3) and PM10 (24-hour standards with one-expected exceedance forms and levels of 150 µg/m3).
Onsite efforts will be made to reduce the creation of PM by implementing the actions above, but additional efforts will be employed if there is the visual presence of particles observed.

9.0 EMERGENCY RESPONSE PLANS

9.1 Fuel Spill Prevention Plan

The Spill Response Plan was developed for the use of all contractors and sub-contractors, to prevent and control any spillage associated with project in accordance with Environmental, Health and Safety regulations (see appendix H).

Figure 2: Emergency Assembly Point and laydown area

9.2 Health & Safety Plan and Emergency Response

Beverly Moss, Site Engineer has been designated as the site safety officer And Orville Turnquest, Foreman as acting safety in her absence. Basic first aid training of these persons shall be required. There shall always be a fully equipped first aid box at all work sites and a list of local emergency telephone numbers in case of accident. Minor and major accidents shall be recorded in an accident logbook.

The contractor shall ensure that all staff, including subcontractors, undergo safety training and inductions. These training events will educate workers on the best practices for working (to include but not limited to):

- With hazardous materials
- At heights
- In confined spaces
- With heavy equipment

Refresher training will be conducted during toolbox talks if necessary, to ensure that all safety procedures are actively being adhered to.

Personal protective equipment (PPE) including protective suit, gloves, hard hats, respirators, and goggles shall be worn in areas designated for their use. At all times work sites shall be maintained in an orderly, safe, and tidy state. Precautions against fire accident shall be taken and appropriate fire safety equipment supplied and clearly indicated at work sites.

The Engineer will inspect sites for compliance with approved working methods and these contractual requirements. The Bahamas labour laws, and occupational health and safety policies shall always be applied.

The emergency assembly site has been identified in figure 2. In case of any emergency the staff will meet in this area, away from the building and near the site exit for easy evacuation.

9.3 COVID-19 Protocol

The Bahamas is currently during a global pandemic, COVID-19. There have been general regulations established to ensure the health of all citizens. The contractor also has an obligation to protect its workers from hazards as such required and best onsite practices will be adhered too. During this time, all parties must place an increased focus on health and safety. All measures will be taken to prevent the spread of COVID-19 and will be done in compliance under the Emergency Powers (COVID-19) Regulations 2020.

All staff will be required to follow the protocol below to prevent the spread of germs:

- By law wearing masks always is required.
- Eyewear should be worn for protective measure.
- Handwashing stations and hand sanitizer will be provided so that hands are washed/sanitized often.
- Sneeze and cough into your sleeve.
- If tissues are used please discard immediately into the trash and wash hands immediately afterward.
- Avoid touching your eyes, nose, or mouth.
- Avoid contact with people who are sick.
- Stay home if you are sick.
- High-touch areas onsite such as doorknobs, vehicles and machinery are to be sanitized on a regular basis throughout the day and if touched ensure hands are washed after.
- Sharing of tools should be limited as much as possible and if tools are to be shared, they are to be sanitized and hands washed prior to and immediately after use.
- Where possible wear gloves and do not touch your face with gloved hands. Take care when removing gloves. Ensure you wash your hands after removing them.
- Wash your clothes as soon as you get home.
- If you are ill, you must notify your supervisor immediately and seek medical attention.

The symptoms of COVID-19 are like many other illnesses, including the cold and flu. At this time, it is recommended that any worker who has any symptoms related to cold, flu or COVID-19

should be sent home.

In addition, workers are encouraged to call:

- 511 – For COVID-19 Health related and general health related matters. National Insurance Board number must be provided for the call.
- 411 – For non-health COVID-19 matters.
- 911 – For all other health emergencies and life-threatening conditions.

Signage will be posted to communicate COVID-19 policies to workers and site visitors. The policies include:

- Social distancing of 3 to 6ft as much as practical.
- No gathering in groups for breaks or lunch.
- A restricted number of persons will be allowed on site.
- Visitors are required to adhere to all best practices and policies.
- Any meetings or toolbox talks will be conducted outside to allow for social distancing.

9.4 Hurricane Preparedness Plan

The Hurricane Preparedness Plan serves the purpose of a guideline for contactors before, during and after the hurricane, while providing background information, it is detailed to ensure minimum damage and shutdown time. Hurricane season runs from June 1 to November 30 each year.

The following notifications determines the actions to be implemented:

Hurricane/Tropical Storm watches mean that a hurricane or tropical storm is possible in the specified area.
Hurricane/Tropical Storm warnings mean that a hurricane or tropical storm is expected to reach the area, typically within 24 hours.

The PM will stay tuned to weather alerts via radio, TV or social media and evacuate as soon as local authorities give the word. Before storm season the PM needs to learn your community's, emergency plans and the location of nearby shelters so employees have a safe place to go if they cannot leave the island.

The contractor is required to prepare before a severe weather event. The PM and Health and Safety Officer will ensure all equipment are secure and cover incomplete structures before a storm.

Some or all the following hurricane preparation materials and equipment be made available if required:

- Concrete Anchors
- Duct Tape
- Garbage Bags
- Generators

- Ground Anchors
- Fuel
- Misc. Hardware and Fasteners
- Netting
- Plastic Sheeting
- Plywood
- Pumps
- Rope
- Sandbags
- Shoring and Bracing
- Water
- Wire

There are to be hard copies of contact lists, plans and other important documents kept in a safe place. These documents should include:

- Emergency contact information for employees.
- List of hurricane preparation materials, equipment, and their sources.
    - The Ministry of Social Services and Urban Development Department of Social Services Islands of the Bahamas 2020 Official Hurricane Shelters Document
        - Epworth Hall, Ebenezer Methodist Church (use of Homeless and People with Physical Disabilities) - Shirley Street
        - Grants town Seven-Day Adventist Church- Wellington street
        - Centreville Seven-Day Adventist Church -Fifth Terrace
        - Pilgrim Baptist Temple- St. James Road
        - Rev. Dr. O. A. Pratt Educational Building,
        - St. John's Native Baptist Church - Augusta and Meeting Street Samuel and Cornella Williams Community Centre,
        - The Salvation Army - Meadow Street
        - The Salvation Army- Mackey Street
- Procedures to follow in the event of exposed electrical wires, hazardous material leaks or structural damage.

The PM and SE are to monitor the weather closely once a Tropical Storm Watch is issued. Both local and international weather services should be monitored for accurate information and provide updates to staff.

Once the National Weather Service issues a Hurricane Watch, it is time to secure structures and equipment on the job site for the storm by implementing the following actions:

- Use rope, sandbags, ground anchors and other items to weigh down materials that could easily fly away.
- Cover materials with plastic sheeting, netting, or garbage bags to prevent water damage.
- Stack loose materials together and secure them with rope or duct tape to keep them from dispersing.
- Complete work on partially completed structures to minimize damage if time allows.

After a Hurricane Warning is announced the following actions should be implemented:

- Loose materials or expensive equipment should be moved or secured.
- Construction dumpsters should be picked up or covered with tarp.
- Remove or tie down portable bathrooms.
- Remove hazardous chemicals to prevent them from being released into the environment.
- Remove materials, tools or equipment that can be damaged by rising water.
- Move heavy equipment and machinery to a garage or other covered structure.
- Tear down and store light-weight fence screens and job site signage.
- Move any portable electronics, job site plans and other important documents from the construction trailer to a safe location offsite.
- Turn off power to the site and make sure fuel is available for power generators.
- Board up door and window openings.
- Tarp or board up any other large openings.
- Place sandbags around the perimeter of structures as reinforcement.
- There will be no staff left on site during hurricane events.

Once all clear has been given after a storm the PM and SE may return to the site to assess damages and determine cleanup efforts. Upon returning to site the following steps are to be taken:

- Be careful when walking in standing water, which may contain sharp or jagged objects.
- Use caution when entering the building because structural elements may be weakened.
- Rent a dumpster to safely dispose of materials that were damaged by the storm.
- Plan to Remove Water
- During a hurricane, water will inevitably flood your work site. Removing it is important for the safety of your property and neighboring structures. Standing water can soften the ground, compromising structural stability.
- Place pumps in excavations or basements before the storm hits.
- Have dehumidifiers and fans available to dry out the space.
- Discharge water to the storm water system.

The construction hurricane plan should be communicated to staff prior to the start of hurricane season and a briefing held by the PM once it is determined that severe weather is eminent. Hurricane preparedness is essential for a safe construction site.

The weather will be monitored by the PM and SE on a regular basis to determine site conditions. During heavy rain events site works will be stopped and commenced once weather conditions remain favorable. This includes the presence of lightening within 5 miles of the site.

9.5 Summary of potential emergencies and responses

In the event of any emergency the Site Engineer must be contacted to ensure the appropriate action is taken. A list of potential emergencies and responses are outlined in table 4 below.

Table 4: Summary of potential emergencies and responses

POTENTIAL EMERGENCY	WHAT TO DO?	RELEVANT AUTHORITIES & PERSONS	PLAN/REFERENCE
Injury caused by: Fire Explosion Machinery accidents	For serious injuries call an ambulance. You should also have the contact details of the nearest doctor, Medical Center or Hospital.	Foreman SE PM	Health and Safety Plan (see appendix I) Spill Prevention Plan (see appendix H)
Minor injuries	Immediately inform the site First Aid Officer. (All Foremen and the Project Engineer are First Aid Trained) Follow the procedures as detailed in the Health and Safety plan. For major injuries contact the SM or PM	Police Station	Health and Safety Plan (see appendix I)
Fire Fire at the diesel tank Fire at any of the machineries Fire caused by vandalism	Evacuate all workers to a safe area immediately. Call the Fire Department (Emergency Services). If the fire is likely to damage neighboring property inform the adjacent residents. Follow the procedures as detailed in the Site Safety plan. For major fire emergencies, contact the Site Manager or Project Manager Inform site security (Note: Fire Extinguishers are available).	Foreman SE PM Police Station Adjacent residents	Health and Safety Plan (see appendix I) Spill Response Plan (see appendix H)

POTENTIAL EMERGENCY	WHAT TO DO?	RELEVANT AUTHORITIES & PERSONS	PLAN/REFERENCE
Explosion	Evacuate all workers to a safe area immediately. Call the Emergency Services immediately. Contact the neighboring residents. If utilities related, call the relevant service provider (e.g. BPL) Follow the procedures as detailed in the Site Safety Plan Contact the SM or PM	Foreman SE PM Police Station Adjacent residents	Health and Safety Plan (see appendix I)
Spills Management, Contaminated Soils & Major Spills: Spill or release of diesel fuel or oil Spill or release of other hazardous chemicals or material	For major spills, (defined as a spill that is likely to have direct environmental consequences.) refer to Spill Plan. Immediately call the Fire Department and notify SM. Identify the source of the spill. If the material is dangerous or unknown, evacuate the site immediately and notify all neighbors. If it is safe, halt the source of the spill immediately. Contain the spill and control its flow. Block storm water drains downstream of the spill. DEHS must be notified about any spills that are likely to threaten the environment.	EM Foreman SE PM DEPP Police Station Adjacent residents	Spill Response Plan (see appendix H)
Minor Site Spills	Minor spills (defined as spills which can be contained and rectified correctly without the need of external services), shall be contained and rectified with the site spill kit and disposed of correctly. SM to be notified via incident report.	Foreman SE PM	Spill Response Plan (see appendix H)

POTENTIAL EMERGENCY	WHAT TO DO?	RELEVANT AUTHORITIES & PERSONS	PLAN/REFERENCE
Heavy rainstorm, flood or and hurricane	Contain/minimize the flow. Contact SM immediately. Investigate reasons for failure and prepare an incident report. (Refer to Hurricane Policy)	Foreman SE PM Police Station Adjacent residents	Hurricane Response Plan in section 9.4 and the Health and Safety Plan (see appendix I)
Rupture of Utility pipelines (water pipes, Water and sewerage pipes, electrical pipes and cable pipes)	Contact Relevant Agency or Utility company to contain Ensure all spilled materials are contained onsite or if running off site are directed through sediment control measures Block storm water drains downstream of the spill. Spills or ruptures that are likely to threaten the environment.	Foreman SE PM Police Station Adjacent residents	Spill Response Plan (see appendix H)
Site security breach or public safety issue	Notify security and/or police immediately. Where public safety issue exists, barricade to restrict egress and address issue immediately.	SE PM Foreman	Health and Safety Plan (see appendix I)

9.6 EMERGENCY & UTILITY SERVICES CONTACT

MEDICAL SUPPORT ACCIDENT & EMERGENCY

Princess Margaret Hospital (PMH)
Tel. (242) 326-7014

Doctors Hospital
Tel. (242) 302-4747

PMH HOSPITAL
Tel. (242) 322-2861

National emergency medical and protection services
Tel. 911, 919, (242) 323-2586

PROTECTION
Police or Fire
Telephone: 911, 919, (242) 322-4444

The following workers may be contacted by the corresponding organization in case of damages or when necessary for co-ordination of related works:

Bahamas Power and Light (BPL) Power Outage
Tel. (242) 325-0505 or (242) 325-4504 (24 hours)
Bahamas Electricity Corporation (BEC)
Mr. Burlington Strachan -302-1416, 376-5107
Mr. Craig Knowles - 302-1524
Mr. Ian Pratt - 302-1573, 376-5109
Mr. Theodore Morley - 302-1569

Bahamas Telecommunications Company (BTC)
Mr. Benjamin Smith - 302-7000, Ext 7080, 424-0487
Mr. Kenyin Basden - 350-7703 or 424-4285
Mr. Kyle Dorsette - 302-7496 or 424-0006
Mr. Dino Rolle - 376-5830

BTC Telephone Repairs
(242) 225-5282

Cable Bahamas
Mr. Pedro Munroe - 376-4063
Mr. Swithen Burrows - 677-8504, 422-6020
Mr. Rob List - 502-8623, 376-0403

Water and Sewerage Corporation
Mr. Robert Deal - 302-5511
Mr. Thomas Desmangles - 525-1910
Mr. Leslie Hutchinson - 302-5724
Ms. Deidre Taylor – 302-5544

9.7 Traffic Management Plan

During the demolition, it will not be necessary to close major lanes as the activities are not occurring on or within roadways. However, due to transporting solid waste material there will be frequent entering and exiting of trucks to the main road there will be impacts to the flow and speed of traffic. Traffic cones and a flag man will always be used to ensure the safety of drivers, pedestrians, and construction employees alike.

Emergency responders will have access the work area. Signage and coning will indicate where the work area is constrained to ensure emergency workers are aware where the area is located

and may access the area as well as general traffic access. Figure 1highlights the access point and routes on site. Access to the site will be restricted to ensure safety during asbestos removal as well as limited space on site.

Figure 2 also highlights the areas allowed for parking. Due to the small size of the site parking and assembly areas are limited so the area is located near the water. The area is partially fenced and screened as well as located on cement foundation to ensure protection of waterbodies and groundwater.

9.8 Open Water and Water Quality Control

Due to the proximity of the site to open water, precautions will be taken to prevent hazardous substances from entering water. Therefore, controlling sediment and run-off during construction work will be of high priority during this work. Should a concern with water quality arise work will stop, and the Environmental Manager will be contacted immediately.

Work may be suspended until adequate corrective measures have been implemented to the satisfaction of the Client.

The site will be fenced and screened prior to the commencement of works to reduce dust and runoff from the demolition. Demolition will be directed inwards to reduce the spread of debris to surrounding areas and once imploded the debris will remain in place then loaded onto trucks for removal to the New Providence Ecology Park (NPEP). Section 8.1.6 lists the actions to prevent dust and debris from entering the roadways. These actions include screened fencing around the area, spraying debris to reduce dust, periodic sweeping of streets to reduce dust and debris build up as well as haul trucks are to be covered by tarpaulins while transporting debris.

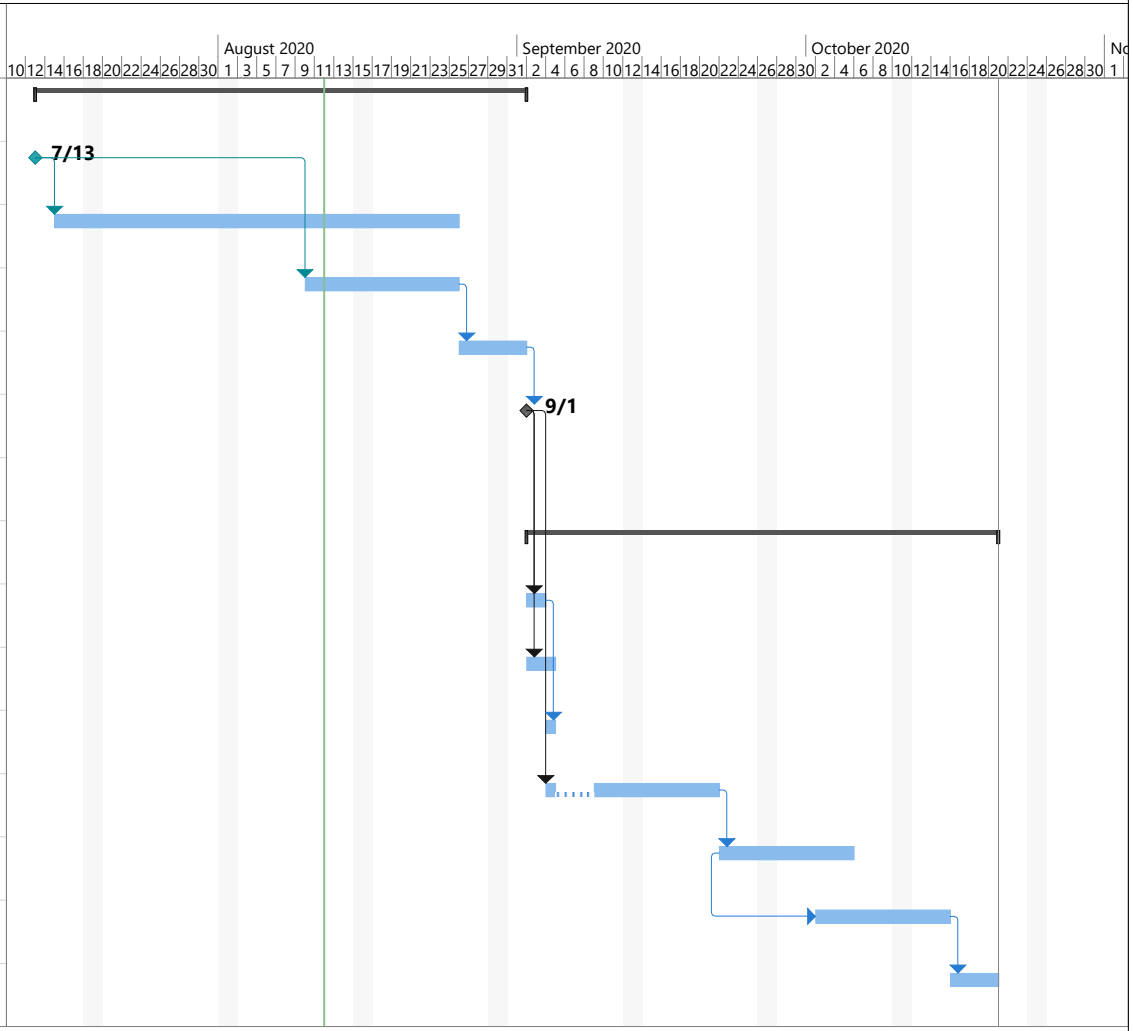
10.0 APPENDICES

APPENDIX A: Project Schedule

BMC
BAHAMAS MARINE CONSTRUCTION CO. LTD.

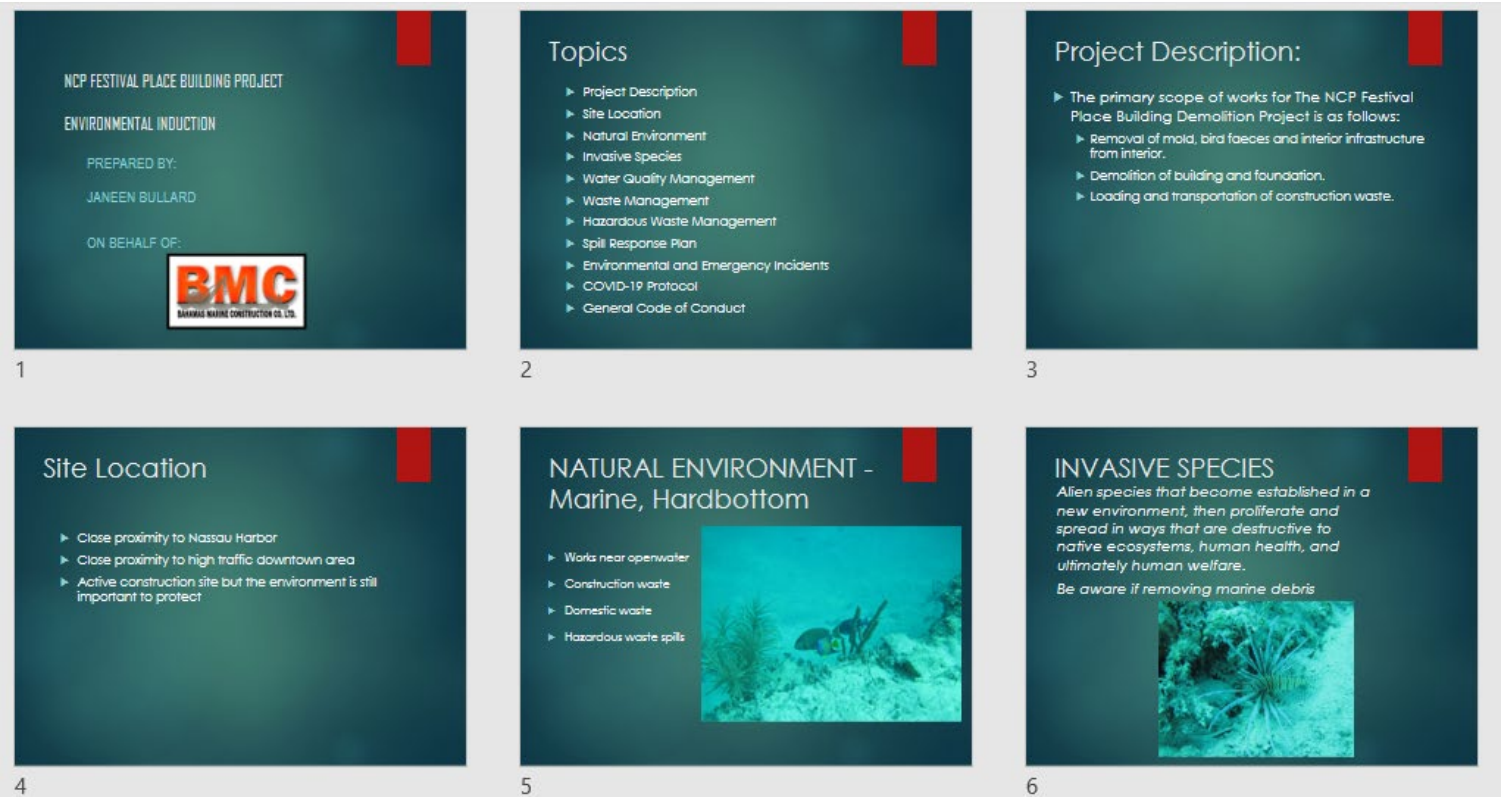
Nassau Cruise Port - Festival Place Building Demolition Schedule

ID	Task Name	Duration	Start	Finish
1	**Preliminaries**	**37 days**	**Mon 7/13/20**	**Tue 9/1/20**
2	Notice of Award	0 days	Mon 7/13/20	Mon 7/13/20
3	Demolition Permit Application and Approval	30 days	Wed 7/15/20	Tue 8/25/20
4	EMP Submission and Approval	12 days	Mon 8/10/20	Tue 8/25/20
5	Tenants to Vacate Building	5 days	Wed 8/26/20	Tue 9/1/20
6	Notice to Proceed	0 days	Tue 9/1/20	Tue 9/1/20
7				
8	**Building Demolition**	**35 days**	**Wed 9/2/20**	**Tue 10/20/20**
9	Mobilization	2 days	Wed 9/2/20	Thu 9/3/20
10	Site Preparation (signage, handwash stations, etc)	3 days	Wed 9/2/20	Fri 9/4/20
11	Disconnection of Utilities to Building	1 day	Fri 9/4/20	Fri 9/4/20
12	Removal of Mold	2 wks	Fri 9/4/20	Mon 9/21/20
13	Building Demolition	2 wks	Tue 9/22/20	Mon 10/5/20
14	Slab and Foundations Removal	2 wks	Fri 10/2/20	Thu 10/15/20
15	Final Cleanup and Fence Removal	3 days	Fri 10/16/20	Tue 10/20/20



August 12, 2020

APPENDIX B: Environmental Induction Presentation and Booklet



ENVIRONMENTAL MANAGEMENT PLAN

WATER QUALITY MANAGEMENT

- Installation of silt fencing
- No direct drainage in water bodies
- No fuel storage and refueling operations only at designated area
- No garbage, contaminants or bodily fluids disposed of in the water
- Vehicles are to be inspected daily for leaks prior to use
- Drip pans when vehicles are parked at the end of day

7

ENVIRONMENTAL MANAGEMENT PLAN

SOLID WASTE MANAGEMENT

- **General Domestic Refuse:** Lidded Garbage Bins

8

ENVIRONMENTAL MANAGEMENT PLAN

SOLID WASTE MANAGEMENT

Construction Debris:

- Reused or recycled
- Haulage trucks must be covered when transporting materials
- A waste ticket must be collected from NPEP for all materials being disposed of

9

ENVIRONMENTAL MANAGEMENT PLAN

HAZARDOUS WASTE MANAGEMENT

What is a Hazardous Waste or Material?

- Solid and liquid waste that poses threat to public health or the environment.

Fuels:

- Use of drip pans and spill kits
- Removed by a licensed contractor

Machine Batteries:

- Recycled

10

ENVIRONMENTAL MANAGEMENT PLAN

HAZARDOUS MATERIAL MANAGEMENT

Use of Hazardous Material on site:

- Report Use
- Clearly marked
- Promptly removed
- Inspection of facility
- Clean up minor leaks and spills
- Report major leaks and spills

11

Spill Response Plan

- Spill prevention;
- Minimize the volume of any potential spill;
- Minimize the environmental effect of spills;
- Contingency planning in the event of a spill;
- Corrective actions.

12


Environmental and Emergency Incidents
Report all incidents no matter how small
Fuel spills are to be recorded
An emergency contact list will be made available to all in case of emergencies
Medical emergencies contact the ambulance immediately
Cpr to be performed by the site safety officer

13


COVID-19 PROTOCOL
A mask is always to worn on site
Sanitize hands as you enter the site and periodically throughout the day
Handwash station and toilet should be sanitized everyday internally and once a week by Bahamas waste
Do not congregate on site unless absolutely necessary for construction activities
There is to be no eating on site
Have a personal cup for drinking water

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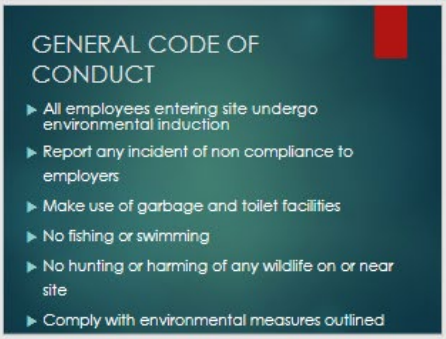
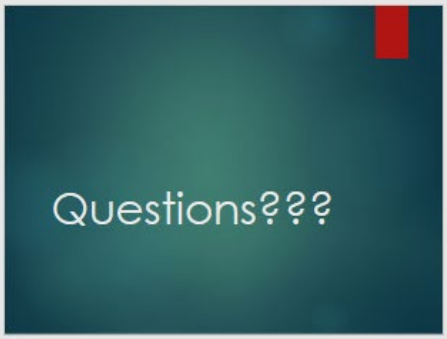

GENERAL CODE OF CONDUCT
All employees entering site undergo environmental induction
Report any incident of non compliance to employers
Make use of garbage and toilet facilities
No fishing or swimming
No hunting or harming of any wildlife on or near site
Comply with environmental measures outlined

15


Questions???

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BAHAMAS MARINE CONSTRUCTION CO. LTD.

21st Century Road
P.O. Box SP-63796
Nassau, Bahamas
Phone: 242-328-2025
Fax: 242-328-2125

"BCA Prime Contractor of the Year 2012"

SITE INDUCTION SIGN-IN

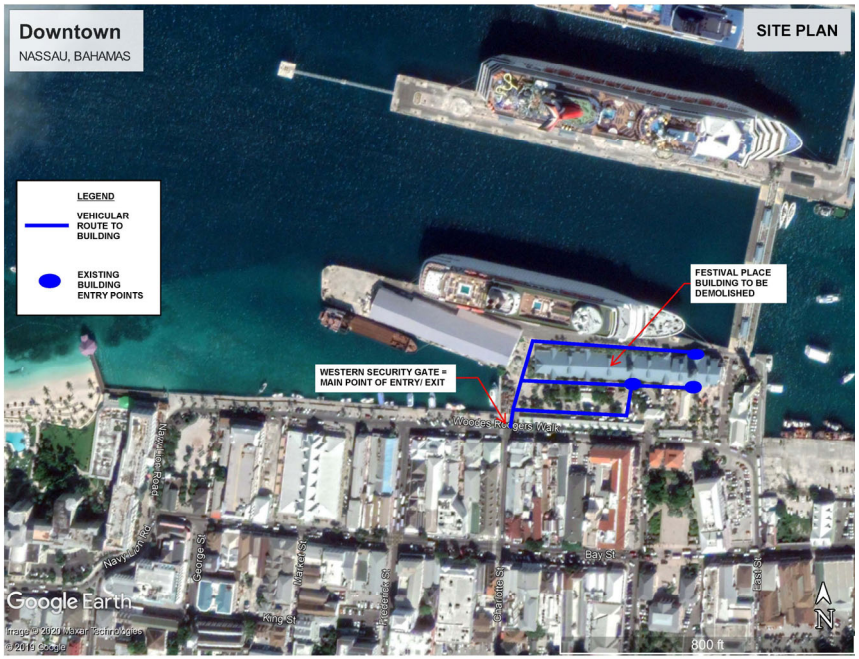
DATE:	TIME:
PRINT NAME	SIGNATURE

21st Century Road
P.O. Box SP-63796
Nassau, Bahamas
Phone: 242-328-2025
Fax: 242-328-2125

"BCA Prime Contractor of the Year 2012"

NCP Festival Place Building Demolition Project

ENVIRONMENTAL INDUCTION BOOKLET



This booklet serves as an Environmental Induction for the South Andros Water Distribution Project.

It is prepared and presented by Janeen Bullard, ISD Environmental Manager.

BMC ENVIRONMENTAL POLICY

BMC is committed to providing quality services and products within a safe work environment as well as developing local talent and skills to contribute to the economic stability of the Bahamas while minimizing our potential impact on the environment. We are committed to operating in compliance and exceed-ing all relevant environmental legislations.

Our environmental policy is to:

◊ consider environmental concerns and impacts into all of our decision making and activities,

◊ promote environmental awareness among our employees and encourage them to work in an environmentally responsible manner,

◊ train, educate and inform our employees about environmental issues that may affect their work,

◊ reduce the production of waste,

◊ promote efficient use of materials and resources including water, electricity, raw materials and other resources, particularly those that are non-renewable,

◊ avoid unnecessary use of hazardous materials and products, seek substitutions when feasible, and take all reasonable steps to protect human health and the environment when such materials must be used, stored and disposed of,

◊ where required by legislation or where significant health, safety or environmental hazards exist, develop and maintain appropriate emergency and spill response programs,

◊ communicate our environmental commitment to clients, customers and the public and encourage them to support it.

We will periodically review our environmental policy to continuously improve our environmental performance to reduce any environmental impacts.

General Code of Conduct

The following is expected of workers and individuals entering the site.

⇒ All persons entering site will undergo environmental induction

⇒ Report any incident of non-compliance to employers

⇒ Do not enter area of retained vegetation

⇒ Make use of garbage and toilet facilities

⇒ No fishing in wetland and water bodies

⇒ No swimming in open water

⇒ No hunting of Birds

⇒ Use appropriate PPE at all times

⇒ Finally, but most importantly, ALL employees MUST comply with all environmental measures outlined

PROJECT DESCRIPTION

The project consists removal of mold and interior infrastructure, demolition of building and foundation, and transporting and deposit of waste to NPEP.

EMVIRONMENTAL CONCERNS

Unavoidable Impacts

There are environmental concerns associated with the project that are unavoidable, meaning there is no other feasible option for execution of the project that would avoid the impact.

The major unavoidable impact is the creation of waste.

Avoidable Impacts

There are a number of potential impacts that can be avoided, minimized or managed.

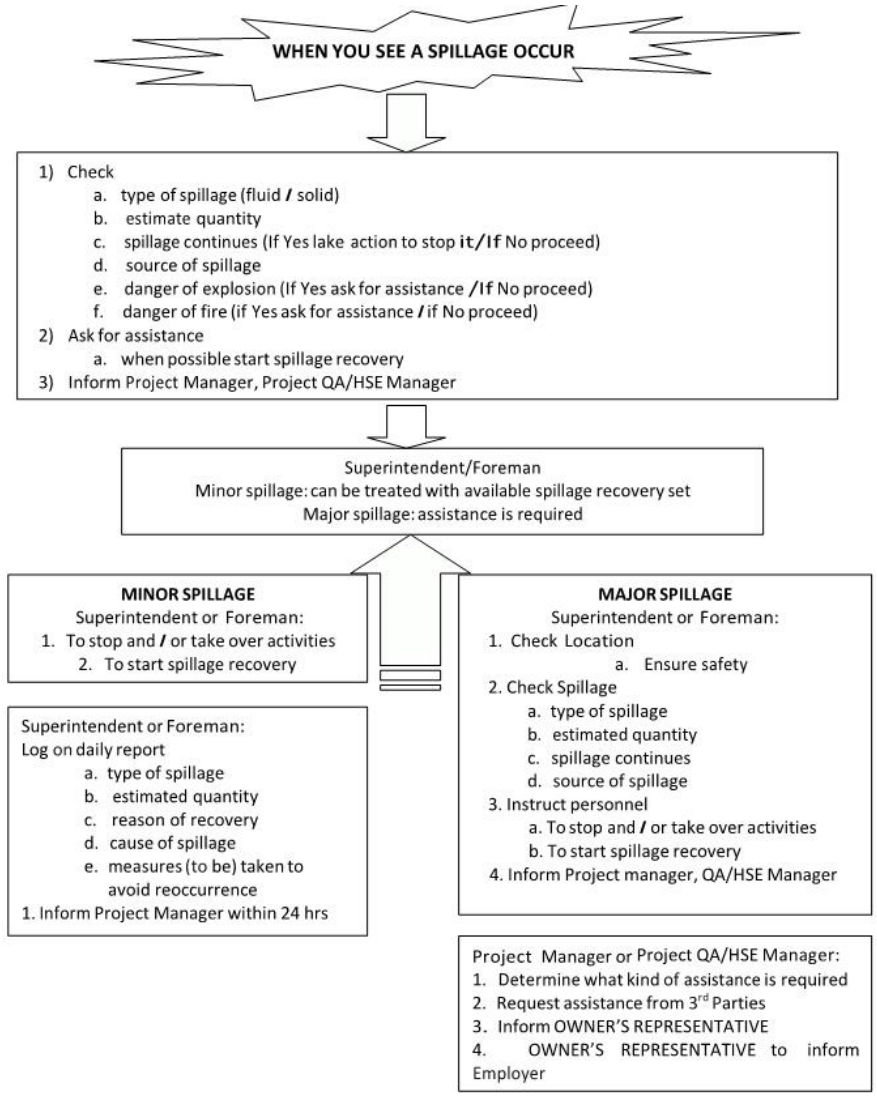
Plans for **HABITAT CONSERVATION & RESTORATION** involve:

⇒ This fencing separates the construction zone or work zone from the retained vegetation.

⇒ There should be no construction activities beyond the fencing.

⇒ The demolition should result in minimal levels of noise and dust.

EMERGENCY SPILL RESPONSE PLAN



In addition to hazardous waste, **HAZARDOUS MATERIAL MANAGEMENT** will also be employed.

What is a Hazardous Material?

A hazardous material is any item that has the potential to cause harm to humans, animals and the environment.

Environmental Management Efforts will include:

⇒ There will be no fuels or pesticides stored on site.

⇒ Refueling will be confined to an identified area, away from open water.

⇒ Use of hazardous material or material suspected to be hazardous should be reported

⇒ Hazardous materials should be clearly marked

⇒ Hazardous materials should be properly stored

⇒ Hazardous materials storage facilities will be inspected on a regular basis

⇒ Minor leaks and spills are to be cleaned up immediately

⇒ Major leaks and spills are to be reported immediately

⇒ Emergency Spill Response plan is to minimize the risk of spillages during the execution of Contractor´s activities in the project site

.Additional habitat conservation efforts include:

⇒ The proper removal and disposal of debris to reduce impact on marine habitats through accidental introduction.

⇒ Dust affecting plant transpiration on site or during transport.

The second area of concern for avoiding or managing impacts is

WATER QUALITY.

This area will be managed through:

⇒ **Sediment Control:** by the installation of silt fencing.

⇒ **Also by monitoring Drainage:** No direct drainage from the project is allowed to any of the water body on the site

⇒ **And by Restricting Activities:** No refueling operations will be allowed within 150 feet of an open body of water

The next area for concern in avoiding impact is **SOLID WASTE MANAGEMENT.**

There are several areas of solid waste management to be considered, **General Domestic Refuse** being one of these. Domestic refuse should be collected daily and disposed of in trash bins off site.

Construction Debris is another area of solida waste management to consider. Large container bins will be used for construction debris.

Large amounts of debris will be hauled offsite in haulage trucks. Haulage trucks should be sheeted when on public roads. All trucks must collect tickets from NPEP for every load.

H**AZARDOUS WASTE MANAGEMENT** will also be considered in avoiding and managing impact.

First let's look at What is considered a Hazardous Waste?

A hazardous waste, for the purpose of this presentation is defined as a solid waste that poses a threat to public health or the environment.

Anticipated Hazardous waste on site would include mold, waste oils & machine batteries but may not limited to these items.

