

Document No	S-BRA-001-00	HEALTH, SAFETY, ENVIRONMENTAL & QUALITY MANAGEMENT	
Revision	01		
Appointment date	9-Sep-26		
Draft Baseline Risk Assessment			
AS PER CONSTRUCTION REGULATION 5(1)(a), 2014 OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993 (Latest Edition)			

ANNEXURE B

RFP153/2026: APPOINTMENT OF A PROFESSIONAL SERVICE PROVIDERS FOR THE PROVISION OF PROFESSIONAL SERVICES TO PLAN, DESIGN, MONITOR AND COMPLETE [as per FIDPM stages 1 – 7] LURHWAYIZO SSS IN THE EASTERN CAPE.

(DETAILS)

This document is prepared in terms of Construction Regulation 5(1)(a). The Baseline Risk Assessment is conducted to obtain a benchmark of type and size of potential hazards pertaining to the project.
The aim is to identify all major and significant risks.

SUPERVISION BY THE CLIENT
DBSA – DEVELOPMENT BANK OF SOUTHERN AFRICA

SUPERVISION BY THE PROFESSIONAL SERVICE PROVIDER
(TBA)

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1. OBJECTIVE

The objective of this baseline risk assessment is to identify and categorize the significant health, safety, environmental and quality hazards and risks associated with the planning, procurement and construction activities of the project.

This Baseline Risk Assessment is developed in accordance with the requirements of Construction Regulation 5(1)(a) of the Construction Regulations, 2014 issued under the Occupational Health and Safety Act 85 of 1993.

The evaluation of results will assist management to eliminate, minimize or control risks to workers associated with the tasks performed or exposure to the working environment.

The assessment further aims to identify hazards that may arise throughout the lifecycle of the project, including the design, construction, operation, maintenance and decommissioning phases of the infrastructure.

This risk assessment was also conducted to assist management in identifying training needs in order to concentrate efforts where they are mostly needed.

The Baseline Risk Assessment will provide input into the preparation of the project Health and Safety Specification and will inform designers, Professional Service Providers, and the Principal Contractor of the significant risks associated with the project.

The assessment also supports the implementation of the “Safety in Design” principles as required in terms of Construction Regulation 6 to ensure that hazards are eliminated or reduced during the design stage as far as reasonably practicable.

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2. SCOPE

This Baseline Risk Assessment considers the full project lifecycle including project initiation, concept and feasibility, design development, procurement, construction, commissioning and project close-out phases.

The purpose of this assessment is to identify and evaluate potential health, safety, environmental and operational risks that may arise during the planning, design and construction of the infrastructure project.

The Baseline Risk Assessment is prepared in accordance with the requirements of Construction Regulation 5(1)(a) of the Construction Regulations, 2014 promulgated under the Occupational Health and Safety Act 85 of 1993.

The Baseline Risk Assessment shall assist in:

- Identifying hazards associated with the project.
- Evaluating the potential risks to workers, the public, property and the environment.
- Determining appropriate control measures to eliminate or reduce risks to an acceptable level.

The findings of this Baseline Risk Assessment will inform the preparation of the project Health and Safety Specification and must be communicated to designers, Professional Service Providers and the Principal Contractor to ensure that the identified risks are addressed throughout the project lifecycle.

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2.1 PROJECT SPECIFIC SCOPE OF WORKS

This Baseline Risk Assessment is pertaining to the ***appointment of a professional service providers for the provision of professional services to plan, design, monitor and complete [as per FIDPM stages 1 – 7] Lurhwayizo SSS in the Eastern Cape. (Project details)***

The Scope of works will include the following.

The scope of work for RFP153/2026 shall cover Stages 1 – 7 on all the following schools. The works in no particular order, shall include but not limited to the following:

The Professional Services Provider (PSP) is expected to assist the Employer to implement the Project.

- Assessment Report (Stage 1)
- SDP and Cost Estimate Approval (Stage 2)
- Concept Design (Stage 3)
- Documentation (Stage 4)
- Procurement (Stage 5)
- Monitoring (Stage 6)
- Final Account and Close out Report (Stage 7)

SCHEDULE OF ACCOMMODATION – LURHWAYIZO SSS	
SCHOOL DESIGN POPULATION	NOTES
School enrolment - 641	School Classification: Large School Latest enrolment figures, number of staff and school subject offering to be verified at site evaluation.
RATIONALISATION & RE-ALIGNMENT STATUS	NOTES
School Phase: Combined School N/A	.
TEACHING AND LEARNING SPACES, SUPPORT AREAS & BUILDING SERVICES	NOTES

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<u>SOI 601 – WATER INFRASTRUCTURE</u> Upgrade water supply and reticulation throughout the site, to support all new structures where applicable: Provision of rainwater tanks and stands and during decanting (prefabricated classrooms). Connect to rainwater goods for harvesting of rainwater. Install vandal proof taps to all tanks.	As per National Building Regulations SANS 10400. As per Minimum Uniforms Norms and Standards for Public School Infrastructure.
<u>SOI 602 – ELECTRICITY INFRASTRUCTURE</u> Upgrade electricity supply and reticulation throughout the site and to support all new structures, complete with testing and commissioning if its necessary.	As per National Building Regulations SANS 10400. As per Minimum Uniforms Norms and Standards for Public School Infrastructure.
TEACHING AND LEARNING SPACES, SUPPORT AREAS & BUILDING SERVICES	NOTES
<u>SOI 603 – SANITATION</u> Upgrade and refurbish the existing waterborne ablutions facilities with the current school population if necessary.	Refer to Minimum Uniforms Norms and Standards for Public School Infrastructure. As per National Building Regulations SANS 10400.
<u>SOI 605 – MAINTENANCE</u> Every effort must be made to salvage existing buildings, which are to undergo general maintenance as part of the intended works. As part of the rationalization of the site, conversion of the buildings to alternative functions (support areas and storage) may be considered. NOTE: The conversion of the buildings will depend on the approved SDP, since some buildings might be demolished due to their position vs the current scope of work.	As per National Building Regulations SANS 10400. As per Minimum Uniforms Norms and Standards for Public School Infrastructure.
<u>NSOI 608 – MAINTENANCE OF EXISTING BUILDINGS (BRICK AND MORTAR) AND DECANTING</u> - Build new 5 Classroom Block - Build new Administration block building	Refer to Minimum Uniforms Norms and Standards for Public School Infrastructure. As per National Building Regulations SANS 10400.

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- Decanting with prefabricated classroom structures x 5 prefabricated structures and related infrastructure. - Build new 2 toilets with 2 urinals and 2 Whb and repair 6 toilets and 2 Whb - Build new Science lab, Computer room and library/Media Centre - Build new Dining and Nutrition Centre - Build new Education Support Spaces consists of 5 storage Areas, 1 Security room/Guard house, 2 flagpoles and 1 school signage - Repairs of other Building Services - Install Grade A-High Security Fencing and school maintenance	
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The Baseline Risk Assessment will be reviewed and updated should significant changes occur in the project scope, design or construction methodology.

3. ABBREVIATIONS & DEFINITIONS

DEFINITIONS	
Purpose of the Act	- to provide for the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith
the Act	- means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
Agent	- means a competent person who acts as a representative for a client
AIA	- means an Inspection Authority approved by the chief inspector: Provided that an inspection authority approved by the chief inspector with respect to any service shall be an Approved Inspection Authority with respect to that service only
Asbestos	- means the following fibrous silicates: ➤ Asbestos actinolite ➤ Asbestos grunerite (amosite) ➤ Asbestos anthophyllite

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	➤ Chrysotile ➤ Crocidolite ➤ Asbestos tremolite ➤ Any mixture containing these fibrous silicates
Asbestos-containing material	- means asbestos as well as any material that contains asbestos and includes asbestos cement products, asbestos coating, asbestos insulation board, asbestos insulation, asbestos textured decorative coatings, asbestos contaminated soil and other asbestos-containing material
Asbestos Demolition Work	- means demolition, alteration, stripping, removing, repair, gleaning of any spilt asbestos, or high-pressure water jetting of any structure containing asbestos lagging or insulation, but does not include work performed on asbestos cement sheeting and related products and asbestos cement products that form part of the structure of a workplace, building, plant or premises.
Asbestos dust	- means airborne or settled dust, which contains or is likely to contain regulated asbestos fibers
Asbestos Waste	- means an undesirable or superfluous asbestos-containing by-product, emission or residue of any process or activity that has been – ➤ discarded by any person ➤ accumulated and stored by any person with the purpose of eventually discarding it with or without prior treatment connected with the discarding thereof; or ➤ stored by any person with the purpose of recycling, re-using or extracting a usable product from such matter
Asbestos Work	- means work that exposes or is likely to expose any person to asbestos dust.
Client	- means any person for whom construction work is performed
Competent Person	- means any person having the knowledge, training, experience and qualifications specific to the work or task being performed.
Construction manager	- means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site
Construction site	- means a workplace where construction work is being performed
Construction supervisor	- means a competent person responsible for supervising construction activities on a construction site

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Construction work	- means any work in connection with - ➤ the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or ➤ the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work.
Contractor	- means an employer who performs construction work
Designer	- means ➤ a competent person who- ○ prepares a design. ○ checks and approves a design. ○ arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or ○ designs temporary work, including its components. ➤ an architect or engineer contributing to, or having overall responsibility for a design ➤ a building services engineer designing details for fixed plant ➤ a surveyor specifying articles or drawing up specifications ➤ a contractor carrying out design work as part of a design and building project; or an interior designer, shopfitter or landscape architect.
DBSA	- Development Bank of Southern Africa
DSTI	- Daily Safety Task Instruction
Excavation work	- means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping
Fall protection plan	- means a documented plan, which includes and provides for ➤ all risks relating to working from a fall risk position, considering the nature of work undertaken ➤ the procedures and methods to be applied to eliminate the risk of falling; and ➤ a rescue plan and procedures.
Fall arrest equipment	- means equipment used to arrest a person in a fall, including personal equipment, a body harness, lanyards, deceleration device, lifelines or similar equipment
Fall prevention equipment	- means equipment used to prevent persons from falling from a fall risk position, including personal equipment, a body harness, lanyards, lifelines, or physical equipment such as guardrails, screens, barricades, anchorages or similar equipment

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Fall risk	- means any potential exposure to falling either from, off or into
Health and Safety File	- means a file, or other record containing the information in writing required by the Construction Regulations 2014
Health and Safety Plan	- means a site, activity or project specific documented plan in accordance with the client's health and safety specification
Health and Safety Specification	- means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work
HCS	- Hazardous Chemical Substances
HBA	- Hazardous Biological Agents
HIRA	- Hazard Identification Risk Assessment
Method Statement	- means a document detailing the key activities to be performed to reduce as reasonably as practicable the hazards identified in any risk assessment
MSDS/SDS	- means material safety data sheet / safety data sheet for hazardous chemicals
National Building Regulations	- means the National Building Regulations made under the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and promulgated by Government Notice No. R. 2378 of 30 July 1990, as amended by Government Notices No's R. 432 of 8 March 1991, R. 919 of 30 July 1999 and R. 547 of 30 May 2008
PSP	- Professional Service Provider
PPE	- Personal Protective Equipment
PTO	- Planned Task Observation
Risk Assessment	- means a program to determine any risk associated with any hazard at a construction site, to identify the steps needed to be taken to remove, reduce or control such hazard.
Shoring	- means a system used to support the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation or trench

