CINGANI HIGH SCHOOL RENOVATION

Baseline Risk Assessment

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1. Definitions and Abbreviations

ABBREVIATION	DESCRIPTION
DSTI	Daily Safe Task Instruction
HME	Heavy Mobile Equipment
MDS	Material Data Sheet
PPE	Personal Protective Equipment
SWP	Safe Work Procedure
RA	Risk Assessment
H&S Spec	Health and Safety Specification
HCS	Hazardous Chemical Substances

1.1 Project Background

Transnet SOC (LTD) through National Ports Authority corporate affairs department is in the verge of community development, the approach has been to one of the local schools located in Motherwell area where the need for renovation of ablution has been identified. The project is planned to be executed and completed within a period of six months.

2. Project Scope

The scope of this project entails internal and external works which is demolishing and removals of old steel windows, door frames, sewer drainage pipes etc, internal works will consist of but not limited to, painting, electric installations, installation of walls tiles etc.

3. Risk Assessment

Baseline Risk Assessment

Risk Assessment Title	Baseline Risk Assessment for the Renovation of Ablution Facilities in Cingani High School

Risk Assessment Team				
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Activities Covered
This baseline risk assessment focusses on the high-level health and safety hazards and risks anticipated during construction taking into consideration all construction methods.
Geographical location: Gqeberha, Motherwell NU6, Cingani High School

Risk Controls
Legal requirements pertaining to the specific task step's control measures are assumed to be implemented and will not be repeated in the baseline risk assessment. Proposed Risk Controls focus on unique risks anticipated, and/or specific client requirements.

Baseline Risk Assessment

Scope of Risk Assessment
The risks identified are those that will have a direct effect on the contractors during construction but also those that could have a detrimental effect on the project directly or indirectly from a time delay and / or cost point of view.