APPENDIX C: Environmental Checklist

Environmental Monitoring Checklist –

Environmental Monitor: _____ Date:_____

Site Location:_____GPS Coordinates:_____

Time: _____ Weather (Circle One): Sunny Partly Cloudy Cloudy Rain

Temperature (°F): _____ Special Weather Notes: _____

1	**Site Safety and Health**			
		In Compliance with EMP		
		YES	Corrective Action Required	Comments
1a	Personal Protective Equipment Used			
1b	Proper safety requirements signage for Safe Road and Hazardous Sites			
1c	Traffic management and site access			
1d	Sanitary facilities are clean and convenient			
1e	Adequate Freshwater drinking supplies			
2	**Ground Water Management**			
		In Compliance with EMP		
		YES	Corrective Action Required	Comments
2a	All diesel, fuels, and other toxic materials securely bundled in welded steel trays whose capacities are at least 110% of max. stored vol.			
2b	Refueling area next to storage tanks and on concrete apron in case of spillage			
2c	All mobile machinery is in good condition and free from engine, lubrication, and oil leaks with drip trays when not in use			
2d	Spill kits, adsorbents, emergency kits on site			
2e	Wash-down area away from waterbodies and contained			
3	**Sediment Control**			
		In Compliance with EMP		
		YES	Corrective Action Required	Comments
3a	Screening adequately place			
3b	Erosion Control Measures: silt fencing and any other measures			
3c	Control of watering activities and runoff			

3d	Stabilization of slopes and excavated areas			
4	**Materials Storage & Solid Waste Management**			
		In Compliance with EMP		
		Yes	Corrective Action Required	Comments
4a	Construction material storage area secured and appropriately stockpiled			
4b	Minimum 2 dumpster			
4c	General Tidiness of the Site			
4d	Ground surface debris disposed of at proper facility			
4e	Hazardous materials identified, stored and disposed of properly. Waste ticket collected.			
4f	Any construction debris observed in the surrounding water? If yes was it removed?			
5	**Dust & Air Pollution/Noise Control/Odour**			
Monitoring Checklist		In Compliance with EMP		
		Yes	Corrective Action Required	Comments
5a	Roadway watering and daily site clean up to mitigate airborne dust			
5b	Speed restrictions adhered to			
5c	Dump trucks fitted with tarpaulins			
5d	No incineration at site			
5e	Noise levels within recommended decibels for day/night			
5f	Observation of foul odours			

6	**Miscellaneous**				
6a	Accident Log - Any reported Environmental Incidents Safety Accidents? Personnel Involved and Accident Details				

* To note, the monitoring checklist is limited to observations at a specific time and place and cannot account for activities occurring outside the time of inspection unless such activity or the results thereof are observed during inspection.

APPENDIX D: Incident Report Form

ENVIRONMENTAL INCIDENT REPORT FORM

Date of Incident				**Time of Incident**			
TYPE OF INCIDENT							
	Chemical Spill		Excessive air emmission including dust		Sediment		Excessive vegetation clearing or damage
	Sanitary Spill		Excessive Noise		Flood		Protected vegetation damage
	Waste Management		Excessive Odor		Fire		Fauna Injury
Details of Incident							
Response to Incident							
Measures to prevent reoccurance							

Name:	Position:
Signature:	Date:

APPENDIX E: Method Statement

Title	**FESTIVAL PLACE DEMOLITION – METHOD STATEMENT**	**M.S. No.**	01
		Rev:	00
Project:	**NASSAU CRUISE PORT FESTIVAL PLACE BUILDING DEMOLITION**	**Copy No.**	01

Revision	Date	By	Approved
00	05/24/2020	BMC	

DISTRIBUTION

1. Owner
2. Owner's Representative
3. Contractor Representative
4. Project Manager
5. Demolition Site Manager

NOTES

1. Introduction - Project Description & Scope of Works

The intent of this project is to demolish and remove the existing Festival Place building, located at Nassau Cruise Port, Prince George Wharf (reference Section 3. Location drawing). The building previously served as a Welcome Center for visiting cruise ship passengers and office spaces. The building is made of concrete walls, with some metal columns, metal trusses, and metal roof.

Overview of Works

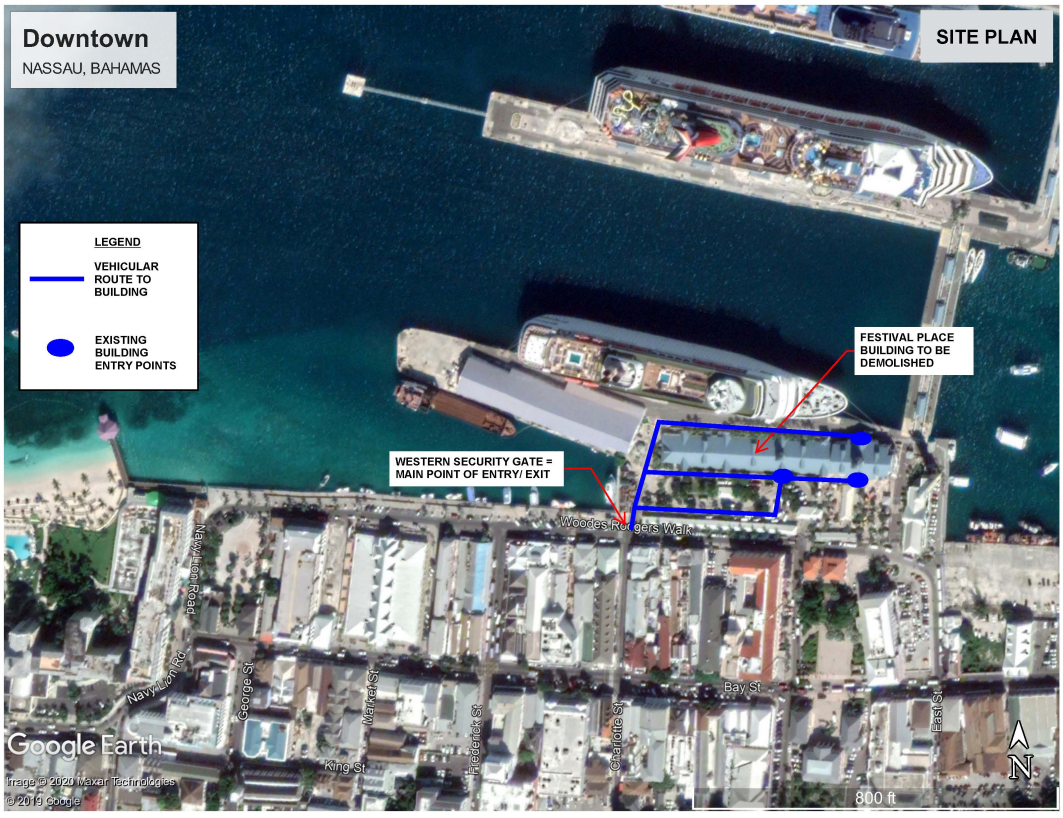
Works will include:

- Fence and screen installation around the site.
- Installation of relevant Safety Signage, if required.
- Inspection of building to be carried out prior to commencement of works.
- Remove any deleterious materials.
- Demolish building (ref. Section 11 – Method of Works)
- Clear area of all equipment, and leave in a safe and tidy condition.

2. Contract Reference

Contract Drawings/ Location plan.

3. Location



4. **Traffic Management**

Due to the locality of the structure in relation to nearby Port/ ship activities, the building will be carefully demolished under strictly controlled conditions. The importance of dust, noise and vibration control is also noted due to the risks. Hours of work will be coordinated with the Employer's representative and local authority. Relevant signage will be displayed at key locations, to inform the public of activities and restrictions.

5. **Pre-commencement**

- Submit required documents to The Ministry of Public Works for demolition permit approval.
- Inspect the building to assess the structural integrity, and review the works to be performed. Identify if there are any asbestos containing materials, and notify Owner if there is, so the necessary steps can be taken for proper removal before demolition works can begin.
- Arrange with BPL/ BTC/ Cable Bahamas/ WSC to disconnect services to building.
- Service disconnections, diversions, systems drained and pipe works purged and certified safe.
- Secure the site to be demolished.

6. **Management and control of works operations**

Supervisory staff

At all times of working, an experienced competent supervisor will be present at each work area on-site.

Operations

All equipment to be operated as per Site Safety Procedures.

Fuel trucks and trained personnel will fuel equipment in the morning and/or evening during operations at approved locations only.

Hours of work to be agreed with Employer. There shall be no work on Sundays or designated Public Holidays unless agreed with the Employer.

7. **Key Personnel**

- Contractor Representative
- Project Manager
- Demolition Site Manager and/ or Site Supervisor
- Plant Operatives
- Demolition Operatives

8. Personal Protective Equipment

All personnel shall be provided with appropriate P.P.E., particularly hi-vis clothing, hard hats, and safety footwear; and will be expected to wear them at all times.

9. Plant and Equipment

- 340 - 500 Excavator
- Trucks
- Forklift
- Crane
- Heavy duty hydraulic breaker
- Lowboy with flatbed (to remove steel)
- Hand tools
- Cleaning tools

10. Contractor's Compound and Staging Area

The location of the Contractor's temporary compound and staging area will be agreed with Employer's representative.

11. METHOD

11.1 Site Establishment

All visitors to our site will be required to follow Nassau Cruise Port's security procedures. They will be inducted into the activities being carried out that day and at all times whilst they are on site they will wear the required PPE and they will also be escorted by a member of the Contractor's staff. The demolition site will be enclosed with a fence and privacy screen. The will be no stockpiling of material as the building is stripped and demolished materials will be removed in bins and dump trucks.

11.2 Soft Stripping

An internal soft strip of the building will be carried out by demolition operatives to remove as much of the waste materials from the building ahead of the demolition works.

Works will be carried out internally to avoid dust exposure outside of the building.

Materials that are to be removed by the internal soft strip can include doors, door frames, fixed and non-fixed furniture, floor coverings, signage and other non-structural materials.

Operatives will strip out all doors, frames, windows, timber of any description, (not appertaining to roof or main structure) toilets, pipe work, ducting, electrical items and any debris.

Where possible the materials will be loaded by hand method into skips/ dump trucks and removed from the site. Where access for skips/ dump trucks is not available the materials will be segregated and stored where they will be removed at a later stage.

Once access for skips/ dump trucks is available the materials will be loaded into the skips/ dump trucks by use of the excavator and by hand method.

At no times shall operatives gain access to partially demolished or unsafe buildings to recover soft stripped materials, these materials will be removed by mechanical means and when safe to do so by hand method.

All waste materials will be transported from the site where it will be taken to a government approved landfill/ dump site.

11.3 Removal of Metal Roofing

Prior to demolition of concrete walls, the metal roof panels will be removed carefully. Once the panels are removed, the metal trusses will be taken down. Any metal columns will also be removed.

All steel will be removed from the site in suitable lowboy with flatbed/ dump trucks that will be transported from the site for disposal.

11.4 Hard Demolition of Building

The building being demolished is partially reinforced concrete structure, and partially steel building.

Prior to any structural demolitions taking place, the site supervisor and plant operatives will walk the building to confirm whether or not there are any voids, or basements present.

To prevent a collapse of the floor during mechanical demolitions, any voids that are identified will be backfilled levelled with the existing ground level.

Prior to commencement we will identify the disposal venues for all waste materials arising from the demolitions.

The building will be soft stripped as described above, prior to demolition.

Where dust will be an issue, a water truck will be on standby to reduce dust exposure.

Concrete walls/ columns will be knocked inwardly to contain the debris within the building footprint as best as possible. The northernmost wall (closest to cruise ships) will be demolished last.

Once the demolition of the building has been completed and all waste, timber and steel skips/ dump trucks removed from the works area, the masonry etc will be stockpiled within or adjacent to the footprint of the building for processing.

All debris will be removed from the site in suitable dump trucks that will be transported from the site for disposal to a government approved landfill/ dump site.

11.5 Excavation of Floor Slabs and Foundations and the Crushing of All Demolition Rubble

Prior to removing any ground slabs or foundations the entire area will be checked in conjunction with site services plans for 'live' services.

Concrete floor slabs will be broken up using heavy duty hydraulic breakers.

All crushed arisings will be stockpiled at agreed points or hauled to government approved landfill/ dump site.

12. Environmental Considerations

All necessary precautions in accordance with the contract requirements shall be adopted for the successful completion of this item of work. All materials removed from the site will be accounted for with an authorized receipt from the New Providence Ecological Park on Harrold Road. All trucks and dumpsters leaving the site will be sealed with plastic sheeting or covered with tarpaulin. Environmental incidents / complaints will be reported immediately to the relevant organisations and the appropriate measures to deal with any such incident will be implemented. All operations will be carried out in accordance with DEHS requirements. Please reference the Environmental Management Plan for this project, for further details.

13. Document Control

The Contractor's appointed Document Controller will be responsible for management of the site document control process. The Document Controller reports to the Project Manager and will have overall responsibility for Document Control.

14. Progress Monitoring Procedures

The methods and systems to be used in monitoring of the production progress for the works will be in accordance with Contractor Management System and Employer's Contract Requirements.

Progress Monitoring Schedule

Internal progress monitoring will be performed on a weekly basis in accordance with Contractor's standard procedures. The Project Engineer/ Site Manager will be responsible for the collection of data for analysis. The Project Manager will be responsible for analysis of the data and implementing recovery measures if required.

Progress Monitoring Phases

Five sequential phases to Progress Monitoring will be implemented for the works.

- Phase 1 – Progress Records
- Phase 2 – Progress Updates
- Phase 3 – Progress Analysis & Reports
- Phase 4 – Progress Reviews
- Phase 5 – Post – Review Actions

Progress Records

The following progress records will be produced for the works.

- Daily site diaries/ Weekly progress sheets (for Contractor's internal records, but can be provided to Employer upon request)
- Photographs (upon request from Employer)
- Phasing Diagrams/ Progress Updates (upon request from Employer)

Progress Reviews

Internal Progress reviews will be held on weekly basis for project, attended by Contractor's key personnel. The objective of the meeting is to confirm current status, identification of critical remaining works and determination of production improvement/ time saving measures.

Monthly Progress Reports

A monthly progress report will be issued by Contractor to Employer, as agreed.

Post-Review Actions – Measures to expedite schedule.

The Project Manager will be responsible for implementing the post-review actions. Examples of these measures include the following:

- Changes to the sequence of the works
- Additional working hours
- Additional resources
- Establish production improvement incentives/ targets

- Early warning mechanisms to prevent future slippage

15. Reference to Other Documents

- Environmental Management Plan (including Risk Assessment)
- Health and Safety Plan (including Hurricane Preparedness)

16. Hold Points

- All equipment to be kept within the construction/ designated area.
- All traffic management barriers should be checked daily.
- Ensure goal posts and warning signs have been erected in appropriate areas prior to commencement of works.
- Check setting out prior to commencement of works.
- Other recommended hold points may be advised by the Employer's representative

APPENDIX F: Mold Removal Management Plan

BAHAMAS ENVIRONMENTAL CONTRACTORS INDUSTRIES

BECI

BAHAMAS ENVIRONMENTAL CONTRACTORS INDUSTRIES

TIN 100730892

"Service to the Environment"

#137 Mackey Street (Same Building as Francis & Company), P.O. Box SB-51407, Nassau, Bahamas
Office 242-601-2682
Email: info@beciltd.com
Website: www.beciltd.com

August 14, 2020

Naveen Gupta, CEO
Chris Leclerc
Island Site Development Ltd.
Bahamas Marine Construction Co.
21st Century Road
P.O. Box SP-63796
Nassau, Bahamas

Method Statement for Environmental Cleanup of Festival Place Building, Nassau, Bahamas

Introduction

Reference is made to our Environmental Report dated April 30 on the Festival Place Building, in which BECI identified initial environmental clean-up work to be carried out prior to demolition. According to this report, BECI will address the following conditions:

In addition to the pigeon feces in the roof areas, significant levels of two mold species of concern regarding health were found – *Aspergillus* and *Stachybotrys.* These samples were taken drywall and ceiling tile from the kitchen and woodwork area. In particular, the accumulation of *Stachybotrys* is a sign of long-term dampness evidently due to the roof leaks. Also, most of the above five mold species can cause allergic reaction in certain individuals in the levels found in Festival Place.

The air sampling showed moderate amounts of mold in the air. Whilst there are no specific danger threshold values, the levels found give cause for concern. In particular, removal of drywall, ceiling tiles, and other materials with surface mold from the vicinity of the roof leaks would be expected to release higher levels of mold into the air. It is expected that pigeon feces will also be encountered.

It was recommended therefore that the removal of these materials be carried out by trained personnel with personal protective equipment.

Scope of Work

- Removal of ductwork, ceiling tile and loose boxes, paper and miscellaneous debris from the kitchen area, as shown in first three pictures. It appears that many of these items have become wet, and subsequently fallen down or been taken down from the ceiling, and contain mold.
- Removal of drywall with surface mold.
- Removal of pigeon feces from inside the building.
- Disposal of the above items as construction waste.
- Post Remediation Air Testing & Closeout Report

Note:

1. BECI will not remove the retail booths or other FF & E in the main passenger areas which are generally in good condition, unless the items are in contact with mold, pigeon feces or other contamination.
2. The inspection sampling and proposal for carrying out the work for $19,000.00 + VAT was made according to the conditions present on April 30, 2020. Should any of these conditions have significantly changed over the intervening 3-1/2 – month period, BECI will immediately notify ISD of any changes.

3. We ask that you can make provision for BECI personnel to get badges or other ID in order to access the site.
4. We also request any extended fork or scissor lifts or scaffolding which may be available for ceiling and inside roof access.

Methodology

1. BECI will put up signs and caution tape on the exterior of the building.
2. Provision of 30 cu ft containers for disposal of waste.
3. Scaffolding &/or man lifts will be installed inside areas to be contained for ceiling and roof area access.
4. We will set up a Clean Room at the entrance and a separate Decontamination Area through which personnel and bagged materials will pass before exiting the area.
5. BECI will erect containment of each area as required in order to prevent release of high levels of airborne mold into the environment.
6. Inside containment, we will set up air scrubbers which will create negative pressure and direct filtered air to the outside.
7. In heavily infested areas we will cover walls and FF & E with 4mm or 6mm poly to protect against mold contamination during abatement.
8. Personnel will don Personal Protective Equipment – heavy protective suits, rubber gloves, boots and respirators with N-95 filters.
9. Drywall heavily infested with mold will be cut away and double bagged. Drywall or other non-porous surfaces with lighter coatings of mold can be wiped down with fungicides approved by Bahamas DEHS.
10. The same procedures will be used for removing pigeon feces.
11. All double bagged contaminants will be removed from the area through the Decontamination Unit, the bags being wiped clean. Since these contaminated materials are non-regulated, they can be disposed of as regular solid waste.
12. Upon completion, BECI will sanitize all areas by fogging with approved chemicals in order to make the Festival Place Building safe for future soft strip in preparation for demolition.
13. Air samples inside and outside the building will then be taken and analyzed by a NVLAP accredited laboratory in the USA to confirm that levels of mold in the area are within the normal range.
14. Final Report and Environmental Clearance will be provided.

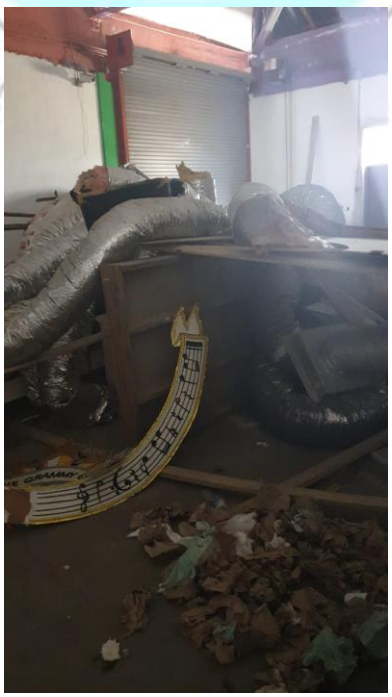
Schedule

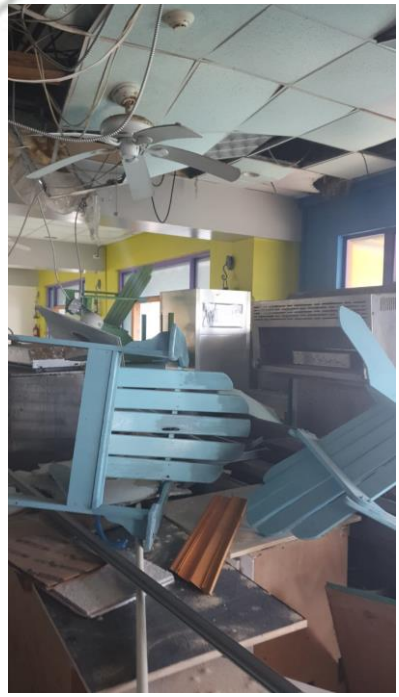
We expect to be complete within 3-weeks of start date.

CHEMICALS TO BE USED

Approved Chemicals include Shockwave Disinfectant, Mediclean and 10% Bleach.

PHOTOGRAPHIC REFEFENCE





AREAS WITH MISCELLANEOUS DEBRIS TO BE REMOVED

DRYWALL AND TILE CEILING AREAS FOR MOLD REMOVAL

If there are any further questions or instructions, please contact Ricky Francis or myself.

Regards

Dr. Barry Iseard
BECI Consultant/Estimator

Ricky Francis
Project Manager


BAHAMAS ENVIRONMENTAL CONTRACTORS
INDUSTRIES
BECI


BAHAMAS ENVIRONMENTAL CONTRACTORS
INDUSTRIES
BECI

APPENDIX G: Festival Place Building Testing Results

BAHAMAS ENVIRONMENTAL CONTRACTORS INDUSTRIES

BECI

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#137 Mackey Street (Same Building as Francis & Company), P.O. Box SB-51407, Nassau, Bahamas
Office 242-601-2682
Email: info@beciltd.com
Website: www.beciltd.com

30th April, 2020

Naveen Gupta, CEO
Chris Leclerc
Island Site Development Ltd.
Bahamas Marine Construction Co.
21st Century Road
P.O. Box SP-63796
Nassau, Bahamas

Inspection of the Festival Place Building for Asbestos and Mold

Reference is made to an initial walk-through inspection of the building carried out in March 2020, in which areas of mold were noted, and our Proposal dated March 31st.

The purpose of this inspection & sampling is to deduce whether the building should first undergo an environmental clean-up prior to demolition with reference to asbestos and mold; and to provide an estimate if this work is deemed necessary.

Methodology.

BECI carried out an intrusive asbestos survey of the Festival Place Building. BECI opened up the ceiling in various locations to ascertain whether there are sections of original Galbestos roof remaining in place. We looked for other suspect asbestos containing materials (SACM) to be sampled and tested for asbestos.

BECI also looked behind areas where visible surface mold was present, in order to ascertain whether the mold would present a hazard to the people carrying out the soft strip and demolition. Air samples were taken to assess the airborne mold in these areas.

The above samples were sent to EMSL laboratories in the USA and below is our full report.

Sampling - Asbestos

On opening up several areas of the drywall ceiling, we found that there were no remaining visible sections of the old original roof. However, samples of drywall tape & bedding and roofing were taken to confirm absence of asbestos containing material (ACM).

These samples were sent for analysis for asbestos by Polarized Light Microscopy (PLM), to EMSL Laboratories of Fort Lauderdale, FL, a United States AIHA Accredited Laboratory for Asbestos Analysis. Photographs of the areas where the samples were taken are shown in Photographic Record below. The Chain of Custody Form is shown in Appendix 1.

Sampling – Mold

The worst areas for visible mold were the kitchen and woodwork areas, so we took bulk samples of visible mold from these areas to determine type of mold and extent.
Photographs of the areas where the samples were taken are shown in Photographic Record below. The Chain of Custody Form is shown in Appendix 2.
We also run air samples to check the levels in the air in the kitchen, woodwork and hallway areas. The Chain of Custody Form is shown in Appendix 3.
The bulk and air samples were sent to EMSL Labs of Fort Lauderdale, FL, a United States, a AIHA Accredited laboratory for Mold Analysis.

Results – Asbestos

The PLM results for asbestos are shown in Appendix 4.
All three samples tested negative for asbestos.

Results – Mold

The bulk mold sample results are shown in Appendix 5. These results record medium or high levels of *Stachybotrys/Memnoniella* in three of the five areas, medium levels of *Aspergillus/Penecillium* in two areas and *Chaetomium* in one area.

The air samples results are shown in Appendix 6. These results recorded significant levels of *Acospores* and *Cladosporium* in the kitchen and woodwork areas.

Discussion – Asbestos

No asbestos was found in Festival Place Building.

Characteristics & Health Effects of Mold Species discovered in Significant Levels in Building

The characteristics and health effects of *Stachybotrys/Memnoniella, Aspergillus/Penecillium, Chaetomium, Acospores* and *Cladosporium* are discussed below.

Ascospores -- *Ascospores* are ubiquitous and are found in all-natural habitats. High concentrations of these spores are often found in outdoor air after heavy rains. This is due

to the resulting high moisture which aids in setting the spore discharge mechanisms in action. Most *ascospores* are plant parasites, some are saprophytes. A few are responsible for plant and tree diseases (e.g. Chestnut Blight, Tar Spot of Maple, Apple Scab disease and powdery mildew).

Aspergillus sp. -- This is a large genus containing approximately 175 species. Most members of this genus can be found in soil in warmer climates, compost, on decaying plant matter, and stored grain. *Aspergillus* spores are frequently isolated from water damaged building materials. Many species produce mycotoxins that can be harmful to both humans and animals. Some of the mycotoxins produced by species of *Aspergillus* are aflatoxins, gliotoxins, sterigmatocystin, citrinin and aspergillic acid. *Aspergillus* can cause opportunistic infections, called aspergiollosis. Cases of aspergiollosis are rare and usually occur in immunocompromised patients after significant exposure. Aspergillus spores can be allergenic to some individuals.

Chaetomium sp. -- This genus has a world-wide distribution and contains approximately 160 to 180 species. They are commonly found in soil, plant remains and plant material. They readily digest cellulose and will grow on paper, wood and anything else that contains cellulose. In water damaged buildings, *Chaetomium* is commonly found on drywall, wallpaper and baseboards, often emitting a musty odor. Some organisms within the *Chaetomium* group have the potential to produce mycotoxins. Many species are also recognized allergens.

Cladosporium sp. -- This genus has a world-wide distribution with at least 500 species identified. *Cladosporium* is abundant in the air during the summer months. Members of this genus are common environmental isolates, both indoors and outdoors. Outdoors, *Cladosporium* is often found growing on dead plant material, woody plants and in soils. Indoors, they can be found on exposed textiles, foods, wet building elements, carpet and in mattress dust. *Cladosporium* is also frequently found growing in buildings' HVAC systems, particularly on insulation of mechanical cooling units with relatively high moisture. Pathogenicity of this genus is very low, but there are reported cases of opportunistic infections. Organisms belonging to this genus are significant aeroallergens, causing asthma and hay fever in susceptible individuals.

Stachybotrys sp. – Also known as "Black Slime Mold". This genus of fungi has a world-wide distribution with some species restricted to subtropical areas. It naturally inhabits materials rich in cellulose and is commonly found in various decaying plant substrates and soil. *Stachybotrys* is more frequently isolated indoors than outdoors. When found growing in buildings, it is used as an indicator of serious moisture problems. It is often found growing indoors on wet cellulose base building materials such as ceiling tiles, gypsum board, paper covered sheet rock and wallpaper. *Stachybotrys* is hydrophilic (aw >0.90) and therefore requires high moisture content for growth. *Stachybotrys chartarum* is the most common species of the genus, and is often found indoors on various construction materials, potentially producing mycotoxins that can lead to serious health complications. The mycotoxin (satratoxin) produced by this species of *Stachybotrys* is especially toxic to humans when ingested, inhaled or comes in physical contact with the skin.

Other Observations

During the sampling, we noticed many roof leaks and pigeons had occupied many of the spaces within the roof area. There was a build up of pigeon stool with a very strong odor in many roof areas.

Pigeon feces are increasingly being implicated in the spread of bacterial pathogens such as Escherichia coli, Campylobacter, Salmonella, Listeria, and Chlamydia. Fungi are rarely investigated except for Cryptococcus that has emerged as an important pathogen in old people and immunosuppressed patients

Discussion

In addition to the pigeon feces, significant levels of two mold species of concern regarding health were found – *Aspergillus* and *Stachybotrys.* These samples were taken drywall and ceiling tile from the kitchen and woodwork area. In particular, the accumulation of *Stachybotrys* is a sign of long-term dampness evidently due to the roof leaks. Also, most of the above five mold species can cause allergic reaction in certain individuals in the levels found in Festival Place.

The air sampling showed moderate amounts of mold in the air. Whilst there are no specific danger threshold values, the levels found give cause for concern. In particular, removal of drywall, ceiling tiles, and other materials with surface mold from the vicinity of the roof leaks would be expected to release higher levels of mold into the air. It is expected that pigeon feces will also be encountered.

It is recommended therefore that the removal of these materials be carried out by trained personnel with personal protective equipment.

BECI proposes to carry out the following:

- Removal of ductwork, ceiling tile and loose boxes, paper and miscellaneous debris from the kitchen area, as shown in first three pictures. It appears that many of these items have become wet, and subsequently fallen down or been taken down from the ceiling.
- Removal of drywall with surface mold.
- Removal of pigeon feces from inside the building.
- Disposal of the above items as construction waste.
- Post Remediation Air Testing & Closeout Report

Note: BECI will not remove the retail booths or other FF & E in the main passenger areas which are generally in good condition, unless the items are in contact with mold, pigeon feces or other contamination.

PHOTOGRAPHIC RECORD

AREAS WITH MISCELLANEOUS DEBRIS TO BE REMOVED

DRYWALL AND TILE CEILING AREAS DAMAGED BY WATER LEAKS



LOCATIONS FOR ASBESTOS SAMPLING



LOCATIONS FOR MOLD SAMPLING

if there are any questions or instructions, please contact Ricky Francis or myself.

Regards

Dr. Barry Iseard
BECI Consultant/Estimator

APPENDIX 1

CHAIN OF CUSTODY SUSPECT ASBESTOS SAMPLES

OrderID: 562001678

EMSL, 2700 WEST CYPRESS CREEK RD SUITE C-108 FORT LAUDERDALE FL 33309 PHONE: 954-786-933 att: AMANDA LEDDA

Asbestos Chain of Custody

EMSL Order Number *(lab use only)*: 562001679

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Company Name : BECI Ltd		**EMSL Customer ID:** BHEC 25	
Street: 5070 NESTING WAY D		**City:** DELRAY BEACH	**State or Province:** FL
Zip/Postal Code: 33484	**Country:** USA	**Telephone #:** 954-999-3868	**Fax #:**
Report To (Name): BARRY ISEARD		**Please Provide Results via:** ☐ Fax ☑ Email	
email Address: iseard@yahoo.com		**Purchase Order Number:** PGW 2001	
Client Project ID: PGW-ISD		**EMSL Project ID** *(internal use only)*:	
State or Province Collected: NASSAU, BAHAMAS		**CT only** ☐ **Commercial/Taxable** ☐ **Residential/Tax Exempt**	

EMSL-Bill to: ☐ Same ☐ Different - *If bill to is different note instructions in comment. Third party billing requires written authorization from third party*

Turnaround Time (TAT) Options Please Check

☐ 3 Hr[1] ☐ 4-4.5Hr[1] AHERA Only ☐ 6 Hr[1] ☐ 24 Hr ☐ 32 Hr[2] ☐ 48 Hr ☐ 72 Hr ☑ 96 Hr ☐ 1 Week ☐ 2 Week

[1]Premium Service Charge applies for 3 Hour TEM AHERA or EPA Level II TAT – you will be asked to sign an authorization form. TEM Air 3-6 Hour, please call ahead to schedule
[2]32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

PCM - Air
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☑ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable - NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NYS 198.8 SOF-V
- ☐ NIOSH 9002 (<1%)

TEM – Air[1]
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)*

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Settled Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil – Rock – Vermiculite (reporting limit)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)*
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep
- ☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM

*Lower reporting limits avaialble on request

Other test (please specify):

☐ **Stop At First Positive** *(clearly identify homogenous areas below)*

Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm

Sampler's Name: Lourens Arce **Sampler's Signature:** [signature]

Sample #	Sample Description/Location	Volume, Area or Homogenous Area	Date/Time Sampled
A1	Drywall Kitchen (da Shack)	1	4/17/20
A2	Drywall Hall way	1	4/17/20
A3	Sheet metale shop area	2	4/17/20

Client Sample # (s): - **Total # of Samples:** 3

Relinquished by (Client): Lourens Arce **Date:** 4/21/20 **Time:**

Received by (Lab): EMSL - Fedex - CC **Date:** 4/23/20 **Time:** 10:20AM

Comments/Special Instructions:
email results to iseard@yahoo.com
TRK# 814700447853

APPENDIX 2

CHAIN OF CUSTODY BULK & AIR SAMPLES MOLD

OrderID: 562001679

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 562001679

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

Company Name: BECI Ltd	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments
Street: 3152 Vineland Road	*Third Party Billing requires written authorization from third party.*
City: Kissimmee **State/Province:** FL 34746	**Zip/Postal Code:** 34746 **Country:** USA
Report To (Name): Barry Iseard	**Telephone #:** 954-999-3868
Email Address: iseard@yahoo.com	**Fax #:** **Purchase Order:** BECI 18-1
Project Name/Number: [redacted]	**Please Provide Results:** ☐ Fax ■ Email
U.S. State Samples Taken: Bahamas **Project Zip Code:** n/a	**Connecticut Samples:** ☐ Commercial ☐ Residential

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ **Biocide Used in Source (specify):** ☐

Public Water Supply Samples: ☐ **Note: All results may automatically be reported to DOH if required by state.**

Turnaround Time (TAT) Options - Please Check

☐ 3 Hour	☐ 6 Hour	☐ 24 Hour	☐ 48 Hour	■ 72 Hour	☐ 96 Hour	☐ 1 Week	☐ 2 Week

Microbiology Test Codes

M001 Air-O-Cell
M030 Micro 5
M174 MoldSnap
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi- Air Samples (Genus ID & Count)
M006 Viable Fungi- Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable fungi - Surface Samples (Genus ID & Count)
M008 Culturable fungi - Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent

M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. coli* (Colilert P/A***)
M018 Total Coliform & *E. coli* (MFT*)
M114 Total Coliform & *E. coli* Enumeration (Colilert MPN**)
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci* (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen –Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M133 *Methicillin-resistant Staph. aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
Other See Analytical Price Guide
***Legionella* Analysis** Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN= Most Probable Number
***P/A= Presence/Absence

Name of Sampler: Orlando **Signature of Sampler:**

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
Example A1	Kitchen Sink/Tap	Water	☒ P ☐ NP	M017	100 mL	9/1/13 4:00 PM	
A1	Kitchen	air	☐ P ☐ NP	M001	100mL	4/17/20	
A2	Hall Cabinet	air	☐ P ☐ NP	M001	10/mL	4/17/20	
A3	Wood work area	air	☐ P ☐ NP	M001	100mL	4/17/20	
A4	Ceiling tile (kitchen)		☐ P ☐ NP		150L	4/17/20	
A5	Wood work area		☐ P ☐ NP			4/17/20	

Client Sample # (s): - **Total # of Samples:** **Samples Received Chilled?** Yes / No (Lab Use Only)

Relinquished (Client): BECI Ltd **Date:** **Time:**

Received (Lab): EMSL - Fedex-CC **Date:** 4/23/20 **Time:** 10:20AM

Comments/Special Instructions:

TRK# 814700447853

Controlled Document – COC-34 Micro R8 11/14/2017

OrderID: 562001679

Microbiology Chain of Custody

EMSL Order Number *(Lab Use Only)*: 562001679

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

Additional pages of the chain of custody are only necessary if needed for additional sample information.

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
A6	wall Surface (kitchen)	Swab	☐ P ☐ NP	M041 ~~M007~~			
A7	wall surface woodwork	Swab	☐ P ☐ NP	M041 ~~M007~~			
			☐ P ☐ NP				
			☐ P ☐ NP				
			☐ P ☐ NP				
			☐ P ☐ NP				
			☐ P ☐ NP				
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			☐ P ☐ NP				
			☐ P ☐ NP				

Comments/Special Instructions:

Page _____ of _____

APPENDIX 3

PLM RESULTS ASBESTOS (NEGATIVE)

EMSL Analytical, Inc.

2700 W. Cypress Creek Rd. Ste. C108 Fort Lauderdale, FL 33309

Tel/Fax: (954) 786-9331 / (954) 941-4145

http://www.EMSL.com / pompanobeachlab@emsl.com

EMSL Order:	562001678
Customer ID:	BHEC25
Customer PO:	PGW 2001
Project ID:	

Attention:	Barry Iseard	**Phone:**	(242) 601-2682
	Bahamas Env. Contractors Industries Ltd.	**Fax:**	
	19 Silver Palm Blvd.	**Received Date:**	04/23/2020 10:20 AM
	Box SB-51407	**Analysis Date:**	04/24/2020 - 04/27/2020
	Nassau, NP	**Collected Date:**	04/17/2020
Project:	PGW -ISD		

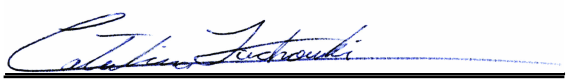
Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
A1-Drywall *562001678-0001*	Drywall Kitchen	Brown/Beige Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
A1-Joint Compound *562001678-0001A*	Drywall Kitchen	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A2-Drywall *562001678-0002*	Drywall Hallway	Brown/Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
A2-Joint Compound *562001678-0002A*	Drywall Hallway	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
A3 *562001678-0003*	Sheet Metale Shop Area	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Catalina Lachowski (1)

John Polanco (4)



Catalina Lachowski, Laboratory Manager
or Other Approved Signatory

Initial report from: 04/27/2020 14:37:28

APPENDIX 4

BULK SAMPLE ANALYSIS MOLD RESULTS

EMSL Analytical, Inc.

2700 W. Cypress Creek Rd. Ste. C108 Fort Lauderdale, FL 33309

Tel/Fax: (954) 786-9331 / (954) 941-4145

http://www.EMSL.com / pompanobeachlab@emsl.com

EMSL Order: 562001679
Customer ID: BHEC25
Customer PO: BECI 18-1
Project ID:

Attention: Barry Iseard
Bahamas Env. Contractors Industries Ltd.
19 Silver Palm Blvd.
Box SB-51407
Nassau, NP
Project: BECI

Phone: (242) 601-2682
Fax:
Collected Date: 04/17/2020
Received Date: 04/23/2020 10:20 AM
Analyzed Date: 04/27/2020

Test Report:Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	562001679-0001			562001679-0002			562001679-0003		
Client Sample ID:	A1			A2			A3		
Volume (L):	150			150			150		
Sample Location:	Kitchen			Hallway			Wood Work Area		
Spore Types	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	7	200	31.3	4	90	45	20	440	100
Aspergillus/Penicillium	-	-	-	4	90	45	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	20	440	68.8	1	20	10	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**27**	**640**	**100**	**9**	**200**	**100**	**20**	**440**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	1	20	-	-	-	-	-	-	-
Pollen	-	-	-	1	20	-	-	-	-
Analyt. Sensitivity 600x	-	22	-	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Marie Garabal, Microbiology Technical Manager
or other Approved Signatory

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.

Samples analyzed by EMSL Analytical, Inc. Fort Lauderdale, FL AIHA-LAP EMLAP 102794

Initial report from: 04/28/2020 09:14 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

APPENDIX 5

AIR SAMPLE ANALYSIS MOLD RESULTS

EMSL Analytical, Inc.

2700 W. Cypress Creek Rd. Ste. C108 Fort Lauderdale, FL 33309
Tel/Fax: (954) 786-9331 / (954) 941-4145
http://www.EMSL.com / pompanobeachlab@emsl.com

EMSL Order: 562001679
Customer ID: BHEC25
Customer PO: BECI 18-1
Project ID:

Attention: Barry Iseard
Bahamas Env. Contractors Industries Ltd.
19 Silver Palm Blvd.
Box SB-51407
Nassau, NP
Project: BECI

Phone: (242) 465-9812
Fax:
Collected Date: 04/17/2020
Received Date: 04/23/2020
Analyzed Date: 04/27/2020

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Bulk Samples (EMSL Method MICRO-SOP-200)

Lab Sample Number:	562001679-0004	562001679-0005			
Client Sample ID:	A4	A5			
Sample Location:	Ceiling Tile (Kitchen)	Wood Work Area			
Spore Types	Category	Category			
Alternaria (Ulocladium)	Low	-			
Ascospores	-	-			
Aspergillus/Penicillium	Medium	Medium			
Basidiospores	-	-			
Bipolaris++	-	-			
Chaetomium	-	Medium			
Cladosporium	-	-			
Curvularia	-	-			
Epicoccum	-	-			
Fusarium	-	-			
Ganoderma	-	-			
Myxomycetes++	-	-			
Pithomyces++	-	-			
Rust	-	-			
Scopulariopsis/Microascus	-	-			
Stachybotrys/Memnoniella	Medium	*High*			
Unidentifiable Spores	-	-			
Zygomycetes	-	-			
Hyphal Fragment	Low	Low			
Insect Fragment	-	-			
Pollen	-	-			

Category: Count/per area analyzed - Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000

- Denotes Not Detected.
++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
* = Sample contains fruiting structures and/or hyphae associated with the spores.

