



OCUPATIONAL HEALTH AND SAFETY

BASELINE RISK ASSESSMENT

Specifically designed for

Department of Education

for

Sidingulwazi Primary School.

By

C & M Safety Consultants SA (Pty) Ltd

Date Prepared: 30 October 2020

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BASELINE RISK ASSESSMENT

PROJECT DETAILS:

CLIENT:

Department of Education

PROJECT LOCATION:

Sidingulwazi Primary school. Ladysmith in KwaZulu Natal

SCOPE OF WORK:

1.1. Overview of the works

The project entails the replacement of all temporary structures with new formal building structures which are to conform to the KZN DoE norms and standards.

The one existing formal brick building structures to be incorporated through re-purposing of the classrooms.

The objective thus ultimately to provide for a state of the art educational facility which conforms to the accepted DoE norms and standards.

1.2. Extent of the works

The project therefore needs to be implemented in a phased approach, phases will dovetail with some overlap and is foreseen to be as follows:

- Phase 1: Construction of Grade 1 to 3, Grade 4 to 7 classroom blocks together with and temporary fence to separate the current school activities from the construction activities.
- Phase 2A: Relocation of school into new building facilities. Demolishing of Grade R ablution and all prefabricated structures and removal of new prefab structures from site.
- Phase 2B: Construction of new Grade R classrooms, Administration building, SNP Kitchen, Teams teaching, guards house, perimeter fence, refuse area and parking
- Phase 2C: Convert existing Grade R classroom into 3 standard classrooms, including for construction of play field and landscaping

The phase approach will allow for all decanting and construction activities to be accommodated on site without the need for additional temporary structures for decanting purposes and all learners can be accommodated within the Phase 1 facilities.

The primary scope of works for the phases are summarised below and is as follows:

- **Phase 1A: Existing school**

Existing school comprising of the following to fully operational during construction (Phase 1):

- 12 x Park home Classrooms Units (20 Classrooms)
 - 2 x Grade R Classrooms
 - 10 x Portable Chemical Girls Toilets
 - 5 x Portable Chemical Boys Toilets
 - 1 x Park home Teacher's Ablution (8 x Toilets)
 - 1 x Carport to Accommodate 16 Vehicles
- **Phase 1B: New school to be constructed part 1**
- 28 x Standard Classrooms
 - 3 x Multipurpose Classrooms

- 1 x Media Centre
- 1 x Computer Classroom
- 4 x HOD Offices
- 1 x Garden Store & Change Room
- 14 x Girls Toilets
- 12 x Boys Toilets/Urinals
- 1 x Disabled Toilet
- 10m Elevated pressed steel water tank. (48 hrs storage)
- Jo-Jo Water tanks
- Civil engineering services
- Electrical engineering services
- Temporary Fencing
- School to be relocated from existing school to new school (Phase 1 Buildings) on completion.

- **Phase 2A: Demolition of existing school**

- Relocation of school into new building facilities. Demolishing of Grade R ablution and all prefabricated structures and removal of new prefab structures from site.

- **Phase 2B: New school to be constructed part 2**

- 5 x Grade R Classrooms
- 1 x Team Teaching Classroom
- 1 x Administration Block

- 1 x Counselling Suite
- 1 x General Storeroom
- 1 x Gate House
- 1 x SNP Kitchen
- 6 x Teachers Toilets
- 1 x Disabled Toilet
- 6 x Grade R Toilets + 1 Staff Toilet
- 39 Parking Bays
- New Perimeter Fence
- Grade R Playground Facilities
- Jo-Jo Water tanks
- Civil engineering services
- Electrical engineering services
- Temporary fencing
- Grade R students to be relocated from existing Grade R block to new Grade R buildings.

- **Phase 2C: New school to be constructed part 3**

- Convert existing Grade R classroom into 3 standard classrooms, including for construction of play field and landscaping.
- 9 Parking Bays
- 862m² Concrete assembly Area (Shared facility - Combi Court & Assembly Area)
- Play Field (65 x 35m)

- Civil engineering services
- Electrical engineering services
- General landscaping and grassing

The Works to be carried out by the Contractor under this Contract comprise mainly the following:

Construction of:

- Fence and gates
- Jungle gym
- Assembly area
- Multipurpose courts
- Standard classrooms, HOD offices and ablutions fixed to classroom blocks
- Kitchen
- Gate house
- Computer room
- Multi-purpose classrooms
- Grade R classrooms
- New walkways (under cover and open)
- New ablutions
- Team teaching classrooms
- Parking area

Demolition of:

- Existing classroom blocks
- Ablution block.

Renovations and upgrades of:

- Covert Existing GrR into 3 classrooms

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RISK RATING CRITERIA

A		INJURY SEVERITY		B		FREQUENCY of OCCURENCE		RATING									
0	No injury			0	Has not occurred in last two years			RISK CLASSIFICATION	RISK VALUE								
2	Minor laceration, wound (first aid case)			2	Occurs very seldom			LOW	0---6								
4	More severe injury medical attention			4	Occurs occasionally			MEDIUM	6---16								
8	Serious injuries, broken bones, amputation etc			8	Occurs often			HIGH	16---32								
10	Loss of life / fatality			10	Could / has happened			CRITICAL	32---40								
C				POTENTIAL DAMAGE / LOSS				D		ENVIRONMENT				ACTION REQUIRED			
0	No damage, minimal costs R10 – 100			0	No effect			Spillage, noise, water, dust / vapours/ fauna and flora	LOW	Supervision, training, certification, method/risk assessments, safe work procedures training, toolbox talks.			Good instruction.				
2	Minor damage, small costs R100 – 1000			2	Minor effect				MEDIUM	Competent supervision, training certification, method/risk assessments, safe work procedures training, toolbox talks.			Change method, mitigate				
4	Med damage, stoppage (On site repair) medium cost R1000 – 5000			4	Serious effect (Short term)												
8	More serious damage / / loss / delay < R5000 - +			8	Very serious effect (Long Term)												
10	Severe damage, long term stoppage, high costs			10	Catastrophic effect												
									HIGH	Competent supervision, training certification, method/risk assessments, safe work procedures training, toolbox talks.			Change method, mitigate.				
									CRITICAL	Close competent supervision, training certification, method/risk assessments, safe work procedures, PJO's, work permits, training and toolbox talks.			Intolerable, change method, transfer risk.				