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
	Occupational Health & Hygiene						
1.	Demolishing of old parts in the building using hand drills and grinders	Noise exposure due to operation or working in close proximity of where the demolishing is executed, dust and sparks.	Noise induced hearing loss Lung and eyes infection.	○ Pre employment and exit medical surveillance. ○ Compliance to PPE Policy ○ Ear plugs or ear muffs. ○ Compliance to Project H&S Spec ○ Induction to all employees	**Possible**	**Major**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
2.	Working in extreme temperatures/ adverse weather conditions	Exposure to extreme ambient temperatures during winter and summer days, UV exposure, windy conditions	○ Adverse health conditions such as heat exhaustion or hypothermia. ○ Lung/chest/eye infections from particles being blown into eyes and inhaled	○ Medical surveillance. ○ Specialised PPE (e.g. lined gloves, balaclavas, eye protection, dust masks/specialised FFP1/FFP2), ○ Compliance to Project H&S Spec (i.e. drinking sufficient potable water).	**Possible**	**Minor**	**Medium**
3.	Manual handling of material	Ergonomic hazards such as awkward work positions, improper lifting method, improper tools, and machinery. Heavy load manual handling; repetitive work	Musculoskeletal injuries, muscle strains; Fatigue	○ Compliance to Project H&S Spec (i.e. lifting techniques), ○ Task based RA, DSTI and Toolbox Talks, ○ Correct lifting and handling practices and ergonomic awareness.	**Rare**	**Moderate**	**Low**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
4.	Drilling and cutting of the walls and pipes	Exposure to solid dust. Airborne particles from drilling and noise.	Dust inhalation resulting in respiratory infection (potentially permanent health impact). Lung Irritation / damage to eyes/ red eyes.	○ Compliance to Project H&S Spec, ○ Hygiene monitoring ○ Medical surveillance ○ Dust monitoring ○ FFP2 dust masks and safety goggles.	**Possible**	**Major**	**High**
		Exposure to vibration and fumes emitting from drilling and demolition using hand breakers and drillers. Fumes inhalation.	Carpal tunnel syndrome. Effect on employees kidneys. Respiratory infection i.e. Lung infection.	○ Compliance to Project H&S Spec ○ Hygiene monitoring ○ Medical surveillance ○ FFP2 masks	**Possible**	**Major**	**High**
5.	Employees interacting and working in limited space	Contact with an infected person or area; Sneezing or coughing without closing the mouth; Unhygienic practices; unprotected sexual practices	Contracting Covid-19, HIV and other contagious illnesses. Spread of diseases and Fatalities.	○ Awareness on infectious diseases ○ Practice social distancing; Washing of hands regularly; use of face masks; employees reporting flu symptoms, drink	**Possible**	**Major**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
				plenty of water and keep hydrated, ○ Use of surgical gloves when treating injured employee			
	Site Establishment						
6.	Transportation of personnel to site	Un-roadworthy vehicles. Intoxicated driver. Incompetent/unlicensed drivers. Driver disobeying road safety signs and rules. Speeding. Vehicle overloaded. Employees loaded with tools. Vehicle not fitted with seat belts. Vehicles parking in the parking of school workers i.e. teacher's reserved parking	Road accidents with potential for injuries and fatalities; property damage. Inconveniences to school workers and classes.	○ Compliance to National Road Traffic Act (No. 93 of 1996), ○ Compliance to Project H&S Spec, ○ Traffic policy & management plan ○ Service history of vehicles. ○ Comply to school management and traffic procedures.	**Possible**	**Critical**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
7.	Use of equipment and tools	Improper use of tools and equipment. Incompetent/untrained operators/users. Substandard tools and equipment. No safeguards where required. Homemade tools. No SWP and SOP.	Pinch points, cuts, laceration incidents (caught by, in between) resulting in LTI's, medical treatment cases or First Aid Injuries; damage to property.	○ Compliance to Project H&S Spec, ○ Correct tools for the job and correct use of the tools, ○ All tools and equipment to be numbered and placed on registers and inspected when required by competent persons, Operators/users to have competency/training and experience, ○ All machine guarding to be in place before equipment is used; ○ PPE (use of suitable gloves mandatory, eye protection).	**Likely**	**Major**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
8.	Employees and Scholars Facilities	Failure to provide employees facilities on site (i.e. eating and ablution facilities) Shortage of school temporal facilities	Health risk Poor Hygiene on site and in school. Environmental impact.	○ Compliance to Project H&S Spec ○ Awareness Training on health and hygiene requirements, ○ Comply to Facilities Regulations.	**Unlikely**	**Moderate**	**Medium**
9.	Electrical Installations	Incompetent Installers, Unsafe installations due to faulty wiring, Lack of insulation & openings, Substandard electrical tools (e.g. portable electrical grinders, drills) being used, Contact with live electrical conductors, Failure to adhere to isolation and lockout procedures,	Fatality and Injuries resulting in permanent disabilities (electrocution, burns etc.) and property damage	○ Compliance to Project H&S Spec, ○ Ensure competency of electrical installers and use of certified equipment. ○ Inspections of installations by competent inspectors. ○ Task Risk assessment with SWP and work permits,	**Possible**	**Critical**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
				○ Issuing of COC upon completion ○ Demarcation of exposed wires			
10.	Stacking and Storage	Employees may be exposed to dust from handling of stockpiled material, i.e. sands and cement bags. Incorrect control of stockpile, high stockpile may cause injury to Employees.	Medical Treatment Injury Lost time injury Damage to property	○ Compliance to Project H&S Spec, ○ PPE compliance, ○ Appointment of stacking and storage personnel. ○ Stockpiled material not to be more than 2m high	**Rare**	**Moderate**	**Low**
11.	Site Access Control	Failure to obtain site access certificate. Failure to provide security or prevent unauthorised person entering site. Failure to test for intoxication.	Injuries, property damage/loss and theft incidents	○ Compliance to Project H&S Spec, ○ Security Management procedure including site access control Plan, ○ Mandatory alcohol testing	**Possible**	**Minor**	**Medium**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
	Project Construction Activities						
12.	Trucks delivering material to site. TLB and other small plant assisting with construction works.	Defective trucks. Incompetent operator. Intoxicated operator. Medically unfit operator. Lack of plant inspection and service history. Man/machine interface. Congested areas. Speeding of operators. Excessive noise	Multiple injuries/fatalities, property damage Disturbance of school proceedings Property damage caused by operators.	○ Compliance to Project H&S Spec, legislation, policies and procedures, ○ Client inductions prior work commencement, ○ Traffic management plan ○ Plant inspection, ○ Plant to be checked and approved for site before allowed on site, ○ Plant service history to be available, ○ Competence verification of operators, ○ Valid medical record, ○ Full supervision, ○ Alcohol testing,	**Possible**	**Major**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
				○ Solid barricading preventing trespassers to site, ○ Full PPE to be worn i.e., reflective vests for high visibility, ○ Designated walkways for students and school workers to prevent plant/people interface.			
13.	Excavation and Trenching (i.e. for sewer pipes and electrical cables)	Inclement weather (poor visibility conditions i.e. rain, blind spots). Mechanical failure of machines (brakes, steering, park brake, leaks, etc). Machines not in safe and serviceable condition. Unprotected excavations.	Collisions resulting in fatality, Injuries resulting in permanent disabilities, property damage, collapsing of excavation resulting in injuries. Disturbance of school classes Slips, trips and falls. Hand and body injuries.	○ Project H&S Spec ○ Ensure competent personnel are used. ○ Adequate barricading of excavations. ○ Safe access and warnings. ○ Inspections of excavations by competent and appointed persons to	**Possible**	**Major**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
		Unstable excavation walls (after inclement weather). Underground services being struck/damaged; Uneven surfaces. Use of hand tools Noise and dust.	Use of homemade hand tools. Reduced noise hearing loss. Lung infection	ensure compliance including checks after inclement weather. ○ Competent and certified operators. ○ Flagmen must be posted to guide operating machines ○ Employees must be well fit to perform their duties. ○ Underground services detection to be done prior excavation, or confirm with school management. ○ Adequate supervision to stop all excavation work at the first visible sign of foreign			