Marie Garabal, Microbiology Technical Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Initial report from: 04/28/2020 09:14 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

2700 W. Cypress Creek Rd. Ste. C108 Fort Lauderdale, FL 33309
Tel/Fax: (954) 786-9331 / (954) 941-4145
http://www.EMSL.com / pompanobeachlab@emsl.com

EMSL Order: 562001679
Customer ID: BHEC25
Customer PO: BECI 18-1
Project ID:

Attention: Barry Iseard
Bahamas Env. Contractors Industries Ltd.
19 Silver Palm Blvd.
Box SB-51407
Nassau, NP
Project: BECI

Phone: (242) 465-9812
Fax:
Collected Date: 04/17/2020
Received Date: 04/23/2020
Analyzed Date: 04/27/2020

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Swab Samples (EMSL Method MICRO-SOP-200)

Lab Sample Number: / Client Sample ID: / Sample Location:	562001679-0006 A6 Wall Surface (Kitchen) Swab	562001679-0007 A7 Wall Surface Woork Work Swab			
Spore Types	Category	Category			
Alternaria (Ulocladium)	-	-			
Ascospores	Rare	-			
Aspergillus/Penicillium	-	Low			
Basidiospores	-	-			
Bipolaris++	-	-			
Chaetomium	-	Low			
Cladosporium	-	-			
Curvularia	-	-			
Epicoccum	-	-			
Fusarium	-	-			
Ganoderma	-	-			
Myxomycetes++	-	-			
Pithomyces++	-	-			
Rust	-	-			
Scopulariopsis/Microascus	-	-			
Stachybotrys/Memnoniella	-	*High*			
Unidentifiable Spores	-	-			
Zygomycetes	-	-			
Hyphal Fragment	Rare	Rare			
Insect Fragment	-	-			
Pollen	-	-			

Category: Count/per area analyzed - Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000

- Denotes Not Detected.
++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
* = Sample contains fruiting structures and/or hyphae associated with the spores.

Marie Garabal, Microbiology Technical Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Initial report from: 04/28/2020 09:14 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

MOLD-RELATED SERVICES LICENSING PROGRAM

THE MOLD ASSESSOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 468, FLORIDA STATUTES

ISEARD, BARRY STUART

3152 VINELAND ROAD UNIT 189
KISSIMMEE FL 32746

LICENSE NUMBER: MRSA2777

EXPIRATION DATE: JULY 31, 2020

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Asbestos Consulting & Training Systems

900 N.W. 5TH Avenue, Fort Lauderdale, Florida 33311 (954) 524-7208

This is to Certify that

Barry Stuart Iseard

XXX-XX-7507

5030 Nesting Way D, Delray Beach, Fl 33484

has successfully completed an English

AHERA Building Inspector Course

10-Jun-19 TO 12-Jun-19

and has completed the requisite training for TSCA

Meets state requirements of FL49-0001020/CN-0006272 and UT(6.0 core).

NDAAC Provider #451 Trainer(s): James F. Stump

Training Address: 900 NW 5th Ave, Fort Lauderdale, FL 33311

Successful course completion based on exam score on: 06/12/19

This Certificate Expires:

11-Jun-20 06/11/20

Processed By:

Seagull

To Authenticate Certificate
www.seagulltraining.com
1-800-966-9933

UNDER CIVIL AND CRIMINAL PENALTIES OF LAW FOR MAKING OR SUBMISSION OF FALSE OR FRAUDULENT STATEMENTS OR REPRESENTATIONS (18 U.S.C. 1001 AND 15 U.S.C 2615), I CERTIFY THAT THIS TRAINING COMPLIES WITH ALL APPLICABLE REQUIREMENTS OF TITLE IV OF THE TOXIC SUBSTANCES CONTROL ACT, 40 CFR PART 745 OR 763, AND ANY OTHER APPLICABLE FEDERAL, STATE, OR LOCAL REQUIREMENTS, AS AMENDED.

James F. Stump, Course Sponsor

Certificate Number: 180130

Course Number: SE1924

APPENDIX H: Spill Prevention Plan

The following Spill Prevention and Response measures will be implemented to prevent or mitigate escalation in the event of a possible spill.

SPILL PREVENTION MEASURES
The following proactive measures will be adopted to prevent the likelihood of spill event:

- The HSO will provide training to Construction Staff and contractors regarding proper methods for transporting, transferring, and handling substances that have the potential impact to human health or the environment.

- Preventative program including inspection and maintenance schedules to confirm and maintain the mechanical integrity and operability of equipment.

- Implementation of Standard Operation Procedures (SOPs) for handling materials including refueling vehicles, the use of diesel/oil absorption pads, the use of diesel tanks, the use and handling of processing chemicals, and managing secondary containment areas.

- Fuel will be purchased locally and immediately transferred to vehicles on site using a fuel pump. Any fuel stored on site are to be kept on a concrete area with secondary containment or an area prepared with impervious chemical resistant material

- Provision of secondary containment, drip trays or other overflow and drop containment measures, for hazardous materials containers at connection points or other possible overflow points. Identification and provision of all equipment necessary to handle, transfer or transport materials properly.

- Use of transfer equipment that is compatible with and suitable for the characteristics of the materials transferred and designed to ensure safe transfer.

- Use of dripless hose connections for vehicle tank and fixed connections with storage tanks.

- Review of all potential pollutants' characteristics prior to introduction to site and establishment of proper storage, handling and transportation procedures and spill risk analysis.

- Material Safety Data Sheets (MSDS) for all contaminants on-site will be readily available. These will include human health effects of chemicals handled and will be included in the required chemical environmental and safety training for all employees handling or otherwise exposed to the contaminants. All appropriate personal protective equipment, handling and response procedures will also be identified in the MSDS or otherwise recommended by the suppliers/manufacturers and will be followed by the Project staff.

- Bulk transfers of chemicals during delivery will be observed by workers to identify preliminary hazard analysis methods.

- SOPs for chemical transportation, unloading, transfer, storage if required, handling, use and disposal shall be developed, kept current, effectively implemented.

SPILL CONTROL AND COUNTERMEASURES

The following spill control and countermeasures will be followed in the event of a spill incident:

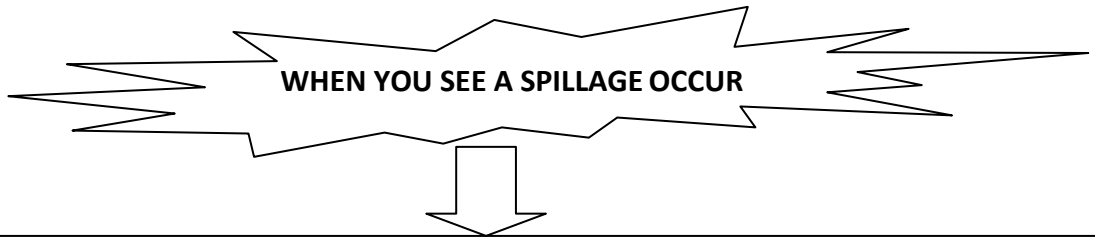
- Maintenance of updated emergency contact information list at all spill response kits locations.
- Maintenance of spill route maps (perceived overland flow path [flow gradient] and likely contamination point [i.e. surface water features, potable boreholes etc.] of a given contaminant substance) at potential spill locations.
- Document availability of all spill response equipment that can handle a large spill.
- Document availability of specific personal protective equipment and the necessary training needed to respond to different potential spills.
- Maintenance of spill response kits on all Project fuel and lubrication sites and vehicles.
- Maintenance of spill response guidelines at all spill response kit locations.
- Maintenance of an updated table of all contaminants on-site and recommended spill response procedures.
- Development, implementation and regular training and testing of a facility-wide Spill Response Plan.
- First-aid trained workers on site.
- All spills will be reported to appropriate management workers.

SPILL RESPONSE PROCEDURE & COMMUNICATIONS

The Spill Response Procedure describes what to do when you see a spillage occur.

The Project Manager is responsible that Emergency arrangements are made, and communication lines are established with relevant agencies and authorities.

The Project Manager is to ensure that employees on the project are aware of the emergency telephone numbers, addresses, and response procedures. Furthermore, he ensures, either via the local agent or direct, that BEST Commission Port Department and the local authorities are made aware of the existence of the project. **ALL** spills are to be reported to the BEST Commission and The Port Department.



1) Check
   a. type of spillage (fluid / solid)
   b. estimate quantity
   c. spillage continues (If Yes lake action to stop it/ If No proceed)
   d. source of spillage
   e. danger of explosion (If Yes ask for assistance / If No proceed)
   f. danger of fire (if Yes ask for assistance / if No proceed)
2) Ask for assistance
   a. when possible start spillage recovery
3) Inform Project Manager, Project Environmental Manager

Superintendent/Foreman
Minor spillage: can be treated with available spillage recovery set
Major spillage: assistance is required

MINOR SPILLAGE

Superintendent or Foreman:

1. To stop and **/** or take over activities
2. To start spillage recovery

Superintendent or Foreman:

Log on daily report

a. type of spillage
b. estimated quantity
c. reason of recovery
d. cause of spillage
e. measures (to be) taken to avoid reoccurrence

1. Inform Project Manager within **24hrs**

(Should be address immediately and remediation within 12hrs)

MAJOR SPILLAGE

Superintendent or Foreman:

1. Check Location-**immediately**
   a. Ensure safety
2. Check Spillage-**immediately**
   a. type of spillage
   b. estimated quantity
   c. spillage continues
   d. source of spillage
3. Instruct workers-**immediately**
   a. To stop and **/** or take over activities
   b. To start spillage recovery
4. Inform Project manager, Environmental Manager-**within 1hr**
5. Tactic Meeting with key workers

Project Manager or Project Environmental Manager:

1. **Immediately** determine what kind of assistance is required
2. Inform ENGINEER **within 1hr of notification**
3. ENGINEER to inform Employer **within 1 hr of notification**
4. Request assistance from 3rd Parties **within 1 hr**
5. Inform DEHS, Port & BEST Commission-**verbally in 1hr, written within 48hrs**

EMERGENCY RESPONSE EQUIPMENT

In the unlikely eventuality there is a spill, on the site there will be Environmental Emergency Response kits.

These spill kits will consist of the following listed materials (or similar):

- Absorption pads (43 x 48 cm)
- Absorption rolls (96 cm x 40 m)
- Spill drum for contaminated materials
- Absorption socks (7.6 cm x 1.2 m)
- Sack of absorption grit
- Plastic foil

Once an eventual spill has been cleaned-up all contaminated materials will be packed in plastic sacks and / or foil and placed in the disposal drum. This drum will be transported to an eventual waste recycling / treatment location.

EMERGENCY PREPAREDNESS

The Contractor is anticipating preparation in general for the following scenarios:

- Serious personal injury/fatality.
- Road traffic accident.
- Fire or explosion.
- Spillage.
- Severe weather conditions (Hurricanes, Tropical Storms, Tornadoes).
- Evacuation of work site; and
- Damage to Third party Property.

Priority for action of each scenario is as follows:

1. Saving lives and people safety.
2. Avoid or limiting environmental damage.
3. Control of situation.
4. Establishing site safety; and
5. Salvage and repair.

SPILL REPORTING PROTOCOL

Step 1: All workers on the work site and assigned to the project will be responsible for implementation with the Project Manager and Project Environmental Manager providing coordination of efforts. A report will be generated by the Contractor and disseminated to relevant parties including BEST Commission and the Port Department.

Emergency Contacts:

Project Manager
Kurt Smith
357-8286

Environmental Manager
Janeen Bullard
357-9262

Rochelle Newbold
Director
DEPP
322-4546

Commander Berne Wright (Marine spills)
Port Controller
The Port Department
326-7354

Anthony Ryan
Department of Environmental Health Services
557-0379

Step 2: When contact is made with the above individuals, report the following information:

- Location of Spill
- Source of Spill
- Time of Spill
- Volume of Spill
- Potential Hazard of Spill
- Has the spill been contained?
- Has the spill material reached a body of water?
- Responsible party's name, address, telephone, official to contact, etc.
- Weather conditions at the spill site

Step 3: If the spill report is not made by the Project Engineer, the reporter will communicate the above information to him/her as soon as possible. From that point forward, the Project Engineer will coordinate all further activities in response to spill control.

SPILL CONTAINMENT AND CLEANUP

Upon discovering a spill, every effort will be made to contain the spill and stop it at its source (when this can be done without danger to the health and safety of those involved). Containment may involve blocking storm water drains, building berms/dikes, deploying booms/absorbent materials and other barriers to prevent the spread of the pollutant, and other measures to minimize health and environmental damage.

Clean-up and removal of spill material and spill contaminated materials will be undertaken after consultation with appropriate governmental agencies to determine the best method(s) for removal. The Contractor will contract with (or consult) a private company to conduct any clean-up. Disposal of the pollutant and/or pollutant contaminated material will be in a manner and location as approved by DEHS.

Spill or Incident Report Form

Site: _____ Primary Contractor: _____

Date: _____ Incident Date _____

Complete for any type of petroleum product or hazardous materials / waste spill or incident

Person Reporting Spill or Incident	
Name	Address
Organization	
Title	
Telephone	
. Fax	Signature

Type of Spill:			
Common Name of Spilled Substance			
Estimated Quantity Spilled			
Estimated Concentration			
Date of Spill			
Time Spill Started :	AM / PM	Time Spill Ended	AM / PM

SPILL TO LAND	SPILL TO WATER BODY
Name of site:	Name of water body:
Street address:	Location of discharge
City	Description of area from which spilled material may reach:
County:	

Spill or Incident Report Form

If no spill describe incident:

Actions Taken:

To contain spill or impact of incident:

To clean up spill or recover from incident:

To remove cleanup material:

To Prevent reoccurrence:

Person responsible for managing spill response:	
Name	Signature
Phone	Fax

Spill Notification List

Agency	Phone
Local Emergency Contacts	
• Fire Department:	
• Emergency Medical:	
• Community Evacuation:	
• Police Department	
• Local Public Works Department: Contact for storm drain and other utilities	
• Hospital: Local Emergency Treatment	
Spills to water	
Ecology	
Emergency Spill Response Contractor	

Spill Reporting Information

Where is the spill?	
What spilled?	
How much spilled?	
How concentrated is the spilled material?	
Who spilled the material?	
Is anyone cleaning up the spill?	
Are there resource damages (e.g. dead fish or oiled birds)?	
Who is reporting the spill?	
Your contact information	

APPENDIX I: Health and Safety Plan

HEALTH AND SAFETY

MANAGEMENT PLAN

CONTENTS

SECTION 1

Site Induction and Training

1.1 Site Induction

Health and safety induction training will be carried out by the Project Site Agent or his nominee for all employees and contractors on arrival at the site.

Some or all of the following topics may be discussed during the site induction:-

1. Outline of the requirements of the Company's Health & Safety Policy Statement
2. Emergency procedures and contact numbers
3. Accidents, dangerous occurrences, damage and near misses – reporting procedures
4. Buried services
5. Confined spaces
6. Cranes / other lifting operations and lifting equipment
7. Demolition work
8. Electricity at work / portable electric tools
9. Excavations – safe digging practices
10. First aid – equipment, first aiders
11. Hazardous operations identified
12. Hand and power tools
13. Company permits-to-work system
14. Housekeeping requirements
15. Hygiene and welfare facilities
16. Manual handling operations
17. Noise – hazards and control measures
18. Plant, vehicle and equipment – checking procedures
19. Personal protective equipment – issue, use of, care of and maintenance
20. Scaffolding
21. Site / road traffic rules and requirements
22. Site security arrangements
23. Vehicles – safe driving practices and checklists
24. COVID-19 Rules

1.1 Tool Box Talk – Site Training

At the Site Agent's discretion regular "Tool Box Talks" will be conducted, after the initial site induction, which will include information on some or all of the topics listed above depending upon the site-specific conditions:-

A tool box talk form / site induction register form shall be completed for each talk and shall contain the following information:-

- Supervisors Printed Name & Signature

- Date
- Site/Project Name
- Topics of Talk
- A record of any relevant questions raised and any answers given.
- Printed name and signature of each operative attending

Copies of these forms shall then be forwarded to the Company's Head Office, reviewed and recorded.

Supervisors and managers will receive general and specific inductions as agreed in advance of the Project start.

Site Rules

Site-specific rules will be posted within the canteen / office and copies will be given to all personnel working on the site. They will contain, for example, details of No Smoking requirements, consumption of food, emergency arrangements etc.

A copy of these Site Rules is contained within this section of the health and safety plan (please see following page).

Site Rules

On Entering the Site

1. All visitors and members of the design and construction teams to report to the site offices on entering the Project site works.

Personal Protective Equipment

2. All works personnel and visitors must wear masks and hard hats on site.
3. High visibility jackets or waistcoats to be worn at all times by all works personnel and visitors.
4. All site personnel must wear the appropriate foot protection with built in steel toecaps.

Smoking, Hot Works and Housekeeping

5. No smoking in any designated `No Smoking' area.
6. No unauthorised welding cutting or burning – refer to the Permit-for-Hot Works.
7. No fires / burning of waste material on site.
8. Put all waste and rubbish in the containers provided and think of the safety of others on the site.

Hygiene and Welfare

9. Food is only to be eaten in the mess/canteen.
10. Wash your hands, face and neck thoroughly throughout the day and before eating, drinking and smoking and before going home.
11. Do not abuse the welfare facilities provided for you.

Pedestrians, Vehicles, Plant and Equipment

12. Only the designated site access routes are to be used for access and egress and these must be kept free from obstructions.
13. Speed limit restrictions and all warning and directional signs must be adhered to.
14. No unauthorised vehicles or personnel are permitted onto the site – if in doubt, consult the Site Agent.
15. Site workers car parking is restricted to the contractors compound.
16. All vehicle and plant safety checks and inspections must be carried out daily and the associated logbook completed – report defects immediately to the Site Agent.

17. No seriously defective plant or machinery is permitted to be operated on site – unless under strict controls to enable repairs.

18. Guards must be in place before operating plant machinery – report defects immediately to the Site Agent.

Permits-to-Work

19. Permits to work are required for:-

(i) any work on live electrical equipment
(ii) hot works
(iii) deep excavations
(iv) entry into confined spaces
(v) roofwork and working at heights; and
(vi) work with asbestos

Accidents

20. Report all accidents, dangerous occurrences, damage incidents and near misses and to the Site Agent. Every incident is important – so report it!

21. No horseplay.

***Additional Site Rules may be added, or further safety guidance given, as the works develop.**

Use of Personal Protective Equipment

Protective clothing must be suitable for the purpose intended, i.e. bright, fit correctly and protect the operative.

Clothing is to be laundered daily to reduce the spread of COVID-19. Soiled clothing may either be laundered and re-issued, or disposed of. Operatives are to be advised not to launder their own protective clothing in domestic washing machines.

All operatives are to be issued with the following:

Mask

Masks are to be worn at all times.

Hard Hat
To be replaced when damaged or beyond manufacturer's life span. Hard hats are to be worn when required where operatives are at risk of injury from falling materials or on a site where there is moving plant and equipment etc.

Hearing Protection
When working in designated noise zones and also when using rock breakers and excavators.

Steel Toe-capped Safety Boots
One pair issued at start of season and subsequent steel toe-capped pairs issued when worn out or defects reported. Choice of types required:- Doc martens, Chukka, Rigger, Wellingtons etc.

Rigger Gloves or Gauntlets
These are to be replaced as necessary – site agent is to keep a small stock on site.

High Visibility Clothing
`Class A' type required – this must be replaced when dirty. Waistcoat to be to BS6629 standard.

Eye Protection
Full face visor / goggles must be worn by personnel using cutting discs, power saws, jack hammers etc. Dust masks will also be required to be worn throughout these processes.

Working in Storm / Foul Drainage Pipes, Contaminated Land & Confined Spaces
The following will be required to be worn:- Boots / Wellingtons, waterproof coveralls, gauntlets, hard hats, PVC gloves / gauntlets and goggles. For entry into confined spaces, gas monitoring will be conducted before works commence, to determine what, if any, breathing apparatus will be required (please refer to the site-specific risk assessment and method statement).

COVID -19 Protocol

The Bahamas is currently during a global pandemic, COVID-19. There have been general regulations established to ensure the health of all citizens. The contractor also has an obligation to protect its workers from hazards as such required and best onsite practices will be adhered too. During this time all parties must place an increased focus on health and safety. All measures will be taken to prevent the spread of COVID-19 and will be done in compliance under the Emergency Powers (COVID-19) Regulations 2020.

All staff will be required to follow the protocol below to prevent the spread of germs:

- By law wearing masks always is required.
- Eyewear should be worn for protective measure.
- Handwashing stations and hand sanitizer will be provided so that hands are washed/sanitized often.
- Sneeze and cough into your sleeve.
- If tissues are used please discard immediately into the trash and wash hands immediately afterward.
- Avoid touching your eyes, nose or mouth.
- Avoid contact with people who are sick.
- Stay home if you are sick.
- High-touch areas onsite such as doorknobs, vehicles and machinery are to be sanitized on a regular basis throughout the day and if touched ensure hands are washed after.
- Sharing of tools should be limited as much as possible and if tools are to be shared, they are to be sanitized and hands washed prior to and immediately after use.
- Where possible wear gloves and do not touch your face with gloved hands. Take care when removing gloves. Ensure you wash your hands after removing them.
- Wash your clothes as soon as you get home.
- If you are ill, you must notify your supervisor immediately and seek medical attention.

The symptoms of COVID-19 are like many other illnesses, including the cold and flu. At this time, it is recommended that any worker who has any symptoms related to cold, flu or COVID-19 should be sent home.

In addition, workers are encouraged to call:

- 511 – For COVID-19 Health related and general health related matters. National Insurance Board number must be provided for the call.
- 411 – For non-health COVID-19 matters.
- 911 – For all other health emergencies and life-threatening conditions.

Signage will be posted to communicate COVID-19 policies to workers and site visitors. The policies include:

- Social distancing of 3 to 6ft as much as practical.
- No gathering in groups for breaks or lunch.
- A restricted number of persons will be allowed on site.
- Visitors are required to adhere to all best practices and policies.
- Any meetings or toolbox talks will be conducted outside to allow for social distancing.

Site Induction Register

COMPANY:	
CONTRACT NAME & NO:	
SAFETY PLAN NUMBER	
TALK GIVEN BY: (NAME & JOB TITLE)	**Signed:**

TALK ATTENDED BY: (NAME & JOB TITLE)	EMPLOYEE (Please Tick)	SUBCONTRACTOR (Please Tick)	SIGNATURE OF ATTENDEE	DATE OF TALK

TOPIC		TALK GIVEN YES	TALK GIVEN NO	TOPIC		TALK GIVEN YES	TALK GIVEN NO
Outline of ISD Policy Statement				Permits-to-Work Systems			
Emergency Procedures & Numbers (Fire, Injury, Explosion etc.)				Housekeeping Requirements			
Accidents / Near Misses – Reporting Requirements				Hygiene & Welfare Facilities			
Buried Services				Manual Handling – Good Practice			
Confined Spaces				Noise – Hazards & Control Measures			
Plant & Equipment Check Procedures							
Cranes / Other Lifting Operations and Lifting Equipment				P.P.E.	Issue		
					Use of		
Demolition Work					Care		
					Defect Reporting		
Electricity at Work / Portable Electric Tools				Roadworks			
Excavations				Scaffolding			
First Aid	Equipment Location			Site / Road Traffic Rules and Requirements			
	First Aiders on Site						
	Electrocution						
	Burns						
Hazardous Operations Identified				Site Security Arrangements			
Hand & Power Tools				Vehicles	Safe Driving Practices		
					Checklists		

Site Induction Register

COMPANY:	
CONTRACT NAME & NO:	
SAFETY PLAN NUMBER	
TALK GIVEN BY: **(NAME & JOB TITLE)**	**Signed:**

Questions	Answers Given

Protective Clothing Issue Form

COMPANY:			
COMPANY DEPT.			
EMPLOYEE'S NAME:			
JOB TITLE:			
WORK UNIT:		**LINE MANAGER:**	
COMMENCED EMPLOYMENT:		**PAYROLL NUMBER:**	

ITEM & SPECIFICATION	YES	NO	DATE RECEIVED	SPECIAL REQUIREMENTS (if any)
EYE PROTECTION				
Goggles				
Safety Spectacles				
Full Face Shield				
Welder's Face Shield				
HEARING PROTECTION				
Ear Muffs				
Ear Plugs				
CLOTHING				
Reflective Coat				
Reflective Waistcoat				
Overalls				
Waterproofs				
Laboratory Coat				
GLOVES				
Rigger Gloves				
Leather Gauntlets				
Vinyl Gloves				
PVC Gauntlets				
Other: Please specify				
HARD HAT / BUMP CAP				
Please Specify:				
RESPIRATORY PROTECTION				
Dust Masks (Disposable)				
Filter Mask (canister type)				
SAFETY BOOTS				
Steel toe-capped boots				
Anti-corrosion soles				
High temperature resistance soles				

EMPLOYEE: I have received the protective clothing as listed above. I have been instructed in it's use, care and maintenance. I know what this protective clothing should help protect against.

NAME_____ SIGNED_____ DATE_____

LINE MANAGER: I have instructed this employee as to the use, care and maintenance of the PPE listed above and have explained what hazards the PPE helps to protect against.

NAME_____ SIGNED_____ DATE_____

SECTION 2

Emergency Telephone Numbers

Notes:

- A copy of this form must be posted at ALL site offices and employees' attention drawn to it.
- This form must be completed before works commence and be included in Construction Stage Health & Safety Plans (if applicable)

COMPANY:	Bahamas Marine Construction
COMPANY DEPT:	
SITE ADDRESS:	Nassau Cruise Port Warehouse Demolition
TELEPHONE NO:	422-4445
CONTRACTS MGR:	Christophe Lederc
SITE AGENT:	
SAFETY DEPT.	C/O ISLAND SITE DEVELOPMENT Tel: 1 (242) 328-2025

Emergency Services Number: 919 (Fire, Police, Ambulance)

Give accurate site address, with details of any access routes / entrances

NAME	TELEPHONE	ADDRESS
NEAREST ACCIDENT & EMERGENCY DEPARTMENT	PMH - 322-2861 DRSH- 302-4747	Shirley Street
NEAREST DOCTOR (including name)		
NEAREST FIRE STATION	322-4444	East Street North - Police Headquarters
NEAREST POLICE STATION	322-4775	East Street North - Central Police Station
ELECTRICITY COMPANY	302-1000	
WATER SERVICE	302-5500	
COMMUNICATIONS COMPANIES (e.g. BTC)	225-5282	BTC
	5028623	Cable Bahamas
LOCAL AUTHORITY	311	COVID-19 related issues
ENVIRONMENT / POLLUTION AGENCY	323-2295 326-7354	Department of Environmental Health Services The Port Department
LOCAL FISHERIES DEPT.	393-1777	Department of Marine Resources

Emergency Telephone Numbers

Notes:

- A copy of this form must be posted at ALL site offices and employees' attention drawn to it.
- This form must be completed before works commence and be included in Construction Stage Health & Safety Plans (if applicable)

COMPANY:	
COMPANY DEPT:	
SITE ADDRESS:	
TELEPHONE NO:	
CONTRACTS MGR:	
SITE AGENT:	
SAFETY DEPT.	C/O ISLAND SITE DEVELOPMENT Tel: 1 (242) 328-2025 Contacts: Meredith Johnson (Group Safety Officer)

Emergency Services Number: 911 (Fire, Police, Ambulance)

Give accurate site address, with details of any access routes / entrances

NAME	TELEPHONE	ADDRESS
NEAREST ACCIDENT & EMERGENCY DEPARTMENT		
NEAREST DOCTOR (including name)		
NEAREST FIRE STATION		
NEAREST POLICE STATION		
ELECTRICITY COMPANY		
WATER SERVICE		
COMMUNICATIONS COMPANIES (e.g. BTC)		
LOCAL AUTHORITY		
ENVIRONMENT / POLLUTION AGENCY		
LOCAL FISHERIES DEPT.		

SECTION 3

Weekly Fire Safety Inspection Report

COMPANY:					
CONTRACT NAME & NO:					
W/E		**INSPECTION DATE:**			
INSPECTION NUMBER:		**LAST INSPECTION DATE:**			
DATE OF PREVIOUS SAFETY AUDIT BY CONTRACTS MGR / SAFETY CO-ORDINATOR		**INSPECTION CARRIED OUT BY:**			

Tick Items found in good order		**Number Items requiring attention, e.g. 1 etc**		**Mark Items not applicable N/A**	
Fire Safety Plan current		Heaters Fixed and Enclosed		Waste removed regularly	
Hot Work Permits Operating		No Smoking Signs where required		Waste away from buildings	
Fire Extinguishers Inspected		Emergency Procedures & Emergency Numbers Displayed		Inflammable Waste in Lidded Skips	
Alarms / Warning devices tested		All Signs Prominent		Other Fire Fighting Equipment in Place – Ropes / Blankets etc.	
Escape Routes Clear		Flammable Liquids stored in open compound		Hydrant Access	
Fire Brigade Access Clear		LPG Containers outside Office and Stores		Lighting Conductors	
Clear Access for other Emergency Services		Oxygen stored away from Flammable Liquids and LPG		Liaison with Client's Fire Officer	
No Rubbish under floors of Temporary Buildings		Fire Points by Storage Areas			

No	Results of Inspection	Action Proposed or Taken	Date	Risk Rating

SHEET ……. OF …… SIGNATURE ……..…….. DATE ……..…..
(Site Agent / Contracts Manager)

Refer Copies To:	**Date:**	**Refer Copies To:**	**Date:**
Health & Safety Plan / Site Office		**Health & Safety OfficeR**	
Contracts Manager		**Principal Contractor** **(if applicable)**	

Received Copy of Report Signature……..…….…….. Date……..……
(of Principal Contractor Representative)

CONTINUATION SHEET:

No	Results of Inspection	Action Proposed or Taken	Date	Risk Rating

SHEET ………. OF …………… SIGNATURE …………………………………………….…………….. DATE …………………
(Site Agent / Contracts Manager)

Refer Copies To:	Date:	Refer Copies To:	Date:
Health & Safety Plan / Site Office		**Health & Safety OfficeR**	
Contracts Manager		**Principal Contractor** **(if applicable)**	

Received Copy of Report Signature…………….………………………………….….. Date………..………………
(of Principal Contractor Representative)

Weekly Health & Safety Site Inspection Rpt.

COMPANY:					
CONTRACT NAME & NO:					
W/E		**INSPECTION DATE:**			
INSPECTION NUMBER:		**LAST INSPECTION DATE:**			
DATE OF PREVIOUS SAFETY AUDIT BY CONTRACTS MGR / SAFETY CO-ORDINATOR		**INSPECTION CARRIED OUT BY:**			

Tick Items found in good order **Number Items requiring attention, e.g. 1 etc** **Mark Items not applicable N/A**

Statutory Notices displayed		Principal & Subcontractors Insurance		Statutory Registers up to date	
Previous remedial actions dealt with. - Please comment		Site Induction & Tool Box talks		Health & Welfare facilities	
Temporary Signs being displayed		First Aid Provision		Road or site conditions	
Temporary Works		Safety Clothing/Equipment issued/worn		Scaffolding & Access Platforms	
Excavations		Mobile Plant & Machinery Inspected		Lifting Appliances inspected	
Lifting gear, chains, slings, hoists.		Wylie Gear Inspection		Hand held power tools	
Woodworking Machinery		Temporary Electrical Installations		Electrical services (above/below)	
Demolition		Visitors on site		Housekeeping & Waste Disposal	
Training Requirements		Hazardous Substances & Materials		Noise and Dust controlled	
Fire Prevention		Confined Spaces		Method Statements/Risk Assessments	
HSE Reportable Accidents		Internal Accident Reports Completed and returned to Head Quarters.		Permits to Work – Hot Work, Confined Spaces, Electricity, etc.	

No	Results of Inspection	Action Proposed or Taken	Date	Risk Rating

SHEET ……. OF …… SIGNATURE …….. DATE …….
(Site Agent / Contracts Manager)

Refer Copies To:	Date:	Refer Copies To:	Date:
Health & Safety Plan / Site Office		**Health & Safety Office**	
Contracts Manager		**Principal Contractor** **(if applicable)**	

Received Copy of Report Signature……..…….. Date……..……
(of Principal Contractor Representative)

CONTINUATION SHEET:

No	Results of Inspection	Action Proposed or Taken	Date	Risk Rating

SHEET ………. OF …………… SIGNATURE ………………………………………….. DATE …………………………

(Site Agent / Contracts Manager)

Refer Copies To:	Date:	Refer Copies To:	Date:
Health & Safety Plan / Site Office		**Health & Safety Office**	
Contracts Manager		**Principal Contractor** **(if applicable)**	

Received Copy of Report Signature…………….………………………………..….. Date………..………………

(of Principal Contractor Representative)

SECTION 4

P1 - Pre-start Vehicle Daily Inspection Checklist

COMPANY			
LOCATION:		**OPERATOR:**	
MANAGER:		**PLANT NUMBER:**	
DATE OF INSPECTION:		**HOUR / ODOMETER READING:**	

If any defects are noted, please tell your site agent immediately and complete the *Vehicle Rectification Form* (see over)

Please tick appropriate box:

MAKE / MODEL OF VEHICLE:_____ OR ITEM PLANT & EQUIPMENT	**OK**	**NEEDS ATTENTION**
Engine Coolant Level		
Engine Oil Level		
Transmission Oil Level		
Hydraulic Oil		
Fuel Level		
Screed		
Ground Engaging Tools		
Tyres		
Wheel Nut Security Checked		
Fire Protection		
Seat Belt		
Gauges		
Brakes		
Steering		
Oil Leaks		
Back up alarm		
Lights		
Camera / Radar		
Wipers & Washers		
Horn & Mirrors		

HAVE PREVIOUS DEFECTS REPORTED BEEN RECTIFIED? Please comment:-	**YES**		**NO**	

COMMENT ON CURRENT DEFECTS:-

Do not use the vehicle if it is unsafe

SIGNATURE OF LINE MANAGER_____DATE_____
OPERATOR SIGNATURE_____

P1 - Vehicle Rectification Form

COMPANY			
SITE LOCATION:		**OPERATOR:**	
SITE AGENT:		**PLANT NUMBER:**	
DATE OF INSPECTION:		**HOUR / ODOMETER READING:**	

Nature of Defect (see inspection checklist)	**Date work to be completed**	**Is vehicle safe to use?**

ANY OTHER COMMENTS:-

All matters requiring attention should be reported immediately to your site agent.

Do not use the machine if it is unsafe / you note any defects

P3 - Plant Register

ISLAND SITE DEVELOPMENT							
CONTRACT NAME & NO:							
CONTRACTS MANAGER:				**SIGNATURE:**			
SITE AGENT:				**SIGNATURE:**			
DATE OF INSPECTION:				**W/E**			

Plant Type, Make & Model	**License Plate Number or Identification Number**	**Status*:**				**State Condition of Plant / Defects / Remedial Actions taken:**	**Plant Operator Signature:**			
		Owned by Company		**Owned by Contractor**						
		Hired by Company		**Hired by Contractor**			**Employee***		**Contractor***	
		Owned by Company		**Owned by Contractor**						
		Hired by Company		**Hired by Contractor**			**Employee***		**Contractor***	
		Owned by Company		**Owned by Contractor**						
		Hired by Company		**Hired by Contractor**			**Employee***		**Contractor***	
		Owned by Company		**Owned by Contractor**						
		Hired by Company		**Hired by Contractor**			**Employee***		**Contractor***	
		Owned by Company		**Owned by Contractor**						
		Hired by Company		**Hired by Contractor**			**Employee***		**Contractor***	
		Owned by Company		**Owned by Contractor**						
		Hired by Company		**Hired by Contractor**			**Employee***		**Contractor***	

Tick as appropriate

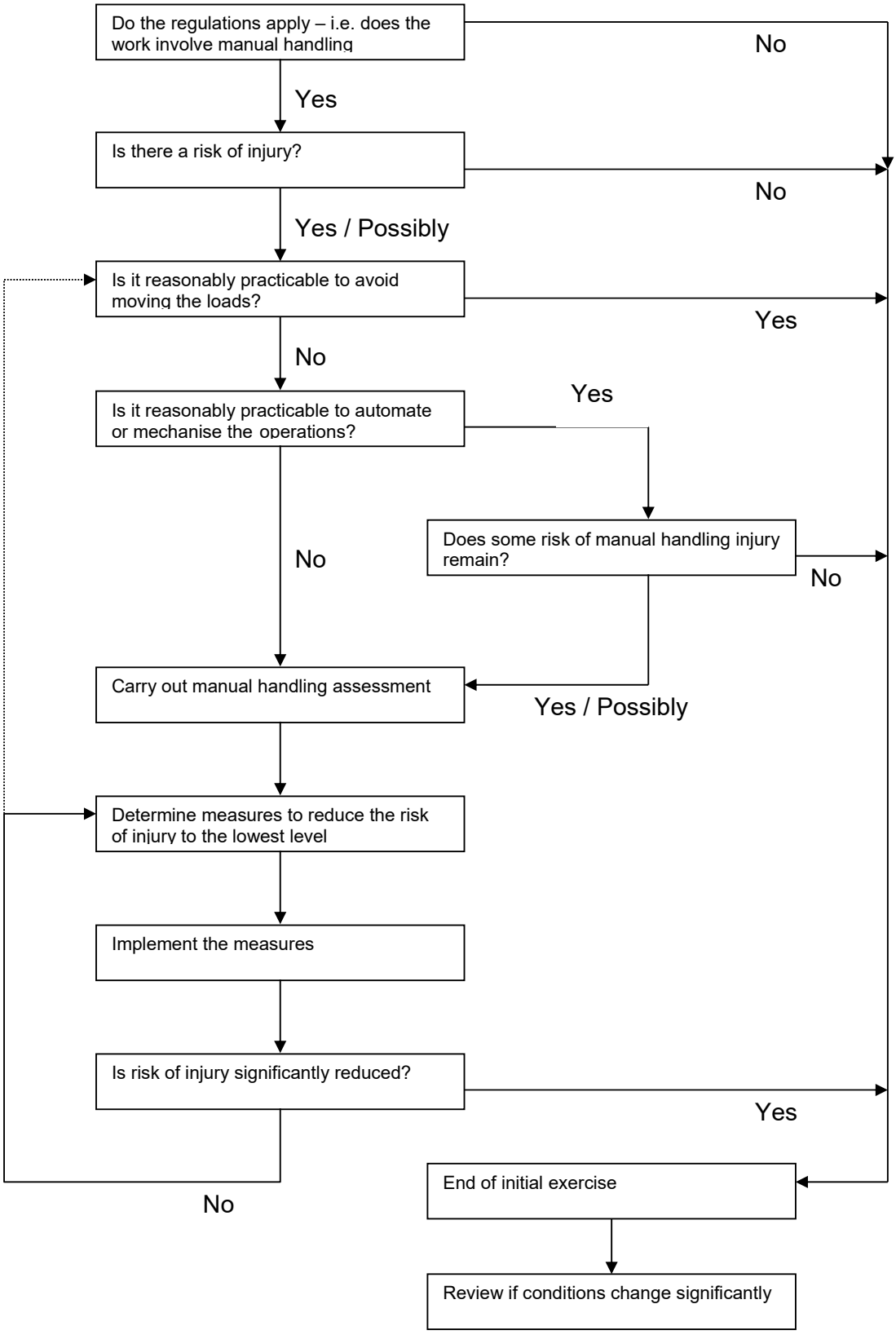
Manual Handling – Assessment

COMPANY:		DATE OF ASSESSMENT:	
OPERATIONS ASSESSED:			
PERSONNEL INVOLVED:			
ASSESSSOR'S NAME:			

Questions to Consider: (Tick `Yes' as appropriate)		Level of Risk			Possible Remedial Action	Priority Rating*
	Yes	Low	Medium	High		
The Tasks – do they involve:-						
Holding loads away from the trunk?						
Twisting?						
Stooping?						
Reaching upwards?						
Large vertical movement?						
Long carrying distances?						
Strenuous pushing or pulling?						
Unpredictable movement of loads?						
Repetitive handling?						
Insufficient rest or recovery?						
A work rate imposed by a process?						
The Loads – are they:-						
Heavy?						
Bulky & unwieldy?						
Difficult to grasp?						
Unstable / unpredictable?						
Intrinsically harmful? (e.g. sharp / hot)						
The Working environment – are there:-						
Constraints on posture?						
Poor floors?						
Variations in levels?						
Hot / cold / humid conditions?						
Strong air movements?						
Poor lighting conditions?						
Individual Capability – does the job:-						
Require unusual capability?						
Hazard those with a health problem?						
Hazard those who are pregnant?						
Call for special information / training?						
Other factors:-						
Is movement or posture hindered by clothing or PPE?						