Potential Risk Identified as per Scope of Work

1. Covid 19 prevention
2. Vehicles travelling to the construction site.
3. Site establishment.
4. Injuries requiring First Aid treatment.
5. Emergency occurrence requiring medical treatment.
6. Security operations.
7. Speed restriction on site.
8. Transport of workers on site.
9. Working on site exposed to weather conditions.
10. Carrying out tasks on site requiring specific Personal Protective Equipment to be worn.
11. Use of Hand Tools, Mechanical and Hydraulic operated tools.
12. Use of Portable Electrical Tools.
13. Using Ladders.
14. Manual Handling.
15. Hazardous Chemical & Flammable Liquids used on site.
16. Housekeeping.
17. Stacking and Storage.
18. Loading and Off loading of equipment.
19. Use of lifting machines, Hand powered lifting devices and lifting tackle for the purpose of loading and offloading equipment on vehicles or lowering of equipment, materials etc
20. Working at heights and elevated positions.
21. Erecting Scaffolding.
22. Working at heights and elevated positions on scaffold structure
23. Confined space entry.
24. Mobile crane operations.
25. Operation of mobile plant and Construction vehicles on site.
26. Electrical Installations.
27. Welding and Cutting operations.
28. Excavations using machine or manually.
29. Working inside an excavation and backfilling an excavation manually.
30. Backfilling excavation with mobile plant.
31. Compacting of ground using a whacker.

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ACTIVITY	POTENTIAL HAZARD	POSSIBLE RESULT	RISK EVALUATION					PREVENTATIVE MEASURES	CONTROLS
			A	B	C	D	R		
Prevention of contracting or been exposed to the Corona virus.	Uncontrolled work environment and Exposure to the coronavirus Contracting of the virus and further transmission of the virus	Severe illness Death	10	10	10	10	40	Medical screening of workers. Daily visual monitoring of workers medical conditions Disinfecting work areas and tools. Personal disinfection and wearing of PPE Social distancing of 2 meters Training on the prevention of contracting the virus as per plan prepared. Regular safety talks on hygiene compliance. Identify high risk workers on site	Control crowding of workers and test when it is suspected Detailed risk assessment on the prevention of contracting the coronavirus and training on the RA; Toolbox talks on the prevention of the virus and hygiene compliance. Supervision to ensure social distancing Constant reinforcement and inspections by an appointed competent person and findings recorded in a register kept on site. Records of disinfection of tools and work areas Remove high risk workers from site
Site establishment	Poor positioning of offices, stores and parking areas.	Restricted access to parking and delivery to storage areas can cause damage to transport, equipment and buildings.	2	2	4	0	8	Access to be a main consideration when positioning offices and stores on site during planning stage; possible one way traffic movement to be introduced.	Detailed risk assessment and training on RA; toolbox talks; directional signs and supervision.
	Incorrect Installation of electrical cables and distribution boards.	Damage to exposed cables and loose wires; Electrical shock / Electrocution of employees or non employees.	10	2	8	0	20	All cables from distribution board to offices, stores and security to be underground; the distribution board is to stand on a firm level base and should be locked at all times; Electrical installations must be in compliance with the Electrical Installations Regulations 2009.	Detailed risk assessment and training on RA; toolbox talks; supervision; constant reinforcement and inspections by an appointed competent person and findings recorded in a register kept on site.
	Installation of security fencing.	Installation of fencing can result in lacerations and other minor injuries to the hands of the workers; Objects falling on feet of workers.	2	2	2	0	6	Security fencing must be minimum height of 1.8m around site area together with two double gates; Employees must wear hand gloves and safety boots at all times.	Detailed risk assessment and training on RA; toolbox talks; supervision; constant reinforcement and inspections by an appointed competent person.
	Fire Fighting Equipment not provided.	Not having Fire Fighting Equipment available in case of a fire can result in loss of property.	0	2	8	2	12	Firefighting services to be available during the site establishment.	Principal contractor to ensure that sufficient fully serviced firefighting equipment to meet the fire risk is on site from the start-up of the site