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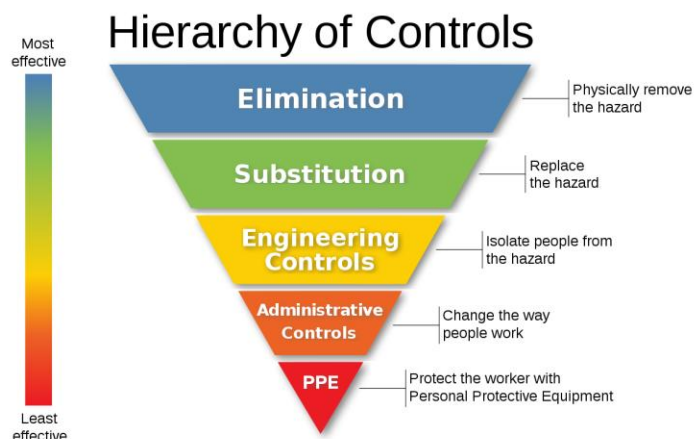
Structure	- means ➤ any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, bulk mixing plant, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure ➤ any falsework, scaffold or other structure designed or used to provide support or means of access during construction work; or ➤ any fixed plant in respect of construction work which includes installation, commissioning, decommissioning or dismantling and where any construction work involves a risk of a person falling
Service Provider	- means an employer appointed by the client to perform construction work
SACPCMP	- means the South African Council for the Project and Construction Management Professions
SOP / SWP	- Standard Operating Procedure / Safe Working Procedure
Temporary works	means any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction work
Definitions to understand under Control Measures	
Elimination	The Most satisfactory method of dealing with hazards is to remove it in complete (get rid of it). Once a hazard is eliminated the potential for harm is removed
Substitution	This involves substituting a dangerous process or substance with one that is not as dangerous
Isolation	Separate or Isolate the Hazards from making contact with people
Engineering	Implement Engineering controls to eliminate or reduce the risk
Administrative	Administrative control usually involves modification of the likelihood of an accident happening. This is done by reducing the number of people exposed to the hazard, and ensuring those that remain exposed to a hazard understand the hazard and the best way to manage the hazard. Administrative controls include – Procedures, Signages, Permits etc.
PPE	Provision of Personal Protective Equipment should only be considered if all the other control measures are impractical.

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4. RISK METHODOLOGY

This risk assessment methodology is used to systematically identify hazards, evaluate associated risks and determine appropriate control measures to eliminate or reduce the risks to an acceptable level.

The methodology follows the principles of hazard identification and risk assessment in accordance with the Occupational Health and Safety Act 85 of 1993 and the Construction Regulations, 2014.

The purpose of this methodology is to:

- Identify hazards associated with project activities
- Determine the potential consequences of these hazards
- Evaluate the likelihood of the risk occurring
- Determine the risk rating
- Implement appropriate control measures

The risk assessment process also supports the application of the hierarchy of controls to eliminate or reduce hazards at source where reasonably practicable.

4. RISK METHODOLOGY

ASSESSMENT				RISK MATRIX						RISK CALCULATION	PRIORITY OF ACTION		
I	INJURY SEVERITY	C	FINANCIAL IMPLICATIONS	26	27	28	29	30	SUM OF: INCIDENT / FINANCIAL / DAMAGE / ENVIRONMENTAL / FREQUENCY / PROBABILITY = RISK VALUE	RISK VALUE		25 - 30	Immediate
1	No injury	1	No [Zero] financial implications	21	22	23	24	25				24 - 21	Within 1 week
2	Minor laceration, contusion or wound (first aid case)	2	R1000 - R9999	16	17	18	19	20				20 - 17	Within 1 month
3	Injury requiring medical assistance <14 Days recover	3	R10 000 - R99 999	11	12	13	14	15				16 - 09	Within 6 months
4	Serious injuries, trauma >14 Days recovery	4	R100 000 - R499 999	6	7	8	9	10				08 - 05	Within 12 months
5	Loss of life [Fatality]	5	>R500 000	1	2	3	4	5				01 - 04	As reasonable
D	POTENTIAL DAMAGE / LOSS	E	ENVIRONMENTAL IMPACT	ACTION REQUIRED							CONSIDER		
1	No damage	1	No effect	Critical			Terminate operation / Competent Supervision / Specialist training / Method Statement / Risk assessments / Safe work procedures / Permits				Intolerable: Change method / Terminate Risk		
2	Minor damage	2	Minor effect										
3	Med. damage/loss, short stoppage (repaired on site)	3	Serious effect (Short Term)	High			Competent Supervision Training / Certification Method Statement / Risk assessments / Safe work procedures Planned task observations / Toolbox talks				Change method Transfer Risk Mitigate		
4	More serious damage/loss & delay	4	Very serious effect (Long Term)										
5	Severe damage/loss & long-term delay	5	Catastrophic effect										
P	PROBABILITY	F	FREQUENCY OF OCCURRENCE	Medium			Competent Supervision / Training / Certification / Method Statement / Risk assessments / Safe work procedures / Planned task observations / Toolbox / Safety talks				Change method Mitigate		
1	Event has never occurred probability of <1%	1	No occurrence										
2	Events have probability of between 1% and <25%	2	Occurs very seldom [5 Years]										
3	Event has probability of between 25% and <50%	3	Occurs occasionally [1 Year]	Low			Supervision / Training / Certification / Method Statement / Risk assessments / Safe work procedures / Training / Toolbox / Safety talks				Written Instructions		
4	Event has probability of between 50% and <90%	4	Occurs often [Monthly]										
5	Event occurs frequently & >90% of re-occurring	5	Could / Has Happened [Weekly/Daily]										

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6. BASELINE RISK ASSESSMENT

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
Stage 1 – Project Initiation and Briefing																		
S1-01	Appointment of competent Pr. Construction Health and Safety Agent	Project disruption due to risks not identified during stage 1-3 of the project Financial implications if the required OHS requirements were not budgeted for Unable to identify Health and Safety Risks or challenges during the design phase. Contravention of Legislative requirements. Not appointing a Health and Safety Agent Construction would lead to contravention of Section 18(1)(c) of Project and Construction Management Professions Act, 2000 Time restrictions to commence with the next stage / project	1	4	3	1	3	4	16	Appointment of competent Pr. Construction Health and Safety Agent as per Legislative and SACPCMP requirements. Implementation of all safety-related functions into manageable systems, subsystems, processes, and procedures. Competency verification to be done through the SACPCMP registered Professionals platform DBSA tender process to ensure the correct OHS professional is appointed based on the specific project	- DBSA Procurement process - Construction Regulations - Appointment letter - SACPCMP Certificate - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Management Professions Act, 2000	1	4	2	1	2	3	13
S1-02	Client project brief, scope, contracts, and related documents	Insufficient information concerning the agreed-upon scope of the construction project, deliverables from key stakeholders, and contractual obligations. Inadequate practices for managing project requirements. Changes in project scope and other requirements No clear statement of intent Roles and Responsibilities not defined Project Disruptions due to poor communication and decision making Financial impact due to non-compliance with legal requirements that might be taken to court Environmental impact due to not being able to identify the impact of the project on to the environment such as Fauna and Flora in the community Undefined roles and	1	4	4	1	4	3	17	Client (DBSA) must ensure that the necessary support and resources are appointed to manage requirements of this project. Agreed on scope of work, responsibilities/accountabilities, and deliverables for all key stakeholders. DBSA should establish safety objectives and targets, along with a commitment to effectively managing and resourcing the project, to continuously improve the safety of systems, employees, assets, and overall performance. Compile legal contracts for professional services, engineering, etc. and general	- Clear Construction project health and safety brief - Agreed Scope of work - Agreed Objectives and targets - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Management Professions Act, 2000	1	4	2	1	3	3	14

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK											
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR					
			responsibilities could lead to miscommunication, delays in decision making, increased costs due to “reworks”, legal and contractual issues and stakeholder disengagement No clear statement of intent addressed in the project brief could cause lack of direction for the project, misaligned stakeholder expectations, poor decision making and inefficiently allocation of resources								construction contracts to secure commitment, compliance, traceability of decision making, deliverables, etc. Implement and agree to clear communication channels for all professionals All professionals to ensure Health and Safety principles and legal requirements are identified and addressed													
S1-03	The process, validation and approval of works by DBSA, regulatory bodies and interested parties.	Exclusion criteria (legal requirements) for current and future DBSA infrastructure causing changes in technical and operational requirements	Project Disruptions/delays if all approvals were not done during this stage Unnecessary funding from stakeholders if all approvals are not done	1	5	4	1	2	3	16	The exclusion criteria for DBSA infrastructure should be properly defined and agreed with interested parties before any final decision and approvals. Agreements must be signed and approved by all interested parties	- Signed agreement - Project Plan - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Management Professions Act, 2000	1	5	3	1	2	2	14					

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S1-04	Appointment of the necessary and appropriately qualified consultants, designers, and other specialists who possess the required competency, statutory registrations, and adequate resources to fulfil their respective roles and responsibilities	No adequate technical safety knowledge, experience, skills, and resources for addressing occupational hazard and risk, technical/structural failures, human factor limitations/behavior and foreseeable misuse during the design/redesign processes.	Project Disruptions/delays if consultants appointed are not competent or registered with the required statutory body Financial Implications if competent resources need to be sourced after the initial appointment of the professional team	1	5	4	1	3	3	17	DBSA must consider competency requirements and verification of designers, engineers and other appropriate specialists as required in legislation. Registrations to be verified with certain bodies. Design risk management training for designers if required. Records of other professionals must be submitted and recorded to ensure competent professionals are appointed for the project	- Appointment letter - Competency / Registration / Qualifications - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Management Professions Act, 2000	1	5	2	1	2	2	13
S1-05	Legal and regulatory compliance.	Non-compliance with Legal and Regulatory requirements range from penalties and fines to imprisonment, withdrawal of licenses, lawsuits and reputational risk, impact on the project objectives and organizational sustainability.	Non-compliance with Legal and Regulatory requirements range from penalties and fines to imprisonment, withdrawal of licenses, lawsuits and reputational risk, impact on the project objectives and organizational sustainability. Project Disruptions/delays Financial Impact Reputational Damages	1	5	4	1	2	3	16	Compile and maintain a legal register for the project. Identifies all the legal obligations impacting directly or indirectly on the infrastructure facility. Comply/evaluate compliance with the requirements contained in legislation and national standards applicable to the project. Monitors changes in legislation and national standards and communicate with relevant stakeholders.	- Legal Register - OHS ACT and its Regulations - Building Regulations - SANS Standards - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Management Professions Act, 2000	1	5	2	1	2	2	13
S1-06	Unknown site and environmental restrictions/conditions.	Inadequate site health, safety, environmental restrictions/conditions information available.	Unable to identify conditions where the project is planned to commence could lead to Project Disruptions/delays Financial Implications if funds are made available but due to conditions,	1	5	3	3	2	2	16	Professional team to identify required site surveys, site tests, analyses of reports, and other investigations where such information will be required in the interest of health and safety and/or legal compliance.	- Surveys Scheduled report - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Management Professions Act, 2000	1	5	2	2	2	2	14