Overall Assessment of Risk:	High		Medium		Low		Insignificant	
*Priority Rating:	e.g. `1' = greatest priority, `10' = lowest priority							
Date by which action is to be taken:								

Manual Handling – When to Carry Out an Assessment



SECTION 5

AR – Accident Reporting Procedure

Instructions to all supervisory / managerial staff:-

Who reports accidents?

Internal Accident Report forms (AR1) should be completed by the manager responsible for the work / activity being performed when the accident took place.

Who are accidents reported to and when should they be reported?

- In cases of accidents that have caused serious injury (requiring hospitalisation etc.) and / or serious damage, notification should be made immediately to the Health and Safety Officer (see telephone number below) and your Company Director, before written reports are completed.
- A completed Internal Accident Report form (AR1) and completed Witness Statement forms (AR1a) should be completed and forwarded to the Group Health and Safety Department within 2 days of the accident occurring.
- A copy of the completed Internal Accident Report form should be given to, and discussed with your senior line manager.

What accidents should be reported?

ALL accidents, including `near misses' / dangerous occurrences and regardless of severity must be reported immediately to your senior line manager and the Group Health and Safety Officer at:-

Island Site Development
21st Century Rd.
POBox SP63796
Nassau, Bahamas

Phone: 1 (242) 328-2025
Fax: 1 (242) 328-2125
Cell: 1 (242) 422-0125 Meredith Johnson (Safety Officer)

Accident investigations:-

The relevant senior line manager should assist the Group Health and Safety Department in gathering information, e.g. physical facts, measurements, photographs, work plans, records, interviews and statements where applicable.

Accidents which require immediate investigation are:-

- those which require hospitalisation or prolonged medical treatment;
- those that may result in 3 days or more absence from work;
- serious damage to property, livestock, machinery or the environment;
- `near misses' and dangerous occurrences e.g. where serious injury or damage may have occurred but for good fortune.

Please note:-

- Under-reporting of "near misses" provides a false picture of the efficiency of safe systems of work and may allow dangerous work practices to continue unchecked.
- Internal Accident Reports should include facts and NOT impressions.
- Prompt factual reporting will greatly assist in our accident prevention programme.

AR1a – Witness Statement Form

- **Please complete this form for any type of incident, e.g. injury, damage to property, dangerous occurrence and `near miss', etc.**
- **Witness statements should include facts and not impressions.**

NAME:						
COMPANY (if applicable):						
JOB TITLE (if applicable):						
HOME OR WORK ADDRESS & TELEPHONE NUMBER:						
ACCIDENT DETAILS:	**Day:**		**Date:**		**Time:**	am / pm
Did you witness the incident at first hand?						

DESCRIPTION OF WHAT YOU SAW / HEARD:

The details in this report are true to the best of my knowledge

Signed………………………………………………………………….. Date………………………………………..

AR2 - All Employees & Owner Drivers

IN THE EVENT OF A ROAD TRAFFIC ACCIDENT

You should:

a. Take the names and addresses of all those in the third party vehicle

b. Take a note of the names and addresses of any independent witnesses

c. Identify the make, model and license plate number of the third party vehicle

d. Exchange insurance details with the third party driver. Our details are as follows:

Insurance Company

Certificate Number ***Private Car***

Certificate Number ***Commercial***

Certificate Number ***Mechanical Plant***

e. Identify the attending Police Officer and the relevant Police Station

f. Report the incident immediately to your manager who will make the necessary arrangements with Head Office

g. **Managers**: Send all communications you receive to ISLAND SITE DEVELOPMENT

! **Failure to report accidents immediately and failure to provide adequate information may result in disciplinary action**

I have read and understood what to do in the event of a Road Traffic Accident:-

Driver Signature:_____

Date: _____

! **It is recommended that all employees and owner drivers keep a copy of this form in their vehicle at all times**

AR3 - Weekly Record of Accidents, Injuries, Dangerous Occurrences & Near Misses

COMPANY:				
Contract Title:		**W/E**		
Site Location:		**Site Agent:**		
Contract No.:		**This week**	**Previous weeks**	**Total to date**
Accidents & Incidents				
Number of Reportable Accidents	Direct Employees			
	Subcontract Employees			
	Labour only Employees			
Total Number of Reportable Accidents:				
No. Minor Accidents	Direct Employees			
	Subcontract Employees			
	Labour only Employees			
Total Number of Minor Accidents:				
No. Dangerous Occurrences:				
No. Near Misses:				
Accident Severity Rate				
Total days lost in period				
Total person hours worked in period				
Accident Frequency Rate				
Total reportable accidents				
Total persons hours worked in a year				
Accident Incidence Rate				
Total reportable accidents				
Total number employees in a year				
Signed:			**Date:**	
Job Title:				

AR4 – RETURN TO WORK FORM

COMPANY:						
SITE / WORK UNIT:						
ACCIDENT DETAILS:	**Day:**		**Date:**		**Time:**	am / pm

2. PERSONAL DETAILS:	
Full Name:	
Date of Birth:	
Job Description: (if appropriate)	
Employer's Name:	
3. INJURY DETAILS:	
Nature of Injury (e.g. cut/ strain/ fracture/ bruise etc.)	
Part of body injured:	
4. MEDICAL DETAILS:	
Date left work:	
Time left work:	
Date returned to work:	
State reason if not returned to work:	

The details in this report are true to the best of my knowledge.

Signed……..

Date……..

Please complete this form when the injured party returns to work and forward to Island Site Development, 21st Century Rd, POBox SP63796, Nassau, Bahamas

SECTION 6

D1 - Group Policy on Employee and Owner Drivers

ALL DRIVERS

Issue all drivers and Managers with comprehensive Transport Safety Guidelines. Both drivers and Managers must sign these for on receipt.

EMPLOYEE DRIVERS

1. All new employee vehicle drivers, before being engaged to do work, must:-
   (a) have a current drivers licence for the class of vehicle to be driven
   (b) complete the `Authorised Driver Record Form' and return this to the Health and Safety Officer (see attached)
   (c) be prepared, for all drivers, to complete, during a 3 month probation period, a driver assessment. Continued employment as a driver will only be possible with a favourable assessment

2. Employed drivers who are involved in serious road traffic accidents are required to undergo a driver's assessment test.

3. Employed drivers who continue to have minor incidents, i.e. collisions or endorsements to their licence will also be required to undergo a driver's assessment test.

In the case of both points 2 and 3 above, failure to achieve a pass in the driver's assessment test will indicate a lack of the necessary capability and will result in the termination of employment as a vehicle driver.

OWNER DRIVERS

1. All new owner-drivers, before being engaged to work, must: -
   (a) Have a current driver's licence for the class of vehicle to be driven
   (b) Complete the `Authorised Driver Record Form' and return this to the Group Insurance Manager or on site Health and Safety Officer
   (c) Be prepared to undergo training / instruction and assessment to obtain recognised competence as a driver. Employment as a driver will only be possible with a favourable assessment.

2. All owner-drivers involved in serious road traffic accidents are required to under and pass a driver's assessment test.

3. Owner drivers who continue to have minor incidents, i.e. collisions or endorsements to their licence will also be required to achieve an acceptable assessment.

In the case of both points 2 and 3 above, failure to achieve a pass in the driver's assessment test will indicate a lack of the necessary capability and will result in the termination of the owner driver's contract.

Note: Minimum age for drivers is 25 years with 2 years experience.

*** AGENCY / TEMPORARY DRIVERS**

Such drivers engaged on short term or relief work are required to have a current drivers licence indicating that the driver is entitled to drive the class of vehicle required AND have a minimum 2 years experience of driving the class of vehicle required to be driven.

I the undersigned have read and understood the above and agree to all the terms and conditions therein.

Signed…….

Date…….

Status Employee ☐ Owner Driver ☐
(Please tick as appropriate)

All drivers are to complete the `Authorised Driver Record Form'

D2 - Authorised Driver Record Form

COMPANY:			
SECTION 1: DRIVER'S DETAILS			
Full name:			
Address:			
Tel #. (Home / Cell etc.)		Date of Birth:	
Job Title:			
SECTION 2: EMPLOYMENT DETAILS			
Are you employed solely and permanently by ISD			
How long have you been employed by ISD (Please state commencement date)			
SECTION 3: LICENCE DETAILS			
Authorised vehicles driven: (License Plate #. & make / model)			
How long have you been driving?			
When did you pass your driving test?			
When does your licence expire?			
Drivers License number:			
Dates of accidents in the last 3 years:			
Details of any motoring convictions: (Charge / Date / Penalty)			
Details of any physical defect, infirmity, defective vision / hearing, heart problems, diabetes, epilepsy or mental illness:			
SECTION 4: INSURANCE DETAILS			
Do you hold any motor vehicle policies in your own name?			
Have you ever been declined / refused motor insurance? (Please detail):			

I DECLARE THAT ALL OF THE INFORMATION I HAVE GIVEN ABOVE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT I HAVE NOT WITHHELD ANY INFORMATION MATERIAL TO THE INSURANCE

……..……..Signed……..……..Date

IMPORTANT NOTE: ***APART FROM COMPANY CARS, COVER IS ONLY PROVIDED FOR USE ON COMPANY BUSINESS AND NOT FOR PRIVATE USE***
I HAVE READ AND UNDERSTOOD THE ABOVE STATEMENT

……..……Signed……..…Date

SECTION 7

BAHAMAS MARINE CONSTRUCTION CO. LTD.

Safety Bulletins

Contents

Bulletin No. 1

All Drivers and Plant Operators

The driver or operator is responsible for ensuring that his vehicle is in a safe condition for work before use.

Every day, before starting work drivers must check:-

- Brakes
- Steering
- Cleanliness of all windows
- Conditions & setting of mirrors
- Tyres
- Lights
- Horn
- Reversing signal
- Seat belts
- Windscreen washers & wipers.

Any defects must be reported to your Supervisor.

During work the driver must:-

- Operate at a safe speed consistent with road and weather conditions, and the road gradient.
- Always be alert for pedestrians, particularly at blind spots such as parked vehicles.
- Always take extra care when starting off from a parked position.
- Never move off in reverse unless you are certain it is safe to do so, and that you reversing signal is operating.
- Always park your vehicle safely before leaving the vehicle.
- Switch engine off
- Disengage gears
- Apply parking brake
- Park on level ground
- Pull back from vertical faces
- Do not obstruct access roads
- Shovels, Excavators - rest the bucket on the ground.
- If a wheeled vehicle must be parked on a gradient **ENGAGE FIRST OR REVERSE GEAR - CHOCK THE WHEELS**

- Never carry unauthorised passengers.
- Take care when the vehicle is being towed.
- Wear your seat belt, where fitted.
- Mount and dismount carefully.
- Ensure that there is sufficient overhead clearance.

Bulletin No. 2

The Personal Protective Equipment at Work

Plant & Equipment Check Procedures

Personal Protective Equipment (referred to from now on as PPE) must be used when it is detrimental to the user's health and/or safety to perform a task without it. PPE falls into two categories:

1. Clothing to protect against hazardous working conditions, e.g. gloves, safety footwear, protective headgear, and high visibility clothing.
2. Goggles, face masks, ear defenders, respirators, safety harnesses and protective breathing equipment. (Other specialist items must be available to match the job on hand e.g. welders face shields for welding work).

The employer is obligated to draw up a risk assessment plan, and then choose the applicable PPE to protect employees. Following consultation with the employees and safety groups, the employer must supply the correct PPE for the task, ie it must be comfortable, able to be adjusted and suitable for the task in hand. The said PPE should be supplied free of charge. The employer must give adequate information and training for the maintenance and use of the PPE supplied.

It is the duty of the PPE manufacturer to supply information about the use of the product and the correct arrangements for storage, cleaning and maintaining of same. Also the PPE manufacturer must supply other information on the protection levels, the availability of replacement parts and how long it is reasonably expected to last.

It is the employees duty to use PPE in a safe and proper manner, and to report back to the employer if it is not suitable to the task or is broken.

Note: It is the duty of all self-employed persons to ensure that they provide themselves with adequate PPE.

All employees and Plant Operatives to be instructed in the use, care and maintenance of PPE and the different types of PPE, suitable types of PPE e.g. Heat resistant boots, wearing of vests in hot weather conditions.

How long should PPE last and when should the company replace PPE? Obviously all items of PPE will have a different life splan depending on usage etc. Individual markings of PPE to ensure proper maintenance and records are kept. Levying charges to be made against individuals for improper use or care leading to premature wear and damage.

Bulletin No. 3

Working Near or Under Overhead Electricity Cables

Contact with live overhead lines is the cause of many serious personal injuries every year. Approximately one third of these inadvertent line contacts prove fatal. Most of the fatalities have occurred when overhead lines have been touched by tipping lorries, low loaders or by metal equipment such as scaffold tubes or even hand tools. High voltage current can jump or arc as far as 3½ metres.

We have listed below some guidelines for your own safety and the safety of others:-

a) Always assume all overhead lines are live.

b) Always follow the advice of the site or works foreman who may have already erected signs, “goal posts” and other barriers to warn of the dangers of overhead conductors. Only drive your vehicle along pre determined safe routes and never be tempted to go inside the barriers.

c) Carefully note the location of all overhead lines before commencing to position your vehicle for offloading.

d) Keep the overhead lines in view when moving your vehicle about the site or works.

e) Do not drive your vehicle below an overhead line if an alternative route is available.

f) Do not approach or touch any broken or fallen overhead lines.

g) Do not, under any circumstances, raise your vehicle body beneath or close to an overhead line.

h) If in doubt always ask the site or works foreman for clarification.

i) **NEVER** put your own safety or the safety of others at risk.

j) If your vehicle comes into contact with an overhead cable take the following action:-

- **STAY INSIDE THE CAB - You are safe**
- **If you cannot get clear or if the cable is broken, stay in the cab and shout to someone else to phone Bahamas Electricity Company (BEC). DO NOT LEAVE THE CAB.**
- **If you have to dismount, jump well clear. DO NOT TOUCH THE GROUND AND ANY PART OF THE VEHICLE AT THE SAME TIME.**

  WARN OTHER PEOPLE TO STAY WELL CLEAR. ON NO ACCOUNT MUST ANYONE TOUCH THE VEHICLE.

Bulletin No. 4

Quarry Vehicle Safety Guidance

1. General

Never ride on any vehicle as a passenger unless the vehicle is suitably equipped for this purpose.

Do not drive unless authorised.

Ensure, at all times, your vehicle is in efficient working order and in good repair. Report any defects immediately.

Do not leave your vehicle unattended with the engine running.

Before driving off, make sure your load is secure and the load does not interfere with the safe driving of your vehicle.

Never reverse your vehicle without assistance if your rear view is in any way restricted.

Always drive with care and consideration for others.

2. Quarry Vehicle Safety

Almost half the accidents in quarries involve the operation of quarry vehicles and that is why the our Company strictly controls their use.

Listed below are some guidelines which you should adhere to when operating vehicles or mobile plant in Company owned quarries:-

a) Daily Checks

Company drivers must not drive plant or vehicles without carrying out daily checks to see that their vehicle is road worthy.

The following should be checked daily:-

- horn
- lights
- indicators
- mirrors
- reversing bleepers and beacons (if fitted)
- tyres for sufficient tread depth, check walls for cuts or bulges
- wheel nuts
- steering
- brakes

If the check shows that any of these items are in an unsatisfactory condition, you must report it to your supervisor.

Drive at speeds that reflect road and weather conditions - Do not speed.

b) Before You Start

At the beginning of your shift:-

- take care when climbing into the vehicle cab, and use the steps provided
- use the seat belt if it is provided
- only carry passengers when authorised to do so, and on a seat provided

NEVER CARRY PASSENGERS:-

- in open back vehicles, outside the cabs of loading shovels, dump trucks etc. or let them get in and out while the vehicle is moving
- do not carry unsecured loose equipment in the cab such as batteries or tool boxes (as these can cause severe injury if there is an accident)
- know the limits of your vehicle's design and capabilities especially its braking capacity and limits of vision.

c) While Driving

- don't drink and drive
- obey all traffic signs in the quarry
- if driving a wheeled loader, travel with the bucket lowered
- observe the speed limits
- drive slowly along a haul road and avoid sudden changes of speed or direction to minimise spillages
- report immediately all instances where haul roads appear to be slippery or giving way
- avoid harsh braking
- take care when driving close to hoppers or other structures
- be alert to pedestrians in the vicinity of your vehicle
- select the correct gear at the top or bottom of slopes

d) When Reversing

- make certain alarms / warning lights and other reversing aids are in working order and operating properly. Mirrors should be in place and adjusted.
- make certain, as far as you can, no one is in your path. If you cannot be sure, be guided by another person.

e) Parking

Do not park:

- under overhead power lines
- within the radius of the swing of an excavator unless being loaded
- near a railway track
- near the top or bottom of the face
- always park on level ground where possible
- remember to chock your wheels if parking on a slope
- always park parallel to the face
- always apply the handbrake, the gear in neutral and engine stopped
- where possible park in approved parking areas where provided.

f) Tipping

When tipping material

- tip well back from the edge of the stockpile or against an approved tipping block
- ensure the body is lowered before driving away
- do not tip over the edge unless there is an appropriate block in position

g) Maintenance

If you carry out maintenance to your vehicle:-

- keep the maintenance area clean and dry
- keep your tools and equipment in good condition
- be sure to tag the controls, before working under a machine, so no one else will start it
- remove pressure caps carefully
- relieve hydraulic pressure before working on your machine
- make certain a raised body is secured by wooden chocks, pins or a manufactured installed system.

If you carry out work on the **tyres** of your vehicle **REMEMBER**:-

- before you place a jack in position, chock the wheel on the other side of the vehicle
- always use a tyre cage where possible, safety cables or chains when removing tyre lock rings or inflating tyres
- check your tyres only when the vehicle is empty
- never cut or weld on the rim of an inflated tyre.

3. Pedestrian Safety

Accident statistics show that pedestrians in quarries are at much greater risk of injury than drivers.

There are many instances of people being killed by reversing vehicles.

Listed below are some useful guidelines which could save your life one day.

- **NEVER** climb on or off a vehicle when it is in motion
- **ALWAYS** be on the look out for vehicles when on foot.
- Keep your distance from loaded quarry vehicles in case stone falls from the load.
- When approaching a vehicle attract the driver's attention before going too close.
- **NEVER** pass between stationary vehicles
- When passing to the rear of a vehicle, take care. It may reverse.
- Wear high visibility outer clothing at all times as provided by the Company.

Bulletin No. 5

Truck Driving Instructions

1. General

Never ride on any vehicle as a passenger unless the vehicle is suitably equipped for this purpose.

Do not drive unless authorised.

Report any defects immediately.

Ensure, at all times, your vehicle is in efficient working order and in good repair.

Do not leave your vehicle unattended with the engine running.

Do not leave keys in an unattended vehicle.

Before driving off, make sure your load is secure and the load does not interfere with the safe driving of your vehicle.

Never reverse your vehicle without assistance if your rear view is in any way restricted.

Drive at speeds consistent with road or site and weather conditions.

Always drive with care and consideration for others.

Always carry out routine daily checks of the vehicle and make good or report defects – refer to point 2(a) below.

2(a) Daily Checks

Company drivers and owner drivers must not drive without first carrying out daily checks to see that their vehicle is road worthy. In all cases the vehicle pre-start inspection check sheet, i.e. the vehicle inspection log book must be completed, signed and dated by the driver.

The following should be checked daily:-

- ✓ windows clean
- ✓ horn
- ✓ lights
- ✓ indicators
- ✓ wipers
- ✓ mirrors
- ✓ reflectors cleaned and free from defects
- ✓ reversing bleepers (if fitted)
- ✓ flashing beacons (if fitted)
- ✓ reversings camera (if fitted)

- ✓ tyres for sufficient tread depth, check walls for cuts or bulges
- ✓ wheels
- ✓ wheel nut tightness (re-tighten as required)
- ✓ access steps – hand holds
- ✓ steering
- ✓ brakes
- ✓ cab free from debris and rubbish and loose objects

If the check shows that any of these items are in an unsatisfactory condition, you must report it to your Manager or Supervisor / Foreman as appropriate. I

In all cases the vehicle pre-start inspectionc hecklist must be completed and signed by the vehicle driver before you start.

2(b) Before You Start

At the beginning of your shift:-

- take care when climbing into the vehicle cab, and use the steps and hand rails provided
- use the seat belt if it is provided
- only carry passengers when authorised to do so, and on a seat provided
- NEVER CARRY PASSENGERS in open back vehicles
- do not carry unsecured loose equipment in the cab such as bars, batteries or tools and tool boxes (as these can interefer with the foor controls and can also cause severe injury if there is an accident)
- know the limits of your vehicle's design and load capacity and it's capabilities especially its braking capacity and limits of vision.

2(c) While Driving

- don't drink and drive
- obey all traffic signs and signals
- observe the speed limits
- drive slowly along a haul road and avoid sudden changes of speed or direction to minimise spillages
- report immediately all instances where haul roads appear to be dangerous or unsafe
- avoid harsh braking
- take care when driving close to edges of slopes or other structures
- be alert to pedestrians in the vicinity of your vehicle
- select the correct gear at the top or bottom of slopes

2(d) When Reversing

- make certain alarms / warning lights and other reversing aids are in working order and operating properly. Mirrors should be in place and adjusted.
- make certain, as far as you can, nothing is in your path. If you cannot be sure, be guided by another person.

2(e) Parking

Do not park:

- under overhead power lines
- within the radius of the swing of an excavator unless being loaded
- near or on a railway track or crossing

To avoid causing a hazard on a public highway:

- park on level ground where possible
- remember to chock your wheels if parking on a slope
- always park parallel to the open edges / faces

When parking:

- always apply the handbrake, the gear in neutral and engine stopped
- where possible park in approved parking areas where provided
- park with your tail reflectors facing the flow of traffic and off the live traffic lane.

Note: make sure all reflectors, lights and plates are clean

2(f) Maintenance

If you carry out maintenance to your vehicle:-

- keep the maintenance area clean and dry
- keep your tools and equipment in good condition
- be sure to tag the controls, before working under a machine, so no one else will start it – remove keys
- remove pressure caps carefully
- relieve hydraulic pressure before working on your machine
- make certain a raised body is secured by robust body props or pins or the approved manufacturer's system if installed.

Tyres:

If you carry out work on the tyres of your vehicle **REMEMBER**:-

- before you place a jack in position, chock the wheel on the other side of the vehicle
- always use a tyre cage where possible, use safety cables or chains when removing tyre lock rings or inflating tyres
- check your tyres only when the vehicle is empty
- never cut or weld on the rim of an inflated tyre
- wheel nuts are to be tightened or re-tightened as per manuafacturers' and Company instructions – where disc lock nuts have been fitted to your vehcile the safety disc lock nut procedure must be followed. Refer to Safety Bulletin No.23 on `Disc Lock Nuts'.

3. Delivery to Sites which involves driving over potentially unsafe ground

The lorries you drive, when loaded, weigh many tonnes and as such it is imperative that you consider the stability of your vehicle when delivering to sites where the ground may be unsafe.

We have listed below some guidelines for your own safety and that of others when delivering to sites:-

a) Before driving onto a site, check it for soft patches, excavations, manholes and excessive gradients or cross slopes.
b) Watch out for timber offcuts and metal objects protruding from the surface of the ground.
c) Never offload / tip too close to the edge of excavations, foundations or open cuts as this could cause a collapse.
d) Do not drive over ground if you think it cannot withstand the weight of your vehicle. If in any doubt seek clearance from the site foreman.
e) Where possible, ask for someone to guide you into position to discharge your load.
f) Request the assistance of a banksman to manoeuvre your vehicle or when unloading.

Note: Get into the habit of putting on your high visibility vest and safety helmet before leaving the cab of your vehicle on every site you visit.

4. Tipper Truck Safety Reminders

a) Reverse carefully and slowly especially in areas where other men may be at work – reverse with the aid of a banksman.
b) Make sure no one is endangered when you tip or lower the body.
c) Don't drive away until the body has been lowered to the chassis and the tailboard is secured.
d) Mind your fingers when clearing loose stones etc. from under a tailboard.
e) Ensure reversing bleepers are fitted and secure.
f) Check for overhead powerlines or obstructions, i.e. trees, adjacent structures.

5. Pedestrian Safety

Accident statistics show that pedestrians are at much greater risk of injury than lorry drivers. Drive with due care and attention at all times.

6. Personal Safety

Listed below are some useful guidelines which could save your life one day.

- **NEVER** climb on or off a vehicle when it is in motion
- **ALWAYS** be on the look out for vehicles when on foot.
- Keep your distance from loaded vehicles in case stone falls from the load.

- When approaching a vehicle attract the driver's attention before going too close – wait for their acknowledgement and signal to approach.
- **NEVER** pass between stationary vehicles
- When passing to the rear of a vehicle, take care. It may reverse.
- When on site wear high visibility outer clothing, steel toe-capped boots and hard hats.

7. In the Event of a Road Traffic Accident:-

You should:-

1. Call the emergency services, e.g. ambulance, fire, police, as necessary.
2. Take the names and addresses of those in the third party vehicle.
3. Take a note of the names and addresses of any independent witnesses.
4. Identify the make, model and regsistration number of the third party vehicle.
5. Exchange iinsurance details with the third party driver. Obtain the names of the third party's:-
    - Insurance Company
    - Certificate Number
6. Identify any attending Police Officers and the relevant Police Station.
7. Report the incident immediately to your manager who will make the necessary arrangements with Head Office and recovery services.

! Failure to report accdents immediately and failure to provide adeqaute information may result in disciplinary action.

Bulletin No. 6

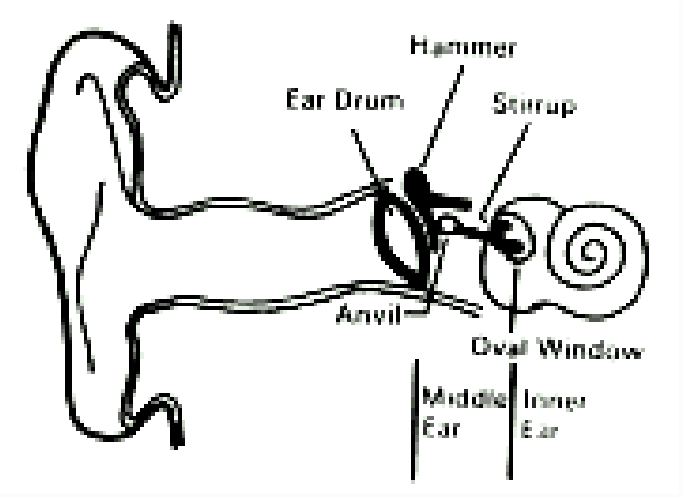
Noise and Hearing Conservation

THE EAR IS A VERY DELICATE ORGAN:

How do you hear?

Hearing starts with the part of the ear you can see. This is called the outer ear and it collects sound waves which pass through a narrow canal into a tightly stretched membrane called the ear drum. This membrane vibrates when the sound waves reach it and these vibrations are transmitted to the middle ear. The middle ear consists of the three smallest bones in your body – the hammer, the anvil and the stirrup – and they pass on the vibrations from one to the other and also act as shock absorbers.

The stirrup is connected to another membrane – the oval window – linking the middle and inner ears. The inner ear is a tiny snail-shaped organ containing fluid and something like 25,000 nerve endings, rather like hairs. The vibration of the oval window and the consequent movement of fluid stimulates the nerve endings which telegraph sounds to the brain via the auditory nerve so bringing meaning to the sound vibrations. It takes only 1,000th of a second for the sound wave to pass through this complete process and record in your brain as hearing.



What causes deafness?

Among the varying causes of deafness, noise exposure is one that can be guarded against. Investigations have shown that exposure to high noise levels at work, at home or at play can cause damage and consequent deafness. This kind of deafness is often temporary but constant exposure to such noise can produce permanent deafness unless precautions are taken.

YOUR HEARING CAN BE DAMAGED:

As a rough guide it is probable that a noise hazard exists if normal conversation is difficult to hear. If you are working with a noisy machine use ear protectors. By doing so you will be safeguarding your hearing future.

What is a safe level of noise?

Sound is measured in decibels and like many other measurements we have to get used to the scale before this means anything to us. We know a foot or yard or a hundred yards, but it took many years to get used to this. We can walk three miles in one hour or run 100 yards in say 12seconds (at 17 miles per hour). Similarly, we can put up with sounds up to 85 decibels all day without our hearing being affected, but if we work in noisier conditions then our hearing is temporarily reduced to protect us, just as our lungs and muscles need time to recover after fast running.

Here are some examples:-

A quiet part of a forest	40 decibels
Normal conversation	65 decibels
Shouting	90 decibels
A tractor operating	95 decibels

The problem is that temporary deafness can make us used to the noise and continuing daily exposure will gradually reduce our ability to hear.

This will happen naturally as we get older but our work should not hasten this. To safeguard our hearing the sound level should not normally exceed 85 decibels.

Measuring Noise

To determine the risk of noise at work it is necessary to measure the various sound levels AT THE OPERATOR'S EAR and for how long each sound level is occurring during an average day.

Most machines are unfortunately too noisy for the unprotected ear.

Where the sound level / usage time exceeds the equivalent of 85 decibels (referred to hereafter as decibels per day) then suitable ear protectors must be worn, or the equipment must be fitted with better silencing or sound proofing for the operation.

An operator must wear suitable ear protectors if he / she is exposed to noise levels in excess of 85 decibels per day.

Suitable Ear Protectors

Ear plugs and ear valves are not suitable for dirty or dusty conditions because hygiene is critically important to avoid risk of ear infection with possible damage to hearing from the infection itself. Ear muffs are at present the only practical alternative to ear plugs and these can be fitted to safety helmets or have neckband / head-band fittings.

Some people, however, experience great difficulty in wearing ear muffs and often complain of excessive perspiration or headaches. In other circumstances it is better to use a disposable ear plug rather than nothing at all but because of the hygiene

problem and possible disorders in the outer ear, ear plugs should only be used on the advice of a doctor.

Some ear muffs are more effective at the lower frequency range of sounds and some at higher frequencies. It is important that the ear muff selected gives the reduction of sound which is required for the particular machine.

Use of Ear Muffs

The pads of muffs become ineffective if the plastic cover is cracked and so spare pads should be available. The foam insert can become saturated with sweat and spares should be issued with the muffs. The safety helmet is held on the head with a slacker harness if the muffs have a safety helmet attachment.

Bulletin No. 7

Accident Reporting

At work we cannot guarantee absolute safety. We all work within guidelines and frameworks where hazards are present. Some hazards are:-

(1). unforeseen
(2). caused by set procedures not being followed; or
(3). distorted or misunderstood.

Whatever the reason, all accidents, which include all cases of dangerous occurrences / near misses (where injury or damage was not sustained), point to a deficiency in our safety management system.

Therefore, like any other aspect of good business practice, it is important that our safety management system has an in-built method of assessing it's own failures. All accidents and their causes must be investigated, in order to determine whether there are any faults in our systems and / or how such accidents can be avoided in future.

The investigation should not be seen as a means of apportioning blame, as people may become reactive rather than proactive. Which it becomes depends on:

(1). The support it is given and the standard of the investigation
(2). The level of follow-up on the causes and recommendations identified by the Accident Report.

Our Safety Management system must utilise accident reports for the prevention of further accidents and the safety of our employees and the general public.

Remember an accident is the result of a mistake
Doing nothing about that mistake means
you have made a second mistake

For further details on how, when and who to report accidents to, please refer to our Internal Accident Report Form and Reporting Procedure.

Bulletin No 8

AR – Accident Reporting Procedure

Instructions to all supervisory / managerial staff:-

Who reports accidents?

Internal Accident Report forms (AR1) should be completed by the manager responsible for the work / activity being performed when the accident took place.

Who are accidents reported and when should they be reported?

- In cases of accidents that have caused serious injury (requiring hospitalisation etc.) and / or serious damage, notification should be made immediately to the Health and Safety Officer (see telephone number below) and your Company Director, before written reports are completed.
- A completed Internal Accident Report form (AR1) and completed Witness Statement forms (AR1a) should be completed and forwarded to the Group Health and Safety Department within 2 days of the accident occurring.
- A copy of the completed Internal Accident Report form should be given to, and discussed with your senior line manager.

What accidents should be reported?

ALL accidents, including `near misses' / dangerous occurrences and regardless of severity must be reported immediately to your senior line manager and the Group Health and Safety Officer at:-

C/o ISLAND SITE DEVELOPMENT
21st Century Rd.
P.O.Box SP63796
Nassau, Bahamas

Phone: 1 (242) 328-2025
Fax: 1 (242) 328-2125
Cell: 1 (242) 422-0125 Meredith Johnson (Safety Officer)

Accident investigations:-

The relevant senior line manager should assist the Group Health and Safety Department in gathering information, e.g. physical facts, measurements, photographs, work plans, records, interviews and statements where applicable.

Accidents which require immediate investigation are:-

- those which require hospitalisation or prolonged medical treatment;
- those that may result in 3 days or more absence from work;
- serious damage to property, livestock, machinery or the environment;
- `near misses' and dangerous occurrences e.g. where serious injury or damage may have occurred but for good fortune.

Please note:-

- **Under-reporting of "near misses" provides a false picture of the efficiency of safe systems of work and may allow dangerous work practices to continue unchecked.**
- **Internal Accident reports should include facts and NOT impressions**
- **Prompt factual reporting will greatly assist in our accident prevention programme.**

Bulletin No. 9

Instruction for the Safe Use of Chain Slings

This bulletin is issued in accordance with the requirements of Section 6 of the Health and Safety at Work etc. Act 1974, amended March 1988. It outlines the care and safe use of general purpose CHAIN SLINGS and is based on Section 2 of the LEEA Code of Practice for the Safe Use of Lifting Equipment. It should be read in conjunction with the requirements for general purpose slinging practice, given overleaf, which form an integral part of these instructions.

This information is of a general nature only covering the main points for the safe use of chain slings. It may be necessary to supplement this information for specific applications.

ALWAYS:

- Store and handle chain slings correctly.
- Inspect chain slings and accessories before use and before placing into storage.
- Follow safe slinging practices as given overleaf.
- Fit slings carefully, protect them from sharp edges and position hooks to face outward from the load.
- Apply the correct mode factor for the slinging arrangement.
- Back hook free legs onto the master link.

NEVER:

- Attempt to shorten a sling leg other than by means of an integral chain clutch.
- Force, hammer or wedge chain slings or their fittings into position.
- Lift on the point of a hook.
- Expose chain slings to chemicals, particularly acidic conditions without consulting the supplier.
- Use chains slings at temperatures above 200^{O}C or below minus 40^{O}C without consulting the supplier.
- Shock load chain slings.

Selecting the Correct Sling

Chain slings are available in a range of material grades, sizes and assemblies. Select the slings to be used and plan the lift taking the following into account:

Type of sling to be used - endless, single, two, three or four leg.

Capacity - the sling must be both long enough and strong enough for the load and the slinging method.

Apply the mode factor for the slinging method.

If adjustment of the leg length is necessary select a sling with chain shortening clutches.

For use at temperatures exceeding 200^{O}C or below minus 40^{O}C refer to the suppliers instructions.
Where slings may come into contact with chemicals, particularly acids or acidic fumes, consult the supplier.

In the case of multi-leg slings the angle between the two legs should not be less than 30^{O} or exceed the maximum marked.

Multi-leg slings exert a gripping force on the load which increases as the angle between the legs increases and this must be taken into account.

Storing and Handling Chain Slings

Never return damaged or contaminated slings to storage. They should be dry, clean and protected from corrosion.

Store chain slings on a rack and not lying on the ground. The storage area should be dry, clean and free of any contaminates which may harm the sling.

Do not alter, modify or repair a chain sling but refer such matters to a competent person.

Never galvanise or subject a chain sling to any other plating process without the express approval of the supplier.

Using Chain Slings Safely

Do not attempt lifting operations unless you understand the use of the equipment, the slinging procedures and the mode factors to be applied.

Do not use defective slings or accessories.

Do not force, hammer or wedge chain slings or fittings into position; they must fit freely. Check the correct engagement of fittings and appliances.

Position hooks of multi-leg slings facing outward from the load. Do not lift on the point of the hook and ensure that the chain is not twisted or knotted.

Back hook free legs to the master link to avoid lashing legs which might accidentally become engaged or otherwise become a hazard.

Take the load steadily and avoid shock loads.

Do not leave suspended loads unattended. In an emergency cordon off the area.

In-Service Inspection and Maintenance

Maintenance requirements are minimal. Keep chain slings clean and protected from corrosion.

Regularly inspect chain slings and, in the event of the following defects refer the sling to a competent person for thorough examination: illegible markings; distortion of fittings; worn, stretched, bent or twisted links; ineffective safety catches; cuts, nicks, gouges, cracks, corrosion, heat discolouration or any other defect apparent to the chain or fittings.

General Purpose Slinging Practice

The following information is based on Section 1 - Appendix 1.5 of the LEEA Code of Practice for the Safe Use of Lifting Equipment. It should be read in conjunction with the instructions for the safe use of which it forms an integral part and with any specific instructions issued by the supplier.

This information is of a general nature only covering the main points for the safe use of various types of slings for general lifting purposes.