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									establishment; training on use of firefighting equipment; fire risk surveys; fire drills and scheduled inspections on firefighting equipment.
	Not providing required hygiene facilities.	Not having proper hygiene facilities available like clean drinking water, toilets, showers, changing facilities and sheltered eating areas will result in unhygienic conditions which can lead to Health issues and water pollution.	4	2	4	2	12	Hygiene facilities to be available in compliance with the Facilities Regulation 2004 and must be within reasonable access of the site; clean hygienic and maintained facilities consisting of at least 1 shower for every 15 persons, 1 sanitary facility for each sex for every 30 workers, changing facilities for each sex; Sheltered eating areas.	Principal contractor to ensure that sufficient fully maintained hygiene facilities are on site from the start of the site establishment; talks on hygiene; regular inspections carried out on the facilities.
Injuries requiring First Aid treatment.	Not providing required First Aid facilities.	Not having the correct First aid Equipment available and no trained first aider in attendance when an Injury occurs, can result in fatalities if incorrect or no treatment is rendered.	10	2	0	0	12	To be in compliance with General Safety Regulations Regulation 3; First Aid box with minimum contents as listed on the Annexure pertaining to Regulation 3; Trained First aiders who is in possession of valid certificates of competency issued by a Person or Organisation approved by the Chief Inspector.	Principal contractor to ensure First aid facilities are on site from the start of the site establishment; sufficient First aid boxes to be available and regular inspections carried out on the contents thereof and replenished where required; first aiders to be trained and valid dates on certificates not expired; Dressing registers available inside the first aid box.
Emergency occurrence requiring medical treatment.	No emergency contact numbers and means of contact available.	Could have adverse effects depending on the emergency.	4	2	2	0	8	A list of emergency contact numbers must be available for use by the personnel; At least one working cellular phone must be available for use at all times.	List of emergency contact numbers available; Working cellular phone available.
Security operations.	Uncontrolled entry /exit to the site.	Can result in tampering with equipment; stealing; persons under the influence of alcohol entering on site; unauthorised entry to the site etc.	2	4	8	0	14	Security Company with competent trained guards to be engaged to control access to the site; All entry and exit to the site to be recorded; Employees of all Contractors to be issued with ID cards.	Security Company with competent trained guards engaged to control access to the site; Guards instructed in the correct procedures to be followed.

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ACTIVITY	POTENTIAL HAZARD	POSSIBLE RESULT	RISK EVALUATION					PREVENTATIVE MEASURES	CONTROLS
			A	B	C	D	R		
Speed restriction on site.	Speeding vehicles / mobile plant.	Causing accidents involving people, other mobile plant and existing structures, Spillages resulting in ground contamination.	10	2	8	2	22	Safe speed limit to be set for the site and enforced.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to operators of vehicles / mobile plant; Speed limit set for site
Transport of workers on site.	Workers not properly seated; tools and equipment not secured sliding around.	Workers being struck by moving equipment or falling off vehicles resulting in injury.	10	4	2	0	16	No transport of persons together with goods or tools unless there is an appropriate area or section to store the goods or tools; Transport persons in a non-enclosed vehicle e.g. truck, there must be a proper canopy (properly covering the back and top) with suitable sitting area; Workers shall not be permitted to stand or to sit on the edge of the bin of the vehicle.	Risk assessment training; Toolbox talks; Supervision; Constant reinforcement & specific instructions to workers.
Working on site exposed to weather conditions or in areas with poor air circulation.	Ultra violet sun rays	Excessive sun burn.	4	2	2	0	8	Personnel to wear long sleeve tops and long pants; Sun screen lotion to be available for use by Personnel; Safety talks to be carried out.	Detailed risk assessment and training on RA; toolbox talks; supervision; Sun screen lotion available for use by Personnel.
	Excessive hot conditions.	Dehydration / heat exhaustion / heatstroke which can result in death.	10	2	2	0	14	Training of personnel on the precautions to be taken to avoid heatstroke and to recognise the symptoms of heatstroke; Inform personnel of the need to partake of at least 600 millilitres of water every hour; Any person showing symptoms of heatstroke must receive medical attention as soon as possible; Safety talks to be carried out.	Detailed risk assessment and training on RA; toolbox talks; supervision; Personnel trained on the precautions to be taken to avoid heatstroke and to recognise the symptoms of heatstroke; Personnel informed of the need to partake of at least 600 millilitres of water every hour; Carry out Heat stress monitoring if deemed necessary.

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	Severe weather conditions i.e. thunderstorms with lightning.	Lightning striking a person can result in severe burns or death.	10	2	4	0	16	When a thunderstorm approaches the site area, all personnel must be withdrawn from the open areas and take shelter inside their vehicles or inside an office; Safety talks to be carried out.	Detailed risk assessment and training on RA; toolbox talks; supervision; Personnel withdrawn from open areas during a thunderstorm and lighting.
Carrying out tasks on site requiring specific Personal Protective Equipment to be worn.	Incorrect or no Personal Protective Equipment worn.	Persons not wearing the correct Personal protective Equipment Can result in serious injuries or death.	10	4	4	0	18	The following Personal Protective Equipment must be issued to all personnel and worn when on site: <u>Hard hats</u> to prevent head injuries from falling objects; <u>Safety boots</u> to protect against Snake bites, Scorpion stings and spider / tick bites / falling Objects, ground conditions, slippery surfaces etc.; <u>Snake gaiters</u> to protect against snake bites, Scorpion stings and spider / tick bites; <u>Eye Protection</u> appropriate for the task; <u>Gloves</u> appropriate for the task; <u>Reflective vests</u> for visibility; <u>Safety Harnesses</u> for fall protection; <u>Any other P.P.E</u> which may be required.	Detailed risk assessment and training on RA; toolbox talks; supervision; Personal Protective Equipment (P.P.E) Requirements Matrix; Record of P.P.E issued to Personnel; Record of training on the correct use of the P.P.E.
Use of Hand Tools, Mechanical and Hydraulic operated tools.	Using tools which have the potential to cause injury.	Possible serious injury if used incorrectly.	4	2	4	0	10	Only trained competent persons with the knowledge in the use, limits and hazards pertaining to a specific tool may work with the tools; Workers trained on the correct use of personal protective equipment issued for use with the tools; Regular inspections carried out to ensure the tools are in a good condition, safe to work with and used properly	Detailed risk assessment and training on RA; toolbox talks; supervision; Only trained competent persons to have access to the tools; Tools on register & checked on a regular basis; visually inspect tools for damage before use; PPE Register.