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S1-07	Preparation of draft risk profile	Unable to identify high level risks during this stage	1	5	4	2	3	3	18	Draft risk profile to be drafted by Professional Registered Construction Health and Safety Agent with consultation with all appointed professionals identify risk that might be associated with the potential project	- Draft Risk Profile - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Professions Act, 2000	1	5	2	2	2	2	14
S1-08	Needs and expectations of local community/public and road users.	Inadequate lines of communication between local community and project activities/construction can lead to civil unrest and other legal and social factors/issues.	1	3	3	1	3	3	14	Social Facilitator to identify and managing community needs and expectations, and to ensure engagements are held with local communities to understand specific needs and expectations of the certain communities.	- Appointment of Social Facilitator as part of the professional team - Stakeholder engagement meetings	1	3	2	1	2	3	12
Stage 2 – Concept and Feasibility																		
S2-01	Feasibility	No feasibility studies conducted	1	5	3	1	3	3	16	DBSA and Professional team appointed should prepare a detailed infrastructure business/project plan that addresses current financial condition, capital, project and operating budget, and cash flow projections for the DBSA infrastructure project.	- Feasibility Study - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction	1	5	2	1	2	2	13

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
											Management Professions Act, 2000							
S2-02	Demand and capacity analysis of DBSA infrastructure.	Failure to study and address higher volumes and operational activities in and around DBSA infrastructure.								Conduct a study and simulation to address and evaluate DBSA infrastructure capacity to address operations and service quality issues.	- Feasibility Study - Concept approval							
S2-03	Commercial/ residential activities in and around DBSA infrastructure	Reasonably foreseeable misuse of DBSA infrastructure in a way not intended in the original design for example, uncontrolled formal/informal facilities in and around the infrastructure precinct, etc.								Exploitation by formal/informal facilities/needs to be regulated and controlled to prevent their unrestricted/uncontrolled expansion within and around the DBSA infrastructure.	- Feasibility Study - Concept approval							

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S2-04	The process, validation and approval in principle for DBSA infrastructure after final approvals.	No mandate and accountability to accomplish required levels of functionality, performance and exclusion criteria for DBSA infrastructure throughout its life cycle, changes in user requirements, etc. changes in technical requirements								the infrastructure to be built	Establish procedures for acceptance, validation and approvals in principle for all mandatory, site specific and generic specifications of all interested parties to address any uncertainty in the DBSA infrastructure design, construction and functioning as confirmation that any alterations, additions, modification, etc. is appropriate for its intended use.	- Feasibility Study - Concept approval - Signed Mandate						
			1	5	3	4	2	2	17				1	5	2	2	2	14
S2-05	Feasibility and concept assessment for DBSA planning and design from inception to completion, evaluating its practical viability in light of the environmental realities of its implementation.	Insufficient or nonexistent information to support decision-making processes regarding the financial implications for the DBSA, including a lack of legal and technical requirements, market research, assessments of current infrastructure constraints and conditions, as well as environmental impact studies.								Unable to review any decisions regarding the feasibility could result in financial implications if concept is not approved	Conduct a comprehensive feasibility study that includes a historical background of the DBSA infrastructure project, a description of the required infrastructure and services, operational and management details, market research, financial data, and legal, technical, and environmental requirements.	- Feasibility and Concept Report - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Management Professions Act, 2000 - National Environmental Management Act (NEMA) / National Environmental Management: Protected areas Act						
			1	5	3	4	2	2	17		Obtain required environmental approvals and authorisations in accordance with applicable environmental legislation prior to project approval.		1	5	2	2	2	14
S2-06	Planning must ensure Access to water resources onsite is available and electricity is available	Economic impact High costs to source Water and electricity Water tanks structural failures. Waterborne diseases. Damage to infrastructure. No Drinking water available in area								Availability of unsafe drinking water for the construction teams, and surrounding members of the area could cause health risks such as cholera, hepatitis, typhoid and polio. Unavailability of water and electricity to the area where infrastructure is to be constructed could result in Project Disruptions/delays to source these resources	Provide the relevant authorities and interested parties with all required information, including drawings, specifications, design assumptions, calculations, documents, and test results (e.g., structural data, biological agent assessments) as mandated by applicable legislation. Water resource assessment to be conducted. Hydrogeological assessments to consider the availability of water Consult with Eskom regarding the availability	- Water Sample tests / yield tests - Hydrogeological Survey						
			3	5	4	4	2	2	20				2	4	2	2	2	14

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
										of electricity in the area and if not currently available determine if Eskom would have electricity available in the specific area in the future. Assessment of temporary construction services requirements to ensure adequate provision of water and electricity during the construction phase.								
Stage 3 – Design Development																		
S3-01	User requirements and specifications for a modern, functional and sustainable DBSA infrastructure.	User requirements were not fully defined by DBSA or Client and the designers, nor properly communicated or understood by all stakeholders.								Unable to build infrastructure as per client needs could result in financial losses and client dissatisfaction. Building infrastructure not according to requirements could result in Project delays/disruptions if works have to be redone								
			1	5	4	4	2	2	18	Constraints of all types should be taken into account during the design and requirements specification stage. A whole life approach should be taken to the design of mechanical, electrical and other systems/equipment, using appropriate analyses for the failure modes of applicable systems.	- Approved design reports - Construction Regulations 2014 (CR5 – Client Duties) and Section 18(1)(c) of the Project and Construction Professions Act, 2000	1	5	3	3	2	2	16
S3-02	Product Specifications	No specifications to cover operating parameters, performance, test and quality requirements of the proposed project over the life cycle. inadequate specifications								The use of poor quality or non-SABS approved products/materials could result in poor quality workmanship this causes financial losses or cost variations to procure approved products or materials during construction. Not planning or designing according to specifications could cause new infrastructure to be unsafe and non-occupiable. This will lead to delays in completing the project and could result in major or								
			5	5	4	4	2	2	22	Ensures that DBSA infrastructure equipment and systems are defined in the system specification to address sustainability. Determine the precise limits for the full set of requirements in the DBSA infrastructure being designed. Design Specifications must be reviewed against all standards by all relevant parties with approval if requirements are met.	- SANS Standards - SABS Approved products - Design Specifications	1	3	3	3	2	2	14

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S3-03																		
	Process Specifications	Poor design risk management, health, safety and environmental and quality systems	4	4	4	3	2	2	19	Implement controls to manage transparency, accountability, etc. between project development and the construction phase delivery process. Ensure that applicable human factors in design/safety in design", "physical environmental factors" and "organizational and psychological factors" are address in the product specifications.	- Approved process specifications - Health and Safety Specifications	1	3	3	3	2	2	14
S3-04	Signed-off technical specifications and drawings for DBSA infrastructure.	Lack of oversight to acknowledge and agree accountability for the proposed DBSA infrastructure. Drawings not approved Drawings done by incompetent person	5	5	4	4	2	2	22	Ensure that the correct structures and appointments are in place to assign accountability, authority, responsibility and roles. Ensure traceability, responsibility and accountability are clearly defined and documented. Design team not to deviate from concept design baseline without written approvals from DBSA. Implement change management procedure	- Signed off / approved Drawings - Approved technical specifications - Change Management Procedure	1	3	3	3	2	2	14
S3-05	Documented evidence for the mitigation and control of occupational health, safety, environmental and regulatory risks in the design, redesign and construction processes.	No documented evidence provided during the design process of compliance with regulatory and technical requirements impact negatively on project delivery, commissioning and functionality	1	5	3	3	2	2	16	Addressing and documented occupational safety, health and environmental obligations in the design and redesign process to prevent or reduce risks associated with the total life cycle of the DBSA infrastructure. Provide schedules of surveys, tests, analyses, site and other investigations conducted during stage 2	- Records of Surveys conducted - Final Health and Safety Risk Profile - Updated Health and Safety Specification - Final Baseline Risk Assessment	1	5	2	2	2	2	14

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR				
S3-06			requirements The delays or stoppage of the project will lead to financial losses when paying service providers and contractors No considering the environmental Impact or Fauna and Flora requirements for the area could result in major fines and work stoppages									Develop and provide preliminary construction project risk profile. Health and Safety Specification to be updated by appointed Pr. CHSA for the project Final Baseline Risk Assessment to be prepared or updated by Pr. CHSA for the project Pr. CHSA to review and approve design risk information and ensure incorporation into the Health and Safety Specification.											
	External and internal Stakeholder involvement to take part in the opportunity to identify safety, security and technical related issues during the design process of new or modified DBSA infrastructure.	Failure to be transparent and inclusive in the design process. Not considering internal and external stakeholders' input	Failing to consider input from internal and external stakeholders could lead to project disruptions during construction with associated cost implications Community disruptions Failing or stopping of project could result in damages to stakeholders, client and DBSA reputations	1	5	2	2	2	2	14	Ensure that the knowledge, skills, experience, insight, and creativity of people (Internal/External) close to the risks are utilized in the design and risk assessment process. Keep record of all engagements with internal and external stakeholders and design risk management processes. Ensure that the inclusion of referenced related standards and requirements of designers be included in the health and safety specifications for project/contractors.	- Stakeholder engagements (minutes of meetings) - Design and Consultants meeting minutes - Design risk management procedure	1	5	2	2	1	1	12				
S3-07	Design Risk Assessment and Safety in Design Review	Failure to identify and eliminate hazards during the design phase	Design-related hazards not addressed may result in unsafe construction methods, increased risk of incidents during construction, maintenance and operation, project delays and increased costs	5	5	4	3	3	3	23	Conduct formal design risk assessments and safety in design reviews in consultation with designers, engineers and the Pr. CHSA to identify, eliminate or mitigate risks as far as reasonably practicable	- Design Risk Register Design Review Meeting Minutes - Updated Health and Safety Specification - Approved Design Documentation	4	4	3	2	2	3	18				
S3-08	Temporary works design considerations	Failure to consider temporary works requirements during	Collapse of temporary structures such as	5	5	4	2	3	3	22	Ensure temporary works requirements are considered during design and that designs	Temporary Works Design Documentation	4	4	3	2	2	3	18				