ALWAYS:

- Plan the lift, establish the weight of the load and prepare the landing area ensuring that it will take the weight.
- Check slings and equipment are free of damage, use slings / slinging methods suitable for the load and protect slings from sharp edges and corners.
- Attach the sling securely to the load and appliance and position hooks to face outwards.
- Ensure the load is balanced and will not tilt or fall.
- Keep fingers, toes etc. clear when tensioning slings and when landing loads.
- Ensure that the load is free to be lifted.
- Make a trial lift and trial lower.

NEVER:

- Use damaged slings or accessories.
- Twist, knot or tie slings.
- Hammer slings into position.
- Overload slings due to the weight of the load or the mode of use.
- Trap slings over floors etc. or attempt to pull trapped slings from under loads.
- Allow personnel to ride on loads.

Sling Configuration and Rating

Slings are available in single, two, three and four leg or endless form. In practice it will be found that chain, wire rope and fibre rope slings are available in any of these configurations but that flat woven webbing is limited to single leg and endless whilst round slings are only supplied in endless form. The maximum load that a sling may lift in use will be governed by the slinging arrangement (mode of use) and may vary from the marked SWL. In the case of textile slings the SWL for the various modes of

use is usually given on the information label. In other cases it is necessary to multiply the marked SWL by a mode factor.

The following three simple rules will ensure that the sling is not overloaded. In some cases this will mean that the sling will be under utilised although this is unlikely to hinder the user unduly. Where the maximum utilisation is required reference should be made to a competent person who understands the factors involved and who can perform the necessary calculations.

(1) For straight lift never exceed the marked SWL and in the case of the multi-leg slings the specified angle or range of angles.

(2) When using slings in choke hitch multiply the marked SWL by 0.8 to obtain the reduced maximum load the sling may lift, i.e. reduce the safe working load by 20%.

(3) With multi-legged slings, when using less than the full number of legs, reduce the maximum load in proportion to the number of legs in use. Simply multiply the marked SWL by the number of legs in use expressed as a fraction of the total, thus: one leg of a two leg sling = ½ marked SWL, three legs of a four leg sling = ¾ marked SWL and so on.

Operative Training

Slings should only be used by trained operatives who understand the methods of rating and application mode factors.

Safe Use of Slings

Good slinging practice must ensure that the load is as safe and secure in the air as it was on the ground and that no harm is done to the load, lifting equipment, other property or persons.

Establish the weight of the load, ensure the lifting method is suitable and inspect the sling and attachments for obvious defects. Prepare the landing area making sure the floor is strong enough to take the load. Follow any specific instructions from the supplier.

Ensure the lifting point is over the centre of gravity. Any loose parts of the load should be removed or secured. Secure the sling firmly to the load by hooks onto lifting points or shackles etc. The sling must not be twisted, knotted or kinked in any way. Use packing to prevent damage to the sling from corners or edges and to protect the load.

Do not exceed the SWL or rated angle. Any choke angle must not exceed 120^{O} and any basket angle must not exceed 90^{O}.

Do not hammer, force or wedge slings or accessories into position; they must fit freely.

When attaching more than one sling to the hook of an appliance use a shackle to join the slings and avoid overcrowding the hook.

Make a trial lift by raising the load a little to ensure it is balanced, stable and secure and if not lower it, and adjust the slinging arrangement.

Use an established code of signals to instruct the crane driver. Ensure the load is free to be lifted and not, for example, bolted down. Check that there are no overhead obstacles such as power lines.

Where appropriate use tag lines to control the load. Except where special provision is made, do not allow anyone to pass under or ride upon the load. The area should be kept clear.

Keep fingers, toes etc. clear ensuring they do not become trapped when lifting, lowering or controlling loads.

Make a trial set down, ensure the sling will not become trapped and the load will not tip when the slings are released. Use supports which are strong enough to sustain the load without crushing.

Never drag slings over floors etc. or attempt to drag a trapped sling from under a load.

Never use a sling to drag a load.

Place the hooks of free legs onto the master link and take care to ensure that empty hooks do not become accidentally engaged.

Never use slings in contact with chemicals or heat without the manufacturer’s approval. Never use damaged or contaminated slings.

On completion of the lift return all equipment to proper storage.

Bulletin No. 10

Safe Operation of Lift Trucks – Dos and Don'ts

DOs

- Lift trucks must only be driven by authorised operators.
- On completion of the work, park the Lift Truck in the designated parking area with the fork arms lowered to the ground, parking brake applied and engine switched off. Disconnect the battery on battery-powered lift trucks. Turn off gas on LPG-powered lift trucks. Return the keys to their place of safe keeping.
- Be particularly careful when operating where there are pedestrians. Observe the quarry rules and take all precautions to avoid pedestrians.
- As a general rule, when operating, keep to the left. However, when driving between rows of blocks it may be safer (if a clear view can be obtained) to keep to the centre of the gangway or aisle.
- Sound the horn in short sharp blasts at every potential danger spot. Remember, the horn does not give automatic right of way.
- Stop before doorways. Sound the horn and proceed slowly if clear to do so.
- Avoid violent braking or sudden change of direction which may cause the load to fall off or the lift truck to tip.
- Where possible, travel with the fork arms lowered to within 150mm (6 in) of level ground and mast tilted slightly back. With some attachments, e.g. barrel clamps, the mast should be kept vertical. Always follow the instructions for use of the attachment.
- Always look in the direction of travel. When loaded travel down or up slopes with the fork arms facing uphill. When unloaded travel up or down slopes with fork arms facing downhill. It may be necessary to raise the fork arms slightly at the bottom of slopes to avoid grounding the load or fork arms. Where it is impossible or hazardous to turn the lift truck to comply with the above, e.g. when loading containers using a portable ramp, operate with the fork arms facing uphill for both directions of travel. In this case keep the lift truck in line with the incline and do not attempt to turn until on a level surface. Do not turn on or travel across a ramp or incline.
- Travel slowly when descending slopes.
- When leaving the lift truck, even for a few seconds, apply the parking brake, make sure that it is in neutral and the fork arms are tilted and lowered to the ground. If the lift truck is to be out of sight or remote, shut off the power and remove the key.
- Before raising a load ensure there is sufficient clearance to do so and that objects which could fall and injure people nearby will not be dislodged.
- When mounting or dismounting from the lift truck use the steps and handholds provided for the purpose. Before dismounting, check that it is safe to do so and the lift truck is parked safely.

DON'TS

- Any operator who consumes alcohol at work will be dismissed.
- An operator who appears unfit through drink or drugs will not be allowed to operate a lift truck (a person who would be unfit to drive a vehicle on the public road will be considered unfit to operate a lift truck).
- Do not pick up a load if someone is standing close to it.
- Do not allow people to walk underneath the load.
- Do not move a load that appears unsuitable. Mark it as such and report its condition to the supervisor.
- Do not leave a lift truck unattended on a gradient except in an emergency, in which case chock the wheels.
- Do not carry passengers unless the Lift Truck is designed and equipped to do so.
- Do not run over cables or flexible pipes etc. that are on the floor unless they are suitably protected.
- Do not operate with the load raised, because of the risks of overturning, except at creep speed as part of a stacking or de-stacking manoeuvre.
- Do not carry a load that blocks forward visibility. If it is absolutely necessary to carry a bulky load which blocks visibility, then the lift truck should be driven in reverse. If this is not possible, for example when travelling up a slope, a banksman should be used to assist the operator.
- Never leave the keys in the ignition of an unattended lift truck.

Bulletin No. 11

Fire Precautions

WHAT YOU SHOULD DO...

...IF FIRE BREAKS OUT

Raise the alarm at once by:

- BREAKING THE GLASS IN THE NEAREST FIRE ALARM BREAK GLASS CALL POINT; or
- IF IT IS SAFE TO TACKLE THE FIRE - Call for assistance and attack the fire with the fire extinguishing equipment provided.

NOTE: If the fire should get out of control or if your escape is threatened, leave the building at once.

...WHEN FIRE ALARM SOUNDS

- Co-operate with Fire Marshalls.
- Do not stop for personal belongings.
- Leave the building.
- DO NOT USE LIFTS.
- When clear of the building report to your head of department at the assembly area so that a roll can be made.
- Do not return until the all clear is given.

If you suspect that there is a fire on the other side of a door, keep the door shut.

If you are caught in a smoke filled area, crawl on your hands and knees, keeping your face as close to the floor as possible where the air will be clearer.

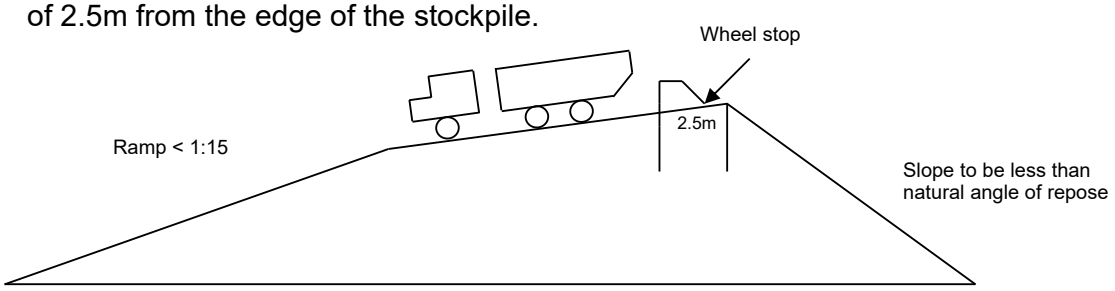
If escape is cut off, go into a room with a window, closing the door behind you. Stand by the window, call for help and await rescue. The fire brigade will usually arrive in a matter of minutes.

Bulletin No. 12

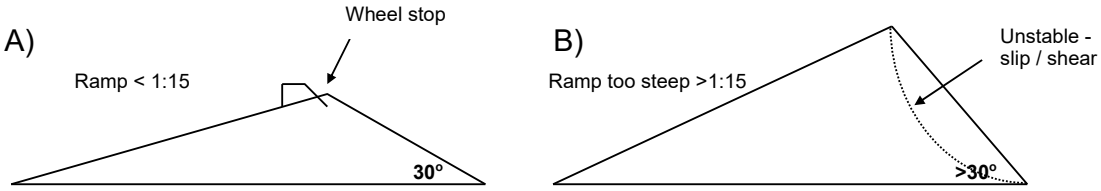
Tipping @ Stockpiles and Maintenance of Stockpiles

Dump Trucks

1. No rigid dump truck, i.e. RD30 or similar with two axles shall tip over the edge of any stockpile. Any loads to stockpile required to be carried by these shall be tipped at ground level only.
2. Drivers on stockpiling duties should check tops of every stockpile on a daily basis for cracks, subsidence, step faces and undermining.
3. All loads shall be tipped at the free edge of stockpiles so as to leave a backstop on the edge of the stockpile. Minimum height of backstop should be at least 2/3 wheel diameter of largest wheel. Backstop should be a minimum of 2.5m from the edge of the stockpile.



4. LOADING SHOVELS
   As far as possible do not remove materials below where fresh material is being tipped. If it is necessary to fill at such a point, ensure that material is taken evenly around the stockpile to prevent the edge from being undermined. A gradual slope should be maintained at all times as in sketch A below:-



Natural Angle of Repose | Unstable Stockpile

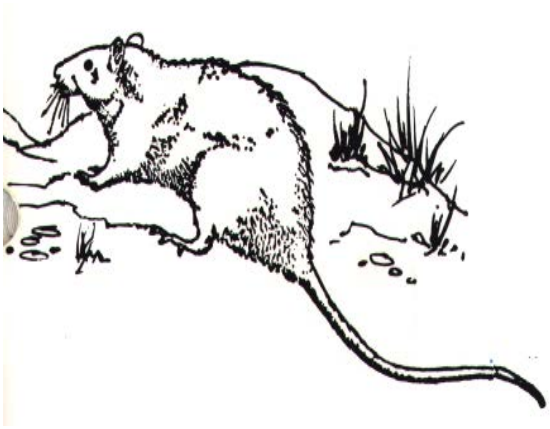
Should a stockpile obtain a profile as drawn in sketch B, particularly with a crusher run, quarry rubble, blinding or dust then the top of the stockpile should be pushed over to restore profile shown in sketch A.
A banksman should be sought if necessary.

5. Shovel drivers should be vigilant not to create unstable stockpiles.
If a stockpile becomes unstable, immediate action should be taken to remove the risk of slippage / collapse, either by pushing the top of the stockpile to restore a safe angle of repose or using a berm of material to block the ramp to the stockpile. Note: this operation may require the use of a tracked excavator to make safe the stockpile.
Drivers and the quarry manager / foreman should be informed immediately should a stockpile become unsafe.

EXTRA CARE AND ATTENTION SHOULD BE TAKEN IN HEAVY RAIN. Heavy and consistent rain can make stockpiles unstable – stockpiles must be checked during and after heavy rain.

Bulletin No. 13

Weils Disease - Leptospirosis



Weils Disease is an infectious disease caused by bacteria transmitted to man by animals and characterised by jaundice, meningitis, kidney failure primarily caused by rats.

Where the location of the work requires that staff work in areas where evidence of rat infestation is recognisable, the following precautions must be adhered to.

- To avoid contracting Weils Disease, it is necessary to adhere to a rigid hygiene policy.
- Staff should wear personal protective clothing, especially gloves, in the area.
- Cuts, scratches or abrasions should be covered with a waterproof dressing.
- Staff should avoid touching their mouth or nose.
- Foodstuffs should not be consumed on site without washing hands, forearms and face.
- When the job is interrupted or complete, staff should thoroughly wash hands, forearms and face with soap and water before eating or drinking.
- If heavily contaminated tools and other equipment used during the operation should be cleaned and disinfected using a solution of disinfectant and warm water.
- If illness occurs following work, medical advice should be sought immediately.

Don't forget - the presence of rats may not always be evident, so it is very important to use protective clothing and to wash thoroughly afterwards. Good hygiene practice makes sense.

Bulletin No. 14

Crane Lifting Operations Checklists – Pre-lift

COMPANY:		**Sheet No:**	
		Date:	
Contract Name and Number:			
Package Title:			
Subcontractor / Works Contractor / Trade Contractor:			

Check:	**Details / Answer:**
1. Proposed lifting company / hire company	
2. Name of Heavy Lift Co-ordinator	
3. Name of Appointed Person	
4. Date of agreed Method Statement – also check crane hire company has all Risk Assessments and Method Statements in place	
5. Start date and duration of operation	
6. Details of crane hire company's Employers and Public liability insurance cover – keep copies if appropriate	
7. Details of lift: a) Maximum load b) Maximum height c) Maximum radius	
8. Details of where crane is to be sited (attach sketch if appropriate) Check for 600mm clearance	
9. Ground bearing capacity (permissible) and provision of spreaders (indicate loads required)	
10. Area free of overhead and underground powerlines	
11. Sufficient lighting is provided	
12. Evidence of notification to Police and Highways department (if applicable)	
13. Details of type of crane(s) to be used: a) Capacity b) Working length of boom c) Maximum working radius and capacity d) Maximum allowable wind speed	
14. Crane drivers / operators / banksmen training certification – keep copies	

External Distribution:

- ☐ Planning Supervisor
- ☐ Design Manager
- ☐ Architect
- ☐ Project Manager
- ☐ Civil Engineer
- ☐ Client

Internal Distribution:

- ☐ Director
- ☐ Quantity Surveyor
- ☐ Construction Manager
- ☐ Safety Co-ordinator
- ☐ Site Manager
- ☐ Project Manager / Site Agent
- ☐ Other

Signature of Appointed Person_____Date_____

Crane Lifting Operations Checklists – Lift

COMPANY:		**Sheet No:**	
		Date:	
Contract Name and Number:			
Package Title:			
Subcontractor / Works Contractor / Trade Contractor:			

Check:	**Details / Answer:**
1 Name of crane driver	
2 Registers and test certificates to be produced by the **Crane driver** a F91 Pt2 #G (14 month test) b F91 Pt1#C (weekly inspection) c F96 (four year test)	
3 Other test certificates required: a F97 (chains etc) b F87 (wire ropes) c F91 Pt2 #J (sling inspection)	
4 Provide slinger / banksman and note suitable method of communication (Note: ensure banksman clearly distinguishable if hand signals used).	
5 Provide warning notices, bollards, barriers	
6 Provide temporary lighting	
7 Check outriggers fully extended	
8 Check crane level	
9 Check safe load indicator working and any computer input set up correctly	
10 Check Method Statement being complied with fully	
11 Ensure load correctly slung	
12 Check tag lines fitted to control load. For contract lifts, the subcontractor must answer all the above questions and ensure the answers are implemented on site. Failure to do so will result in operations not being allowed to proceed.	
13 Check load after lifting 150mm.	
14 Check no-one is or can get under load being lifted.	
15 Check load is landed on batons to prevent damage to slings and to allow their removal.	

External Distribution:		**Internal Distribution:**	
☐ Planning Supervisor	☐ Project Manager	☐ Director	☐ Quantity Surveyor
☐ Design Manager	☐ Civil Engineer	☐ Construction Manager	
☐ Architect	☐ Client	☐ Safety Co-ordinator	☐ Site Manager
		☐ Project Manager / Site Agent	
		☐ Other	

Signature of Appointed Person_____Date_____

Bulletin No. 15

Recommended Contents of First Aid Boxes and Kits

Materials	First Aid Travel Kit Contents	First Aid Box Contents		
		1-5 Persons	**6-25 Persons**	**26-50 Persons**
Adhesive Plasters	12	12	20	40
Sterile Eye Pads (Bandage attached)	-	-	2	4
Individually Wrapped Triangular Bandages	2	2	6	6
Safety Pins	2	2	6	6
Medium Individually Wrapped Sterile Unmedicated Wound Dressings (approximately 10cm x 8 cm)	-	-	6	6
Large Individually Wrapped Sterile Unmedicated Wound Dressings (approximately 13cm x 9 cm)	1	1	2	4
Extra Large Individually Wrapped Unmedicated Wound Dressings (approximately 28cm x 17.5 cm)	-	-	3	4
Individually Wrapped Wipes	8	8	8	10
Paramedic Wrapped Wipes	1	1	1	1
Pairs of Latex Gloves	1	1	2	2
Additionally, where there is no clear running water. Sterile Eye Wash	1	1	2	2

NOTES

Where more than 50 persons are employed pro rata provision should be made.

Where mains tap water is not readily available for eye irrigation, sterile water or sterile normal saline (0.9%) in sealed disposable containers should be provided. Each container should hold at least 300 ml and should not be re-used once the sterile seal is broken.

Eye bath / eye cups / refillable containers should not be used for eye irrigation.

The above table provides a general guide on the recommended contents of first-aid boxes and first-aid kits based on numbers employed. The appropriate number of boxes or kits required in any particular place of work will depend on the particular circumstances.

Bulletin No 16

Fire Checklist

This checklist is designed to assist Fire Marshalls and Site Safety Officer to carry out a fire safety appraisal. If the answer to any question is `no', corrective action should be taken.

COMPANY:			
DATE OF INSPECTION:			
INSPECTION COMPLETED BY:		**JOB TITLE:**	

*Please tick if inspected	Area	Yes	No	Comments
	Storerooms and cupboards?			
	Attics and basements?			
	Boiler rooms and other plant rooms?			
	Bottoms of lift shafts?			
	Staircases and under stairs?			
	Fuses and switchboard areas?			
	All exits and entrances?			

FIRE – Prevention of Fire:-
Are all parts of the premises kept clear of waste and rubbish particularly:

FIRE – Smoking:-	Yes	No	Comments
Are substantial ashtrays provided in all areas where smoking is permitted?			
Are staff warned to use the ashtrays and not throw cigarettes or matches into waste paper receptacles, through gratings or out of windows? (Note: waste paper receptacles should be metal, with closed sides and bottoms).			

FIRE – Electricity:-	Yes	No	Comments
Do all parts of the electrical installation comply with the Electricity Rules for Electrical Installations?			
Is the electrical installation inspected and tested at least every 3 years?			
Are electrical appliances checked every six months by a competent person?			
Are staff trained to report frayed leads and faulty plugs and sockets?			
Are staff warned to keep combustible materials away from heaters?			
If you do not have central heating, are heating appliances fixed rather than portable?			

FIRE – If Fire Breaks Out:-	Yes	No	Comments

Are there instructions for detailing the action to be taken by staff on discovering a fire and when warning of a fire is given?			
Do the staff know these instructions?			
Have regular fire drills been carried out?			
Are there means for warning the entire staff and other occupants of the building when a fire is discovered?			
Has a responsible person (Fire Marshal) been appointed in each office or on each floor to supervise the action to be taken when fire breaks out?			
Are emergency exits kept clear and unlocked during normal working hours?			
Are internal fire doors kept shut at all times?			
FIRE – Escape:-	Yes	No	Comments
Are fire exits and special fire escapes clearly marked?			
Are staff familiar with all the escape routes out of the building?			
Are the escape routes open at all times when the building is occupied?			
Are escape routes well lit?			
Are smoke / fire detectors present on fire escape routes?			
Are escape routes and entrances and exits kept free from obstruction and in good structural condition?			
FIRE – Fire Fighting:-	Yes	No	Comments
Are portable fire extinguishers provided in clearly visible and readily accessible places throughout the premises?			
Are they maintained at regular intervals?			
Are staff familiar with their use?			
Are fire alarm systems regularly tested and maintained?			
Do you know how to operate the fire alarm system?			
FIRE – When Work Ceases:-			
Are checks made to ensure:-	Yes	No	Comments
Electric, gas and oil equipment not required to operate overnight is switched off?			
Equipment in use overnight is safe?			
Electric typewriters, computers, copying machines and other equipment having flexible cables, are unplugged?			
Kitchen cooker, kettles, toasters etc. are switched off?			
No cigarettes are left smouldering?			
FIRE – When Work Ceases Continued:-			
Are Checks made to ensure:-	Yes	No	Comments

Areas to which the public have access are checked for signs of careless or malicious sources of ignition (cigarettes, incendiary devices etc.)?			
Fire doors and smoke stop doors are closed?			
Windows are closed?			
Outside doors are locked?			
Premises are secure against intruders?			

MAIN POINTS FOR ACTION:-

Signature of Assessor: **Date:**

Bulletin No. 17

Disc-Lock Wheel Nuts

To: <u>All Large Goods Vehicle Drivers</u>

Disc lock nuts are fitted to help prevent wheels from coming adrift from the vehicle**.**

THE FOLLOWING PROCEDURES APPLY:

1. Daily check on wheel, wheel nut and tyre inspections

2. The attached manufacturers instructions must be followed at all times

3. Following a wheel or tyre change – re-torque the disc lock nuts to the vehicle manufacturers recommended torque after 80km/50 miles.

4. To re-torque the disc lock nuts on a weekly basis.

5. ***<u>Warning:-</u>*** Air guns can seriously damage the disc lock nuts.

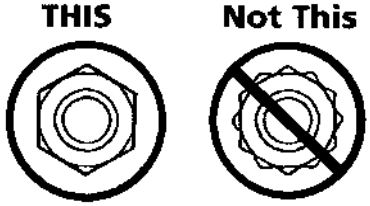
If an air gun is used it is required that on both slackening and tightening the nuts, the hexes in the nut are correctly lined up to avoid burring the hexes. (Fitter should be informed of this requirement).

<u>NOTE</u>:

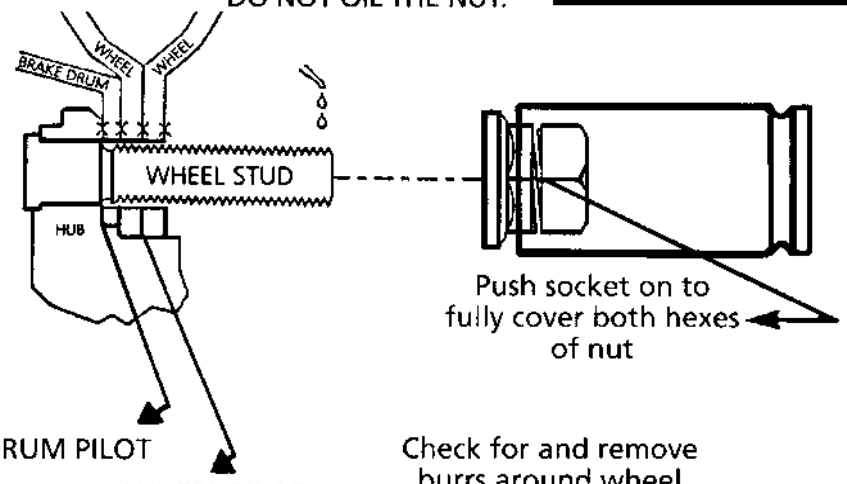
It is required that the torque bar be used to finish tightening nuts and for the first two turns when loosening the disc-lock nuts prior to use of an air gun.

DISC-LOCK WHEEL NUT INSTALLATION

IMPORTANT: Be sure to keep nut flange face and wheel and drum mating surfaces free from lubricant*, dirt, rust, excess paint and other foreign material. Replace damaged parts.

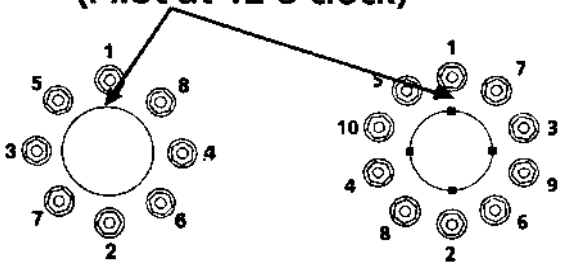


TO REMOVE OR REPLACE WHEEL NUT, BOTH HEXES MUST BE LINED UP.
(See note below)



*Clean centre hole of wheels and lube pilots on hub to help seat wheels

NUT TIGHTENING PATTERN
(Pilot at 12 o'clock)



IMPORTANT

- *DISC-LOCK WHEEL NUTS MUST BE FITTED IN COMPLETE SETS*
- *REFER TO AXLE MANUFACTURERS INSTRUCTIONS FOR TORQUE SETTINGS.*

NOTE: When a 6 point socket is used to install the DISC-LOCK Wheel Nut, the two hexes will automatically line up as the socket is pushed over both hexes. When a 12 point socket is used, make sure the two hexes are lined up before pushing socket over both hexes.

DISC-LOCK EUROPE P.O. Box 134
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Bulletin No. 18

Working with Sewage – The Health Hazards

Introduction

Several work activities bring workers into contact with sewage and sewage products. Each year, some workers will suffer from at least one episode of work-related illness. The majority of illnesses are relatively mild cases of gastroenteritis, but potentially fatal diseases such as leptospirosis (Weil's Disease) and hepatitis, are also reported to HSE.

Who is at Risk?

If you work in one of the following areas, your health, or that of your employees, may be at risk.

- Local Authority employees involved in sewer inspection and maintenance work.
- Construction workers who repair or replace live sewers.
- Water company employees who work with sewage treatment plant.
- Agricultural and forestry workers who may be exposed to sewage sludge.
- Sludge tanker drivers/operators and associated maintenance staff.
- Plumbers.

What this leaflet is about

This leaflet describes some of the risks and the ways in which they can be either eliminated or reduced. It follows the principles of the Control of Substances Hazardous to Health Regulations 1994. This leaflet does not set out or interpret the law – it has been produced simply to help you.

What is Sewage?

The term may be used to mean raw sewage, sewage sludge or septic tank waster.

Raw sewage is mainly water containing excrement, industrial effluent and debris, such as sanitary towels, condoms, plastic, etc.

Excrement is the major source of harmful micro-organisms, including bacteria, viruses and parasites.

Sewage treatment reduces the water content and removes debris, but does not kill or remove all the micro-organisms.

What are the Health Risks?

Exposure to sewage or its products may result in a number of illnesses. These include:

- Gastroenteritis, characterised by cramping stomach pains, diarrhoea and vomiting.
- Weil's disease, a flu-like likeness with persistent and sever headache, transmitted by rat urine. Damage to liver, kidneys and blood may occur and the condition can be fatal.
- Hepatitis, characterised by inflammation of the liver, and jaundice.
- Occupational asthma, resulting in attacks of breathlessness, chest tightness and wheezing, and produced by the inhalation of living or dead organisms.
- Infection of skin or eyes.
- Rarely, allergic alveolitis (inflammation of the lung) with fever, breathlessness, dry cough, and aching muscles or joints.

How do Micro-organisms enter into the Body?

- The most common way is by hand-to-mouth contact during eating, drinking and smoking, or by wiping the face with contaminated hands or gloves, or by licking splashes from the skin.
- By skin contact, through cuts, scratches, or penetrating wounds, i.e. from discarded hypodermic needles. Certain organisms can enter the body through the surfaces of the eyes, nose and mouth.
- By breathing them in, as dust, aerosol or mist.

Protecting workers from risks to health

Since micro-organisms are an inherent part of sewage, the hazard cannot be eliminated.

However, a proper assessment of risk is required, but this should not include analysis of sewage for micro-organisms as they can constantly change.

Exposure to sewage should be eliminated or minimised by, for example, using remote-controlled robotic cameras for sewer inspection; drying sludge before disposal; incineration of sludge; injection of sewage into land rather than spreading; damming and bypass pumping of sewer sections prior to reconstruction.

The following measures can further reduce risk of infection and illness:

- Ensure that employees and line management understand the risks through proper instruction, training and supervision;
- Provide suitable personal protective equipment, that may include waterproof/abrasion-resistant gloves, footwear, eye and respiratory protection. Face visors are particularly effective against splashes.

Equipment selection and a proper system for inspection and maintenance are important.

- Provide adequate welfare facilities, including clean water, soap, nailbrushes, disposable paper towels, and where heavy contamination is foreseeable, showers. For remote locations, portable welfare facilities should be provided.

Areas for storage and contaminated equipment should be segregated and separate from eating facilities.

- Provide adequate first aid equipment including clean water or sterile wipes for cleansing wounds and a supply of sterile waterproof adhesive dressings.
- Make effective arrangements for monitoring the health of staff.

Bulletin No. 19

All Employees and Owner Drivers – In the Event of a Road Traffic Accident

You should:

a. Take the names and addresses of all those in the third party vehicle

b. Take a note of the names and addresses of any independent witnesses

c. Identify the make, model and registration number of the third party vehicle

d. Exchange insurance details with the third party driver. Our details are as follows:

Insurance Company

Certificate Number *Private Car*

Certificate Number *Commercial*

Certificate Number *Mechanical Plant*

e. Identify the attending Police Officer and the relevant Police Station

f. Report the incident immediately to your manager who will make the necessary arrangements with Head Office

g. **Managers**: Send all communications you receive to ISLAND SITE DEVELOPMENT

! **Failure to report accidents immediately and failure to provide adequate information may result in disciplinary action.**

I have read and understood what to do in the event of a Road Traffic Accident:-

Driver Signature:_____

Date:_____

! **It is recommended that all employees and owner drivers keep a copy of this form in their vehicle at all times.**

Bulletin No. 20

Plant & Machinery
Safe Access and Egress

General

- Access and egress should allow for a person to have 3 points of contact with the machinery or plant at all times, when mounting, dismounting or gaining access to carry out servicing, maintenance or repair work, e.g. two hands and one foot in contact with plant / machinery at any one time or, two feet and one hand in contact at any one time when climbing is done.

Steps

- The maximum height of the first step above ground level should not be greater than 450mm (18”), thereafter footsteps should not be greater than 250mm (10”) apart. Note this is a good guide, with care taken to ensure that steps do not foul machine movement.
- Note: Steps should be non-slip and have sufficient surface area to accommodate the length of one foot and the breadth of two feet.
- Note: Tracks on vehicles can be utilised as a foot platform or stepping point. These should be made with non-slip surfaces or sole grips

Hand-grips / Handrails

- Provide at least two hand-grips.
- Note: Handrails must be within hand / arm’s length.
- Note: The hand-grips / handrails must be within reach from the lowest point of access.

Compliance

- Management / supervisors should make arrangements to fix / fit appropriate access and egress points to all equipment under their respective areas of control, should present access / egress points not meet these basic standards.

- Consultation may be required with users of the plant, machinery or vehicles requiring modification, to ensure the best possible location of access / egress points.

Bulletin No. 21

Trolley Jacks

Controls

- Read instructions before use.
- Check vehicle manual for correct weight of lift.
- Never exceed jack rated capacity.
- Never work under load without additional supports, i.e. fully rated jack stands.
- Always work on a solid level surface with the vehicle's brakes on and wheels chocked.
- Failure to comply with all cautions may result in serious injury.

Instructions

To Lift:

- Place vehicle in park position, apply handbrakes and black wheels.
- Turn jack valve in cylinder clockwise until tight – use jack handle as a wrench.
- Place jack handle in housing and pump jack up-down to lift load.
- Always centre the load on the saddle of the jack – Note – off-centre load can be unstable resulting in possible load collapse.

To Lower:

- Use handle as a wrench turn – release valve SLOWLY

Maintenance:

- Lower lift to lowest position.
- Remove air vent valve – fill with hydraulic jack oil only – DO NOT use brake fluid.
- Fill to correct level.
- Release air from system, i.e. pump jack 5-6 times with air valve open – then tighten air vent valve.
- Always ensure trolley jack wheels are in good condition – replace immediately if defective.
- NEVER use a defective jack.

Bulletin No. 22

Safety Harnesses

Pre-use Checks

- Read instructions before use.
- The webbing is free from burns, cuts, broken stitches or excessive wear.
- The buckles and rivets are not defective (bent, loose) or missing.
- The harness should be discarded if it does not pass inspection and replaced with a new one.

Never:

- Attach more than one snap hook onto a D-ring.
- Modify the harness in any way.
- Work without independent fall arrest systems if there is a risk of falling.

Care and Use:

- Harnesses should only be used by thoroughly trained personnel.
- Used with compatible double locking connectors.
- Destroyed if subject to impact loading.
- Not exposed to chemicals that may damage the fabric or the buckles.
- Protected from sharp edges and abrasion.
- Used with an anchorage point based above the position of the user if possible.
- Allow to dry naturally without being exposed to direct heat sources (e.g. direct sunlight, radiators etc.)
- Store harnesses away from direct sources of heat.
- Wash harnesses, using only those products recommended by manufacturers.

SECTION 8

Operative Safety Guidelines
Contents

1. General Safety Guidelines

1. Give extra care to young persons.
2. Stop all running and horseplay.
3. Stop the use of boxes in place of step ladders.
4. Stop the carrying of objects while climbing.
5. Insist on the use of handrails on stairs and working platforms.
6. Stop the wearing of unsafe clothing and footwear.
7. See that goods are stacked safely and clear of gangways.
8. See that all guards are in place on machines.
9. Watch for wet, oily, slippery or damaged floors.
10. Report all unsafe conditions in your area.
11. Ensure that all minor injuries receive first aid attention.
12. Give careful instructions and make certain they are understood.

2. Personal Safety

1. Don't take chances - carry out instructions.
2. If you don't know - ask.
3. Rectify or report all unsafe conditions to your line manager.
4. Use correct tools and equipment.
5. Help to keep the work place clean and tidy.
6. Have all injuries, however slight, properly attended to.
7. Don't horseplay or distract others.
8. Wear or use any protective clothing or equipment provided.
9. Don't start machinery unless authorised or without guards being in place.
10. Obey all safety rules and signs.
11. Use only those tools you are authorised to use.
12. Don't leave tools on the floor or where they can fall on people below.

YOU MAY BE RIGHT -
BUT THINK OF YOUR WORK COLLEAGUES

3. Working Dress

1. Wear the right clothing for the job.
2. Always keep clothes clean. Dirty clothes can offer a fire or dermatitis risk.
3. Loose ends of sleeves, ties or scarves can become entangled.
4. Long hair can get caught and result in scalping.
5. If protective equipment is provided wear it.
6. Finger rings or bracelets are dangerous near moving machinery.
7. A safety helmet will protect your head - and perhaps save your life.
8. Safety shoes save toes.
9. Danger can strike upwards. Be sure your boots or shoes have strong soles.
10. Remove contaminated clothing immediately and WASH.
11. Remember, cotton burns easier than wool.
12. It is worth dressing properly, even for a short job.

PROPER CLOTHING MEANS
SAFER WORKING

4. Housekeeping

1. Don’t leave rubbish lying about.
2. Keep all gangways, aisles and stairways clear.
3. Wipe all spilt oil, grease or liquids.
4. Clear up turnings, chips, or off-cuts.
5. Use metal containers for oily or greasy rags and waste.
6. Stack goods and materials clear of gangways.
7. Stow your tools safely when not in use.
8. Keep benches and worktops uncluttered.
9. Don’t accumulate scrap or waste.
10. Don’t leave loose tools on running machines.
11. Ensure that access to fire extinguishers is not obstructed.
12. Keep all fire doors and exits clear of obstructions.

A CLEAN WORKPLACE MEANS
FEWER ACCIDENTS

5. Fire Safety

1. See that you know what to do in case of fire.
2. Make certain you know your escape route.
3. Keep fire doors and shutters clear and unobstructed.
4. Don't obstruct access to fire extinguishers; learn how they operate.
5. Don't hang clothing over or near heating equipment.
6. Don't let paper, oily rags or other rubbish accumulate.
7. Do not smoke in forbidden areas.
8. Use proper containers for flammable liquids, not open tins or buckets.
9. Handle flammable liquids at a safe distance from possible sources of ignition.
10. Check before and after using blowlamps, welding and cutting equipment.
11. Crucibles, soldering irons and gas rings must be on non-combustible stands.
12. Switch off from mains any electrical equipment when not in use.

PLAN IN ADVANCE - YOU WON'T
HAVE TIME WHEN FIRE BREAKS OUT

6. Manual Handling

1. Where possible gloves should be worn to protect against cuts, scratches or punctures.

2. Wear safety boots or shoes to protect toes from falling loads.

3. Size up the load and, if necessary, make a trial lift of a few inches.

4. Do not attempt to lift alone any load that is too heavy, too large or awkward.

5. See that there are no obstructions in the direction you will be going.

6. Take up position, feet hip breadth apart, one foot slightly advanced pointing in direction it is intended to move.

7. Bend the knees, back muscles should be relaxed.

8. Get a secure grip of the load.

9. Lift, keeping the back straight, arms close to body, leg muscles taking the strain.

10. Step off in direction advanced foot is pointing, load held close to body.

11. Do not carry a load which obscures your vision.

12. When lifting to a height from the floor do it in two stages.

7. Care of your Skin

1. The most important factor is personal cleanliness.
2. Barrier cream appropriate to the exposure should be used if gloves cannot be worn.
3. Gloves should be worn for handling rough or sharp materials. But not on drilling machines.
4. Cuts or punctures can turn septic - get first-aid at once.
5. Change soiled dressing on wounds.
6. Rings on fingers can be dangerous.
7. Use safeguards installed or provided.
8. Wash before eating, drinking or smoking - there may be harmful chemicals on your hands.
9. Do not use solvents to remove oil or material from the skin.
10. Do not use a pumice stone or abrasives for cleaning skin.
11. At the end of the day or shift wash hands with warm water and soap or cleaning cream - dry well.
12. Clean habits prevent diseases.

8. Handling Sheet Materials

1. Sheet materials should, where practicable, be stored flat. Keep stacks low.
2. Vertical storage should only be done in suitable racking to prevent collapse.
3. The corners of stacked sheet materials should be suitably guarded against physical contact.
4. When removing steel strapping from sheet materials, wear goggles and gloves. Remove strapping immediately to a safe place.
5. ALWAYS use suitable hand protection, and arm protection where necessary.
6. Before moving sheet materials, ensure that your route is free from obstruction.
7. Large sheets should be either handled mechanically or by an organised team.
8. When lifting sheets manually, bend the knees and keep the back straight.
9. When moving sheets by crane, use only sound and suitable slings or straps.
10. Be careful when you have to handle sheet materials out of doors in windy conditions, particularly above ground.
11. NEVER attempt to manhandle sheet materials up or down ladders.
12. When processing sheet materials - such as on guillotines, a leather apron or other suitable protective clothing should be worn.