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Use of Portable Electrical tools.	Using portable electrical tools which have the potential to cause injury.	Possible injury, electrical shock or electrocution if used incorrectly.	10	2	4	0	16	Only trained competent persons with the knowledge in the use, limits and hazards pertaining to a specific portable electrical tool may work with the tools; Workers trained on the correct use of personal protective equipment issued for use with the tools; The person using the portable electrical tool must ensure it is in a safe working condition.	Detailed risk assessment and training on RA; toolbox talks; supervision; Only trained competent persons to have access to the portable electrical tools; Portable electrical tools on register & checked on a regular basis; Portable electrical tools visually inspected for damage before use; PPE Register.
	Insufficient or poor quality portable electrical tools; Unsafe portable electrical tools due to broken switches, damaged cables, plugs and missing machine guards.	Possible injury, electrical shock or electrocution due to failure or incorrect/ unsafe use of tools.	10	4	4	0	18	The correct good quality portable electrical tools for the job must be available for use; Only trained competent persons with the knowledge in the use, limits and hazards pertaining to a specific portable electrical tool may work with the tools; Workers trained on the correct use of personal protective equipment issued for use with the tools; The person using the portable electrical tool must ensure it is in a safe working condition.	Only the correct good quality portable electrical tools for the job must be available for use on site; Only trained competent persons to have access to the portable electrical tools; Portable electrical tools on register & checked on a regular basis; Portable electrical tools visually inspected for damage before use; PPE Register.
Using of ladders.	Defective ladders; ladders used by workers not trained in the safe use and maintenance of ladders; unsafe placing, climbing or securing of ladders; using the wrong ladder for the job; using ladders in unfavourable weather conditions; work done from a ladder.	All potential hazards can result in serious injuries or Fatality.	10	2	8	0	20	Only ladders in compliance with General Safety Regulation 13A of the Occupational Health and Safety Act may be used and used in the manner as set out in the regulation; No home-made ladders are allowed on site; Only workers trained in the safe use and maintenance of ladders are allowed to use ladders; ladders must be numbered and listed in a register; ladders must be inspected on a scheduled basis by an appointed competent person who has the training and the knowledge on the safe use and maintenance of ladders in compliance with GSR 13A and the results of the findings recorded in the register; damaged ladders which cannot be repaired must be cut up and discarded; before using a ladder, the person trained in the use of	Detailed risk assessment and training on RA; toolbox talks; supervision; Only trained competent persons to have access to the portable ladders; Records of training on use of ladders on file; Ladder inspection registers.

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								ladders who is going to use the ladder, must inspect the ladder to ensure that it is safe to use; Ladders must not be used in inclement weather conditions; both hands to be used to climb the ladder; Carry tools in a tool bag that's secured to the waist; The ladder must always be secured when used, either by tying the top end of the ladder to the structure with a rope or being held in position by another person; The ladder must where possible ,always protrude 900mm past the working platform; Where work is to be carried out whilst standing on a ladder, a safety harness must be used anchored to a point above the point of work; place a ladder so that its feed is a quarter of its own length from the object it is resting against; Only wooden ladders or ladders specifically constructed for the purpose should be used where there is a danger of coming into contact with electricity.	
Manual Handling.	Lifting heavy loads i.e. bags of cement, heavy tools or equipment.	Employees could injure their backs when picking up heavy loads on their own.	4	4	2	0	10	Employees must never pick up anything that is too heavy for one person; If they battle to lift an item, they must get assistance; Where possible mechanical lifting equipment i.e. forklifts, cranes etc. must be used to pick up heavy equipment.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to employees.
	Wrong posture when lifting/placing down items.	Employees that pick items up with their legs straight and back bent can sustain serious back & muscle injuries.	4	4	2	0	10	Employees must ensure that they keep their back straight and bend their knees when they lift any load, this prevents strain on the lower back; Physical demonstrations should be given to all employees.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to employees.
	Loads with sharp edges/corners.	Sharp edges and corners could cause lacerations to hands and other body parts.	2	2	4	0	8	Load to be inspected before lifting to check for sharp edges & corners; To wear leather gloves when picking up equipment and materials to protect against hand injuries.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to employees.

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Hazardous Chemicals & Flammable Liquids used on site.	Exposure to source of ignition; inhaling vapours / fumes; contact with the skin; accidental ingestion; Chemicals splashing into eyes; Spillage of chemicals on ground and in water.	Fire or explosion when ignited; respiratory irritation from fumes and vapours which can cause injuries to the respiratory system, dizziness, nausea & loss of consciousness if inhaled constantly; Irritation & possible skin disorders like Dermatitis, infection, allergy and poisoning when skin is exposed constantly to chemicals; low viscosity material if swallowed may enter the lungs and cause lung damage; eye injuries from chemicals splashing into the eyes; Ground and water pollution.	4	2	8	2	16	Keep flammable liquids away from high energy ignition sources, heat, sparks, pilot lights, static electricity & open flames; Avoid skin contact with chemicals by wearing PVC gloves; Wear respirators if exposed to the inhalation of vapours or mists; Use chemicals in a well- ventilated area away from all ignition sources; no smoking or open flames in close proximity of flammable liquids; firefighting equipment must be available at the point of storage & use of flammable chemicals; flammable substances must be stored separately from other materials in a well-ventilated area with a bund wall to contain leaks or inside a flammable liquid cabinet specific for that purpose with suitable warning signs displayed; Do not ingest any chemicals; wear splash goggles when handling chemicals; Eye wash to be available; Workers trained on the correct use of personal protective equipment issued; Material Safety Data Sheets available for all Hazardous chemical substances; Spill kit to be available; Hazardous Chemical Substances Co-ordinator to be appointed in writing.	Detailed Risk Assessment; Training on MSDS sheets; Toolbox talks; MSDS Sheets available for all chemicals; Constant Supervision & Reinforcement of Preventative Action; Proper storage facility for chemicals and the necessary warning signs displayed; Hazardous Chemical substances Co-ordinator appointed in writing; PPE register.
Housekeeping.	Poor housekeeping and storage practises can result in various items lying around.	Materials and paper lying around creates an un neat appearance; Items lying around are tripping hazards and can cause employees to trip and fall resulting in injuries; Plastic bags when eaten by cattle can result in the	8	4	2	2	16	Housekeeping must be based on a place for everything and everything in place; Refuse bins must be available to place all waste in; Redundant material or equipment must be sorted and stored in designated areas; All workstations must be kept tidy; Employees should be trained through risk assessments and toolbox talks to practise housekeeping on a daily basis;	Detailed risk assessment and training on RA; toolbox talks; supervision; Refuse bins in place; Designated storage areas; All waste removed from site.