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
				material (e.g. electric cable sheath, water supply pipes etc). ○ Uneven surfaces must be levelled before working o them. ○ Proper PPE must be used when using hand tools. ○ No homemade tools must be used on site. ○ Dust masks and ear protection must be used.			
14.	Backfilling	Movement of machinery (TLB); dust emissions; noise; improper use of tools (i.e., shovels) Use of hand tools. Dust	Injuries/fatalities, property damage, lung infections. Disturbance of school classes Home made tools	○ Dust suppression methods to be implemented. ○ Trained flagmen to be appointed.	**Possible**	**Minor**	**Medium**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
			Lung infection	○ Inspection of tools before use and to be placed on registers ○ Home made hand tools must not be used. ○ Dust masks must be worn.			
15.	Concrete Work (Pouring)	Improper handling of concrete can lead to eyes or skin contact. Holding of concrete weighted equipment. Incompetent concrete mix operator. Slipping and tripping. Concrete spill. Nip points from chutes. Defective concrete plant	Skin and or eye irritation. Back sprain. Incidents (collision) resulting fatality injuries. Environmental impact, (fauna and flora) Injury to employees and property damage.	○ Project H&S Spec, ○ Medical Surveillance ○ Employee Dossier. ○ Competent concrete mix operator. ○ DSTI and Toolbox Talk. ○ Employees must assist each other when lifting heavy material ○ Procedure for hazardous substance handling.	**Rare**	**Minor**	**Low**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
				○ Use of correct PPE (i.e. long sleeve overall, footwear, eye and hand protection etc). ○ Spotter for concrete truck mixer. ○ Full time Supervision. ○ Safety Data Sheet must be communicated. ○ Hand protection must be used by employees. ○ Plant coming to site must be serviced.			
16.	Working at elevated position (i.e., ceiling, light installation inside and outside)	Incorrect methods of getting materials, equipment, or tools from and to ground (i.e., throwing).	Slipping and falling from height resulting in injuries and fatalities. Falling of objects on to other employees.	○ Project H&S Spec, ○ Fall protection plan to be developed and communicated with employees.	**Possible**	**Critical**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
		Conditions/surfaces Working during inclement weather conditions. Medically unfit. Untrained employees working at heights Use of hand tools Slippery Defective hand tool	Cuts and abrasions Injuries to empoyees.	○ Employees must have tool bags on their waist and hand lines to be used to convey other tools. ○ Medical surveillance to include working at height assessments. ○ Working at height training. ○ Proper PPE must be worn i.e. gloves ○ Pre tool inspection must be done.			
17	Access and work at height using a ladder	Use of and falling from the ladder. No ladder assistant used to hold the ladder. Defective ladder used. Homemade ladder. Improper method used when climbing the ladder.	Injury requiring medical treatment. Lost Time Injuries.	○ Project H&S Spec. ○ Ladder assistant to be used. ○ Inspection of Ladders before use. ○ Three point contact when climbing ladders.	**Possible**	**Major**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
				○ No manmade ladder should be used.			
18	Install floor and wall tiles	Cutting tiles with grinder Defective grinder Cracked or improper cutting disk Noise Dust Incompetent grinder operator Electrical extension cable with joints Absence of fire extinguisher	Injury to employees Property damage Noise induced hearing loss Eye irritation and chest infection Multiply injuries Uncontrolled fire	○ Pre inspection of grinder and extension cables ○ Serviced grinder ○ Correct use and inspection of disk ○ Use of ear protection ○ Use of dust masks ○ Competent operator	**Possible**	**Major**	**High**
19.	Plumbing works	Defective/homemade tools and equipment. Incompetent plumber. Sewer waste spillage and contact.	Cuts, lacerations, bruises. Hand injuries. Poor connection resulting into pipes explosion. dislocation or connected to wrong channel. Health impact.	○ All tools/equipment must be inspected before use and at regular intervals. ○ Mandatory PPE to be worn, only	**Rare**	**Moderate**	**Low**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
				competent plumber must do the work. ○ Task risk assessment must be done.			
20.	Plastering	Repetitive movements Hand mixing cement with plastering sand Cement spillage to vegetation. Cement contact with eyes and skin. Incompetent person doing the work. Manmade hand tools.	Back sprain. Environmental impact Skin and eye infection. Employee injury	○ Rest breaks ○ Cement must be mixed on top of a bunded surface or shutter board. ○ Adherence to cement material data sheet and it must be communicated with employees. ○ Long sleeve overalls and safety goggles must be worn. ○ Only competent employee must do the work. ○ Adherence to project H&S Spec.			