CUTS NEED CARE - GET FIRST AID

9. Hand Tools

1. Use the right size spanner to fit the nut.
2. See that every file has a handle.
3. Chisels and punches with mushroomed heads should be ground.
4. Keep hammer heads tightly wedged on their shafts.
5. Renew wooden handles that are split.
6. Keep the edges of cutting tools sharp.
7. Keep hands behind the cutting edges when working.
8. Don't use screwdrivers on work held in the hand.
9. Keep tools in boxes or racks when not in use.
10. Protect sharp edges of tools that are to be stored or carried.
11. Scrap tools that are worn or damaged beyond repair.
12. Always use the correct tool for the job.

GOOD TOOLS MEAN FASTER
AND SAFER WORKING

10. Noise

1. Wear ear protectors at all times if exposed to a noise hazard.
2. Do not use cotton wool as ear protection: it is not effective.
3. Make sure that ear plugs are a good fit in each ear and are correctly inserted.
4. Regularly clean re-usable ear plugs to the manufacturer's instructions.
5. Hands should be clean when handling all types of ear plugs.
6. Ear muffs should be a good fit to the head all round the seal.
7. Ensure that ear muffs are worn the correct way round.
8. See that muff seals are always in a serviceable condition.
9. Do not alter the pressure of ear muffs by bending the head band.
10. If you have difficulty in wearing any type of hearing protector provided, report it.
11. There is no satisfactory treatment for noise-induced hearing loss.

PROTECT YOUR HEARING

11. Ladders

1. Use clear varnish to protect a ladder; paint may cover a defect.
2. Never use an unsound ladder.
3. Be sure the ladder is set on a firm level base.
4. Have a man at the foot or lash the top.
5. Make certain the ladder reaches at least 3ft. 6in. (1.070m.) above landing platform.
6. The correct pitch of a ladder is 1 foot (300mm.) out at the base for every 4 feet (1.210m.) vertical height.
7. Use the right length ladder for the job. Never lash two short ladders to make a longer one.
8. Do not carry loads on ladders - use a hoist line.
9. Do not lean sideways from a ladder - it's safer to move the ladder.
10. Face the ladder when climbing or ascending.
11. Beware of wet, greasy or icy rungs.
12. Inspect ladders before use and regularly when stored.

ON BUILDING SITES BURY FOOT OF
LADDER IF GROUND IS UNEVEN

12. Roof Work

1. Only workmen who are physically and mentally suitable should work on roofs.

2. Suitable crawling boards or ladders to be used for any work on sloping roofs, or where a roof is of fragile material, or is used for access or egress.

3. Crawling boards or ladders to be properly supported and securely fixed or anchored.

4. The falling of materials or articles from roofs must be prevented by suitable and sufficient means.

5. Extensive work on sloping roofs to be done only from a suitable platform, or a barrier must be provided at lower edge of the slope.

6. For work near fragile roof materials, a guard-rail must be erected or the surface suitably demarcated / covered.

7. Covering or other protection may be removed for the passage of workmen, materials, other purposes of the work, or for filling in the opening.

8. Any ladder used for temporary access to the roof must be sound and placed on a firm level base.

9. Until a ladder is lashed in position, it must be footed by a person at its base.

10. When ladders rise to over 30ft. an intermediate platform equipped with guard-rails and toe-boards must be erected.

11. A ladder must reach at least 3ft. 6in. above a landing platform.

13. Electricity

1. Don't carry out make-shift repairs on electrical equipment. Repairs are an electrician's job.
2. Always check for defective cables, plugs or sockets.
3. Never overload electrical equipment.
4. If a fuse blows, report it. Do not fit makeshifts.
5. Switch off and disconnect any equipment that sparks or stalls.
6. Don't let cables trail across portable tools.
7. Don't use lighting circuits for portable tools.
8. Disconnect equipment when not in use, but don't pull cable to disconnect; pull the plug.
9. Avoid kinking, twisting, binding or crushing cables.
10. Keep all electrical equipment clean and dry.
11. Don't use portable tools near flammable vapours or gases.
12. Don't stand on a wet area when using electrical equipment.

ELECTRICAL REPAIRS ARE
AN ELECTRICIAN'S JOB

14. Portable Electric Tools

1. Before using a portable electric tool check to see it is properly earthed, unless it is an approved type that does not require earthing.

2. Before using an electric tool, make sure that the casing is undamaged. If it is damaged, don't use the tool.

3. Make sure that all cables, plugs or connectors are sound and properly wired up.

4. Use tools only on the correct power supply as instructed on the maker's label.

5. Make sure that the power cable is long enough to reach your working place without straining it.

6. Keep power cables off the floor. They may get damaged or trip somebody.

7. Never stand on a damp or wet surface when using electrical equipment, and keep the equipment clean and dry.

8. Portable electric tools should only be used for their designed purpose.

9. Never connect a portable electric tool to a lighting socket.

10. Never use worn, blunt or damaged bits or other accessories.

11. Disconnect tools when not in use.

12. Electric power tools should be regularly inspected and maintained by a competent electrician.

REPORT ALL DEFECTS IMMEDIATELY

15. Electric Arc Welding

1. Make sure that your shield, helmet or goggles contain the correct filter glasses.

2. Wear adequate protective clothing, including leather gauntlet gloves and clear goggles for chipping.

3. When necessary, use screens to protect neighbouring workers and passers-by from the arc.

4. Ensure that cables and connections are in good condition and firmly attached.

5. Make certain that the welding equipment, bench or workpiece is properly earthed.

6. Check that the electrode holder is fully insulated and always place it on an earthed surface when not in use.

7. Stand on an insulated mat when the ground is damp.

8. Arrange good ventilation in the welding area, but do NOT use oxygen to ventilate confined spaces.

9. Avoid welding near flammable materials.

10. Never weld enclosed vessels, drums or tanks which have contained flammable materials unless they have been purged by steaming or boiling, or filled with inert gas, and tested and certified that they are safe to work on.

11. Do not weld INSIDE enclosed vessels unless all precautions have been taken for your safety.

12. Keep trailing welding cables clear of roads and walkways. Secure to overhead fixtures where possible.

BEWARE OF ARC EYE - PROTECT YOUR EYES

16. Slings

1. Find out the weight to be lifted.

2. Check the safe working load marked on the sling; do not use it for any load in excess of the safe working load.

3. Do not use fibre or wire rope slings for hot loads and keep them away from welding or flame cutting operations.

4. Examine all slings before use; reject any that are defective.

5. Slings should be protected by suitable packing from sharp edges or corners of the load.

6. Rope slings should not be dragged along the floor.

7. A sling doubled around a shackle has a S.W.L. equivalent to that of a single part of the rope.

8. Take your hands away before the crane takes the load and stand clear.

9. Ensure that load is free before lifting.

10. Use only recognised signals to the crane driver.

11. Lower loads on to adequate battens to prevent damage to the slings.

12. Return slings to store after the job is completed.

ALWAYS WORK SAFELY

17. Chains

1. Select the right chain for the job. If in doubt - ask.

2. Check chains before using. Report any chain with deformed, corroded, cracked or cut links and don't use it.

3. Make sure that the chain is marked with its safe working load; don't exceed it.

4. Make sure that the chain is not kinked or twisted.

5. Immediately after use, return chains to store so they can be properly stored.

6. Use packing for chain slings when lifting anything with sharp edges.

DO NOT

7. Shorten a chain by knotting it.

8. Lengthen a chain by joining pieces together.

9. Hammer a chain down on to a load.

10. Drop chains on hard surfaces.

11. Leave chains where they can be run over or otherwise ill-treated.

12. Expose chain to acids or other corrosive substances.

REMEMBER - A CHAIN IS ONLY AS STRONG AS ITS WEAKEST LINK

18. Hooks and Eye Bolts

Hooks

1. Check for distortion. If in doubt, check dimensions against standard tables or drawings.

2. If a hook has opened by more than 1/5th of it's original dimension, destroy it.

3. Examine carefully for cracks, cuts, dents and corrosion pits.

4. Swivel hoods should rotate freely. Nut securing hood to trunnion should be split-pinned or otherwise secured.

5. If swivel hook is welded in trunnion, check shank for excessive wear and the weld for deterioration.

6. Always mouse hooks unless fitted with safety catch. Make sure the catch operates freely.

Eye bolts

1. Examine for damaged threads. If in doubt, check with thread gauge.

2. Check thread. Only metric eye bolts in metric thread holes.

3. Shoulder or collar should be flat, free from damage, and at right angles to threaded portion.

4. Check that centre line of eye is central with threaded portion.

5. Examine for cracks, cuts, dents and corrosion pits.

6. Check eye for wear; if 1/10th or more of original diameter, destroy it.

NEVER USE HOME-MADE HOOKS OR EYE BOLTS

19. Shackles

1. Use the right type of shackle for the job in hand.

2. Check the safe working load of the shackle before use.

3. Don't use any shackle which is not marked with the safe working load.

4. Examine bow and pin for damage or distortion. Destroy if doubtful.

5. Check bow and pin for excessive wear. Destroy when wear is 1/10th or more of original diameter.

6. Make sure pin is free, but not loose, in tapped hole.

7. Threads should be undamaged and without flats or appreciable wear.

8. Check alignment of holes. The untapped hole should not be too large or worn.

9. When using a shackle with "nut and bolt" pin, the pin should be free to rotate when the nut is tight.

10. Sound shackles should have a clear ring to test, suspend and tap lightly with a hammer.

11. To prevent pins unscrewing, secure with a split pin if possible. Alternatively, mouse with spun yarn.

12. Don't use a shackle where the pin can unscrew by "rolling" under the load.

NEVER USE HOME-MADE SHACKLES

20. Abrasive Wheels

1. Wear goggles when using an abrasive wheel.

2. Adjust the guard to expose the minimum wheel surface necessary for the operation.

3. The speed of the machine must not exceed the maximum permissable speed of the wheel.

4. Adjust the tool rest as close as possible to the face of the wheel.

5. Keep your fingers below the tool rest level.

6. Take care work does not slip off rest.

7. Use the correct grade of wheel for the work in hand.

8. Keep the face of the wheel evenly dressed.

9. Never use the side of the wheel unless it is designed for it.

10. Do not exert heavy pressure on the wheel.

11. Run a replacement wheel for a full minute before using. Make sure everyone is standing clear during the test.

12. Stop the wheel when not in use.

PROTECT YOUR EYES
FROM FLYING FRAGMENTS

21. Cartridge Hammers or Rivet Guns

1. Read makers' instructions carefully before using a gun.
2. Before handling gun make sure it is NOT LOADED.
3. Load gun with barrel pointing in safe position - away from you.
4. Never place your hand over the end of the barrel.
5. Never walk around with a loaded gun - load at site.
6. Check material into which bolt is to be fired.
7. Allow at least 3 in. (76mm) from edges of concrete or brickwork.
8. Hold gun at right angles to the job when firing.
9. Wear goggles when using the gun.
10. In the event of a misfire wait a minute before unloading.
11. Keep the gun clean and well oiled.
12. Never leave gun loaded when not in use.

TREAT CARTRIDGE HAMMERS
WITH RESPECT - ALWAYS

22. Excavations

1. Always use ladders to get into and out of excavations. Don't climb on the timbering and never jump across.

2. Before digging, make sure that the location of water, gas, electricity and telephone services is known.

3. Keep spoil heaps well away from the edges of excavations.

4. Do not place materials, including tools, on or near the edges of excavations - remember the people working below.

5. Never work in an unshored excavation unless the slope of the sides is sufficient to prevent a dangerous fall of earth.

6. Always wear your hard hat when working in an excavation.

7. Remember to keep all gangways clear.

8. Do not drive vehicles close to or along the edges of an excavation.

9. If you are using a dumper to tip into an excavation make sure that stops are provided to prevent it overrunning the edge.

10. Barriers must be provided around any excavation deeper than 6'6" (1.980m) and they must be as close as practicable to the edge.

A CUBIC METRE OF EARTH WEIGHS AT LEAST
A TON - THE ONLY BODY THAT CAN SUPPORT
A TON OF EARTH IS A DEAD ONE

23. Fork Lift Trucks

1. Take the weight and test your steering before lifting a load.
2. Do not move with insecure loads.
3. Keep clear view and look in direction you are travelling.
4. Travel with load low and fully tilted back.
5. Travel at safe speeds consistent with conditions.
6. Stop and start smoothly.
7. Stop at face of stack and raise load to stacking height still tilted back.
8. Move load over stack, bring mast to vertical, and lower until forks are free of load.
9. Withdraw and lower forks just clear of floor before travelling away.
10. Descend slops with load behind you.
11. Drive uphil with load in front of you.
12. When truck is to be left unattended set the parking brake with forks on the ground. Remove starter key.

LOOK OUT FOR PEDESTRIANS

24. Hoists

1. Never ride on materials hoists.

2. Never exceed the safe working load (SWL) of a hoist.

3. Landing place gates must be kept clear at all times except to allow the passage of materials or people, and always close landing place gates immediately after use.

4. Keep landing places clear of materials, tools and rubbish.

5. Do not operate a hoist unless you have been trained to do so.

6. Never place loose materials on a hoist platform unless it is enclosed or there is some other means of preventing the materials from falling.

7. Never allow unsecured trucks or wheel -barrows to be carried on a hoist and never allow loaded trucks or wheel-barrows to be carried on open platforms unless the load is secured.

8. Always position the handles of a wheel-barrow so that it can be removed at landing place without walking onto the hoist platform.

9. When signalling to the hoist operator, always make sure your signals can be easily seen or heard.

REPORT ALL DEFECTS IMMEDIATELY

25. Crane Drivers

1. Before starting see cab windows are clean and controls in neutral.

2. Test that safe load indicator is working correctly and that brakes are satisfactory.

3. Check all round visibility for possible hazards or obstructions. If overhead power lines are near ensure that current has been switched off.

4. Make sure that any load to be lifted is within the safe working limit of the crane, which must not be exceeded; lifting tackle is part of the load.

5. Work only on the signals of the authorised slinger or, where he cannot be seen, the signaller.

6. Loads must be straight lifted and not slewed over personnel. Loads must be correctly slung.

7. Loads must not be left suspended on the hook and they must not be dropped freely or snatch lifted.

8. Make sure cut-outs are working correctly but do not depend entirely on their automatic operation.

9. Make sure at all times that it is safe to commence lifting and personnel are clear of the load.

10. Where any doubt exists, test the load before making a lift. For unequal loads test for level slinging.

11. Avoid overwinding or allowing the hoist rope to be run too far off the drum.

12. Comply with crane makers instructions and any additional ones issued by your company.

26. Compressed Air

1. Do not use compressed air for any other purpose than that for which it is intended.

2. Never direct compressed air at yourself to blow dust off clothes or hair. This can rupture your eardrums.

3. Do not clean down machines and benches with compressed air. Use a brush or special vacuum cleaner.

4. Horseplay with compressed air is FORBIDDEN. This can cause agonising injury or death.

5. Make sure that your compressed air tool, hose and fittings are working properly. If not, report the fault to your supervisor.

6. When connecting a tool to the air line keep a firm hole on the tool in case it whips.

7. Before changing tools make sure that the supply line is closed or has an automatic shut-off valve.

8. Always close a hose by the valve. Never kink the hose.

9. Do not leave hoses lying around for others to trip over.

DO NOT MISUSE COMPRESSED AIR

27. Compressed Gas Cylinders

1. Treat every cylinder as “full” and handle carefully.

2. Always use a carrier and secure the cylinder into it.

3. Always secure acetylene cylinders in an upright position both in use and in storage.

4. Store ALL cylinders so that they cannot fall or roll.

5. Keep them away from sun, artificial heat, flammable materials, corrosive chemicals and fumes.

6. Avoid damage to valves and fittings. Do not use them for lifting or carrying.

7. Keep valves and fittings of oxygen cylinders free from oil and grease.

8. Do not use cylinders as rollers for moving equipment.

9. Open cylinder valves slowly, and close sufficiently to shut off gas - never use force.

10. Always lift cylinders from trucks - do not drop or slide them.

11. Keep hose lines clear of traffic lanes.

12. In case of fire keep cylinders cool with water spray.

REPORT ANY DAMAGE
OR DEFECTS IMMEDIATELY

28. Oxygen

1. Oxygen is not a flammable gas, but it will enrich the air when released into it and cause combustible materials to burn.

2. Oxygen can cause oil or grease to ignite spontaneously, so these must not be used on threads or couplings on cylinders.

3. Do not handle oxygen cylinders, valves or any other fittings with greasy hands, gloves or rags.

4. Close down equipment when not in use to prevent tubes and regulators being under unnecessary pressure.

5. Do not store cylinders of oxygen and combustible gases together.

6. Cylinders, valves and outlets must not be damaged.

7. Do not use cylinders as rollers for moving materials or equipment.

OXYGEN MUST NOT BE USED TO:

8. Ventilate confined spaces.

9. Cool yourself down when hot.

10. Clear flammable or other vapours from containers or areas.

11. Remove dust from personal clothing.

12. Drive compressed-air tools.

COMBUSTIBLES OR CLOTHING
ENRICHED BY OXYGEN
WILL BURN LIKE A TORCH

29. Workshops

1. Keep overalls buttoned or fastened. Loose or torn cuffs are also dangerous.

2. Do not use petrol in open containers or mix it with other liquids for cleaning clothes or equipment. Always carry petrol in a safety can.

3. Clean up spilt oil or grease on the floor immediately.

4. Do not stand between two cars or a car and a fixed object while someone is at the wheel.

5. Parts, tools and other objects on the floor are hazards. Keep benches tidy too.

6. When using a pit, leave room at either end for emergency exit; when work is complete clean up and replace pit guards.

7. Vehicles jacked up or supported on chain falls must be securely blocked before working underneath.

8. Keep entire body under the vehicle when working. Do not leave creepers where someone can step on or trip over them.

9. Before working under a raised bonnet ensure it is properly supported and place chocks under front and rear wheels.

10. Keep hand tools in good condition and use the right tool for the job.

11. Only “approved” portable extension lamps or tools should be used. Leads must be sound and properly connected to plug, tool or lamp.

12. Do not try to lift or carry alone anything too heavy or bulky; get help.

30. Cleaning with Hot Water and Steam

1. Concentrate on your job and keep the jet directed towards the work.

2. Do not get a steam jet too close to the work because blowback steam can cause severe burns.

3. Take care not to squirt steam or hot water over your legs and feet. Wear your trousers over your boots and wear an extra long waterproof apron.

4. Make sure that you know which valves operate the steam and water so that you do not turn the wrong one by mistake.

5. When using mixer valves start from cold and raise the temperature to that required.

6. Do not use a cold water hose for steam or hot water.

7. Do not have a steam or hot water hose running unattended. It is not only wasteful, it is dangerous.

8. Never indulge in horseplay. Clothing is not protection against steam and hot water.

9. Make sure there is no-one near the area to be cleaned. If necessary place signs to warn passersby.

31. Dangerous Liquids

1. Don’t touch - liquid may be HOT.
2. Don’t touch - liquid may be ACID.
3. Don’t touch - liquid may be CORROSIVE.
4. If you get burnt or splashed, flush copiously with cold water AT ONCE.
5. Don’t smoke near it - liquid may be FLAMMABLE.
6. Don’t smell it - liquid may be POISONOUS.
7. Don’t drink it - liquid may be POISON.
8. Always replace the stopper, cork or bung.
9. Wash spills and splashes away with running water.
10. Never add water to acid; always add ACID TO WATER.
11. Be especially careful with bottles which have LABELS MISSING.
12. Treat all liquids as DANGEROUS until you know they are safe.

IF YOU DON’T KNOW -
LEAVE LIQUIDS ALONE

32. Synthetic Resins, Glues and Lacquers

1. Dermatitis is a risk with epoxy and polyurethane resins. Instructions for use must be followed.

2. Exposed skin should be protected with a suitable barrier cream.

3. Any resin on the skin should be washed off at once, using a skin cleanser.

4. Solvents such as acetone should not be used for removing skin contamination.

5. Special detergent cleaners (not flammable solvents) should be used to remove partially cured resins from tools.

6. If hardener gets in the eyes, flush liberally with water and get medical attention.

7. Catalysts (hardeners) and accelerators should be kept in separate stores. These materials should never be mixed directly together.

8. Hardeners should be stored in vented containers away from flammable materials and any source of heat or ignition.

9. If paper cups are used for resin mixes, they should be destroyed to prevent further contamination, preferably by incineration.

10. Wooden stirrers should be used for mixing resin and hardener.

11. Surplus or waste catalysed resin should be spread over a large safe area to harden before disposal.

12. Rags or mops used for wiping up spillages must be removed at once and burnt in the open.

33. Ionizing Radiations (Sealed Sources)

1. Protective equipment and film badge or dosemeter must always be worn.

2. Sources must not be handled with bare hands. Handling tools, clamps or remote control devices must be used.

3. Only classified workers may enter radiation areas which must be isolated and warning notices displayed.

4. Sources not in use or transit must be suitably and securely stored.

5. Sources must be withdrawn from store only for the minimum time necessary and only by or under the supervision of an authorised person.

6. Sources must always be transported in their protective containers.

7. The amount of radiation to working positions must not exceed permissable levels.

8. Any useful beam must be directed away from adjacent occupied areas.

9. Any useful beam must be limited to the minimum necessary for the work.

10. Adjustments must not be made to radiographic equipment while such equipment is energised.

11. Report immediately any breakage of or suspected leakage from a sealed source.

12. If you think a source has been lost or mislaid, report the matter immediately.

34. Drivers and Plant Operators

The driver or operator is responsible for ensuring that his vehicle is in a safe condition for work, before use.

Every day, before starting work, drivers must check:-

- brakes
- steering
- cleanliness of all windows
- condition and setting of mirrors
- tyres
- lights
- horn
- reversing signal
- seat belts
- windscreen washers and wipers.

Any defects must be reported to your supervisor.

During work the driver must:-

- Operate at a safe speed consistent with road and weather conditions, and the road gradient.
- Always be alert for pedestrians particularly at blind spots.
- Always take care when starting off from a parked position.
- Never move off in reverse unless you are certain it is safe to do so, and that your reversing signal is operating.
- Always park your vehicle safely.
- Before leaving the vehicle:-
    - switch engine off
    - disengage gears
    - apply parking brake
    - rest the bucket on the ground
    - park on level ground
    - pull back from vertical faces
    - do not obstruct access roads
- If a wheeled vehicle must be parked on a gradient - **ENGAGE FIRST OR REVERSE GEAR - CHOCK THE WHEELS**
- Never carry any unauthorised passengers
- Take care when the vehicle is being towed.
- Wear your seat belts, where fitted.
- Mount and dismount carefully
- Ensure that there is sufficient overhead clearance.

35. Environmental Compliance

The Contractor will appoint a designated Site Safety Officer with an acting safety officer always appointed in his absence. Basic first aid training of these persons shall be required. There shall be a fully equipped First Aid Box at all work sites at all times and a list of local emergency telephone numbers in case of accident. Minor and major accidents shall be recorded in an accident log book.

Basic personal protective equipment (PPE) such as boots, hard hat and vest are to be worn at all times. Specialized equipment shall be worn in areas designated for their use for example when working alongside or over water, where there is a risk of drowning, the Contractor shall take appropriate measures to prevent falling (e.g. use of harnesses) and rescue equipment shall be readily on hand (e.g. use of life jackets, life lines/rings and a safety boat). At all times work sites shall be maintained in an orderly, safe and tidy state. Precautions against fire accident shall be taken and appropriate fire safety equipment supplied and clearly indicated at work sites.

The Client will inspect sites for compliance with approved working methods and contractual requirements. The Bahamas labour laws and occupational health and safety policies shall be applied at all times.

36. Site Emergency Response Plans

In the event of any emergency the Site Manager must be contacted to ensure the appropriate action is taken.

POTENTIAL EMERGENCY	WHAT TO DO?	RELEVANT AUTHORITIES & PERSONS
Injury caused by: • Fire • Explosion • Machinery accidents • Minor injuries	• For serious injuries call an ambulance. You should also have the contact details of the nearest doctor, Medical Centre and Hospital. • Immediately inform the site First Aid Officer. • Follow the procedures as detailed in the Site Safety plan. • For major injuries contact the SM or PM	• Emergency Services • Nearest Doctor • Medical Centre • SM • PM
Fire • Fire at the diesel tank • Fire at any of the machineries • Fire caused by vandalism	Evacuate all personnel to a safe area immediately. • Call the Fire Department (Emergency Services). • If the fire is likely to damage neighbouring property inform the adjacent residents. • Follow the procedures as detailed in the Site Safety plan. • For major fire emergencies, contact the Site Manager or Project Manager • Inform site security (Note: Fire Extinguishers are available).	•Emergency Services • SM • PM • Adjacent residents
Explosion	• Evacuate all personnel to a safe area immediately. • Call the Emergency Services immediately. • Contact the neighbouring residents. • If utilities related, call the relevant service provider (e.g. BEC) • Follow the procedures as detailed in the Site Safety Plan • Contact the SM or PM	• Emergency Services • Relevant agency or company • Site Manager • Project Manager • Adjacent residents
Spills Management, Contaminated Soils & Major Spills: • Spill or release of diesel fuel or oil • Spill or release of other hazardous chemicals or material	• For major spills, (defined as a spill that is likely to have direct environmental consequences.) refer to Spill Plan in EMP. • Immediately call the Fire Department and notify SM. • Identify the source of the spill.	• Emergency Services (fire department) • DEH • SM & PM • DEHS • ER

• Minor Site Spills • Acid Sulphate Soils	• If the material is dangerous or unknown, evacuate the site immediately and notify all neighbours. • If it is safe, halt the source of the spill immediately. • Contain the spill and control its flow. • Block storm water drains downstream of the spill. • DEHS must be notified about any spills that are likely to threaten the environment. • Minor spills (defined as spills which can be contained and rectified correctly without the need of external services), shall be contained and rectified with the site spill kit and disposed of correctly. SM to be notified via incident report. • Where Acid Sulphate Soils are discovered, the spoils shall not be removed from site and subsequent notification & testing will follow.	
Heavy rainstorm, flood and hurricane	• Contain/minimise the flow. •Contact SM immediately. •Investigate reasons for failure and prepare an incident report. (Refer to Hurricane Policy)	• SM • PM • EM
Rupture of Utility pipelines (water pipes, sewerage pipes, electrical pipes and cable pipes)	• Contain/minimise the flow Contact Relevant Agency or company • Ensure all spilled materials are contained onsite or if running off site are directed through sediment control measures • Block storm water drains downstream of the spill. • DEHS must be notified about any spills that are likely to threaten the environment.	• Relevant Agency or company • SM • PM • EM • Neighbouring residents.
Site security breach or public safety issue	• Notify security and/or police immediately. • Where public safety issue exists, barricade to restrict egress and address issue immediately.	• SM • PM

SECTION 9

USING THIS MANUAL

Introduction

This document has been adapted from the International Construction Employers Federation. It is not a local organization but the standards identified will be implemented in the operational procedures associated with this work. The development and maintenance of a safe working culture can only be effective if everyone is included and actively involved. The use of "toolbox talks" is an invaluable means of involving those most at risk, the employees, sub-contractors and self-employed, without incurring any significant time or financial penalty.

This "Toolbox Talks Manual" is to assist companies, and in particular the likes of contracts managers, site managers, foremen, charge hands, etc, in implementing an efficient system of conducting regular toolbox talks with minimum effort, whilst hopefully achieving maximum gain.

Format

Whilst a standard format has been adopted throughout the toolbox talks contained in the manual, there remains considerable flexibility enabling users to adapt the content to their specific requirement.

The standard format used comprises the following:

(a) A Talk Number and Title. Purely for reference purposes.

(b) An introduction: A few lines that can be used to introduce the particular talk, most including why it is important.

(c) Main points: Three to five primary points that it is recommended are included in the toolbox talk.

(d) Discussion points: A list of other points to choose from. All can be covered and the format used like a script if required, or particularly relevant points can be selected. The site scale, activities and available time may determine the best option.

(e) A quote: Each toolbox talk ends with a quick quote by way of summary. In the main, these are deliberately "catchy" in the hope that they will be remembered.

(f) Notes: There is a space for individual notes, which can include specific site conditions and activities, site rules, company policy points, etc, as required.

(g) The flip side of each toolbox talk has deliberately been left blank to allow for the inclusion of pictures if required. This will depend on individual approaches and requirements, but possibilities worth considering might include photographs of the effects of industrial dermatitis, good or bad scaffold, or types of fire extinguisher (though the latter may be better demonstrated by having the actual site fire extinguishers present!).

Frequency

Again, this will depend upon individual requirements and approaches, and also on the site conditions. On larger sites it may be necessary to give the same toolbox talk several times in order to ensure all sub-contractors etc, are addressed, or it may be more practicable to give the same toolbox talk at different locations on site, ie a different floor/level each day. On smaller sites, it may be simple enough to address all site personnel at once.

Whilst there is no set frequency or method, it is recommended that companies aim to give a toolbox talk to every employee, sub-contractor and self-employed person once a week. Ideally, where practicable, this should be implemented as a set routine, ie every Wednesday morning starts with a 10-15 minute toolbox talk.

Which talks?

Included in the manual are toolbox talks covering most construction site activities, and there are sufficient, allowing for holidays etc, to give a different one each week for a year. Thus, if suitable, users can simply work their way through the manual for a year, and then start again! Alternatively, users can select talks based upon primary company or site activity, or maybe on areas of concern. Additional toolbox talks can also be added as and when required.

Summary

Toolbox talks provide a convenient and effective method of communicating and reinforcing the safety message throughout the workforce, and, used properly, can significantly enhance the development of a safe working culture.

The cost of implementing a regular toolbox talk system is minimal, 10-15 minutes a week! The benefits will include greater awareness, with the potential to reduce accident rates, and possibly even save a life.

The question is not “can you be bothered?” - it’s “can you afford not to be?”

CONTENTS

NOTE

These toolbox talks are provided purely for use as an aid in promoting safety awareness in construction. They are not a substitute for the statutory regulations and may not address all the safety issues on a specific site.

Talk No: 1	Title: EMPLOYEE'S DUTIES

Introduction: Under Health and Safety legislation all have duties, including employees. You cannot comply with your duties unless you understand them, and a safe working environment cannot be properly maintained without employee co-operation.

Main points:

There are three main employee responsibilities:

- To co-operate with employers to help them comply with their legal duties, ie following safety procedures, site rules, etc
- Not to interfere with or misuse anything provided for health and safety, ie discharging fire extinguishers, wilful abuse of PPE, etc
- To safeguard your own safety and that of others, including the public, who may be affected by your actions, ie by reporting or eliminating any hazards seen.

Discussion points:

- Importantly these duties are not confined to your specific activity or area, but to all site activities.
- Do not hesitate to tackle colleagues, or report to line management, wherever any unsafe activity, procedure or equipment is seen or suspected.
- Employ the "buddy buddy" system and look after your workmates as well as yourself.
- Site managers/foremen can only cover a limited area – employee awareness and assistance is vital if site health and safety is to be effectively maintained.
- Employees are the most likeliest to be injured.
- These duties include the wearing of provided PPE.

SAFETY IS EVERYONE'S BUSINESS – ESPECIALLY YOURS!

Notes:

Talk No: 2	**Title: SITE HOUSEKEEPING**

Introduction: The Construction (Health, Safety & Welfare) Regulations require that sites be maintained in good order. Poor housekeeping is a common, but easily preventable, cause of accidents.

Main points:

- There should be a place for everything, and everything should be in its place.
- Do not rely on others to clean up – they won't.
- Put tools away when not in use, as well as reducing a trip hazard it will keep them safe.
- If working with oils/lubricants then have some means of cleaning up any spillages at hand.
- Suspend power/light cables where practicable. Where not practicable avoid trailing them across walkways if possible.

Discussion points:

- Remove all nails from dismantled/unused timber – where not possible then hammer flat.
- Stack both stores and waste neatly – ensure that walkways/escape routes are not obstructed.
- Clean up waste as it is created; small waste can be bagged, larger waste stacked and then skipped as soon as is practicable.
- Use racks when storing lengths of pipe or timber. Where pallets are used then do not stack too high.
- If working at height then loose objects must not be left on walkways, platforms, etc, where they could fall and injure persons below.
- Beware muddy sites - these will greatly increase risk of slips. Keep footwear as clean as is reasonably practicable; ensure loose mud is removed prior to climbing ladders, etc.
- Try and allocate a set period each day to general housekeeping (possibly at the end of the day?)

IF YOU THINK AND ACT SAFELY,
THE NEXT LIFE YOU SAVE COULD BE YOURS!

Notes:

Talk No: 3	Title: CLOTHING

Introduction: Suitable and sensible clothing is a pre-requisite of site safety and can provide effective protection against a wide range of hazards.

Main points:

- Wear head protection – it can save your life!
- Wear safety shoes/boots that provide protection to your toes and to the soles of your feet.
- Wear gloves where there is any risk to your hands.
- Wear hi-visibility clothing/vests – be seen.
- Keep clothing reasonably clean to protect against dermatitis, fire, etc.
- Avoid loose clothing – especially loose ends that can get in machinery, etc.

Discussion points:

- Skin cancer is deadly – keep skin covered when working in sunny conditions.
- Avoid exposed skin when working with substances such as cement, tar, insulation, etc.
- If clothing you are wearing becomes contaminated then remove it and get it washed.
- If working with hazardous substances consider use of suitable coveralls.
- Wear any PPE provided, and look after it so that it can look after you.
- Consider fire hazards: cotton burns easier than wool; is fire retardant clothing required?
- Jewellery, including rings, chains, etc, can be hazardous near machinery and when working on plant – consider taking off or taping up (also reduces wear and tear).
- Always dress properly, even for short jobs, and be prepared to swap or add clothing as required for specific tasks.

DRESSING SAFELY ISN'T BEING SILLY – IT'S BEING SENSIBLE

Notes:

Talk No: 4	**Title: EYE PROTECTION**

Introduction: It only takes a small fragment or splinter to cause irreparable damage to the eye, but most risks can be significantly reduced, if not eliminated, by simply wearing suitable eye protection.

Main points:

- You have a legal obligation to use eye protection provided in accordance with the regulations, and you should never enter an area where eye protection is required unless wearing such.
- Ensure eye protection provided fits you comfortably and is suitable for the job.
- Look after any eye protection provided. Keep them clean and report any damaged, lost or unserviceable eye protection immediately.

Discussion points:

- Even if not carrying out a task with an obvious eye hazard, you may be at risk from others nearby. Always have your eye protection with you and if any doubt – wear it!
- Eye protection only works when worn over the eyes – it is useless worn over the head or around the neck.
- Never watch any welding processes unless wearing suitable eye protection.
- Should you get something in your eye, or receive any sort of eye injury, then get a trained first aider to look at it.
- Always consider eye protection when compressed air, hazardous substances, cartridge-fired tools, power tools, power washers, hand tools such as chisels, etc, are in use.

EYE PROTECTION IS REPLACEABLE – EYES ARE NOT!

Notes:

Talk No: 5	Title: EAR PROTECTION

Introduction: Noise induced hearing loss is the most common occupational health hazard there is, and it is incurable. Once you're deaf, you stay deaf.

Main points:

- Compressors, concrete mixers, circular saws, breakers, etc, can all damage your hearing.
- You do not have to be using noisy equipment to be affected by it, just be in the vicinity.
- If you have to shout to be heard then the noise level can be regarded as high enough to warrant the wearing of ear protection.

Discussion points:

- Wear ear protection at all times when exposed to a noise hazard (obey noise hazard warning signs).
- Wear proper ear protection and wear it properly (ie cotton wool is no good for ear protection and ear muffs are no good worn over a balaclava).
- If ear plugs are used ensure they are a good fit, are fitted properly, and are kept clean.
- Use disposable ear plugs only the once.
- Keep reusable ear plugs clean.
- Ear muffs must be a good fit, particularly where the seal fits the head, and must be worn the correct way around.
- Ensure hands are clean when handling all types of ear protection, and store ear protection in a clean environment.
- Do not alter pressure of ear defenders by bending the band.
- Report any damaged, lost or unserviceable ear protection immediately.
- Consider options for reducing noise in the workplace, ie turn off unused machinery, keep cement mixer and compressor covers closed, ensure air lines do not leak, fit mufflers to tools where applicable, move noise source away, shield noise source, etc.

YOU COULD PAY THE PRICE FOR GETTING IT WRONG
FOR THE REST OF YOUR LIFE!

Notes:

Talk No: 6	**Title: SKIN PROTECTION**

Introduction: Occupational dermatitis is a common health problem within the construction industry. Potential causes include cement, pitch, tar, paints, varnishes, brick, stone and plaster dust, mineral oils, organic solvents, thinners, petrol, and white spirit, to name but a few.

It most commonly affects the hands, forearms and legs, but in dust, mist and/or fume form it can also affect the face, neck or chest, etc, (any exposed area of the body). Some types of dermatitis, if untreated, can result in cancer.

Main points:

- Look for the hazard warning signs on substance containers.
- Avoid contact with potential causes so far as is reasonably practicable, where contact is unavoidable wear suitable PPE.
- Report any rashes, warts and/or skin complaints to the site manager, nurse or family doctor as soon as possible.

Discussion points:

- Get first aid for any cuts and grazes and keep them covered.
- Keep your workplace clean.
- Keep your skin clean and use after wash cream.
- Use barrier creams where appropriate.
- Don't use abrasives or solvents to clean your skin.
- Don't wear oil contaminated clothes next to your skin.
- Don't let synthetic resins or glue harden on your skin.
- Don't work with irritant/allergic substances if you suffer from eczema or allergic rashes.
- Regularly inspect your skin for any possible signs – if in any doubt seek advice from a professional.

THE PURPOSE OF THE SKIN IS TO
KEEP THE OUTSIDE OUT AND THE INSIDE IN

Notes:

Talk No: 7	Title: SUBSTANCE ABUSE

Introduction: Substance abuse includes alcohol and/or drugs. In a high risk industry such as ours, drink/drugs and work don't mix; both impact on brain function reducing levels of awareness and alertness, and slowing down reaction times.

Main points:

- If you are suspected of being under the influence of drink or drugs at work you will sent off site and face the possibility of disciplinary action.
- Ultimately you could lose your job, and a reputation of having a drink/drug problem could make finding other employment difficult.
- Those under the influence of drink or drugs are not only a risk to themselves but to every employee on site – do not let them put you at risk.

Discussion points:

- Don't get drunk the night before and expect to work safely on site the next day. Alcohol takes time to work its way out of the system. As a rough guide a single unit of alcohol (a single spirit or glass of wine, or ½ a pint of beer) will take one hour to leave your body.
- Be aware of the signs of drug use which include watery eyes, pin-point or dilated pupils, running nose, constant sniffing, tight lips, sores, ulcers, trembling, fatigue and irritability. If you see such signs then report it and help eliminate a serious risk – ignore it and it could be you that gets hurt!
- Be aware of prescribed drugs as well as illegal drugs. Some prescribed drugs can cause drowsiness, etc – be responsible. If you are on prescribed drugs advise your site manager.
- Confine your drinking to social occasions where there is suitable recovery time, and if offered drugs just say "no!". As well as creating a risk in the workplace, drink and drug abuse will damage your body.