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		animal dying; Pollution of the Environment.						Regular inspections by Supervisors; All waste must be removed from site.	
Stacking and Storage.	Unstable stacking and storage	Collapsing stack and material falling off the stack can fall on employees resulting in multiple injuries; Damaging of stored items.	8	2	8	0	18	Competent person appointed in writing with the duty to supervise all stacking on site; Demarcated storage area; Stacking area must be stable and levelled to avoid material falling; Storage area must be kept neat and under control.	Supervision by a competent person appointed in writing; Constant reinforcement; Toolbox talks.
	Stacking material of different sizes, shape and mass together.	Collapsing stack and material falling off the stack can fall on employees resulting in multiple injuries; Damaging of stored equipment.	8	2	8	0	18	Competent person appointed in writing with the duty to supervise all stacking on site; Demarcated storage area; Stacking area must be stable and levelled to avoid material falling; Storage area must be kept neat and under control; Material of the same size, shape / mass must be stacked and stored together to avoid the material falling.	Supervision by a competent person appointed in writing; Constant reinforcement; Toolbox talks.
	Stacking exceeding 3m in height.	It can cause material to fall and serious injuries and damage to equipment can occur.	8	2	8	0	18	Competent person appointed in writing with the duty to supervise all stacking on site; Demarcated storage area; Stacking area must be stable and levelled to avoid material falling; Storage area must be kept neat and under control; Total height of stack must not exceed 3m to avoid material from falling onto the ground.	Supervision by a competent person appointed in writing; Constant reinforcement; Toolbox talks.
Loading and Offloading of equipment.	Untrained / incompetent persons using the equipment; loads being dropped.	Damage to material, equipment & plant; Injury to workers and/or plant.	4	2	4	0	10	Only competent trained persons are permitted to operate lifting machinery; Banksman / Rigger to be available at all times to co-ordinate & control the material being loaded or unloaded.	Ensure that the lifting machine operator & banks man are trained & are appointed as competent persons; Training certificates should be available.
Use of Lifting machines, Hand powered lifting devices and Lifting tackle	Untrained / incompetent persons using Lifting machines, Hand powered lifting devices	Damage to Lifting machines, Hand powered lifting devices and Lifting	4	4	8	0	16	Only competent trained persons are permitted to operate lifting machines, hand powered lifting devices and lifting tackle used on site;	Detailed risk assessment and training on RA; toolbox talks;

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for the purpose of Loading and Offloading equipment on or from vehicles and the raising or lowering of equipment, materials etc.	and Lifting tackle; Unsafe Lifting machines, Hand powered lifting devices and Lifting Tackle.	tackle; Load dropping can result in damage to materials, equipment and plant; Possible injuries to Workers; Contravention or failure to comply with the Driven Machinery Regulations, 2015 can lead to Prosecution.						All lifting machines, hand powered lifting devices and lifting tackle to be on register; Tested & checked by a competent appointed person; Load test certificates must be available for all lifting machines and hand powered lifting devices; All training of lifting machine operators, Load testing and inspection of lifting machines and lifting tackle to be in compliance with Driven Machinery Regulations, 2015; Lifting machines, hand powered lifting devices and lifting tackle to be visually inspected for damage before use; A competent Banksman / Rigger to be available at all times to co-ordinate & control the lifting operations; The banks man must use his whistle at all times when a suspended load is moving above workers to warn them.	supervision; Training certificates of lifting machine operators on file; All records of tests and inspections of lifting machines, hand powered lifting devices and lifting tackle to be on file and available on site; All training of lifting machine operators, Load testing and inspection of lifting machines, hand powered lifting devices and lifting tackle in compliance with Driven Machinery Regulations, 2015; Visual inspection of lifting before use; A competent Banksman / Rigger to be available at all times to co-ordinate & control the lifting operations.
Working at Heights & Elevated Positions.	Not wearing safety harnesses / safety harnesses not secured; Taking an unsafe position whilst working on scaffolding.	Severe injury or even death when falling from a height or scaffolding.	10	2	4	0	16	Training on the correct use of safety harnesses and fall arrest equipment; ensuring that trained competent persons are carrying out the work & understand the hazards of working at height; always use the 100% tie off method while moving around at height.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to employees; Daily pre-inspection to be carried out; training on the correct use of a safety harness and fall arrest equipment on file; Competent to do the job; Monthly safety harness inspection register to be completed.
	Improper identification and issuing of Personal Protective Equipment requirements resulting in slipping and falling; improper head, hand and eye protection.	Severe injuries or even death.	10	2	4	0	16	Survey to be carried out to identify PPE requirements; issuing of correct PPE as identified i.e. safety shoes, hardhat, overall, gloves, safety glasses, safety harnesses with dual lanyards; Workers trained in the correct use of PPE issued;	Detailed risk assessment and training on RA; toolbox talks; supervision; Daily pre-inspection to be carried out; training on the correct use of a safety harness and fall arrest equipment on