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
		design								accommodate safe construction methods, sequencing and support systems for all temporary structures	- Design Specifications - Approved Drawings - Method Statements (to be developed by Contractor)							
S3-09	Design for safe maintenance and access	Design does not consider safe access for maintenance activities								Incorporate safe access provisions such as walkways, platforms, ladders, edge protection and safe working areas into the design to ensure maintenance can be performed safely	- Approved Design Drawings - Design Specifications - Maintenance Access Plans - Health and Safety Specification	3	3	2	2	2	2	14
Stage 4 – Tender Documentation and Procurement																		
S4-01	Detailed documentary evidence to demonstrate that the key safety and environmental constraints or issues are addressed at DBSA infrastructure procurement and tender stage	Unable to identify health, safety and environmental risks during bidding stage could result in financial implications when contractors submit variation orders as they did not price to attend to certain risks. No methods and procedures to indicate that the key safety issues are addressed at DBSA infrastructure projects. Unclear Procurement plan / process Final Health and Safety specification and final Baseline Risk Assessment not integrated with tender documents Unethical Procurement Not addressing key risks could result in project delays/disruptions when bidders did not budget for certain requirements to be met An unclear procurement plan creates significant risks, potentially leading to missed opportunities, decreased efficiency, unexpected costs, and damaged customer relationships Unethical procurement could result in Audit findings, that would lead	1	5	3	2	2	2	15	Designers must ensure that designs are accompanied by a report as required in terms of the construction regulations (6. (1)(c)) for inclusion in the Health and Safety Specification/Safety Plan/Budget. Designers must have record that they have considered the Health and Safety Specifications when designing Ensure a project plan is tailored to the specifications/performance of DBSA and consistent with best practices and agreed. Final health and safety specifications and baseline risk assessment conducted by Pr. CHSA must be issued with all tenders to ensure the bidders are aware of risks associated with the project to ensure they budget for certain requirements.	- Design Report - Final health and safety specifications - Final baseline risk assessment - BSC approved tender documents - Final Construction project health and safety cost estimates	1	5	2	2	2	2	14

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR
			construction project and the project being poorly managed by incompetent construction / project manager. This can lead to project delays, and financial mismanagement.																
S4-04	Evaluation of principle contractor/s and contractor/s capability and competency	No proof that the contractor is conversant with site-specific DBSA infrastructure hazards and risks to ensure compliance and non-conformance.	Contractors being unable to conduct the scope of works could lead to poor workmanship that would result in project delays and have financial implication if work needs to be redone	4	5	4	3	2	2	20	Evaluation of contractor's risk and safety management capabilities with adequate resources.	• Tender Returnable • BEC appointments • BEC evaluation report	3	5	3	2	2	2	17
		The contractor's capability and SHE performance are not evaluated and considered prior to awarding the contract.	Contractors not having the required resources for the scope of works could result in poor health and safety management																
S4-05	Provision for health and safety requirements in project costing and Bill of Quantities	Failure to allocate adequate budget for health and safety requirements	Insufficient budgeting for health and safety may result in non-compliance, unsafe working conditions, project delays, contractor variations and financial losses	4	5	3	2	3	3	20	Ensure that health and safety requirements are clearly defined and included in the Bill of Quantities and tender pricing to allow contractors to adequately price for compliance	• Final Health and Safety Specification • Bill of Quantities (OHS BOQ) • Final Tender Documentation • Final Baseline Risk Assessment	3	3	2	2	2	2	14
Stage 5 – Construction Documentation and Management																			
S5-01	File Approval as per OHS Requirements and Client Specification	Work commencing prior to file being available and approved.	Non-Conformances issued or Default letters issued could result in termination of non-compliant contractors that would result in project delays or cancelation								No Work Commencement until approval has been signed off. Client Health and Safety Specification provided to each Principal Contractor or Contractor. Baseline Risk Assessment provided to each Principal Contractor or Contractor	• Health and Safety Plan / file approval letter • Copy of Health and Safety Plan • Copy of LOGS • Valid Competencies, appointments, medicals, work permits etc. • Site Establishment plan / layout							12
		No valid registration with COIDA.		1	4	3	2	4	4										
		Expired Documentation (e.g. competencies, equipment load test, medicals, work permits)																	
		Documentation not available or																	

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S5-02		approved as per required Client Spec and OHS act.	Contractors with no valid COID could cause injured employees not to be covered by the compensation fund, this will lead to direct and indirect cost for the company								Principal Contractor with valid LOGS will be allowed to commence with Site Establishment. LOGS must be presented at tender stage to prohibit a contractor to be awarded with a tender if LOGS is not available. Principal Contractor to provide updated list of employees, with competencies, ID's, Medicals and work permits if required																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR	
S5-04	Risk Identification	Risk assessments not conducted, not site-specific, or performed by an incompetent person	Failure to conduct suitable and sufficient risk assessments may result in hazards not being identified, leading to serious injuries, fatalities, inadequate control measures and unsafe working conditions	4	4	4	4	3	3	22	Issue based Risk Assessment must be drafted by risk assessment team that includes the risk assessor, construction manager and supervisor, SHE Rep and skilled employee.	- Client Health and Safety Specification - Baseline Risk Assessment - Method Statement of Tasks - Risk Assessor competency - Issue based risk assessments - Training / communication records - SOP/SWP - Risk Assessment training	4	4	3	3	2	2	18	
											All risk assessments, method statements and safe working procedures must be communicated to the required employees conducting those activities. Record of communication / training must be kept in Safety file.									No Activity to commence if risk assessment and method statement has not been approved by the relevant person.
S5-05	Site Establishment - Setting up Camp & Storage Facilities & Project Mobilization of Plant and Equipment	Abnormal loading of trucks	Unsafe or abnormal loading could cause accidents that could lead to multiple fatalities.	5	5	4	3	3	4	24	Trucks must only be loaded according to its safe load capacity.	- Safe Workload Certificate or Certificate of Compliance for Lifting equipment - Traffic Management Plan - Lifting Plan - Appointment letters - Competencies – Operators, truck driver, flagperson, riggers - Pre-lift checklists - Safe Working	5	5	3	2	2	2	19	
		Traffic congestion / unwanted(unauthorized) members of the public walking in risk zone	Loaded truck uncontrolled movement on site can cause an accident resulting in serious injuries to operators and members of the public and damages to surrounding								Appointed spotter (flag person) to be in position wearing reflective vest and whistle to assist Truck driver or Plant operator with movement on site.									Traffic Management Plan must be communicated to all relevant parties to ensure controls are implemented.
		Containers placed on uneven surfaces.																		
		Using defective / incorrect equipment to offload containers.																		

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
		property.								Barricade area and post warning signage – Only Authorized workers/persons to enter construction area.	Procedures • Issue based risk assessment • Approved method statement • DSTI • Emergency contact numbers							
	Fatigued operators	Containers falling over or off from stands/bricks could cause property damage.								Appointed competent Banksman (Rigger) to oversee all lifting operations.								
	Unsafe / uncontrolled Truck Crane Operations	Load / construction materials falling during lift could cause property damage or serious injuries or even fatalities.								Pre-lift checks to be done on lifting material, and recorded on a Checklist, any deviations must be recorded and reported to Construction manager.								
	Unsafe and poor manual offloading practices from delivery vehicles / plant	Fatigued operators could lead to accidents resulting in damage to plant or vehicles and serious injuries or fatalities.								Slings and chain blocks to be checked prior lifting operations and have valid load test certificate. Lifting truck to also be in possession of a load test certificate and driver to be appointed in writing with valid competency.								
	Operators under the influence of Alcohol or other substances while transporting machinery and equipment to site establishment area.	Unsafe / uncontrolled lifting could result in load falling that could lead to property damage and serious injuries.								Social facilitators to ensure community are aware of Construction work before Site establishment.								
	Theft of material, equipment, and machinery	Materials / Load falling could result in property damage.								Only Competent appointed Contractors or Service Providers will be authorized to work on the site.								
	Community unrest	Materials / Load falling on employees could lead to serious injuries and even fatalities.								Dust Control measures to be implemented continuously at the site laydown area, watering the areas and roads on site.								
		Project Interruption and even delays with cost implications								All operators must be appointed to operate and inspect the specific plant he is competent in operating, medical fitness and competencies for operators must be valid and available on site.								
										Site Establishment Risk Assessment and Safe working Procedure / Method Statement to be communicated to all workers								
										Construction Manager and Supervisors must ensure continuous monitoring and								

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR											
											enforcement of all control measures on site If it is a live site, provide a separate gate or access to the site.																			
S5-06	Site Establishment - Site clearing / Grubbing	Dust from plant used to clean and level areas. Poor Visibility Collisions Incompetent operator / not medically fit Unsafe / broken or mobile plant not roadworthy	Excessive dust could result in Occupational illness such as hypersensitivity pneumonitis in the surrounding communities and even to all the employees on site.									Water Truck to be used to spray working areas in order to suppress dust. Speed limit to be adhered to at all times while clearing the site. Supervision on a continues basis with appointed flag persons assisting the operator while moving on site. Workers to stand clear from moving machinery when clearing and grubbing takes place. Only competent operators with valid competency to be appointed with a valid Occupational Health Medical (Annexure 3) will be allowed to operate mobile plant. Pre-start inspections to be conducted, records to be kept in safety file. All operators must be trained in the safe working/operating procedures and the issue-based Risk Assessment Only construction vehicles and mobile plant that are roadworthy (records must be available) may be used for construction activities and for transporting materials etc. Construction Manager and Supervisors must ensure continuous monitoring and enforcement of all control measures on site	- Operators' Competency - Roadworthy Certificates - Driver's License - PDP - Appointment letters - SOP/SWP - Issue based Risk Assessment - Medical Certificate of Fitness - Checklist - DSTI's																	
			Accidents causing property damage and Accidents causing serious Injuries or even fatalities.																											
			Poor Visibility could cause the operators to collide with surrounding property.	4	4	3	3	3	3	20																				
			Operator not competent or medically fit operating plant could cause serious accidents leading to property damage and even fatalities.																											
			Operating plant that is unsafe or not roadworthy could cause accidents that may result in serious disabling injuries or even fatalities																											
			Colliding with property or other plant or vehicles will result in financial																											

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S5-07	Site Establishment - Installing Temporary services (Electrical, Plumbing)																	
		Incompetent Electrical / Plumbing contractor installing temporary services.																
		Damages to underground services or surrounding services	3	3	3	3	4	4	20			3	3	2	2	2	2	14
S5-08	Excavation Works - Excavating by hand	Incorrect Location of Services																
		Environmental contamination																
		Spillages from toilet waste due to poor plumbing or incorrect installation would result in environmental pollution																
		Damages to underground services																
S5-08	Excavation Works - Excavating by hand	Poor ergonomics used.																
		Unsafe damaged hand tools used.																
		Exposure to Heat and Sun																
		Dust generated from picks and shovels used when excavated																
S5-08	Excavation Works - Excavating by hand	Excavation Collapses																
		Employees manually excavating and making contact with underground services																
		Damage to Property	4	4	3	3	3	4	21									
		Employees manually excavating and making contact with underground services could lead to employees being electrocuted.																