35% OF ALL FATAL ACCIDENTS ARE RELATED TO DRINK/DRUG ABUSE – DON'T BECOME A STATISTIC!

Notes:

Talk No: 8	Title: WORKING AT HEIGHTS

Introduction: Falling from height is the major cause of fatalities in the construction industry. More than half of falls from a height of over 2 metres result in death or serious injury. All such deaths and serious injuries are preventable.

Main points:

- Can work at height be avoided and the risk eliminated?
- Plan work at height to include safe access/egress, edge protection (for people and materials), PPE and suitable training as applicable.
- Any work above 2m requires guard-rails, intermediate guard-rails and toe-boards to be fitted.
- Where impracticable to fit guard-rails, intermediate guard-rails and toe-boards (short duration) then personal suspension equipment/fall arrest equipment must be utilised as required.

Discussion points:

- If roof work is involved identify any fragile areas and/or openings and implement suitable protective precautions.
- Access ladders must be secured and extend sufficiently beyond working platforms to allow for safe access/egress.
- Where access ladders run for more than 9m then suitable intermediate platforms must be provided.
- Consider weather conditions – wet, windy and/or icy conditions can have a serious impact on safety at height.
- Ensure operatives are suitably trained and physically capable for tasks being undertaken.
- If guard-rails, fragile surface covers, void protections, etc, are removed for any reason then they must be replaced as soon as possible, and in the interim should be physically guarded.
- Use crawling boards/roof ladders where applicable.

IT'S NOT THE FALLING THAT HURTS – IT'S THE LANDING!

Notes:

Talk No: 9	Title: SCAFFOLDING

Introduction: Falls of both persons and objects from scaffolding are a major cause of accidents in the construction industry, and in some cases the scaffold itself falls! All are preventable.

Main points:

- Scaffolding must be planned according to requirements including loads, platforms, safe passage, access/egress, etc.
- Scaffolding should only be erected, adjusted and dismantled by, or under the supervision of, a competent (properly trained) person.
- Scaffolding must be maintained and this is the responsibility of all employees. Do not tamper with scaffolding and report any faults or concerns immediately.

Discussion points:

- Safe access/egress must be provided, which will normally comprise ladders. These must be secured and extend sufficiently beyond platforms for safe mounting/dismounting. On no account should employees be climbing scaffold.
- Scaffold platforms must be fully planked out where practicable, and should provide a passage for people of at least 600mm in width.
- Where stores are stacked on scaffold platforms then consider load weights, ensure 600mm passage is maintained, do not stack materials too high, and stack near standards as opposed to centre of bays.
- Over 2m in height then guard-rails, intermediate guard-rails and toe-boards are required.
- Where guard-rails are removed to facilitate loading they must be replaced immediately – consider purpose built loading bays.
- Scaffolding must be suitably tied to structures. On no account remove ties – get a scaffolder to do it.
- Do not use incomplete or unsafe scaffolding – report it and get it signposted prohibiting use.
- Scaffolding should be formally inspected after initial erection, after significant alteration, after any destabilising event, and at least once every 7 days. The findings should be recorded.

A HANGMANS NOOSE IS SUPPORTED BY A SCAFFOLD
– ENSURE YOUR SCAFFOLDING ISN'T AS LETHAL!

Notes:

Talk No: 10	Title: MOBILE TOWER SCAFFOLDS

Introduction: Mobile tower scaffolds provide a very useful and efficient working platform for numerous tasks when used properly. When misused, they provide a means of serious injury to both users and other employees.

Main points:

- Plan use of mobile tower scaffolds. Ensure SWL's are sufficient, that manufacturers guidelines are complied with, and that a competent person is available to erect, adjust and dismantle.
- Check all mobile tower scaffolds prior to use; check general condition, check brakes/locking devices are working, check free rotation of wheels, check all bracings are in place, check for suitable access/egress and for suitable platform.
- Where height exceeds 2m then guard-rails, intermediate guard-rails and toe-boards must be fitted (note this is a minimum requirement – recommended that they be fitted regardless of height).

Discussion points:

- Check manufacturers guide for base to height ratio. General rule is that the height should not exceed 3 times the narrowest base width, ie where narrowest base width equals 1.5m, height should not exceed 4.5m. (Note: this can be extended by use of outriggers.)
- Mobile tower scaffolds should only be used on level, firm surfaces. If surface is soft or not level then should only be used where adequate support is provided.
- Wheels should be locked whenever the tower is in use.
- Only integral ladders should be used – on no account rest ladders against outside, or use ladders off of mobile tower platforms.
- Ensure all persons and materials are removed from mobile tower scaffolds prior to moving, move by pushing at the base, avoid potholes/uneven surfaces, and beware of overhead obstructions – especially power lines!
- Mobile tower platforms should be fully boarded out where practicable - must be a minimum of 600mm wide.
- Consider tying the tower to structures where applicable.

MOBILE TOWER SCAFFOLDS ARE AN ASSET – NOT A SHORTCUT.
NO JOB IS SO URGENT THAT IT CAN'T BE DONE SAFELY!

Notes:

Talk No: 11	**Title: LADDER USE**

Introduction: Ladders are one of the most used, and abused, pieces of equipment on a construction site. When abused and misused, they have enormous potential to cause accidents and injuries.

Main points:

- Ladders are essentially a means of access/egress and should only be used as working platforms for very short duration tasks, where alternative platforms would be impracticable, and where such tasks can be carried out safely using a ladder.
- Only industrial class ladders should be used, which are in good condition (no missing/broken rungs, split stiles, etc).
- Ladders must be suitable angled (1 unit out for every 4 units up) and suitably secured (preferably tied off at the top using both stiles to prevent both sideways slip and rotation).

Discussion points:

- Ladders must extend sufficiently beyond working platforms to allow for safe access/egress.
- Ladders must not be painted (this hides defects), should be stored correctly, and be subject to regular inspection.
- Never take serviceability for granted, always carry out a visual check prior to use. Report any defects immediately.
- Never carry out home made repairs on a ladder, and never use a ladder with existing home made repairs, and never use a home made ladder!
- Always stand ladders on a firm base. Never use milk crates, oil drums, etc., to gain extra height, and if ground is soft use suitable support. Consider staking at bottom.
- Never use rungs as a support for planks, or rest rungs on planks.
- Remove excessive mud, grease, etc., from footwear prior to climbing/descending a ladder.
- Always use both hands to climb/descend, and face the ladder.
- Do not carry loads up ladders – use hoists or alternatives.
- Never over reach from ladders – get down and move them.
- Avoid using metal ladders against metal surfaces – the reduced friction makes them more liable to slipping.
- Beware of overhead obstructions, especially overhead power lines (metal ladders/metal reinforcements).

SILLY PEOPLE TAKE CHANCES – SENSIBLE PEOPLE TAKE PRECAUTIONS

Notes:

Talk No: 12	**Title: WORKING PLATFORMS**

Introduction: Working platforms can comprise of almost anything used to achieve your task. Primary examples include trestle platforms and stepladders, both of which are potentially hazardous if not used properly and safely.

Main points:

- Trestle platforms, stepladders, etc, should generally only be used for light, short-term work. Consider alternatives if this description doesn't apply.
- Only equipment designed for use as working platforms should be used as such. Makeshift platforms are generally unsafe and unnecessary.
- The minimum width of any working platform should be 600mm.
- Where 2m in height is reached then guard-rails, intermediate guard-rails and toe-boards must be fitted.

Discussion points:

- Ensure the surface upon which a working platform is to be erected is suitable, ie level and firm.
- Consider access to the working platform.
- Never "piggy back" trestle platforms.
- Only case hardened pins should be used in trestle bearers – not nails, brick ties, etc.
- Never balance trestles, stepladders etc, on breeze blocks, oil drums etc, to gain extra height.
- Do not use trestles, stepladders etc, on scaffolding, tower scaffolds etc, to gain extra height.
- When using stepladders check the rungs, stiles, hinges, and restraining ropes/chains prior to use – if defective then take out of service and report it.
- Stepladder rungs must not be used to support boards and create working platforms.
- Do not over reach when working from stepladders – get down and move them!
- Never use working platforms such as stepladders and trestles near to exposed leading edges, voids, risers, lift shafts, etc.
- Do not work more than two thirds of the way up a stepladder (remember handholds), and ensure they are fully extended prior to mounting.

CATS MAY HAVE NINE LIVES – YOU HAVE ONLY ONE!

Notes:

Talk No: 13	**Title: ROOF WORK**

Introduction: Roof work is inherently hazardous and results in a significant number of serious accidents every year. Don't become a statistic.

Main points:

- Is it necessary to actually go on the roof? Are there alternatives such as tower scaffolds, mobile elevated work platforms (MEWPs), etc?
- A risk assessment should be carried out for every roof to be worked on.
- Only suitably trained operatives should be permitted to work on roofs.

Discussion points:

- A safe method of work must be agreed prior to any roof work commencing.
- Consider methods of access/egress – these must be safe.
- Suitable and sufficient edge protection must be provided to prevent falls of both persons and materials (scaffolding, guard-rails, etc) – physical protection!
- Hazard tape, rope etc, can only be used where employees are not going to go within 2m of a leading edge, opening, etc.
- Identify all openings and securely guard or cover them.
- Suitable crawling boards and roof ladders must be provided for sloping and/or fragile roofs (unless suitable battening is to be used).
- Where crawling boards are to be used for access/egress or used near leading edges/openings then guard-rails, intermediate guard-rails and toe-boards must be fitted.
- Where it is impractical to provide edge protection then safety harnesses must be worn and suitable anchor points utilised.
- Always consider the weather – wet, windy and/or icy conditions can seriously impact on roof work.
- Consider how you are going to get stores up (hoists, etc) and waste down (rubbish chutes, etc).
- Consider recovery procedures in the event of an accident, ie a person hanging from a safety line, getting a casualty down from the roof etc.

PREVENTING AN ACCIDENT IS ALWAYS POSSIBLE
– REPAIRING A BROKEN BODY ISN'T!

Notes:

Talk No: 14	**Title: USE OF HOISTS**

Introduction: Hoists are an excellent accessory when used properly. If misused, they can be extremely dangerous.

Main points:

- The erection, alteration and dismantling of hoists should be carried out only by suitably trained and qualified personnel.
- Hoists must be clearly marked denoting whether they are for personnel or materials use, or for both, and with the Safe Working Load (SWL).
- Hoists should be operated only by suitably trained and competent personnel.

Discussion points:

- Hoist towers must be suitably tied to the hoist structure.
- Passenger hoists must be fitted with interlocking gates at each landing space, and all gates must be kept closed when the hoist is in operation.
- Hoist design and construction should prevent the fall of any materials from any platform or cage.
- Hoists must be fitted with a braking device that operates in the event of a lifting gear failure.
- Such braking devices must be re-tested following any significant adjustment or alteration to the hoist.
- Personnel must never travel in hoists designed for material loads, and material loads must never exceed SWL's.
- Hoists must be subject to periodic thorough examinations by competent persons (in the case of personnel hoists this is at least every 6 months).
- A system of local interim inspections should also carried out on a regular basis (weekly?) and the results recorded.
- Hoists must be suitably secured when not in use to prevent unauthorised use.

IF YOU THINK SAFETY RULES ARE A PAIN
– CONSIDER THE PAIN OF AN ACCIDENT!

Notes:

Talk No: 15	Title: MOBILE ELEVATED WORK PLATFORMS

Introduction: Mobile Elevated Work Platforms (MEWP's) are useful pieces of plant when used properly. However, they combine height with mobility and can be extremely dangerous if misused.

Main points:

- Ensure the correct MEWP is selected for the task (ground, height, SWL, etc).
- Only suitably trained operators can use MEWP's (must be trained for that specific item of plant).
- Continually monitor weather conditions.

Discussion points:

- Assess ground conditions (uneven surface could result in MEWP overturning).
- Check for overhead obstructions (especially overhead power lines) remembering height MEWP can be extended to.
- Beware of collision with other vehicles, plant, equipment, scaffold etc, be particularly aware when using near public footpaths and streets. Remember to allow for boom, arcs etc.
- Always check that the plant is stable prior to use, deploy stabilisers, outriggers etc, as required.
- Any tools, materials etc, taken on board must be secured so far as is reasonably practicable to ensure they don't fall from the edge.
- It is recommended that operators employ safety harnesses as secondary protection.
- Never exceed Safe Working Loads.
- When manoeuvring in tight areas or near public rights of way ensure a banksman/signaller is deployed.
- Consider refuelling options (LPG, Diesel, etc). Refuelling should take place in the open air where practicable, and the engine must be switched off.
- Any diesel spillages, etc, should be cleaned up immediately.
- MEWP's must be subject to thorough examinations at least once every six months, and should be subject to regular local inspections (weekly?) the findings of which should be recorded.

EVERY ACCIDENT IS OWNED BY SOMEONE SOMEWHERE

Notes:

Talk No: 16	Title: USE OF ELECTRICITY

Introduction: Electricity is silent, invisible, and potentially fatal, so it deserves the utmost respect. Never ever take electricity for granted, and never assume a circuit is dead.

Main points:

- The lowest practical voltage should be used on construction sites, which should not exceed 110v.
- Only suitable and authorised electrical supplies and equipment should be used, which should be installed and maintained by trained electricians.
- Suitable protection such as circuit breakers, fuses, and residual current devices, must always be used, along with the correct load ratings.

Discussion points:

- Electrical cables should be suspended where practicable to avoid damage and damp (which also reduces a trip hazard).
- Carry out visual checks of plugs, sockets and cables – if any damage is identified then remove from service and report immediately.
- Any cable joins must utilise proper connector blocks, not just insulating tape.
- Never use lighting sockets to power equipment.
- Ensure cables are long enough for the task – they should not be pulled taut.
- The inner insulation of cables should never be visible – the outer insulation should extend into plugs and equipment and fully utilise cable grips.
- Blown fuses should be replaced immediately – never make do with a “bodge” (note: if a replaced fuse immediately blows again then it is indicative of a problem requiring the attention of an electrician).
- For electrical maintenance work ensure the mains supply is disconnected.
- Never overload electrical sockets – one plug per socket!
- Where “emergency stop” switches are present ensure they are tested regularly.

LIVE ELECTRICITY CAN EQUAL A DEAD PERSON
– ENSURE IT ISN’T YOU OR YOUR MATES!

Notes:

Talk No: 17	Title: PORTABLE ELECTRICAL APPLIANCES

Introduction: Electrical appliances used on site are subject to harsh treatment and can easily become worn and/or damaged. They can then become lethal.

Main points:

- All portable electrical appliances should be subject to regular inspection and maintenance by a competent person (electrician).
- They must only be used at the correct voltages – this should be 110v maximum on a construction site.
- Visual checks of cables, casings and plugs should be carried out prior to use. If any damage is identified then remove from service and report immediately.

Discussion points:

- Check that suitable protection devices such as fuses, circuit breakers and residual current devices are in place, and that any fuses have the correct load ratings.
- Only use portable electrical appliances for the purpose for which they were designed.
- Ensure switches are working properly at the earliest opportunity (prior to starting the task).
- Disconnect power tools when not in use.
- All power tools must be properly earthed unless it is an approved type that does not require earthing.
- Use of portable electrical appliances will often require wearing of suitable PPE such as eye and/or ear protection – ensure you wear them as required.
- Never connect portable power tools to lighting sockets.
- Never use blunt, worn or damaged bits and accessories.

IT'S TOO LATE TO CARRY OUT BASIC CHECKS AFTER AN ACCIDENT!

Notes:

Talk No: 18	Title: WELDING OPERATIONS

Introduction: Welding is a multi-risk operation to both operatives and others in the vicinity that must be strictly controlled.

Main points:

- Only trained operatives can undertake welding operations.
- Welding operations will always require the wearing of suitable personal protective equipment.
- Fire is an ever present risk when welding and suitable precautions must be taken.

Discussion points:

- Infra red rays, visible light rays and ultra violet radiation are hazardous to the eyes and skin. Wear suitable skin and eye protection (basic eye protection will always be required, and normally filter protection will be required).
- Consider the risks to other employees and provide suitable protection/procedures such as confining welding to specific areas, use of welding screens, etc.
- Wear suitable clothing that covers bare skin and is flame resistant.
- Welding and cutting produces fumes and gases that can harm the respiratory system (some fumes from lead or toxic coated materials can also affect the rest of the body) – wear filtered respirators for low volume work. Permanent welding locations should have local exhaust ventilation fitted.
- Have CO2 or dry powder fire extinguishers at hand, check areas where welding operations have been undertaken at least 30 minutes after work has been completed for any residual fire risks.
- Compressed gas cylinders pose a fire and explosive risk.
- Ensure only the minimum number of cylinders are stored on site as are required, ensure they are stored upright, ensure flash back arrestors are fitted at cylinder gauge ends and non-return valves at inlets to the blowpipe, ensure valves are closed prior to moving.
- The primary risk from electric arc welding is electric shock – check insulation, earthing, equipment condition and protective devices.

GLOVES AND MASKS PROTECT THE USER
– SAFE SYSTEMS OF WORK PROTECT EVERYONE

Notes:

Talk No: 19	Title: MANUAL HANDLING

Introduction: Manual handling in construction is unavoidable, thus it is essential that it is carried out correctly to avoid both immediate and long term injuries.

Main points:

- The primary aim is to eliminate manual handling so far as is reasonably practicable (ie use mechanical handling).
- Where manual handling must be carried out then it must be assessed, and proper procedures must be used.
- Plan deliveries and storage to take into account load sizes, locations and distribution.

Discussion points:

- Assess all loads: are they heavy, bulky, unstable, difficult to grasp, sharp etc? Size up the load and, if necessary, make a trial lift by rocking it from side to side and then lifting it a few inches.
- Can you handle the load yourself or do you need assistance?
- Wear suitable clothing and PPE such as gloves and safety boots to protect against cuts, crushed toes etc.
- Is there sufficient space, suitable lighting and a clear route to where you are taking the load?
- Do not carry a load that will obscure your vision.
- If necessary move loads in stages.
- Always use a good handling technique:

1. Stand reasonably close to the load, feet hip width apart with one foot slightly forward pointing in the direction you're going.
2. Bend your knees whilst keeping your back straight.
3. Get a secure grip on the load.
4. Breathe in before commencing the lift.
5. Carry out the lift smoothly using the legs to take the strain, keeping the back straight, chin up, and arms close to the body.
6. Step off in the direction the advanced foot is pointing, keeping the load close to the body.
7. If necessary, stop for rests en-route.
8. Avoid any jerky or twisting movements.

GET IT WRONG TODAY AND YOU COULD SUFFER THE CONSEQUENCES TOMORROW – AND POTENTIALLY FOR THE REST OF YOUR LIFE!

Notes:

Talk No: 20	Title: SAFE STACKING ON SITE

Introduction: Unsafe stacking can cause injuries as a result of collapse, or when materials have to be collected from stacks. In contrast, safe stacking not only reduces risk, but also enhances site efficiency.

Main points:

- Only stack materials in designated areas ensuring that escape routes, doorways etc, are not obstructed.
- Stack on level, firm surfaces, use packing where appropriate, and never stack materials higher than three times the base width.
- Make sure you wear suitable protective clothing such as gloves and safety boots, and use handling accessories as appropriate.

Discussion points:

- Use machinery were possible eliminating the need for manual handling. Where manual handling is unavoidable, carry out an assessment.
- Stack small pipes in racks, whilst large diameter pipes must be securely chocked at the base.
- Do not stack pipes in pyramids – they are not sufficiently stable.
- Large concrete rings must be laid flat so they cannot roll.
- Small sized timbers should be stacked in racks.
- Bearers should be used for larger timbers and joists – use cross packing to keep level.
- Where possible keep different length timbers in different stacks.
- Large prefabricated panels should be stacked flat or in suitable racks – they should never be leant against temporary structures, parts of buildings, or where the wind could affect them.
- Store bricks/blocks/palleted materials on level surfaces and ensure heights are controlled - only stack two packs high, and place upper stacks squarely on lower stacks.
- If banding is damaged or materials are displaced then do not stack other materials on top - where necessary make lower stacks safe.

YOU WERE BORN WITH TWO ARMS, TWO HANDS, TWO LEGS AND TWO FEET – LET'S KEEP IT THAT WAY

Notes:

Talk No: 21	Title: USE OF CARTRIDGE OPERATED TOOLS

Introduction: Cartridge operated tools are potentially lethal if misused and should always be treated with respect.

Main points:

- Cartridge operated tools, including rivet guns, should only be used by properly trained persons (those issued with a certificate of authority).
- Read and understand the manufacturers instructions prior to use and comply with them at all times.
- Before handling a gun, and before putting it away, ensure it is not loaded.

Discussion points:

- Always load with barrel pointing in safe direction (away from you and not at anyone else).
- Never walk around on site with a loaded tool/gun.
- Never place your hand over the end of the barrel.
- Ensure cartridges are suitable for material being fired into (no too powerful) – consider a test fire.
- Beware of voids in material being fired into and allow at least 75mm (3") from edges of concrete or brickwork.
- Always hold gun/tool at right angles to material being fired into – ensure splinter guard is resting on surface.
- Always wear suitable PPE (eye protection and ear defenders as a minimum).
- In the event of a misfire wait one minute and try again. If still a misfire, then wait a further minute prior to unloading.
- Keep guns/tools well maintained and clean – never leave a gun loaded.
- Cartridges are explosives and must be strictly controlled (kept under lock and key, restrict issue, account for fired cartridges and ensure unfired cartridges are returned).

IT'S TOO LATE TO PLAN FOR SAFETY AFTER THE ACCIDENT HAS HAPPENED!

Notes:

Talk No: 22	Title: USE OF HAND TOOLS

Introduction: Misuse and poor maintenance of hand tools result in countless injuries every year. Whilst many may be considered “minor” - all are avoidable by complying with relatively simple procedures.

Main points:

- Only ever use the right tool for the job.
- Maintain all tools in a serviceable condition – if unserviceable either repair or replace.
- Control/protect tools with obvious risks (Stanley knives, etc).

Discussion points:

- Use correct size spanners/sockets for nuts – if using adjustables, be extra cautious as these are more prone to slipping.
- Always keep hands behind cutting edges when working.
- Grind down mushroomed heads of chisels, punches, etc to prevent splinters flying off.
- Do not use screwdrivers as chisels – handles splinter.
- Replace split or damaged wooden handles – do not tape or wire up.
- Regularly check hammer heads, etc for security of fixings.
- All files should be fitted with suitable wooden handles.
- Where necessary use specialist tools (insulated screwdrivers on live electrics).
- Protect sharp edges/points of tools.
- Keep tools in toolboxes or racks when not in use.
- Where applicable ensure suitable PPE is worn (eye protection, gloves, etc).

MINOR ACCIDENTS CAN RESULT IN MAJOR INJURIES
(A SPLINTER FROM A MUSHROOMED CHISEL HEAD CAN BLIND YOU!)

Notes:

Talk No: 23	Title: FIRE SAFETY

Introduction: Fire is a major risk both to persons and to property. You can either help prevent fires, or you can help start/allow them.

Main points:

- Ensure you are aware of the fire drill including the means of raising the alarm, escape routes, and the assembly point.
- Ensure you know where the nearest fire point is, what types of fire extinguisher are there, what types of fire they can be used on, and how they should be used (never put yourself at risk!)
- Never obstruct any fire points, fire doors or escape routes.

Discussion points:

- Never misuse or tamper with anything provided for fire prevention or fighting (never discharge fire extinguishers during horseplay).
- Don't hang clothing/materials over or near heating equipment.
- Control rubbish – don't let paper, rags, etc, accumulate.
- Store flammable liquids in suitable containers – well away from any sources of ignition, keeps lids on containers when not in use.
- Control smoking – use designated areas if necessary.
- Don't overload electrical sockets – one plug per socket!
- If electrical equipment is not in use then switch off at the mains
- Bitumen boilers, soldering irons, gas rings, etc., must be placed on non-combustible stands.
- Carry out residual heat checks 30-60 minutes after any hot work has been carried out.
- Always have a fire extinguisher within arms reach when carrying out hot work.
- Obtain hot working permits where applicable.

FIRE DESTROYS PEOPLE AND PROPERTY
– SAFE PEOPLE PREVENT FIRES

Notes:

Talk No: 24	Title: DEMOLITION WORK

Introduction: All demolition work carries an inherent risk, with primary hazards being falls and unplanned collapse.

Main points:

- Structures for demolition must be fully assessed for services, hazardous substances/materials (ie asbestos), and design.
- All demolition work must be suitably planned and method statements should be produced.
- All demolition work must be supervised by a competent person.

Discussion points:

- Never enter a building if it appears unsafe.
- Select and use suitable plant (including protected cabs).
- Wear PPE including masks, head protection, safety footwear, gloves and eye protection. Respirators/dust masks should be worn where required (dusty conditions).
- Only work from safe platforms (scaffolds, etc.) with safe access/egress.
- Protect the public using suitable exclusion zones, keep footpaths and roads clear of debris, damp down dust, minimise noise, and store any hoardings/materials in safe locations inside the site.
- Use banksmen for plant where appropriate.
- Never demolish walls, floors, etc., adjacent to other workers.
- Don't overload floors, supporting structures, etc.
- When cutting steel secure gas bottles, ensure flashback arrestors are used, store any spare bottles in suitable compounds and protect hoses.
- Ensure adequate fire fighting facilities are present.
- Do not burn materials/rubbish on site (unless specific permission has been granted).
- If in any doubt regarding procedures – ask!

SAFETY CULTURE IS WHEN PEOPLE ACT AND BEHAVE SAFELY – EVEN WHEN NO-ONE IS LOOKING!

Notes:

Talk No: 25	Title: EXCAVATION WORK

Introduction: Trenches are potential killers. The majority of fatal trench accidents occur where the depth is less than 1.5m. A cubic metre of earth can weigh over 1.5 tonnes – which will crush a man.

Main points:

- Prior to any digging carry out thorough checks for services.
- Plan excavations including shoring requirements, safe access/egress, etc.
- Ensure any support/shoring materials are present on site prior to commencing excavations.

Discussion points:

- Excavations must be supported/battered back where necessary to prevent collapse.
- Use ladders for access/egress – do not climb supports.
- Provide edge protection around excavations to protect other workers, the public, etc.
- Keep soil heaps, tools and vehicles back away from the edge of excavations.
- Never throw tools/materials into an excavation – always pass hand to hand or lower on a rope.
- Wear suitable PPE, including head and foot protection.
- Do not jump across excavations – provide suitable bridges where required.
- If vehicles are to be used to fill then position stops to ensure vehicles cannot drive into excavations.
- Never adjust/adapt supports/shoring without first getting approval from person in charge.
- Excavations must be inspected prior to entry, at the start of each shift, and after any destabilising event (including heavy rain).
- Excavations must be formally inspected by a competent person at least once every seven days and the results recorded.

THE MESSAGE IS SIMPLE
– DON'T DIG YOUR OWN GRAVE!

Notes:

Talk No: 26	Title: USE OF LIFTING EQUIPMENT

Introduction: Unsafe lifting practices result in numerous incidents every year, including serious and sometimes fatal accidents. Remember that lifting equipment now includes plant such as forklift trucks, telescopic handlers, MEWP's, hoists, gin wheels, etc, as well as cranes.

Main points:

- All lifting operations should be planned, and be supervised where applicable.
- Lifting equipment and accessories must only be used for the purpose for which they were designed (ie buckets are not designed for lifting persons).
- Lifting equipment and accessories must only be used by trained personnel or under strict supervision.

Discussion points:

- All lifting equipment must be marked with safe working loads (SWL's) which must never be exceeded.
- Beware of overhead obstructions such as overhead power lines.
- Use banksmen/slingers wherever applicable.
- Ensure all loads are stable and secure.
- Beware of weather conditions – especially wind conditions when using cranes.
- Ensure load is lifted off the ground, free, and correctly slung before hoisting.
- Always wear a safety helmet and hi-visibility vest.
- Never stand under a suspended load, and control movement under any such loads (exclusion areas).
- Use hand signals where applicable, using only approved code signals, ensuring they are clear and distinct.
- Use cranes to lift and lower loads vertically – never drag loads.
- If necessary attach tag lines to assist in stability.
- Lifting gear should be formally checked regularly, and visually inspected for any obvious damage prior to use.
- Riding on loads is strictly prohibited, as is riding in unauthorised positions on any lifting equipment.
- When using forklifts travel with the load in the lowest practicable position and don't raise it on the move.

MURPHY'S LAW ONLY APPLIES WHEN YOU HAVE FAILED TO PLAN PROPERLY

Notes:

Talk No: 27	Title: USE OF LIFTING ACCESSORIES

Introduction: Misuse and/or neglect of lifting accessories are a common cause of accidents, some of which prove fatal.

Main points:

- All lifting accessories should be marked with a safe working load (SWL) which must never be exceeded (note that some rope slings may not be marked but these should be accompanied by test certificate indicating the SWL).
- Only ever use the correct type of lifting accessories for the task in hand, and only ever use them in the manner intended.
- Visually inspect lifting accessories prior to use for any obvious faults – if in doubt do not use.

Discussion points:

- Never use fibre rope or wire slings for hot loads and protect them from hot work such as welding.
- Protect nylon and wire rope slings from sharp edges.
- Never tie a knot in a chain sling to shorten it or join pieces together to lengthen it, and ensure there are no kinks or twists prior to use.
- Don't lubricate chain slings – they then pick up abrasive materials.
- Use only approved "C" type hooks or those fitted with a working safety catch.
- Check splices, rings and thimbles on any slings, and check the bow and pin on any shackles (never use home made shackles).
- Land loads onto suitable bearers to avoid damaging lifting accessories and to assist in easy removal.
- Ensure your hands are clear of ropes and chains before the load is taken, and stand well clear.
- Ensure all lifting accessories are suitably stored when not in use – they should not be left laying on the ground where they can get damaged.

A CHAIN IS ONLY AS STRONG AS ITS WEAKEST LINK

Notes:

Talk No: 28	Title: BANKSMEN/SLINGERS

Introduction: The movement of loads around a site, whether by teleporter, crane or whatever, entails an element of risk. The use of banksmen/slingers can significantly assist in controlling these risks.

Main points:

- Any banksmen/slingers must be competent, ie must have received formal training.
- All lifting operations should be suitably planned prior to commencing.
- Ensure effective communications are in place.

Discussion points:

- Visually inspect all lifting gear daily – if in doubt do not use.
- Ensure safe working loads (SWL's) are always complied with.
- Establish communications with the crane driver where applicable – if you can't see him then use radios (ensure radios are fully charged before the start of shifts).
- When using signals then stand where you can clearly see the load, the crane operator can clearly see you, and make your signs clear and distinct using only the approved codes.
- Ensure you are aware of all relevant hazards on site including overhead power lines, excavations, etc.
- Always wear a safety helmet and hi-visibility vest.
- Always ensure crane hooks are centrally located over loads to reduce swinging when raised.
- Ensure loads are lifted off the ground, are free, and are correctly slung before hoisting.
- Use guide ropes to steady loads where applicable.
- When a crane is in operation, then concentrate on your task, do not become distracted, and on no account leave the area unless relieved by another competent person.
- If the crane is travelling, ensure you warn the driver of obstructions, sharp corners, etc.

REMEMBER: PEOPLE CAUSE ACCIDENTS - NOT EQUIPMENT!

Notes:

Talk No: 29	Title: USE OF ABRASIVE WHEELS

Introduction: Misuse of abrasive wheels continue to result in accidents, often because the wrong type of wheel is fitted.

Main points:

- Wheels must only ever be fitted/replaced by a competent person.
- Machine speeds must never exceed the maximum permissible speed of the wheel.
- Eye and ear protection should always be worn.

Discussion points:

- Don't exert heavy pressure on wheels.
- Don't use the sides of wheels.
- Keep fingers clear of cutting edge of wheel.
- Ensure any guards are always correctly fitted and used – the minimum wheel surface required for the task should be exposed.
- Be aware of other workers in the area – do not expose them to risk.
- Adjust tool rests to be as close as possible to the face of the wheel.
- Only reinforced discs should be used on hand held machines.
- Run replacement wheels for a full minute prior to using them ensuring you stand well clear.
- Always stop wheels when not in use.
- Keep the face of the wheel evenly dressed.
- Visually check wheels before use for any obvious faults – if in any doubt get verification.

PPE IS NO SUBSTITUTE FOR A SAFE SYSTEM OF WORK

Notes:

Talk No: 30	Title: CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSHH)

Introduction: Many hazardous substances are used in the construction industry. Ignoring a hazardous substance today is something you may regret tomorrow.

Main points:

- COSHH assessments must be carried out with the aim of elimination, substitution and reduction of exposure to hazardous substances.
- Any substance that has a hazard warning label has the potential to do harm – assess the risks before you use it.
- Employees must use hazardous substances as directed, following the required safety precautions, and using the required PPE as applicable.

Discussion points:

- Store hazardous materials in suitable containers, ensuring only as much as is needed is in the workplace, and that lids are replaced when not in use.
- Read labels on containers – if no label then do not use!
- Know the correct precautions and control measures.
- Avoid all unnecessary contact with hazardous substances.
- Know where the first aid and washing facilities are on site.
- Always wash hands after use, and do not eat, drink or smoke when handling hazardous substances.
- Ensure there is adequate ventilation when using hazardous substances.
- Never mix hazardous substances unless you are sure of what you are doing.
- Never expose other employees to fumes, dust, gas or any other dangers from hazardous substances.
- Don't store hazardous substances above head height.
- Always clean up any spillages, dispose of hazardous waste properly.

IF A DUST, FUME OR VAPOUR MAKES YOU COUGH,
CATCH YOUR BREATH, OR GIVES YOU A HEADACHE
THEN IT'S A SUBSTANCE HAZARDOUS TO HEALTH

Notes:

Talk No: 31	Title: VIBRATION

Introduction: Vibration can cause serious and disabling injuries, but many operatives are unaware of the risks. Many construction tools can cause vibration including road breakers, chainsaws, percussive hand tools, rotating hand tools, riveting guns, etc.

Main points:

- Reduce the potential for vibration by careful selection of work equipment (e use those with vibration absorbing features).
- If using work equipment that causes vibration, then plan the task so that it is broken up with other activities, or rotate the task amongst several employees.
- If you think you are suffering from the effects of vibration, then stop the activity immediately and speak to your supervisor. If necessary, seek medical advice.

Discussion points:

- Vibration can affect the whole body, but more commonly affects the hands and arms.
- The first signs may simply be a tingling in the fingers, but can also result in fatigue, irritation and loss of concentration – thus increasing the general risks to safety at work.
- Longer term effects can include damage to blood vessels, nerves, muscles, tendons and body organs, and potentially lead to "Vibration White Finger" (VWF).
- Always wear adequate clothing to keep dry and maintain hand and body temperatures (cold is a contributory factor to VWF) – note that heavily padded gloves do not protect against vibration and can even increase vibration levels.
- Always let the work equipment do the work for you. Grip the handle as lightly as possible whilst ensuring sufficient grip is maintained for safety.
- Do not use blunt tools – keep tools sharp and use the right tool for the job.
- Note that nicotine reduces the blood supply to hands and fingers, so if you are a smoker, you are at increased risk of VWF.

PREVENTING EXPOSURE IS RELATIVELY EASY
– CURING VIBRATION WHITE FINGER IS NOT!

Notes:

Talk No: 32	Title: HIGHLY FLAMMABLE LIQUIDS

Introduction: Highly Flammable Liquids (HFL's), including petroleum based adhesives, are used extensively throughout the construction industry and carry with them the risk of fire, serious accidents and injury.

Main points:

- Always look for the hazard symbol and wording on containers.
- Only ever have the minimum quantities at the place of work. Keep the remainder in suitable stores.
- Always keep the lid on containers when not is immediate use, and store correctly.

Discussion points:

- Always follow the manufacturer's instructions.
- Keep away from open flames and sources of heat (HFL's ignite at relatively low temperatures).
- Do not smoke in areas where HFL's are used or stored, and do not use equipment which generates heat and/or sparks (including electrical sparks).
- HFL vapours are generally heavier than air and will accumulate at ground level if they cannot disperse. Beware of drains, excavations, pits, etc, both when using and storing HFL's.
- HFL vapours can also be toxic, make you drowsy, etc. Only use in well ventilated areas, or, if this is not possible, respiratory protective equipment may have to be worn.
- HFL storage should comprise containers made of non-flammable material (don't forget the vapour hazards – ensure there is ventilation).
- Clear up any spillage immediately and safely dispose of contaminated cleaning materials. If inside a building, consider assisting vapour dispersal by opening windows, doors, etc.
- Consider covering drains to protect against entry by substance or its vapour where necessary and practicable.

IF YOU IGNORE HEALTH AND SAFETY
THE NEXT PERSON YOU INJURE COULD BE YOU!

Notes:

Talk No: 33	Title: USE OF COMPRESSED GASES

Introduction: Compressed gases, including Liquefied Petroleum Gas (LPG), are used extensively on construction sites and provide a valuable source of energy. Misuse, however, can result in fires, serious accidents and injuries.

Main points:

- Treat all cylinders as full.
- Regularly inspect hoses, cylinders and valves for damage and wear and tear.
- The likes of Oxy/Acetylene cylinders should only be used by competent persons.

Discussion points:

- Keep cylinders away from the sun, artificial heat, flammable materials, corrosive chemicals, etc. Do not smoke in vicinity.
- If a cylinder catches fire, then call the fire brigade. Cool the cylinder with water spray only if safe to do so.
- Always have fire extinguishers located within reasonable proximity to any hot work being carried out. Use hot work permits if appropriate.
- Ensure everyone knows fire procedures including alarm signal, evacuation routes, assembly area, and correct use of fire extinguishers (including types!)
- Avoid damage to cylinder valves and fittings. Don't use them as carrying aids. Open valves slowly and close sufficiently to cut off gas supply – do not use excessive force.
- Always secure acetylene cylinders in upright position. Ensure all cylinders are stored so that they cannot fall or roll.
- Consider manual handling of cylinders – they are heavy! Use a trolley for full size cylinders or get assistance.
- Always unload cylinders from lorries, vans, etc, by lifting – not by dropping/sliding.
- Transport cylinders in vehicles with good ventilation – ensure relevant signs (compressed gases) are clearly displayed on vehicles.

PEOPLE CAUSE ACCIDENTS – NOT EQUIPMENT!
LPG AND COMPRESSED GASES ARE VALUABLE "TOOLS"
– BUT CAN BE LETHAL IF NOT USED CORRECTLY

Notes:

Talk No: 34	Title: LEPTOSPIROSIS (WEIL'S DISEASE)

Introduction: The presence of rats on construction sites should be discouraged so far as is practicable, but to some extent can be unavoidable, and carries with it the risk of Weil's disease. The risk exists even where rats are no longer present, but were prior to work commencing, as the organism is carried in rats' urine.

Main points:

- Discourage the presence of vermin by disposing of waste food, etc, properly.
- Do not handle the carcasses of dead rats, etc, found on site.
- Always wash your hands and forearms using hot water and soap. If clothing is contaminated then bag it and wash it.