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			A	B	C	D	R		
								record of all training to be kept on file; record of PPE issued to be kept on file; safety harness inspector to be appointed.	file; training on the correct use of PPE on file; record of PPE issued on file; Monthly safety harness inspection register to be complete
Erection of Scaffolding.	Erection of scaffolding not carried out by competent persons or not supervised by a competent person.	Can result in serious injuries or death to persons should the Scaffolding collapse; Damage to scaffolding or other equipment; Contravention or failure to comply with Construction Regulation 16, can lead to Prosecution.	10	2	8	0	20	Only competent Scaffold Erectors, Team leaders and Inspectors allowed to erect scaffolding; Competent person appointed in writing to supervise scaffolding operations.	Detailed risk assessment and training on RA; toolbox talks; Competent person appointed in writing to supervise scaffolding operations; Constant reinforcement & specific instructions to employees; competent Scaffold Erectors, Team leaders and Inspectors carrying out erection of scaffolding; Daily pre-inspection to be carried out; Complying with SANS 10085-1 on the design, erection and inspection of access scaffolding.
Working at Heights & Elevated Positions on Scaffolding structures.	Scaffold not properly boarded.	Employees could fall through resulting in serious injuries or death.	10	2	4	0	16	Scaffold platforms must at all times be fully boarded to ensure that employees do not fall through; Competent person appointed in writing to supervise scaffolding operations.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to employees; Daily pre-inspection to be carried out; Complying with SANS 10085-1 on the design, erection and inspection of access scaffolding.
	Scaffold has no handrails.	Falling off the scaffold resulting in serious injuries or death.	10	2	4	0	16	Handrails must be fitted at knee & hip height at all times, if employees are required to work on an open edge then they need to wear a harness & attach it to the structure or life line; Competent person appointed in writing to supervise scaffolding operations.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to employees; Daily pre-inspection to be carried out; Complying with SANS 10085-1 on the

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									design, erection and inspection of access scaffolding.
	Scaffold has no safe access.	Falling from height resulting in serious injuries or death.	10	2	4	0	16	Scaffolding must be fitted with safe access ladders / staircases at all times, if the scaffold does not have safe access then it may not be used; Competent person appointed in writing to supervise scaffolding operations.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to employees; Daily pre-inspection to be carried out; Complying with SANS 10085-1 on the design, erection and inspection of access scaffolding.
Confined spaces.	Testing and air evaluation.	Lack of oxygen while testing and evaluating air can cause suffocation.	10	2	8	4	24	A competent person must test and evaluate the air within and certify in writing after testing; Trained or competent person must use dragger instrumentation or similar to measure the oxygen content.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to workers; Daily pre-inspection to be carried out.
	Lack of oxygen below 20%.	Lack of oxygen in the confined space can cause suffocation to employees.	10	2	8	0	20	Employees to be evacuated immediately should the oxygen level drop below 20%.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to workers; Hourly pre-inspection to be carried out.
	No ventilation.	If there is no ventilation in the confined space, harmful gasses can reduce oxygen which can lead to suffocation.	10	2	8	0	20	Fans to be positioned to allow sufficient air flow and oxygen to the worker.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to workers; Hourly pre-inspection to be carried out.

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	Changing conditions; Accumulation of poisonous gases or the lack of oxygen.	The lack of oxygen can cause suffocation and poisonous gases can result in respiratory damage or death.	10	2	10	0	22	Supervisor to take readings continuously throughout the day to monitor the oxygen content to ensure a safe breathing environment for the persons working.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to workers.
	Not using self-contained breathing apparatus if oxygen level drops to less than 20%.	Not using self-contained breathing apparatus if there is lack of oxygen in confined space can cause suffocation to employees.	8	2	8	0	18	Employees to use self-contained breathing apparatus or airline system if oxygen level drops to less than 20%; Employees need to be trained on the proper and safe method of using the apparatus.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to workers.
	No unauthorised persons allowed into confined space.	Untrained employees can cause serious injuries or death to themselves and other employees, because they are not familiar with confined space working procedures.	10	4	8	0	22	No unauthorised personnel allowed in the working area; Working area outside the confined space must be barricaded to avoid unauthorised persons from entering.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to workers.
	No emergency breathing apparatus provided.	Not receiving the required oxygen immediately after the incident can cause suffocation or death to an employee.	10	4	8	0	22	A breathing apparatus set must be positioned outside in case of an emergency; Check oxygen content of apparatus before work starts.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to operators.
Mobile Crane operation.	Using a mobile crane that is not load tested and certified safe for use.	Use of uncertified safe to use lifting equipment can result in failure whilst lifting causing the load to drop which can result in serious injuries, fatalities or damage.	10	4	10	0	24	All lifting equipment must be placed on a register for inspection purposes and must have a valid certificate of safe work load test issued by a Lifting Machine Inspector; Employees may not be positioned under suspended loads.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement and specific instructions to operators; Lifting equipment certification on file.