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
21.	Painting	Repetitive movements Paint splashes in the eye. Exposure to paint fumes. Paint skin contact Incompetent painter Paint spillages.	Back sprain. Eye infection. Inhalation/pulmonary problems. Dermatitis. Environmental Pollution.	○ Rest breaks and rotation of activities. ○ Mandatory PPE to be worn with additional PPE relevant on the specific activity. ○ Procedure to handle HCS to be developed and communicated to all employees working with the substances, paint trays, drip trays or plastic sheets to be used to prevent paint spillages on the ground, ○ Only competent painter to do the job. ○ Ventilation must be ensured when paining inside the building	**Likely**	**Minor**	**Medium**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	**Hazards**	**Associated risk event**	**Risk controls**	**Risk rating with controls**		
					L	**C**	**R**
22.	Local community strikes	Community riots.	Injuries. Project delays. Property damage. Theft (Looting). Disturbance in school classes.	○ Local Economic Development personnel. ○ School governing body engagement. ○ Other stakeholder engagement, i.e. local government. ○ Transnet SCS procedures. ○ Security Management Plan. ○ Emergency Preparedness Plan.	**Possible**	**Major**	**High**
23.	Community domestic animals	Stray domestic animals not attended by the owners.	Domestic animals on service roads which could be hit by the vehicles resulting in injuries. Property damage. Killing of an animal.	○ Adhere to speed Limit of the area. ○ Drivers to be vigilant and alert while driving. ○ No use of cell phones while driving.	**Possible**	**Minor**	**Medium**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
				○ Fatigue management plan. ○ Adhere to road safety site.			
24	Public Safety/Protection of 3rd parties	Public or learners gaining access into construction area. Lack of barricading or failure to adhere to barricading requirements.	Public and student's injuries.	○ Security to be appointed by the Contractor throughout the project duration, covering day/night shift. ○ Construction area to be fenced off and demarcated. ○ Signage to be placed at strategic places informing public and students of the dangers in the area. ○ Emergency contact numbers must be displayed.	**Possible**	**Critical**	**High**

	Hazards, Associated Risks, and Ratings						
	Task Steps / Short risk name	Hazards	Associated risk event	Risk controls	Risk rating with controls		
					L	C	R
25.	Close out of construction activities	Poor housekeeping	Students and school worker's injuries.	○ Adherence to project H&S Spec. ○ Close out checklist to be conducted before product handover to Client	**Possible**	**Minor**	**Medium**

Monitor and Review the Risk Controls
It is important to monitor risk controls and review risk assessments regularly. Review is required when there is a change in the process, relevant legal changes, and where a cause for concern has arisen. Reviews could be scheduled on an annual basis. If the risk assessment has substantially changed a new risk assessment is warranted.

4. Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Critical
Almost Certain	Medium	Medium	High	Extreme	Extreme
Likely	Low	Medium	High	High	Extreme
Possible	Low	Medium	High	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Low	Medium

Assessed Risk Level	Description of Risk Level	Action Required
Low	If an incident were to occur, there would be little likelihood that an injury would result	Undertake the activity with the existing controls in place
Medium	If an incident were to occur, there would be some chance that an injury requiring First Aid would result	Additional controls may be needed

High	If an incident were to occur, it will be likely that an injury requiring medical treatment would result	Controls will need to be in place before the activity is undertaken
Extreme	If an incident were to occur it, it would be likely that a permanent or death would result	Consider alternatives to doing the activity. Significant control measures will need to be implemented to ensure safety

Likelihood	Desciption of Likelihood
1. Rare	Will only occur in exceptional circumstances
2. Unlikely	Not likely to occur within the foreseeable future, or withing the project lifecycle
3. Possible	May occur within the foreseeable future, or within the project lifecycle
4. Likely	Likely to occur within the foreseeable future, or within the project lifecycle
5. Almost Certain	Almost certain to occur within the foreseeavle future or within the project lifecycle

Consequence	Description of Consequence
1. Insignificant	No treatment required
2. Minor	Minor injury requiring First Aid treatment (e.g. minor cuts, bruises, bumps)
3. Moderate	Injury requiring medical treatment or lost time
4. Major	Serious injury (injuries) requiring specialist medical treatment or hospitalisation
5. Critical	Loss of life, permanent disability or multiple serious injuries