Discussion points:

- The leptospirosis organism contaminates humans by entering broken skin, or by passing through very thin linings such the eye, ear, nose, throat, anal and vaginal areas. Cover up any cuts and abrasions with waterproof dressings where there is any risk of rats. If you cut yourself whilst at work, get it treated by a doctor/nurse.
- Consider the use of suitable PPE to assist in protection (ie coveralls).
- Leptospirosis starts as a mild disease but becomes serious if left untreated, and can be fatal.
- Unfortunately the signs and symptoms are very similar to flu. If you have been exposed to the risk of leptospirosis, then advise your doctor – a simple blood test can quickly confirm either way.
- The greatest risk is to those working near water, who should consider carrying a card or tag warning of risk from the disease.
- Remember that if you fall into infected water, you run the risk of contamination via water getting into your nose, ears, mouth, etc. If in doubt get it checked.

IT CAN'T HAPPEN TO ME? YES IT CAN!

Notes:

Talk No: 35	Title: GENERAL SITE PLANT AND EQUIPMENT

Introduction: Site plant and equipment comes in many forms. It can be static or mobile, and can range from dumper trucks to welding sets. Whilst all such plant is beneficial to construction work if used correctly, it can pose a hazard if used incorrectly, and misuse can result in serious injuries.

Main points:

- Operators of power operated plant and equipment must be trained in its use.
- All such plant and equipment must be maintained in safe working order, and subject to formal inspection where applicable.
- All safety aids, such as guards, must be used.

Discussion points:

- Familiarise yourself, and comply with, manufacturer's instructions.
- Consider any risks to other employees nearby when using plant and equipment.
- Carry out visual checks for any obvious damage/defects prior to use – if in doubt, do not use, but advise your supervisor.
- Control access/use of plant and equipment – never leave unattended/unsecured.
- Do not carry passengers on plant unless it is designed for such.
- Consider use of banksmen when reversing, etc, always comply with site speed limits, one way routes, etc.
- Consider exhaust emissions – do these need to be vented out?
- Consider use of barriers/exclusion zones to protect others from risks.
- Route electrical cables so that they are protected from damp and damage (suspend).
- Lock off/chock wheels where applicable (mobile tower scaffolds, etc).
- Ensure any warning devices (lights, audible, etc) are functioning correctly.
- Ensure any safety limitations are clearly displayed (SWL's, maximum speeds, etc).
- Wear appropriate PPE where applicable.

PREVENTING AN ACCIDENT IS ALWAYS POSSIBLE
– MENDING BROKEN LIVES AND BODIES IS NOT!

Notes:

Talk No: 36	Title: SITE WELFARE

Introduction: Adequate welfare provisions should be available on all sites, not just for the relative comfort of employees, but to encourage good hygiene practices and to help prevent occupational health diseases such as dermatitis.

Main points:

- There should be sufficient toilets, wash basins and rest facilities on site to cater for the maximum number of employees.
- All such facilities must be maintained to a reasonable standard.
- Water facilities must include hot and cold or warm water for washing, and a suitable supply of drinking water that should be sign-posted where applicable.

Discussion points:

- Employees are as responsible as employers for maintaining welfare facilities in a reasonable condition. Leave them as you would wish to find them - do not abuse them, and inform your supervisor if they are unsatisfactory.
- Washing facilities must be in reasonable proximity to toilets and to canteen areas.
- Soap and drying facilities should be provided at wash basins.
- Rest areas should be arranged to protect non-smokers from the effects of cigarette smoke.
- If food is provided on site it must be stored, handled and prepared in a hygienic manner.
- Where cookers/microwaves are provided for site use, ensure they are maintained in a reasonable and clean condition, and ensure all food is thoroughly cooked.
- Dispose of waste on site carefully, especially food waste which can attract vermin.
- Always wash your hands prior to eating/drinking on site.
- Suitable storage areas should be provided for PPE and for “street” clothes as applicable.

**ON SITE HEALTH AND SAFETY IS THE RESPONSIBILITY OF ALL –
TEAMWORK IS REQUIRED IF GOOD WELFARE FACILITIES
ARE TO BE MAINATINED.**

Notes:

Talk No: 37	Title: SITE SECURITY

Introduction: Construction sites attract children looking for adventure, and thieves looking to steal plant and equipment. It is important, therefore, that sites are made secure in order to protect the public, who will not be as aware of the dangers of a construction site, and to protect site materials.

Main points:

- The law effectively gives trespassers the right not to expect to be put at risk if they enter a construction site. This particularly applies to children.
- Visitors are entitled to a safe environment and they should not be exposed to risk when on a construction site.
- Site security should ensure that no-one can access the site when occupied without authorisation, and when not occupied without having to clearly commit trespass.

Discussion points:

- Sites should be fenced all around with recognised access points, and signs should be displayed warning that it is a construction site and that entry is prohibited.
- Plant and equipment should be locked away out of sight where practicable, and disabled/secured in situ where not practicable.
- Never leave keys in any plant when unattended.
- Hazardous substances on site that may be readily familiar to site employees can pose a serious risk to unauthorised persons who have not encountered them before – lock them away.
- Consider methods of access control based upon the scale and type of site (this may comprise a simple sign telling persons to report to the site manager, or could be a manned access point – note this may also provide a method of monitoring who is on site for emergency purposes).
- Remove ladders from scaffolding, walls, etc, or board up at the end of each working day.
- Whilst trespassers, including children, should be challenged and either escorted off site or introduced to the site manager, avoid putting yourself in a position where you could be accused of assault.

SILLY PEOPLE TAKE CHANCES – SENSIBLE PEOPLE TAKE PRECAUTIONS!

Notes:

Talk No: 38	Title: DUST AND FUMES

Introduction: Exposure to dust and fumes should be prevented where practicable, and must at least be controlled. Breathing in dust and fumes can have both acute and chronic effects, and can cause long-term health problems.

Main points:

- Dusts arise from cutting, sanding and grinding operations, and can also be found when working with old lead pipes (lead oxide dust) or stripping out fibrous insulation (a prime, and very dangerous example being asbestos).
- Fumes arise from a wider source of origins including welding operations, use of hazardous substances, heating metals such as lead, burning off old paints, etc.
- The effects vary greatly, but examples of potential hazards include lung disease from silica dust as a result of cutting/scabbling concrete, cancer from cutting/sanding hardwood dust, metal fume fever from welding fumes, and lung cancer/asbestosis from exposure to asbestos, to name but a few.

Discussion points:

- Where practicable, plan operations/tasks to eliminate exposure to dust and fumes.
- Where elimination is not practicable, then exposure to dusts and fumes must be controlled.
- Use tools with dust extraction systems if possible.
- Consider the use of portable extraction equipment.
- Consider use of local exhaust ventilation where practicable.
- As a last resort use personal protective equipment/respiratory protective equipment. Ensure it is suitable and that you know how to use it properly, and how to maintain it.
- Always remember other workers in the area – they may also require protection.

YOU CAN LEAVE A DUSTY PLACE ANYTIME
– BUT ASTHMA LASTS FOREVER!

Notes:

Talk No: 39	Title: UNDERGROUND SERVICES

Introduction: There continue to be numerous injuries, and several fatalities, every year as a result of contact with underground services.

Main points:

- Ensure that as much research as possible is carried out to identify underground services prior to any work commencing (existing plans, service authorities, etc).
- Clearly mark potential locations of underground services.
- Employ safe digging techniques wherever underground services are suspected.

Discussion points:

- Ensure all employees are aware of actions to be taken in event of discovering possible services.
- Remember that gas is both inflammable and explosive. If any gas leak is suspected, leave the area and call the gas and emergency services (do not smoke in vicinity!).
- Beware that modern house mains are often smaller diameter plastic pipes – do not confuse with electric cables!
- Follow gas company specifications for back-filling.
- Beware when working with water mains; remember that water at high pressure can cause serious, and even fatal, injuries, and that a burst water pipe can fill an excavation very quickly. Contact the water services immediately if water pipes are damaged.
- Ladders should be provided for access/egress to excavations containing water pipes.
- Don't leave lengths of pipes unsupported, and don't drop tools/equipment onto exposed pipes.
- Be especially aware if foul sewers are damaged as they carry specific health hazards – evacuate immediately and contact the water company.
- If you have to work in or near foul sewers, then wear PPE to protect against sewage, and wash hands before eating, drinking or smoking.
- If you break a stormwater sewer when rain is falling, then evacuate as it could flood without warning.
- Remember buried service colour coding:
  - Black or red: Electricity
  - Blue: Water
  - Yellow: Gas
  - Grey or white: Telecommunications
  - Green: Cable television

NO-ONE IS ACCIDENT PRONE – THEY'RE JUST POORLY PREPARED!

Notes:

Talk No: 40	Title: ROAD/STREET WORKS

Introduction: Many accidents occur at roadsides every year, most of which could be avoided with the implementation of safe working procedures.

Main points:

- Suitable warning signs should be displayed and correctly positioned.
- Traffic control must be implemented to meet the site requirements.
- Use a safety zone wherever practicable.

Discussion points:

- Cone off a tapered lead in zone to control traffic.
- Ensure barriers are erected around excavations, and that lighting/warning lights are used at night.
- Ensure a suitable pedestrian route is maintained – if necessary re-route.
- Clean any excess mud/debris off the road so far as is practicable.
- Beware of work activities that create dust or debris that may impact on vehicular or pedestrian routes.
- Position plant and equipment so that no part of it infringes on the safety zone, and do not store any materials or equipment in the safety zone.
- Consider and organise site traffic access/egress.
- Wear safety helmets, hi-visibility vests and safety footwear.
- Do not enter the safety zone unless specifically required and authorised to do so.
- In the summer consider protection against the sun.
- Consider precautions for working in excavations, underground services, etc.

IF YOU THINK SAFETY IS EXPENSIVE OR TIME CONSUMING
– TRY THE COSTS OF AN ACCIDENT!

Notes:

Talk No: 41	Title: ACCIDENT PREVENTION

Introduction: Whilst overall accident statistics indicate a general reduction, the construction industry remains the exception by showing an increase. It is essential that all personnel contribute in every way possible to reduce accident rates in construction.

Main points:

- Equipment does not cause accidents – people do!
- Every accident is owned by someone somewhere!
- It's too late to plan for safety after an accident has happened!

Discussion points:

- Accidents are caused by:
  a. People not thinking, not following instructions, or not putting their training into practice.
  b. Unsafe manual handling, loading, stacking and storing of materials.
  c. Overloading of platforms, scaffolds, hoists, plant, etc.
  d. Incorrect use and abuse of plant and equipment.
  e. Use of faulty equipment and "homemade" repairs.
  f. Illegal adaptions and illegal removal of guards/barriers.
  g. Failure to use PPE and ignoring safety signs/warning devices.
- The costs of accidents include pain, suffering, ongoing disability, and potential fatalities. Can also result in loss of earnings, incapacity for the job, inability to support family, etc.
- Employers face financial and time costs in compensation, loss of working time, lost management time during investigations, possible fines, etc.
- Help prevent accidents by:
  a. Not removing any guards/barriers.
  b. Not handling hazardous substances without knowing the hazards.
  c. Not using plant and equipment unless suitably trained.
  d. Always complying with laid down procedures.
  e. Always wearing suitable PPE as applicable.
  f. Not engaging in horseplay where it could result in hazards.
  g. Not misusing/abusing any equipment provided for safety.
  h. Not using any defective equipment/plant, and not carrying out "homemade" repairs.
  i. Employing good hygiene standards.
  j. Using the correct tools for the job.
  k. Obeying site safety rules and signs.

BE THE "EYES AND EARS" FOR SAFETY ON SITE AND REPORT ANY HAZARDS TO SUPERVISORS IMMEDIATELY!

Notes:

Talk No: 42	Title: USE OF CHAINSAWS

Introduction: Chainsaws are increasingly used within the construction industry, often in a manner for which they were not originally designed. They are particularly dangerous and can cause serious injury, even in the hands of a trained operator.

Main points:

- All chainsaw operators should have received formal training.
- Chainsaw operators should wear suitable PPE.
- Chainsaws should be maintained in a serviceable and safe condition.

Discussion points:

- Before using a chainsaw carry out the following checks:
  a. Check guards are in place, in good condition and secure.
  b. Check chain brake operation.
  c. Check security of casing and all nuts and screws.
  d. Check throttle and interlock for serviceability.
  e. Check chain sharpness, tension and freedom of movement.
  f. Check chain lubricating reservoir – top up if required.
- Ensure you have all the required PPE and that it is serviceable. This should include leggings.
- Always engage the chain brake and place on a secure surface clear of any obstructions before starting the chainsaw.
- Never make adjustments to the chainsaw whilst it is running.
- Maintain a firm grip, using both hands, on the chainsaw when in operation, and aim to complete cuts at full throttle where practicable.
- If you have to stage cuts, take extreme care when re-entering the previous cuts.
- Always beware of the timber closing in on the saw cut and pinching the chain.
- Never place any part of your body in the saw's line of cut.
- Before moving with the chainsaw, switch it off, apply the chain brake, and fit the scabbard over the chain. Carry by front handle with chain facing rearwards.
- Refuel chainsaws in well-ventilated areas and at least 3 metres away from where you are going to use the chainsaw (wipe up any spilt fuel). Do not smoke and ensure no naked flames are nearby. Check for fuel leakage and ensure fuel cap is correctly replaced.

WE WERE GIVEN TWO ARMS, TWO HANDS AND TWO LEGS –
LET'S KEEP IT THAT WAY!

Notes:

Talk No: 43	**Title: WORKING NEAR WATER**

Introduction: Most drowning incidents occur in inland waters and involve males. Most causes relate to bravado, foolishness and/or lack of safety awareness.

Main points:

- Drowning can occur in relatively shallow water, and can also occur in other liquids.
- The primary aim should be to prevent persons from falling in the first place. Prevention of drowning is the secondary aim!
- Never work alone near water – always employ the "buddy buddy" system.

Discussion points:

- All working platforms near water must be properly constructed including the required guard-rails and toe-boards. Consider securing boards where water or high winds could affect them.
- All ladders must be firmly secured.
- Ensure there is clear passage on all platforms and access/egress routes.
- Safety harnesses should be employed where applicable.
- If lighting is supplied for night work, note that it should be able to take in the surface of any water that an employee could fall in to.
- Ensure pontoons are properly loaded, stable, and securely moored.
- Where applicable only ever embark at suitable landing places.
- Never work alone, always work in at least pairs, and continually check on each other (never rely on a "shout" as an indication of someone falling – it may not happen or you may not hear it).
- Know how to raise the alarm and know the location of rescue equipment.
- If there is a risk of falling in, then wear a life jacket or buoyancy aid (note that a life jacket will automatically turn an unconscious person face up in the water – a buoyancy aid will not!)
- Ensure all rescue equipment is regularly inspected and maintained (visual check at the start of each shift).
- Where safety boats are provided, they should be continuously manned by a competent (trained) person.
- Know the emergency drills.
- Be aware of dangers from Weil's disease (leptospirosis).

TIME SPENT NOW ON SAFETY COULD SAVE A LIFE LATER!

Notes:

Talk No: 44	**Title: WORKING WITH ASPHALT/BITUMEN**

Introduction: Working with asphalt and/or bitumen often carries a double risk. A primary risk from working with hot materials, and a secondary risk from the location – roads and roofs!

Main points:

- Plan tasks using asphalt and/or bitumen taking into account the local environment (roads, roofs, etc).
- Only trained personnel should carry out such tasks (or trainees under supervision).
- Apply hot work precautions including PPE, fire appliances, after work checks, etc.

Discussion points:

- Areas where asphalt/bitumen work is to be carried out should be fenced off to prevent access by other employees and/or the public. Where applicable, traffic control will need to be deployed.
- Signpost the type of work in hand (particularly when asphalting).
- Ensure suitable PPE is available, serviceable, and used!
- Wear hi-visibility vests when working on or near roads.
- Have suitable and serviceable fire extinguishers within arm's reach. Ensure all know how to use them.
- Have a first aid kit within reasonable access. Ensure basic treatment for burns is known.
- Ensure asphalt/bitumen pots are serviceable and, in particular, that taps are working.
- Avoid the need to carry hot asphalt/bitumen over any distance so far as is reasonably practicable.
- Carry out checks 30 minutes after hot work has been completed for any residual risk.

GOOD QUALITY PROMOTES GOOD HEALTH AND SAFETY!

Notes:

Talk No: 45	**Title: GENERAL HEALTH & SAFETY REFRESHER**

Introduction: All persons on site have a legal responsibility for health and safety and to conduct their activities in a safe manner. This duty applies both to yourself and to your workmates.

Main points:

- Safety culture is when people think and act safely even when no-one is looking!
- Safety signs don't prevent accidents – safe people and safe systems do!
- No system can be safe without the co-operation of all employers and employees. It is a team effort requiring awareness and alertness on the part of everyone.

Discussion points:

- Know the company's safety policy, including the arrangements.
- Use and maintain PPE provided – report any defects immediately.
- Do your bit to keep the site tidy, in good order, and safe.
- Obey all warning signs.
- Never operate plant or equipment unless suitably competent/trained.
- Never interfere with the likes of guard-rails, ladders, etc.
- Never interfere or misuse safety equipment such as fire extinguishers.
- Never throw things from height, always lower properly.
- Never take short cuts – they rarely are!
- Only ever use authorised access/egress routes.
- Store/stack materials sensibly, especially if at height.
- Check substances before use – are they hazardous? Inflammable?
- Be alert in vicinity of mobile plant.
- Be aware of trespassers – if you don't recognise someone, ask them who they are looking for and direct them to the site manager.
- Constantly think safety on site. Be on the lookout for unsafe practices, defective equipment, excessive waste build up, etc, and report such to site managers – NEVER turn a blind eye!

SAFETY IS EVERYONE'S BUSINESS
- ESPECIALLY YOURS!

Notes:

Talk No: 46	Title: MANAGING SITE WASTE

Introduction: Most construction sites produce significant waste which, if allowed to accumulate, can create new, or complicate existing, health and safety hazards. These range from basic nails in wood to attracting vermin.

Main points:

- Suitable waste locations must be established, and these must be segregated where applicable (controlled and special waste, etc).
- A formal waste management system should be implemented, ie spending the last 15 minutes of each day, or last hour of each Friday, cleaning up the site.
- Waste should only be removed from site by those in possession of a valid waste carriers licence, and should only be handed over to those with a valid waste managers licence.

Discussion points:

- Consider how you are going to separate waste where applicable, such as using different skips, etc.
- Ensure nails etc, are removed from wood or hammered flat to avoid puncture wounds to other persons.
- Consider how waste is going to be lowered to ground level from height. It should never be thrown down! Consider hoists, waste chutes, etc.
- If lightweight waste is produced, it may need to be bagged and tied to prevent the wind blowing it all over the site.
- If skips are to be placed on roads, then permission is required and it must be suitably cordoned off to protect the public and vehicles.
- Never overload skips – they should not be loaded higher than the sides.
- Beware of accumulating flammable waste and thus creating a serious fire risk.
- Never burn or bury waste on site.
- Dispose of any foodstuffs carefully to avoid attracting vermin and the risk of disease such as Weil's disease.
- Inspect your waste! Can it be reduced? Can any of it be reused? Is any of it recyclable? All waste that leaves the site is costing money!

MINIMISED WASTE = MINIMISED COSTS

Notes:

Talk No: 47	Title: POLLUTION PREVENTION

Introduction: Pollution not only threatens today's generations, but also those of tomorrow – our children, and, in turn, their children. Not only is there a legal obligation to prevent pollution, there is also a moral one.

Main points:

- Pollution can affect air, land or water!
- Smoke, fumes, vapours, chemicals, oils, fuels, etc, are all potential pollutants.
- Pollutants can migrate over significant distances from a site – particularly if water bound.

Discussion points:

- Always use hazardous substances (remember COSHH?) with care, ensuring they are suitably stored and empty containers are properly disposed of.
- Diesel tanks, fuel cans, etc, should be stored and used so that leakages/spillages can be contained (consider hard standings, bunding, spill trays, spillsorbs, etc).
- Do not run plant or equipment when not in use. This is using valuable fuels which are in turn causing pollution, and is also costing someone money!
- Electrically powered plant and equipment is more environmentally friendly than combustion engine operated, but still damages the environment at source.
- Ensure all plant and equipment is well maintained to ensure it is running efficiently (using less energy), and does not have the likes of oil leaks.
- Noise is also a pollutant and should be reduced so far as is reasonably practicable – this will also help your ears.
- Water is an increasingly valuable resource. Do not waste it by using leaking hoses or by leaving them running unnecessarily.
- Be particularly aware if your site borders any watercourse. Water can carry pollutants over significant distances, and all too easily contaminate local drinking supplies. Never use watercourses for cleaning tools, etc, and never store hazardous substances nearby.
- Likewise beware of drains – especially storm drains. Again, never store hazardous substances nearby and never pour any contaminants down storm drains.
- If in doubt – ask!

PRACTICE SUSTAINABLE DEVELOPMENT
BY MEETING THE NEEDS OF TODAY'S GENERATIONS,
WITHOUT COMPROMISING THE NEEDS OF TOMORROW'S GENERATIONS!

Notes:

Talk No: 48	Title: ACCIDENT PROCEDURES

Introduction: Whilst the emphasis should be on prevention, the construction industry is a high-risk business, and there is always the possibility of an accident. It is important that all know what to do in such circumstances.

Main points:

- All accidents, and near misses, should be reported.
- All must know who the appointed persons/first-aiders are.
- All should know the best means of contacting the emergency services.

Discussion points:

- Know the name and contact procedures for the appointed person/first aider, and the location of the first aid kit.
- If you are going to be working away, in a small group etc, consider a small first aid kit to take with you.
- Know the basic rules if you have to deal with a casualty:

  a. Remove hazard from casualty if safe to do so.
  b. Call for help (first aider if possible).
  c. Send someone to phone for an ambulance if necessary.
  d. Do not move the casualty unless he is in immediate danger.
  e. Make the casualty as comfortable as possible and remain with him providing reassurance.
  f. Don't give food or drink to the casualty – moisten lips if necessary.
  g. Do not allow casualty to smoke.

- Consider what you know about first aid - do you know:

  a. How to resuscitate and start the heart?
  b. How to stop major bleeding?
  c. How to treat burns, scolds and shock?

  These comprise basic first aid procedures that can save a life both at home and at work. If you don't know them you may wish to consider first aid training.

- Accidents and near misses should be investigated to establish the cause, and to enable the implementation of procedures etc, to prevent recurrence.

AFTER AN ACCIDENT THE QUESTION SHOULD BE
"WHAT SHOULD HAVE BEEN DONE TO PREVENT IT?"
– ACTION SHOULD THEN BE TAKEN TO PREVENT RECURRENCE

Notes:

Talk No: 49	Title: CONFINED SPACES

Introduction: Confined spaces can include cellars, pits, tanks, drains, manholes, sewers, and even some types of excavation. Some are more obvious than others, but confined spaces are more common on construction sites than often realised.

Main points:

- Consider what may comprise a confined space on your site!
- A risk assessment should be carried out for all confined spaces.
- Never ever work alone in a confined space.

Discussion points:

- Hazards include oxygen depletion/enrichment, suffocation, toxic and flammable atmospheres, physical dangers (plant), biological hazards (Weil's disease), etc.
- Confined space atmospheres should be checked prior to entry.
- Suitable PPE should be worn which may include breathing apparatus, and may require specialist training.
- Employees working in confined spaces should be fit and healthy.
- Permit to work systems should be used where applicable (these should include rescue procedures).
- Work in confined spaces must be supervised, either physically or by communications/monitoring equipment (remember failure procedures).
- Ensure any recovery equipment is checked and serviceable prior to starting work.
- Ensure all know the alarm procedure – including location of nearest telephone, etc.
- Don't attempt a rescue without first sounding the alarm.
- Always leave a confined space immediately if told to do so.
- Don't eat, drink, smoke, or used naked flames in confined spaces or in close proximity to entry.
- Ensure there is suitable access/egress.
- Remain alert to any changes in the situation/environment. If in doubt - get out.

GLOVES AND MASKS MAY PROTECT INDIVIDUALS
– SAFE SYSTEMS OF WORK PROTECT EVERYONE

Notes:

Talk No: 50	Title: STEELWORK

Introduction: Steelwork carries with it significant inherent risk, both to those erecting steelwork, and to those in the vicinity. Only safe systems of work can control these risks and reduce them to an acceptable level.

Main points:

- Only suitably trained personnel should undertake steelwork, or trainees under suitable supervision.
- A risk assessment must be carried out, and a method statement produced, for any steelwork.
- Suitable PPE should always be worn, both by steelworkers, and by other employees in the vicinity.

Discussion points:

- Plan steelwork according to the method statement, remembering to take into account the use of cranes or other lifting equipment and accessories, and co-ordinate with other site activities.
- If cranes are to be used consider the ground conditions, potential danger to other employees and the public as a result of crane arcs, and the need to ensure continued serviceability of lifting equipment.
- Utilise slingers and banksmen where appropriate.
- Beware of any overhead services.
- As an absolute minimum head and foot protection should be worn.
- Ensure there is safe access/egress to/from places of work.
- Where possible work from a stable working platform.
- Where no working platform is available, utilise a safety harness and fall arrest device – ensure it is clipped on at all times.
- Beware of dangers to those below – consider exclusion zones, nets, etc, as appropriate, do not leave tools/equipment on steelwork.
- Never move along beams by straddling unless absolutely necessary – clip on as soon as is practicable.

CATS HAVE NINE LIVES – YOU ONLY HAVE THE ONE!

Notes:

SECTION 10

WORKPLACE DRUGS, INTOXICANTS AND ALCOHOL POLICY

Objective

The Company is committed to providing a workplace that creates a working environment which is free from risks to Health and Safety. The Company promotes the well being of everyone working within it including physical and mental health.

Abuse of drugs, intoxicants or alcohol may lead to personal and work related problems and can affect the health, confidence, morale and performance of those affected by it. The Company aims therefore to create an environment where, if such a problem occurs, it can be dealt with openly and fairly.

All occurrences will be treated sensitively and confidentially and the Company are committed to assisting in the appropriate way. The aims of the Policy are to:

Aims

- Raise awareness of how drugs, intoxicants or alcohol can affect health, well-being and work performance.
- Identify a problem at an early stage, and assure the employee that this will be dealt with sensitively and confidentially.
- Prevent risks to all employees, customers, and the public from the hazards that may be caused.
- Identify sources of help.
- Inform employees of the Company procedure should a problem arise, and to make this procedure accessible to all employees.

Definition

Drugs, intoxicants or alcohol problems will be considered to be those which incorporate a variety of behaviours caused by the misuse of such substances and which may be deemed problematic to the employee, or to the organisation or those associated with it.

The definition of “drugs, intoxicants or alcohol” is any substance, legal or otherwise, that may affect your behaviour or ability to carry out your everyday activities

Symptoms

There are many warning signs that may be apparent where there is a problem. These include the following (the list is not to be taken as exhaustive);

- Can’t think clearly
- Poor co-ordination
- Problems with vision
- Attendance at work under the influence of drugs, intoxicants or alcohol.
- Reduced performance

- Tiredness
- Disinterest
- Use of substances each night or late into the night
- Taking risks
- Feeling hung over
- Missing work or poor timekeeping
- Aggressiveness or being unco-operative
- Craving for substances during the day
- Nervousness or “shakes”
- Worry or dread
- Taking more alcohol than the recommended standard number of drinks per day.

Broken down these may fall into the following categories:

Emotionally:	Anxiety, high anger levels, mood swings, depression, sleep problems, loss of interest, irritability, loss of sense of humour
Mentally:	lack of concentration, poor memory, reduction in accuracy and poor performance, reduced motivation, difficulty in making decisions
Physically:	insomnia, tiredness, disturbed appetite, panic attacks and breathlessness, fidgeting, nausea, tension, weakened immune system

It is important that both individuals and the management team recognise if these symptoms emerge in order that the causes can be identified and dealt with effectively.

Employees’ Responsibilities

It is the responsibility of all employees and others within the organisation to report any such problem which they feel has occurred in or been caused by the work environment.

The Company cannot address a potential problem unless it is aware of this. In order to deal effectively and efficiently with the problem, it is essential that the Company be made aware of the situation immediately.

Individuals who believe that they, or others, may have a drugs, intoxicants or alcohol related problem, have a responsibility to bring this to the attention of the Company in one of the following ways;

- Reporting the situation to their line manager
- Notifying the Health and Safety Officer of the situation

Where the individual feels uncomfortable bringing this to the attention of any of the above they may speak to a fellow work colleague to go with them or to speak on their behalf in the first instance.

Managers' and Supervisor's Responsibilities

Managers and Supervisors have a duty to implement this policy and to make every effort to ensure that such issues are brought to the attention of the Health and Safety Officer to be dealt with under this policy. Failure to implement this policy will be considered a serious failure to fulfil all the responsibilities of the job.

Managers and Supervisors should explain the Company's policy to their staff and take steps to positively promote the policy. They should be alert to symptoms as stated above, and take action if this occurs.

They should be responsive and supportive to any member of staff who makes them aware of a problem or where they identify a potential problem, provide full and clear advice on the procedure to be adopted.

The Organisation's Responsibilities

The organisation is responsible to ensure that all individuals in the Company are made aware of this policy.

The Company will ensure that the procedure for dealing with incidents of drugs, intoxicants or alcohol abuse are reviewed and remain effective. All those responsible for this procedure will be trained in its effective implementation, the procedure to be adopted, as well as the identification of the symptoms.

Where a problem is identified either from an individual or reported from a manager or supervisor then the Company will ensure that this is investigated fully and sensitively, giving support to the person involved, and by providing any necessary assistance.

Procedure

This policy applies to employees across the organisation and at all levels. The policy is designed to assist employees where there may be abuse of drugs, intoxicants or alcohol. This covers all types of drugs, intoxicants or alcohol, including the use of medically prescribed or pharmaceutical medication.

The procedure will not be followed in the circumstances where an employee is under the influence of, using, or supplying, drugs or alcohol in the workplace, which will be dealt with under the normal disciplinary procedure.

Where the employee is prescribed medication this should be brought to the attention of the line manager, especially where this medication may have side effects which have an effect on the ability to carry out the normal job function.

Where an employee recognises that they have a problem they may wish to seek advice or help for themselves. They should refer to one of the many counselling agencies, specialist clinics, or their own GP.

Supervisors and Managers may intervene where they feel that there are at least some of the symptoms noted as above. In this instance the matter will be referred to the Human Resources Manager. A meeting will be held to consider the information available and to consider a course of action.

Where it is acknowledged that an employee has a problem, treatment or other assistance will be considered. This treatment will depend on the circumstances; however will normally consist of a medical assessment by an independent occupational health specialist, and further intervention on their advice.

Treatment is given on the understanding that:

- Employees accept that treatment is necessary to fulfil their role within the Company.
- Treatment is on a voluntary basis, and no employee will be forced to undergo treatment as recommended by the occupational health specialist.
- Employees are prepared to fulfil the obligations of the treatment that has been arranged or recommended.

Where a period of treatment is recommended this may involve a period of absence from the workplace. This will be treated as under the terms of illness related absence, and subject to the normal terms of sick payments.

Following treatment a return to work will be facilitated with a meeting with the line manager or a member of the Human Resources Department. This will be followed by meetings at regular intervals to ensure that the employee is assimilating well into the Company, and to assist should there be difficulties.

Where further treatment is necessary, or where there is a relapse, the Company may give consideration, at its discretion, to further assessment or treatment. The Company will give merit to the time of further treatment, and the likelihood of full recovery.

All information and meetings will be treated as confidential.

Refusal of Help

Employees who refuse to accept help or assistance, or who refuse to attend for occupational health assessments, or recommended treatment, and where they continue to fail to meet the required standards of conduct, will be subject to the normal disciplinary procedures, and may be subject to suspension without pay.

Testing

The Company is committed to the safety of all employees and therefore it may be necessary that employees are asked to undergo testing for any drugs, intoxicants or alcohol related substances. Tests may occur as follows:

- Pre-employment
- Random testing – this may be announced or unannounced
- “For cause” testing, after an accident or incident, or where there are observations or suspicions that there has been use of substances which may effect work performance
- During other clinical assessments, or on medical assessment follow ups

The Company may test for alcohol use by means of basic tests, however testing will be carried out by an accredited practitioner.

Any person testing positive for such substances at that stage will be asked to undergo a further medical assessment, which will give further details related to the nature of the work that you carry out. This may mean that the procedure outlined in this policy be followed.

An employee may challenge the results of the test, and may have this analysed independently.

Should an employee be suspected of being under the influence of drugs, intoxicants or alcohol they may be suspended under the terms of Precautionary Suspension until appropriate tests can be arranged.

Review

The Company will monitor all incidents and use of this policy and will review the effectiveness of this policy and procedures annually.

SECTION 11

Activity Hazard Analysis (AHA)

Activity/Work Task: Site Works			Overall Risk Assessment Code (RAC) (Use highest code)			
Project Location: Cat Island Job Site:			**Risk Assessment Code (RAC) Matrix**			
Contract Number:		**Severity**	**Probability**			
Date Prepared:			Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title):		Castastrophic	**E**	**E**	**H**	**H**	**M**
		Critical	**E**	**H**	**H**	**M**	**L**
Reviewed by (Name/Title):		Marginal	**H**	**M**	**M**	**L**	**L**
		Negligible	**M**	**L**	**L**	**L**	**L**
Notes:		**Step 1:** Review each "**Hazard**" with identified safety "**Controls**" and determine RAC (see above)					
		"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.				**RAC Chart**	
		"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Neglible				**E = Extreme**	
						H = High Risk	
		Step 2: Identify the RAC(Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				**M = Moderate Risk**	
						L = Low Risk	

Job Steps	**Hazards**	**Controls**	**RAC**
To Be Completed by Supervisor/ Engineer/ Project Manager	*To Be Completed by Supervisor/ Engineer/ Project Manager* Possible Hazards inlude: 1. Eye danger from saw dust 2. Injuries from cutting and fastening operations 3. Trenching (impedement of traffic) 4. Debris 5. Equipment Injury	*To Be Completed by Supervisor/ Engineer/ Project Manager* Possible Controls include: 1. Wear proper safety gear 2. Ensure that all machinery and tools are being used properly. Follow safety procedures as per Health and Safety Management Plan (HSMP) 3. Implement Shoring 4. Properly maintain and secure serounding areas from debris. Ensure proper traffic managment plans and barriers are in place to protect civilians. Wear proper safety gear on site. Follow EMP guidelines and procedures. 5. Follow HSMP guidelines and procedures.	

Equipment to be Used	**Training Requirements/Competent or Qualified Personnel name(s)**	**Inspection Requirements**

The AHA shall be reviewed and modified as necessary to address changing site conditions, operations, or change of competent/qualified person's

SECTION 12

Hurricane policy

In light of the hurricanes which caused major problems to our sites in the Bahamas, this policy has been produced and should apply to all sites.

Contents

1. Hurricane classification

Saffir Simpson Hurricane Intensity Scale

***Category One* - A Minimal Hurricane**

Winds: 74-95 mph, 64-83 kts, 119-153 km/h
Minimum surface pressure: higher than 980 mbar
Storm surge: 3-5 ft, 1.0-1.7 m
Damage primarily to shrubbery, trees, foliage, and unanchored homes. No real damage to other structures. Some damage to poorly constructed signs. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings. Example: Hurricane Jerry (1989)

***Category Two* - A Moderate Hurricane**

Winds: 96-110 mph, 84-96 kts, 154-177 km/h
Minimum surface pressure: 979-965 mbar
Storm surge: 6-8 ft, 1.8-2.6 m
Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings; some window and door damage. No major damage to buildings. Coast roads and low-lying escape routes inland cut by rising water 2 to 4 hours before arrival of hurricane centre. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying areas required. Example: Hurricane Bob (1991)

***Category Three* - An Extensive Hurricane**

Winds: 111-130 mph, 97-113 kts, 178-209 km/h
Minimum surface pressure: 964-945 mbar
Storm surge: 9-12 ft, 2.7-3.8 m
Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some wind and door damage. Some structural damage to small buildings. Mobile homes destroyed. Serious flooding at coast and many smaller structures near coast destroyed; larger structures near coast damaged by battering waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane centre arrives. Flat terrain 5 feet of less above sea level flooded inland 8 miles or more. Evacuation of low-lying residences within several blocks of shoreline possibly required. Example: Hurricane Gloria (1985)

***Category Four* - An Extreme Hurricane**

Winds 131-155 mph, 114-135 kts, 210-249 km/h
Minimum surface pressure: 944-920 mbar
Storm surge: 13-18 ft, 3.9-5.6 m
Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows and doors. Complete failures of roofs on many small

residences. Complete destruction of mobile homes. Flat terrain 10 feet of less above sea level flooded inland as far as 6 miles. Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane centre arrives. Major erosion of beaches. Massive evacuation of all residences within 500 yards of shore possibly required, and of single story residences within 2 miles of shore. Example: Hurricane Andrew (1992)

Category Five **- A Catastrophic Hurricane**

Winds: greater than 155 mph, 135 kts, 249 km/h
Minimum surface pressure: lower than 920 mbar
Storm surge: higher than 18 ft, 5.6 m
Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Major damage to lower floors of all structures less than 15 feet above sea level within 500 yards of shore. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane centre arrives. Massive evacuation of residential areas on low ground within 5 to 10 miles of shore possibly required. Example: Hurricane Camille (1969)

2. Hurricane Tracking

During Hurricane season tracking and checking should be carried out at various times every day. There is a vast amount of information on hurricane tracking available on the internet and on local television or radio.

Some good sources on the internet are

1. www.weatherchannel.com
2. www.caribwx.com
3. www.kronor.com
4. www.stormcarib.com/guide.htm
5. www.noaa.com

Attached in appendix 1 is a tracking chart which can be used to plot the advance of hurricanes.

3. Key Decisions

Once it has been ascertained that a hurricane strike is imminent.

It is imperative that the senior site agent should be briefed in the decision making of the removal of all plant & equipment to safe areas.

All employees should be trained in these procedures so that no time is wasted when the key decisions are implemented. Each site should have a designated person responsible for these operations.

4. Preparation

The following tasks need to be carried out to the site to make the site safe and secure. These tasks need to be started minimum 4 days before the hurricane is due.

- All plant brought to a safe area (ideally the site compound or yard) that has no risk of flood and be parked together with brakes on. Trucks should be filled with aggregate.
- Window shutters should be placed if they are available if not plywood placed on the windows.
- Computer data backed up and stored in a safe secure area.
- Electric supplies should be disconnected.
- All confidential and essential records held on site should be and kept in a secure and watertight place off the ground.
- All Computers and electrical goods stored likewise.
- Any portable offices tied down.

- Windows boarded up in offices.
- Some ventilation should be left in offices to avoid differential pressures.
- Any loose materials in the area gathered up and stored.
- Any trees likely to damage offices cut down.
- Asphalt and concrete plants should have their bins filled and in asphalt plants the hot storage should be filled with dry stone. Bitumen heaters should be turned off. All gantries, masts and any loose parts should be taken down
- All plant and vehicles should be left fuelled and fuels supplies should not be let rundown as there can be shortages in the aftermath of hurricanes.
- All employees should be allowed adequate time to return home to make the necessary arrangements to ensure the safety of their families and homes

5. Return to work

Once the all clear has been given and we are in a position to return to work the works areas need to be checked to ensure they are safe. The following things need to be examined.

- Structural integrity of site offices, welfare facilities and accommodation
- Check of all services to ensure that the electrical supplies are still safe.
- All plant needs checked to ensure that it is still in safe working order
- Sanitation facilities need to be checked
- A roll call of all personnel
- Check of works carried out

Atlantic Basin Hurricane Tracking Chart
National Hurricane Center, Miami, Florida