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	Incorrect rigging by untrained persons.	Incorrect rigging can result in failure whilst lifting causing the load to drop which can result in serious injuries, fatalities or damage.	10	2	10	0	22	A trained rigger must be appointed to supervise or perform all rigging operations.	Detailed risk assessment and training on RA; Toolbox talks; supervision; constant reinforcement and specific instructions to operators; Rigger competency certificate on file.
	Improper / unclear communication between the Banksman and the Operator.	The lack of proper Communication between the operator & Banksman can result in injuries, fatalities or damage to material or equipment due to misinterpreted instructions.	10	2	10	0	22	Banksman must be issued with a whistle to warn others of loads being hoisted; Crane operator & Banksman needs to use standard terminology and must not react on any unclear instructions.	Detailed risk assessment and training on RA; toolbox talks; supervision; constant reinforcement and specific instructions to operators; Crane operator's training and certification on file.
Operation of mobile plant & construction vehicles.	Untrained operators operating mobile plant and construction vehicles.	Causing accidents involving people, other mobile plant & construction vehicles and existing structures; Causing serious injuries, fatalities or damage; Spillages resulting in ground contamination.	10	2	10	2	24	Only trained certified competent, medically fit and legally appointed employees may operate mobile plant & construction vehicles; Certificates of competency of the operators Must be filed in the safety file on site.	Detailed risk assessment and training on RA; toolbox talks; supervision; Constant reinforcement & specific instructions to operators; Certificates of competency and appointments and medical certificates of the operators on file.
	Poor condition of mobile plant & construction vehicles.	Failure of mobile plant & construction vehicles can result in injury to the operator, other workers, damage to mobile plant, or structures; Oil leaks resulting in ground contamination.	10	2	10	2	24	Ensure that all plant is maintained & records thereof kept; A planned maintenance schedule must be followed & operators must record daily inspections & report deviations immediately to the supervisor.	Detailed risk assessment and training on RA; Toolbox talks; Supervision; Constant reinforcement & specific instructions to operators; Planned maintenance programme; Daily vehicle checklists
Electrical Installations - Permanent and Temporary.	Untrained / incompetent persons carrying out electrical installations.	Can lead to electrical shock or electrocution and damage to equipment.	10	2	8	0	20	Only competent Registered Persons as defined in the Electrical Installation Regulations pertaining to the category of electrical installations carried out may carry out any electrical installations.	Only competent Registered Persons as defined in the Electrical Installation Regulations pertaining to the category of electrical installations carried out may carry out any electrical installations; Person appointed in writing to control all

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									temporary electrical installations; Weekly inspections carried out and recorded on a register; COC (Certificate of compliance) available for all electrical installations including offices and containers.
	Unsafe standard of installation of electrical equipment.	Can lead to electrical shock or electrocution and damage to equipment; Fires caused by failing electrical installations damaging property.	10	4	10	0	24	All installations to be in compliance with the Electrical Installation Regulations 2009, the Electrical Machinery Regulations 2011 and Construction Regulation 24 of the Occupational Health and Safety Act and Regulations (Act 85 of 1993).	Only competent Registered Persons as defined in the Electrical Installation Regulations pertaining to the category of electrical installations carried out may carry out any electrical installations; Person appointed in writing to control all temporary electrical installations; Weekly inspections carried out and recorded on a register; COC (Certificate of compliance) available for all electrical installations including offices and containers.
Welding and cutting operations.	Incompetent persons carrying out welding and cutting operations.	Damage to equipment and injuries to persons.	4	4	8	0	16	Only competent persons trained in the safe use of welding and cutting equipment allowed carrying out such operations; All the required PPE must be worn i.e. Welding helmets, welding gloves, leather aprons, gas cutting glasses, cotton overalls, welding spats, safety boots and welding caps; Record of the issue thereof to be available on file.	Only competent persons trained in the safe use of welding and cutting equipment carrying out such operations; Proof of competency on file. All the required PPE must be worn i.e. Welding helmets, welding gloves, leather aprons, gas cutting glasses, cotton overalls, welding spats, safety boots and welding caps;
	Using unsafe equipment.	Can result in serious injuries and electrical shock to person using the equipment or fire damage to property.	8	2	8	0	18	All electrical welding equipment, gas cutting and welding equipment must be on register and checked monthly.	Detailed Risk Assessment and workers trained on RA; Toolbox talks; All electrical welding equipment, gas cutting and welding equipment on register and checked monthly; Record of inspections kept on file.
	Fire starting as a result of hot sparks and metal.	Damage to property.	2	4	10	2	18	Ensure a fire marshal with a fire extinguisher is standing by during the operation; All combustible material must be removed from	A fire marshal with a fire extinguisher is standing by during the operation; All combustible material removed from

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								the welding area or covered with non combustible material; Area below welding if done at height must be demarcated and warning signs displayed or protected from any sparks or hot metal falling to the lower level.	the welding area or covered with non combustible material; Area below welding if done at height demarcated and warning signs displayed or protected from any sparks or hot metal falling to the lower level.