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR										
			Employees exposed to manual excavating for long periods could lead to minor to moderate back injuries. The use of unsafe or damaged hand tools could cause head, bodily and hand injuries. Employees exposed to working long periods of time in the sun could lead to long term/short term skin damage, this could include skin cancer, heat stroke and dehydration resulting in serious injuries. Excessive dust could result in Occupational illnesses such as hypersensitivity pneumonitis to the exposed employees excavating Excavation collapsing could result in employees excavating to be trapped by collapsed walls leading to serious injuries even fatalities									Employees need to take regular breaks when working in the sun to prevent sunburn. Employees need to drink enough water to stay hydrated. Employees manually excavating must be issued with the required PPE. All excavation walls must be shored or braced and must be approved by appointed / competent excavation supervisor. All excavated materials must be placed at least 1.5 – 2m away from any excavation edge Water truck to be used daily or as per issue-based risk assessment to spray all roads with water to suppress the dust																	
S5-09	Excavation Works - Excavating by Machinery / Plant such as TLB's, Excavators, Ditch witch	Workers standing / walking or working near mobile plant operations. Operator incompetent and not appointed.	Employees working / standing or walking past operational plant / machinery could lead to being struck by or being driven over resulting in disabling injury or even fatality.	5	5	4	3	3	3	23	Traffic control is to be managed to prevent collision of mobile plant as well as collision with personnel. Appointed Flag person to control movement of plant within areas. Only competent / Appointed operators authorized to operate machinery (must have	• Issue-based Risk Assessment • Method Statement • SOP/SWP • Appointment letters • Competency for operators, excavation supervisor	4	4	3	2	2	3	18										

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
	Unsafe / damages Mobile Plant / machinery used to excavate.	Incompetent operators operating mobile plant / machinery could result in accidents, property damages and even serious injuries and/ or fatalities to surrounding employees.								valid Competency, medical and PDP) will be allowed to operate mobile plant.	• Underground services drawings • Checklists • Signages • DSTI's • PTO • Breathalyzer records / register • Medical Certificate of Fitness							
	Mobile plant / machinery operating near unprotected edge of an open trench / excavation.									Machinery must be inspected before use, findings to be recorded on a checklist, any deviations must be recorded and reported to a supervisor. Service / maintenance schedule / history must be available for the specific machinery.								
	Operator is intoxicated.									All operators must be breathalyzed daily to test if they are intoxicated.								
	Unsuitable ground conditions for excavation	The use of unsafe damaged mobile plant / machinery used could result in property damage and delays in production.								Before excavation work begins the stability of the ground must be evaluated by a competent person appointed (Excavation Supervisor).								
	Dust generation	Mobile plant / machinery operating near the edge of an open excavation could cause excavation / trench walls to collapse resulting in employees being trapped underneath that may result in disabling injuries and/or multiple fatalities.								Dust suppression methods to be used when required such as water truck spraying area								
	Excessive noise generation (especially during rock breaking)									Operators must be issued with the required PPE such as dust masks, earplugs if required.								
	Open Excavations left open or unattended.									Scanning devices to be used to identify underground services prior excavation works, in order to prevent cable damage and possible electrocution.								
	Damage to existing services during excavations	Mobile plant / machinery operating near the edge of an open excavation could result in mobile plant / machinery falling into the excavation / trench when walls collapse resulting in serious damage to mobile plant and even disabling injuries and or multiple fatalities.								All Deep trenches or excavations must be braced or shored to prevent collapse if mobile plant or machinery operates near the trench or excavation. Bracing and Shoring must be supervised and approved by appointed excavation supervisor								
		Intoxicated Operator operating mobile plant /										Mobile plant and machinery are not allowed to be operated within 5m of any open excavation or trench. Unless declared safe by appointed competent person and that the excavation or trench does not have any employees working in the open trench or						

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S5-10										excavation Construction Manager and Supervisors must ensure continuous monitoring and enforcement of all control measures on site								
	Excavation Works - Barricading of excavated areas and warning signages posted	Deep open excavations, trenches or open edges left unprotected. No warning signages posted Unauthorized entry																
		machinery could result in accidents, property damages and even serious injuries and/ or fatalities to surrounding employees. Operator excavating or breaking rock for an extended period are exposed to excessive noise, and this could cause minor to moderate short term hearing loss and even long-term hearing loss. Damage to existing services could result in financial costs and loss of production. Making contact with electrical underground services could cause operator to be electrocuted																
		Deep excavations / trenches left unprotected could result in employees / visitors falling into excavation / trench resulting in serious injuries. No warning signages posted could lead to employees, the public or even children not knowing of the open excavation, and this could lead to them falling into excavation resulting in serious injuries or even a fatality	5	4	4	3	3	3	22	Excavations guarded/barricaded/lighted after dark in public areas and when there is no work conducted. All excavations are subject to daily inspections by a competent appointed person. Excavations must be kept open to a minimum, do not leave them open for long periods. Warning signages to be posted at all excavated areas to warn the other employees or members of the public of the risk. Open trenches or excavations must be secured / closed off with a solid barricading. No Danger tape is allowed	- SOP/SWP - Issue based Risk Assessment - Toolbox talks - Checklist - DSTI's	4	4	2	2	2	2	16

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR
			Unauthorized entry by members of the public / children could result in members / children / visitors falling into open trenches or excavations. This could result in serious bodily injuries. During raining season this could result in members, children or visitors to drown when falling into or playing in open trenches and excavations																
S5-11	Lifting operations (Loading and offloading of materials) - Manual handling / loading and offloading (Ergonomics)	Employees lifting heavy uncontrolled materials. Employees not trained in safe manual lifting procedures. Materials / equipment falling. Walkways not clear of tripping hazards.	Employees manual handling materials / equipment exceeding 25kg per person could cause minor back strains and even long-term back injury. Employees who do not understand the safe procedure to lift (Ergonomics) materials could result in injuries such as back injury or materials to fall resulting in property damages. Materials / equipment falling when loading or offloading could lead to pinch point injuries to hands, fingers, and feet. Workers tripping over hazards when moving with load could cause load to fall and	4	3	3	1	4	5	20	Manual handling / lifting Safe work Procedure and Risk Assessment to be communicated to all workers on site. (Keep proof of communication in safety file) Workers assisting each other to lift must communicate with each other to ensure safe lifting and lowering of items. Before offloading or handling any materials, equipment or tools, ensure walkways are clear and free from tripping hazards. Workers to assist each other if intended load to be lifted exceeds 25kg (per person). Workers / Supervisors to ensure materials, equipment and tools are secure when offloading. When manual lifting the correct procedure must be used, workers to lift loads using their legs and not their back. Employees manually lifting equipment, materials must be issued with the required	- Ergonomics Risk Assessment - SOP/SWP - Toolbox talks - DSTI's	3	2	2	1	3	4	15

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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S5-12			employees to fall over resulting in bodily injuries								PPE such as gloves, hardhat, safety shoes, overalls																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	</

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S5-13																		
S5-13	Lifting operations (Loading and offloading of materials) - Lifting Gear used for Lifting operations	Use of unsafe / damaged Lifting equipment such as slings, ropes and chains Rigging done by incompetent person or object not correctly hooked																
			4	3	3	2	4	4	20	All lifting gear/ tackle must be inspected before use, deviations must be recorded on the checklist and reported to the construction manager. CoC/SWL must be available for all lifting gear and its components. Rigging must only be done by a competent person appointed for the works. Safe Working Procedures and Risk Assessments to be communicated to all relevant workers	- Valid SWL / CoC - Checklist - Rigger Competency - Rigger appointment - SOP/SWP - Issue-based risk assessment - DSTI's	3	2	2	2	2	2	13
S5-14	Construction vehicles and mobile Plant Operations – TLB, Excavators, Bobcats, Telehandlers, MEWP's, Trucks, Site vehicles	Defective / unsafe Construction vehicles and mobile Plant used, or vehicles used that are not roadworthy. Speeding onsite, near the construction site and/or within restricted areas. Operators and drivers untrained / not skilled or not in position of the required license to drive. Construction Vehicles / mobile plant left unattended.																
			5	5	4	3	3	4	25	All construction vehicles and mobile plant have to comply with Construction regulations and Driven Machinery Regulations. Other construction vehicles used must have a valid roadworthy certificate. Employees to be transported to and from work in a safe manner, never to be carried at the back of bakkies and trucks. Mobile plant operating on site to fully comply with CR 23. Maintenance / Service history must be available on site and used in accordance with their design and intention for which they were designed.	- Maintenance / service records - Driver's License - PDP - Appointment letters - Valid Competency - Medical Fitness to work - Signages - Breathalyzer records - Checklists	4	4	3	2	2	3	18

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION								PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
			I	C	D	E	P	F	R	I			C	D	E	P	F	RR		
		Operators and drivers intoxicated or under the influence of Alcohol, Marijuana (Cannabis) or other drugs.									Random alcohol and drug tests to be introduced and maintained.									
		Failure to inspect vehicles									Ensure vehicles are isolated when not in operation, Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights, reflectors or adequate barricades to prevent moving traffic from a sudden emergency, or to come into contact with the parked construction vehicles and mobile plant. In addition, construction vehicles and mobile plant left unattended after hours must be parked with all buckets, booms etc. fully lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.									
											Operators to drive according to the required speed limit on site and on public roads.									
											All drivers must be appointed and must have a valid driver's license and PDP/Competency certificate.									
											Vehicles or plant not to exceed the prescribed weight limit of the plant or vehicle.									
											Construction Vehicle to be Fitted with adequate signaling devices to make movement safe including reversing; Fitted with two head and two taillights that are in good working condition whilst operating under poor visibility conditions.									
											No loose tools, material etcetera is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.									

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK															
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR									
S5-15											The construction site must be organized to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.																	
	Hot Work Activities – Grinding, Cutting, Welding, Flame Cutting, drilling and soldering (Including Gas and Electrical cutting and welding)	Employees are not trained to operate machinery.	Untrained or incompetent employees operating machinery or conducting hot work activities could lead to serious injuries and even a fatality.									Only competent workers with the required skills and knowledge will be appointed to operate such machinery like grinders, welding machines, cutting torch etc.																
		Unsafe/Damaged tools and equipment used – No Flashback arrestors – No Guards on machinery.										Gas cylinders when used to be safely stored and to be secured, when not in use, in a cool place, upright position and locked in storeroom.																
		Employees making contact with hot surfaces.	Using tools and equipment that are damaged or unsafe or does not have the required guards in place could lead to an accident when cutting or grinding resulting in injuries to bodily parts.									All hot works to be conducted in an enclosed place away from public and employees conducting other activities. Welding screens to be placed at welding areas and solid barricading used to close off areas.	• Training records / competencies • SOP/SWP • Issue based Risk Assessment • Method Statements • Medicals fitness to work • Checklists • Signages • Appointment letter • DSTI's															
		Uncontrolled Sparks, open flames or hot metals causing fire.										All equipment used for Hot works must be inspected before use, all findings to be recorded on a checklist and any deviation must be recorded and reported to a supervisor, all guards must be in place and correct blades/ discs or drill bits to be used.																
		Incorrect storage of Gas Cylinders																										
		Operators do not wear the required PPE.	Making contact with hot surfaces when or after conducting hot works can lead to serious burns.	5	5	4	3	4	4	25																		
		No Fire prevention controls available.																										
		Hot work area not closed off / barricaded / no welding screens and no warning signages displayed within this area.	Uncontrolled sparks could cause a fire resulting in property damages and harm to the environment.											If conducting hot works near flammable materials or the bush, spark containment must be used, for example fire blankets, welding screens and wetting the areas with water.														
		Incorrect fittings / attachments or component used when operating machinery.	Unsafe storage of gas cylinders could cause cylinders to fall over causing gas leaks and a possibility of explosion resulting in serious											Fire extinguishers must be placed near areas where hot works are conducted, and a trained competent appointed fire fighter to be available onsite.														
Overhead Hot work operations											SABS approved PPE to be issued and used on site. Task specific PPE is required for Hot																	

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers , Policies, Procedure)	RESIDUAL RISK								
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR		
	No firefighting equipment or firefighter available	damages to property and resulting in multiple fatalities.								work activities, for example welding helmet, face shield when cutting, safety glasses, dust masks, welding apron etc.										
	Flammable and explosive chemicals stored near hot work area.	Conducting hot works without the required PPE could cause injuries to bodily part or face.								No Overhead Hot works will be allowed, if Hot work is required at height, it should be done from an approved scaffold or MEWP. Then the area below should be barricaded to prevent workers from entering that area.										
		No fire prevention controls could cause an uncontrolled fire resulting in damages to property (including neighboring property) and serious harm to the environment.								Hot work will not be allowed in wet conditions, electrical cables must be made safe and free/away from water sources.										
		Hot work area not controlled / closed off or no welding screens could cause injuries to unauthorized employees or members of the public.								All cylinders used onsite must be fitted with the correct fittings and clamps when connecting the hoses. All gauges must be in good working condition.										
		Operating machinery without the required fittings / attachments or components could cause the machinery to break, resulting in injuries to the operator.								All new vessels must be checked for leaks, leaking vessels should NOT be used. Equipment must be identified/numbered and entered into a register. (Soap Test to be done)										
		Overhead hot work activities could cause harm / injuries to employees below or cause a fire resulting in property damage									All workers conducting Hot work activities must be trained on the safe working procedures and issue-based risk assessments									
	No fire fighter or firefighting equipment on site could cause an																			

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR	
			uncontrolled fire resulting in damage to property and harm to the environment Sparks from hot work activities could cause fire or even explosions at flammable storage area resulting in serious property damage and even fatalities																	
S5-16	Scaffolding – Scaffold erection, dismantling and Working from Scaffold platform	Improper erecting of scaffold. Not as per SANS 10085:2004	Scaffold collapse due to improper erecting or shortage of scaffold materials could cause scaffold materials to fall on employees below resulting in serious head or bodily injuries.									Competent person with valid competency to be appointed to erect scaffold as per SANS 10085 Scaffold must be inspected by a competent person (valid Competency) whom has been appointed every time before use. Scaffold must be inspected before use, findings must be recorded on a checklist Scaffold must be fully erected according to SANS 10085 Standards, if scaffold is not fully erected or components missing, it must be dismantled or declared unsafe to use. No Scaffold works are allowed in inclement weather or near overhead powerlines. Weather conditions must be monitored by Health and Safety resource and Construction Manager All employees working from Scaffold must be provided with the correct Safety Harnesses, they must be fully hooked at all times when working from scaffold Ground must be inspected for stability before scaffold can be erected. If ground is stable scaffold can be erected, base jacks must be used to level the scaffold.	- SANS Standards 10085-1:2004 - Issue-based risk assessment - Method Statement - SOP/SWP - Checklists - Appointment letter – Scaffold Erectors, Scaffold Inspectors, Scaffold Supervisor - Competencies - Work at Height training certificate - Medical fitness to work at height - SWL / CoC for fall protection equipment - Fall Protection Plan - DSTI's							
		Erecting scaffold on uneven or unstable ground	Scaffold collapse could also cause scaffold erectors to fall from height resulting in serious injuries or even a fatality.																	
		Scaffold materials falling while erecting or dismantling.																		
		Unsafe stacking and storage of scaffold materials	Incompetent scaffold erectors could cause scaffold to be erected unsafe resulting in collapse, scaffold materials falling and scaffold erectors falling from height resulting in serious injuries or even fatalities.	5	5	3	2	4	4	23	4			4	3	2	3	3	19	
		Construction materials or tools falling from scaffold.																		
		No Safe access to platform																		
		Scaffold erected near overhead powerlines.																		
		Working in inclement weather such as strong winds, rain and thunderstorms	Erecting scaffold on uneven surfaces could cause scaffold to fall over, resulting in property damage.																	
		No Signages available to indicate scaffold is safe or unsafe to use.																		

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK								
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR		
	Employees falling from scaffold.	Unsafe stacking of scaffold components could cause pinch point injuries when stacked materials fall over.								All safety harnesses must be inspected before use, all findings must be recorded on a checklist, and any deviations must be recorded and reported to supervisor. COC for harness must be available in safety file.										
	Scaffold collapsing																			
	Fall Protection Equipment not available or damaged.	Tools, equipment or materials falling from height could fall on employees below the scaffold resulting in serious head or bodily injuries.																		
	Employees working at height not medically fit to work at heights	Scaffold making contact with overhead powerlines could cause employees to be electrocuted / shocked that could result in serious disabling injuries or even fatalities.																		
		Working on scaffold during inclement weather could cause employees to slip and fall due to slippery surfaces resulting in serious injuries or even fatalities. Working at height during thunderstorm could result in employees been struck by lightning.																		
		No warning signages or safe or unsafe signages posted at scaffold could cause employees to access a scaffold that is unsafe and could result																		

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S5-17	Work at Height activities – Working on edge of building or near openings																	
S5-17	Work at Height activities – Working on edge of building or near openings																	
		Construction materials and tools falling from edge.																
		Employees, Visitors or Management falling from Edge or into opening.																
S5-17	Work at Height activities – Working on edge of building or near openings	No Edge Protection available																
S5-18	Work at Height activities – Use of Trestles to																	
		Trestle used on uneven / unstable surface.																
S5-18	Work at Height activities – Use of Trestles to																	
		Trestle used on uneven / unstable surface could cause trestle to fall over																

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR
	work from	Trestle not fully boarded (Platform)	while employees are working from it, this could result in lost time and even disabling injuries								Trestles used must be fully boarded that have been secured to prevent movement. Workers will not be allowed to work from trestle if platform is fully extended.	• Checklist • Signages • Work at Height competency certificate • Medical Fitness to work • Issue-based Risk Assessment • Fall Protection Plan							
		Trestle platform not secured.	Trestle used not fully boarded could cause employees working from trestle to fall due to the small space to work from.								Employees must be trained on the Safe Working Procedures and Issue based Risk Assessment for trestle works								
		Trestle platform damaged / bent or unsafe to use.									No tools or construction materials to be left unattended on the trestle								
		Employees working from fully extended Trestle base.	Trestle platform / boards not secured could cause employees or materials to fall from trestle when moving or conducting activities								All trestles may only be erected on level surfaces, bricks are not allowed to level the trestles. Baseplate with jack or solid wood slab to be used. Trestles must be erected as per SANS standards								
		Workers and tools falling from trestle platform.	Damaged or bent platform could cause employees, tools or materials to fall								All trestles' activities must be conducted under supervision								
		Employee working on trestle not medically fit to work at height	Employees working from fully extended trestle platform could cause trestle platform to fall over																
			Employees falling from trestle could cause serious injuries or even disabling injuries																
S5-19	Work at Height activities – Using ladder to work from or to use for access	Unsafe or damaged ladders used such as Self-made or wooden ladders.	Unsafe or damaged ladders used could cause ladder / rugs to break when accessing or descending the ladder resulting in the employee falling from the ladder	4	3	3	2	4	4	20	No Self-made ladders to be used	• SOP/SWP • Issue-based Risk Assessment • Checklist • DSTI's • Toolbox talks • Medical fitness to work • Fall Protection Plan	3	2	2	2	3	3	15
		Incorrect ladders used for specific activities.								All ladders to be inspected before use. Findings to be recorded on a checklist.									
		Employee falling from ladder.								Employees working from ladders must be trained on the Issue Based Risk Assessment and Safe working procedure									

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK								
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR		
S5-20		Tools and equipment falling from ladder. Ladder unstable or surface uneven Ladder used is not secured. Employee working on ladder not medically fit to work at height	Incorrect ladders used when accessing a certain area or to work from could cause ladder to fall over Tools and equipment falling from ladder could cause head or body injuries to employees below. Tools and Equipment falling from ladders could result in property damages or damages to tools and equipment resulting in financial costs. Employee working from unstable / unsecured ladder could cause ladder to fall over Employee falling from ladder could result in serious injuries and even disabling injuries								If ladder cannot be secured when working from it, it must be held in position by an employee Employees working from ladder to make use of a tool bag to ensure tools are secured at all times. No tools to be left unattended on a ladder. Ladder to be used on a secure / stable surface. If work activities are required from ladder for a certain amount of time a scaffold must be used to conduct these activities										
	Work at Height activities – General Work at heights (Any fall risk position)	Employees not trained to work at height. Employees not medically fit to work at height. Work at Height activities in inclement weather such as strong winds, rain and thunderstorms Unsafe or damaged fall protection equipment used.	Employees who are not competent to work at height could result in the employee being unable to identify hazards associated with WAH activities, actions to be taken to prevent incidents. Employees who are not medically fit could cause drowsiness, dizziness or even blurred vision that	5	5	3	2	4	4	23	All employees working at Height must be competent, they must be trained on working at height, identifying risk, the correct use of Fall Protection Equipment etc. All employees working at height must be declared medically fit to conduct work at height. Records in the form of Annexure 3 must be kept on site. No work at height activities to commence in inclement weather. Works must be stopped until declared safe.	- Fall Protection Plan - Work at Height Rescue Plan - SOP/SWP - Work at Height Competency certificate - Medical fitness to work - Issue-based Risk Assessment - DSTI's - Checklist - Signages - SWL/COC for fall	4	4	3	2	3	3	19		

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR	
S5-21		Unsafe Fall Prevention equipment used	could result in the employee collapsing. Working at height in inclement weather could cause employees to slip and fall due to slippery surfaces or losing balance due to strong winds resulting in employees falling from height. Use of unsafe or damaged fall protection or fall prevention equipment could cause it to break resulting in employee falling from heights Employee falling from height could result in serious disabling injuries or even fatality								All Fall prevention / fall protection equipment must be inspected before use; all findings must be recorded on a checklist. All damaged equipment must be removed from site. CoC certificates must be available for all Fall prevention / fall protection equipment.	protection equipment								
	Hazardous Chemical Agents – Handling and storage of HCA and flammable materials	Improper storage of chemicals, transportation, and handling Spilled chemical substances. Ingesting, inhaling or Eye / skin contact with HCS. Employees not trained to work with or handle HCA. Employees not issued with specific PPE to work with and handle HCA. Fire or Explosion caused by a source of ignition.	Unsafe stacking, handling or transporting of chemicals could cause stack to fall over resulting in spillages. Spilled Chemicals could result in soil contamination and loss of product that result in financial costs. Ingesting, inhaling or eye / skin contact could cause nausea, dizziness, skin irritation or even short-term vision impairment.	3	4	4	4	3	3	21	The principal contractor to ensure that: ➤ No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapors being present unless adequate precautions is taken. ➤ Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage, room or banded area that is kept locked with consistent access control measures in place and sufficient firefighting equipment installed and fire prevention methods practiced for example proper housekeeping. ➤ Containers (including empty containers) to be kept closed to prevent fumes/vapors	- Gas test results - SOP/SWP - Issue-based Risk Assessment - MSDS/SDS - Appointment letter - Signages - Checklists - PrDP"D" Certificate	2	3	3	3	2	2	15	