Excavations using Machines or done Manually.	Improper barricading or warning signs to indicate location of an excavation.	Serious injuries, possible fatalities can occur; vehicle drivers not aware of the excavation driving into the excavation especially at night; other workers not aware of the excavation falling into the excavation; Animals falling into the open excavations getting injured or killed.	10	2	8	0	20	Ensure that barricades (barrier or fence) are put around the excavation at least 1 meter away from the edge; Provide warning illuminates or any other clearly visible boundary indicators at night; Daily inspections are carried out & documented on a checklist by a competent trained person - Excavation Supervisor.
	Striking unknown underground services i.e. electric power cables, water lines etc.	Striking of underground services such as live electric power cables can result in electrical shock or electrocution and severe damage to equipment or services.	10	2	8	0	20	Client to obtain the information regarding the location of any underground services of the property on which the construction will take place and make it available to the Principal contractor; Daily inspections are carried out & documented on a checklist by a competent trained person - Excavation Supervisor.
	Excavation collapsing.	Depending on depth, injuries or even fatalities; Damage to Equipment.	10	2	8	0	20	Ensure the sides of excavation are stable; If unstable, the sides must be shored or cut back to prevent subsidence / collapse; Ensure material removed are not stacked too close to the edge of the excavation causing it to collapse; Ladder access must be available for egress from the excavation within 6 metre of place of work.
	Spoil is stacked too close to the edge of the excavation & causing it to collapse / fall back into the excavation.	Lost time, damage and/or possible injury depending on the depth of the excavation.	4	2	2	0	8	Ensure that the spoil removed is placed at least one meter from the edge of the excavation; Ensure that there are no cracks in the side walls.

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Working inside an excavation and Backfilling an excavation manually.	Working where high temperatures, high humidity, direct sunlight and poor air circulation occurs, carrying out strenuous physical activities; Worker not acclimatized to working in such conditions.	<u>Heat exhaustion:</u> Headaches, dizziness, fainting, irritability, confusion, upset stomach or vomiting. <u>Heat Stress:</u> Dry hot skin with no sweating, mental confusion, losing consciousness, seizures or convulsions. Heat stress can lead to death.	10	4	4	0	18	Heat stress monitoring to be carried out; Standard procedure to be in place for working in areas where high temperatures, high humidity, direct sunlight and poor air circulation occurs, carrying out strenuous physical activities with the possibility of heat exhaustion or heat stress occurring; All persons working in such conditions must be trained on the contents of the procedure and to recognise the symptoms of heat exhaustion and heat stress, how to prevent it by drinking at least 600 ml of water every hour, taking regular breaks from the area, action to be taken when the symptoms are experienced or observed by moving the worker to a cool shaded place, provide water, fan to create air movement, cover the person with damp clothing to cool the body off and seeking medical assistance immediately; All persons working in such conditions must have medical certificate of fitness issued by an Occupational Health Practitioner (OHP) declaring that this person is fit to perform duties where high temperatures etc. occurs; Sufficient quantity of potable drinking water available; Supervision by a competent person appointed in writing.
	Fall or dislodgement of material from the side of the excavation.	Serious injuries or suffocation resulting in fatalities can occur when being buried or trapped by a fall or dislodgement of material.	10	2	8	0	20	Permission to work to be given in writing by a competent person, Professional Engineer or Technologist competent in excavations; Supervision by a competent person appointed in writing; daily checks prior to the commencement of each shift by the appointed competent person and recorded in a register; Excavation to be adequately shored or braced unless sloped to at least maximum angle of repose measured relative to the horizontal plane; No load, material plant or equipment placed near the edge of excavations which can cause it to collapse; Warning signs to be positioned next to an excavation within which or where persons are working.
Backfilling excavation with mobile plant.	Untrained operators operating mobile plant.	Causing accidents involving people, other mobile plant, existing structures; Spillages resulting in ground contamination.	10	2	8	2	22	Only certified competent, medically fit and legally appointed employees may operate mobile plant & construction vehicles; Certificates of competency of the operators must be filed in the safety file on site.
	Workers working in the vicinity of moving mobile plant.	Workers struck by the moving mobile plant by coming to close to it or working behind it not being visible to the operator sustaining serious injuries or death.	10	4	10	0	24	All employees to wear reflective clothing; No employee should walk or work behind moving mobile plant; All mobile plant must be fitted with a reverse alarm; all persons walking on site must listen for the hooters; Operators may never leave the mobile plant running unattended or with the key in the ignition.

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Compaction of ground using a whacker.	Not knowing how to operate a whacker and Getting struck by the whacker out of control; Constant vibration on the body; Noise above 85 dBA; Defective whackers.	Improper operation of the whacker can result in damage to materials, structures or vehicles; Hand-arm vibration Injuries; hearing loss Injuries.	8	2	4	0	14	Only trained, competent & authorized employees may operate this machine; Do not work too close to other employees, valuable material or vehicles with the roller; Never leave machine unattended while in operation; Only operate when authorized to do so and when trained on the risks involved; Use drip tray when refuelling; Always wear hearing protection, safety boots and anti-vibration gloves; Defective machinery to be reported to the Supervisor; Make sure that the stop / start buttons are in working condition; Workers trained on the correct use of personal protective equipment issued.
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NOTE:

This information describes the type of work required in terms of this contract that will be accompanied by dangers, hazards and risks which the Contractor shall be required to identify, analyse, manage, monitor and review in terms of the Health and Safety Plan and Risk Assessments.

This information is neither prescriptive nor exhaustive, and is provided as a guideline to tenders in preparing their tender submissions and to the successful Contractor as a basis for the preparation of the Site Specific Risk Assessments, to be performed by the Contractor in terms of Construction Regulation 9.

Tenders shall make their own assessment of the dangers, hazards and risks that can be expected during the course of this contract, which may include dangers, hazards and risks not identified in the Baseline Risk Assessment, including those that may arise from specific methods of construction employed by the Contractor, and shall make due allowance in their tendered rates and prices for all costs related to complying with the provisions of the Act and Construction Regulations.

This information is given in good faith for the guidance of Tenderers, and no additional payment shall be made as a result of any inaccuracies, discrepancies or omissions contained therein.

This is a Baseline Risk Assessment and the responsibility remains with the Contractor to prepare project specific Risk Assessment as per Regulation 9.