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR
		Lack of warning signages at HCA store	Employees who are not trained in HCA could result in serious injuries or harm to health.								from escaping and accumulating in low lying areas.								
		Unlabeled Containers	Employees not issued with the correct PPE could cause employees to be exposed to skin contact, fume inhalation resulting in harm to health. Fire / spark or any source of ignition near HCA could cause a fire and even an explosion resulting in serious injuries, even fatalities and damages to property. P No Warning signages posted could cause employees to be unaware of HCA in certain areas that might lead to Injuries, Fire or even explosions. Unlabeled containers could cause employees to be unaware of HCA resulting in fires, explosion or even consumption of chemicals that could have sever health problems								All flammable materials / containers must be clearly marked/labelled All employees must be trained in Risk Assessments, Safe working Procedures and MSDS's/SDS's on the HCA used on site. Employees need to be issued with the task specific PPE to handle and use HCA. No fires, smoking or Hot work activities can take place near HCA storages areas or at areas HCA are used. If specific activities are required while HCA are present a Gas test must be done to ensure the LEL level is safe. Warning Signages to be posted at HCA storage areas with the required demarcation Firefighting equipment must be made available near HCS storage areas All vehicle used to transport HCS must comply with legislative requirements, it must clearly be marked to certify the vehicle is allowed to transport HCS. The driver must hold a PrDP "D" certificate to transport HCS								
S5-22	Working near overhead powerline – Conducting	Sagging KV line Roof inclining near the KV line	Employees unable to identify overhead powerlines near work	5	5	4	3	3	3	23	Ensure Mobile Plant cab is fitted with insulators to prevent the operator to be electrocuted.	- SOP/SWP - Issue-based Risk Assessment	4	4	3	2	2	2	17

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S5-23	Construction activities near overhead powerlines	Scaffolding erected close to the KV Line Untrained employees, temporary workers, or local laborer's (general workers) working near the KV line. Construction Vehicles or plant operations near overhead powerlines	activities could cause employees or equipment to make contact with high voltage powerlines resulting in severe injuries such as burns and shock and could also result in electrocution of employees Mobile Plant making contact with high voltage powerlines could cause operators to be electrocuted if cab is not fitted with insulators.							If mobile plant has made contact with an overhead powerline the operator should reverse away from the contact area if this is not possible, the operator should remain seated until the line is de-energized. Only approved authority employees to work near overhead power line. Allowed distance to work near overhead powerline to be determined by relevant authorities including Eskom thereafter employees to be made aware of the hazards and risks associated No scaffolding to be erected close to the overhead powerline No Construction vehicles to be operated within 10m of overhead powerlines, unless declared safe by Competent Authority Safe working Procedure and Risk Assessment must be communicated to those employees exposed to working near overhead powerlines Trained and Competent Spotters / Flag person must be present at ALL times when plant is operational near overhead powerlines.	- Competencies - DSTI's - PTO's							
	Use of portable electrical tools and hand tools (Including use of Portable lights) –	Unsafe, sub-standard and/or defective equipment used. Untrained employees using portable electrical tools. Operating electrical tools near flammable materials	The use of unsafe or damaged hand tools could cause hand injuries such as cuts. Unprotected cables could result in employee being shocked Untrained employees operating power tools could cause employees							Portable electrical tools and equipment must be inspected regularly but at least on a weekly basis and maintained to the same standards as portable electrical tools and appliances. The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:	- Checklists - Issue-based Risk Assessment - SOP/SWP - Competency - Appointment letter - Medical fitness to work - DSTI's - Signages	3	2	2	2	3	3	15

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		Unsafe stacking and storage of all electrical tools and hand tools to be unable to control the equipment resulting in serious bodily injuries and even disability Unsafe stacking of portable electrical tools could result in tools falling and breaking, this could lead to financial losses to buy new equipment and delays if being unable to procure new tools									- Regular inspections by a competent person appointed in writing. - Inspection results must be recorded in a register. - Only competent authorized persons are allowed to use portable electrical tools and equipment; and - The correct protective equipment is worn/used whilst operating portable electrical tools and equipment. These equipment – - Must be maintained in good condition at all times - The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and - All equipment must be fitted with a switch to allow for safe and easy starting and stopping. The following requirements to be applied with when portable lights are utilized - Must be fitted with a robust non-hygroscopic non-conducting handle. - Metal parts which may become live must be protected against contact. - The lamp must be protected by a strong guard. - The cable lead-in must withstand rough handling. - A register be kept for each piece of equipment with findings of regular inspections undertaken to evaluate the condition of these lights. - Inspections must be undertaken that concentrate on at least the plug, cord, switch, guard and any obvious faults; and - When used in wet/damp/metal container conditions, it must be protected.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

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S5-24											Risk Assessment and Safe working Procedure for the operation of task specific Portable electrical tools must be communicated to those operating and exposed to hazards when using portable electrical tools																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR			
S5-26		Information not transmitted as supposed to	Information not transmitted to the relevant parties could result in loss of information								Site meetings to be conducted on set intervals including integration between various parties. Minutes of meeting to be kept for record of discussions	• Site attendance registers										
		Schedule slippage due to rework																				
	Temporary structure (Temporary works) – Formwork			Poor Temporary designs could cause structures to collapse resulting in multiple fatalities								A contractor to appoint a temporary works designer in writing, to design, inspect and approve the erected temporary works. Temporary works to be carried out under the supervision of a competent person appointed in writing. To be erected by competent persons. Temporary structure to be inspected by a competent person immediately, before, during and after the placement of concrete. After inclement weather or any other imposed load and at least on a daily basis until the temporary works has been removed and results recorded in a register. All temporary works to be carried out as per Construction regulations 12. Temporary work structures to be so designed, erected, supported, braced and maintained that they will be able to support any vertical or lateral loads that may be applied. No load to be imposed onto a structure that the structure is not designed to carry. Temporary work to be erected in accordance with the structural design drawings for such temporary work and if there is any uncertainty, the designer must be consulted before proceeding with the erection/use of the temporary work	• Appointment letter • Competencies • Work at height competency • Medical fitness to work • Method Statement • Fall protection plan • PPE Issue register / checklist • Checklists • DSTI's • Issue-based Risk Assessment • Approved drawings for temporary works									
			Inadequate designs	Hand and finger injuries from being pinched when installing props																		
			Incompetent formwork erectors and inspectors	Employees falling from heights could result in serious bodily injuries, disability and even fatality																		
			Temporary structure collapse due to poor design																			
			Unsafe access to elevated areas																			
			Poor stacking and storage of Form work materials	Collapse of structures could result in financial losses due to loss of production, damages to property and surrounding facilities	5	5	4	3	3	4	24					4	4	3	2	3	3	19
			Manual handling																			
			Pinch points																			
			Work at Fall Positions	Employees who are not medically fit to work at height could result in fainting, dizziness or even a seizure that could cause serious bodily injuries, disabling or even a fatality if employee fell from height																		
			Medically unfit for work at height																			

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				I	C	D	E	P	F	R			I	C	D	E	P	F	R						
S5-27											The foundation or base upon which the temporary work is erected to be able to bear the weight and keep the structure stable.														
											Employees erecting temporary work to be trained in the safe work procedures for the erection, moving and dismantling of the temporary work.														
											Safe access and emergency escape to be provided for employees.														
											Only employees trained to work at height with a valid medical fitness to work allowed to erect temporary works														
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S5-28	Limited resources to conduct all task	Contractual non-compliance Schedule and cost over run on project	burns to hands									Client to ensure that contractor is well aware of current scope definition as well as the requirements stipulated in the tender specifications. Contractor to ensure compliance on set specifications from client Contractor to ensure workers comply to working hours guided by the Basic Conditions of Employment Act	• Approved Programme of works • Issue-based Risk Assessment • Basic Conditions of Employment Act																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
			Cutting of steel with grinder could cause debris to cause damage to eyes of the operator or surroundings employees																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
			Delays in the project could result in the PC not to achieve completion in time resulting in penalties – Financial Loss																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
			Lack of resources could cause employees to overwork that would make them tired resulting in incident and accidents at the workplace	4	3	3	2	2	2	2	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

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			due to the rehabilitation of the environment costs and fines by authorities								Waste must be removed on a regular basis to a registered waste facility, proof must be kept in the safety file on site.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR						
		employees' severity of an injury to increase when applying incorrect treatment Incompetent Fire Fighter could cause fires on site to become uncontrolled resulting in serious injuries, or even multiple fatalities. This will also have an impact on damaged property. No firefighting equipment available on site could cause a fire to become uncontrolled resulting in serious injuries, property damage or even multiple fatalities								contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarize employees with them. Emergency evacuation points must be available, and signage displayed First - Aid The principal contractor to provide first-aid equipment and has qualified first-aider(s) on site as required by General Safety Regulation 3 of the OHSACT. The contingency plan of the principal contractor to include arrangements for the speedy and timeous transportation of injured and/or ill person(s) to a medical facility or getting emergency medical support to person(s) who may require it. The principal contractor has firm arrangements with his contractors in place regarding the responsibility of these contractors' first-aid arrangements as well as treatment of injured and/or ill employees. Fire Prevention and Protection The principal contractor to ensure that a) Sufficient and suitable storage of flammables is provided. b) employees are trained in the use of the firefighting equipment and know how to attempt to extinguish a fire; (these employees must be appointed and proof of competency to be available on site. c) A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies. d) Employees are informed regarding emergency evacuation procedures and														

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				I	C	D	E	P	F	R			I	C	D	E	P	F	RR					
S5-31											escape routes this must be included in the induction of all workers and visitors. e) Emergency escape routes are always kept clear and clearly marked. f) Roll call is held after evacuation to account for all employees and to ensure that no-one including visitors and disabled persons have been left behind. g) A clear audible siren or alarm is fitted and regularly tested. If this is not practicable to the site, other method of warning employees must be used, for example whistles. All emergency procedures / plans must be communicated to all employees onsite													
	Site security and public protection	Public gaining access to the construction site. Theft Vandalism	Unauthorized members or children entering the construction site could result in serious injuries and even fatality if children are unattended. Unsecured Construction site could cause materials, equipment and machinery to be stolen or damaged during strikes resulting in time delays and financial losses	4	3	4	2	3	3	19	Principal contractor to ensure the project is always secure. Access control to be maintained and no unauthorized entry to be permitted to the project. When there are no activities on site and no personnel conducting works. The Project must be left in a safe manner so that the public can't gain access and that all hazards are attended to prior vacating the site. Security should be available due to valuable materials and equipment that might be stored on site. Security will also be responsible to monitor site access by unauthorized people / children Warning Signages must be posted to inform the community of hazards and risks	- Site Rules posted - Signages	3	2	3	2	2	3	15					
	Ablution and welfare facilities	Inadequate provision of toilet facilities for each sex No hand washing stations available No secured area for each sex to change clothing (Changing area) Not providing toilet	Insufficient toilet facilities result in overuse of existing facilities leading to unhygienic conditions that could cause disease transmission to all employees on site.	3	3	3	2	3	3	18	Principal Contractor to provide toilets for each sex as required in terms of the National Building Regulations and Construction Regulation 30. Chemical toilets are allowed only if they are cleaned on a regular basis by registered contracted company. Toilets must be provided at a ratio of at least 1 toilet per 30	- Checklists - Waste Disposal Certificates - Issue-based Risk Assessment - Signages	2	2	2	2	2	3	13					

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S5-33		No sheltered eating area with tables and chairs provided								employees. Disposal waste certificate to be obtained to ensure waste has been removed and dumped at a registered facility								
		Poor Hygiene standards								Toilets must be provided for each sex. Toilets must be enclosed, lockable to provide adequate privacy. Signages must be posted to indicate the sex for each of the toilets.								
S5-33		Poor ergonomically designed facilities								Daily inspections to be done to ensure toilets are cleaned on a daily								
		No safe to drink water available								Handwashing stations must be provided near toilet facilities with soap, clean water (running water) and drying materials such as towels.								
S5-33										Drinking of unsafe water could lead to various health problems, including diarrheal diseases, bacterial infections, and even long-term health issues like cancer								
										Drinking water must be made available to all employees, water must be regularly tested and monitored for any contaminations. Signages must be posted in areas where drinking water is available. All drinking water bottles must be labelled "drink water"								
S5-33										An eating area must be provided for the employees sheltering them from the sun, wind and rain. Chairs and Tables must be made available.								
		Concrete spillages								Concrete mixers to be regularly serviced in order to prevent breakdown leading to oil spillages. Spot checks to be done prior to each shift.								
S5-33		Use of hand tool								All hand tools to be inspected by a competent person.								
		Oil spillages								When concrete is being poured, concrete spillages are to be prevented and plastic sheet to be placed on the ground when spillages cannot be prevented.								
S5-33		Cement dust generation (Silica)								Concrete washout area to be created where concrete run off will be discharged.								
		Incompetent concrete mixer operators	4	4	4	4	3	3	22		- Concrete truck / concrete pump truck service history presented - SOP/SWP - Issue-based Risk Assessments - Method Statement - Competencies - Appointment letters - Toolbox talks - Checklists - Medical fitness to work	3	3	3	3	2	3	17
S5-33		Concrete mixer operated without guards in place																
		Miscommunication between operator and flagman																

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
	Mixer operating near excavation	dust could result in asthma, silicosis and scarring of the lungs.								A flagman must be well trained in order for him to be able to provide proper signals thus preventing employees being hit by a mixer.								
	Incompetent Concrete Pump Operator	Oil spillages from concrete trucks or pump trucks could cause environmental pollution, contaminating the environment leading to water contamination								Operators to be well trained and no unauthorized employees must operate the mixer.								
	Unsafe operation or control of Concrete Pump - Hoses / pipes moving around uncontrolled	Concrete mixer operated by incompetent person could result in serious injuries to arms and hands if safe procedure is not followed								Only Competent / Appointed operator to operate concrete Pump, Ready-mix Truck. Competency must be valid and available								
	Inhaling of Cement dust and skin contact with wet cement	Concrete mixer operated by incompetent person could result in serious injuries to arms and hands if safe procedure is not followed								Dust mask must be provided to employees handling cement as a last resource when dust cannot be controlled. If exposed to cement dust for long periods a breathing apparatus must be used. Workers exposed to Dry Cement or Wet Cement must be supplied with the minimum required PPE (Overalls, Gumboots, Safety Boots, PVC Gloves, Safety Glasses, Earplugs, if exposed to wet cement raincoats can be used.								
	Incompetent or intoxicated truck driver	Operating concrete mixer without protective guard in place can result in serious hand and finger injuries								Concrete ready-mix truck, Concrete Pump Truck and Concrete Mixers must keep a safe distance from excavation edges, when pouring into excavation flagman have to be more vigilant and a regular toolbox talk must be held.								
	Concrete Pump Blockages	Concrete mixer operated near open trenches and excavation could cause trenches or excavation walls to collapse due to the vibrations								Issue-based risk assessment and safe working procedures for all activities must be developed and communicated to all relevant employees								
	Concrete mixer truck unable to offload in time (Suppliers)	Noise exposure from operating concrete mixer for long periods could result in long-term / permanent hearing loss								Housekeeping must be done after each pour, concrete waste should be disposed of at designated waste areas, Concrete Mixers, Ready-mix truck and Concrete Pump trucks to be cleaned after each use.								
	Noise from Concrete mixer	Poor communication between flagperson / supervisor and concrete trucks could cause accidents on site								All plant or equipment used for concrete works must be inspected before use and								

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR	
			resulting in property damages								findings recorded on a checklist, deviations must be reported to Construction Manager/ Supervisor. All guards must be in place before operations									
			Uncontrolled movement of concrete pump truck boom and hose could cause serious injuries to surrounding employees and damages to surrounding property																	
			Concrete blockages in Concrete pump truck could cause the sudden release of concrete that could result in serious injuries if employees are struck by the concrete that came out of the pipes by high pressure. This can also cause damages to surrounding properties																	
			Poor planning for concrete trucks not to dump concrete in time could result in delays of production and financial losses if concrete could not be used due to hardening																	
S5-34	Electrical Installations – New Infrastructure, replacing or installing of temporary electrical supply	Illegal connections	Unsafe electrical installations and open wires could result in employees and other persons being electrocuted with subsequent injuries or even fatalities as well as asset damage due to fire								Any electrical work undertaken as part of the project, including the installation of temporary electricity for construction use shall be in accordance with Construction Regulation 24 and the Electrical Installation Regulations	• Issue-based Risk Assessment • SOP/SWP • Method Statement • Wireman's License • Competencies • Appointment letter • Medical Fitness to work • DSTI's • Checklists								
		Substandard equipment																		
		Poor cable management		5	5	4	3	3	4	24				4	4	3	2	2	2	17
		Incompetent Installer																		
		Unauthorized Access to DB's																		
		Fires and Explosions																		
			Improper grounding																	

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers , Policies, Procedure)	RESIDUAL RISK						
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR
	Improper grounding		could cause electrical current to take unintended paths								- Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site.	• LOTO procedures							
	Contact with live open wires		through metal objects, if contact is made with this metal the person will be shocked and can even be electrocuted								- Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the occupational health and safety file.								
	Overloads and short circuits																		
			Poor cable management could result in tripping and falling resulting in bodily injuries								Electrician with a Wireman's License must install, commission and inspect all electrical installations. Employee to be authorized, competent and appointed. COC must be available for electrical connections done.								
			Unprotected or open wires could cause sparks leading to electrical fire. This could result in major property damage if buildings are burned down								All DB's to be locked. Key register to are established and proof of key use to be evident.								
			Overloading of electrical installations could cause wires to generate heat resulting in fires. This can also cause the continues tripping of electrical supply that would result in production delays and financial costs to repair								Lock out procedure to be communicated to all employees exposed.								
			Overloading of electrical installations could cause wires to generate heat resulting in fires. This can also cause the continues tripping of electrical supply that would result in production delays and financial costs to repair								Issue -based Risk assessments and method statement to be communicated to the relevant employees conducting or assisting with installations								
			Incompetent person conducting electrical installation will have inadequate knowledge of electrical codes, improper installation techniques, and failure to follow safety protocols, this could result in serious								All electrical components / parts to be used must be SABS approved.								

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR	
S5-35			injuries even fatalities																	
			Exposure to noise for long periods of time could cause short- and long-term hearing loss																	
		Exposed to Work at height (From Ladders, Scaffold and MEWP)	Employees conducting trades at height without required fall protection equipment could fall and result in serious injuries and even a fatality																	
		Use, control and storage of HCS (Paint, Thinner, Silicon, Tile adhesive, Cement, Bonding agents)	Inhaling of HCS fumes or dust could cause harm to the lungs resulting in asthma and Silicosis																	
		Use/operating of small plant / equipment (Compactor, Brick cutter, Concrete Mixer, Tile cutter, Grinders, Skill Saw / jigsaw)	HCS used for trades if spilled could cause environmental pollution, contaminating the environment and surrounding area.	4	4	4	3		3	3	21									
	Construction Trades	Dust	Polluting the environment could result in poor water quality from underground water resources																	
	Painting	Excessive Vibrations																		
	Tiling	Excessive Noise																		
	Paving	Use of unsafe hand tools and portable electrical tools	Operators exposed to continues vibrations from operating small plant or machinery could cause Hand-Arm Vibration Syndrome (HAVS), also known as Vibration White Finger (VWF), this could also result in musculoskeletal disorders or herniated discs																	
	Brickwork	Tools, equipment or materials falling from heights																		
	Plastering	Incompetent operators																		
	Ceiling / roof works																			
	Glazing																			

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR	
S5-36			Use of unsafe handtools and portable electrical tools could result in hand and arm injuries and being shocked if unsafe electrical tools are used Operators of tools, plant or machinery, not being competent could cause serious injuries if employees do not understand the hazards and risks																	
	Demolition work – Demolishing of existing structures (Infrastructure)	No Competent person appointed to supervise all demolition of building works Unsafe removal / demolition of walls / structures Dust Falling debris / bricks / walls Public entering demolition work area Incompetent TLB or excavator operator TLB or excavator used to demolish structure not in good condition Structural integrity compromised of other existing buildings Excessive Noise	Supervision by incompetent person could cause team and supervisor being unable to identify hazard and risks associated with demolition, this could result in serious injuries and even fatalities Unsafe removal or breaking of walls or supporting walls could cause building to collapse unplanned, this could result in serious damages to mobile plant, surrounding building and serious injuries to operators or surrounding employees. If employees are crushed or trapped when a wall falls over this could result in fatalities Excessive exposure to dust can lead to various health problems,																	

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ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers , Policies, Procedure)	RESIDUAL RISK											
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR					
S5-37			Excessive exposure to continues noise could cause short- and long-term hearing loss								SOP/SWP must be communicated to the demolition team. All employees must be medically fit to work, with a valid medical certificate and annexure 3. Exit medicals must be done once the trade team are done with their scope to ensure employees did not obtain any health issues from working on this project													
		Defective explosives used	Failure to comply or issue required permits could cause work stoppages resulting in loss of production, and might have cost implications								Only registered blaster appointed may apply for a blasting permit with Department of Employment and Labour													
	Demolition Work - Blasting	Incompetent Blaster / Explosives Supervisor / Unregistered person									Site Plan / blasting plan to be prepared by competent, appointed person to identify risks, methods to be used and control measures to be implemented.													
		Danger area not identified or closed off									Competent person to inspect explosives to be used to ensure it is safe and comply to requirements													
		Unsafe transportations of explosives	Blasting near unsafe infrastructure or poorly built houses could cause buildings or part thereof or surrounding houses to collapse. This will lead to cost implications and community unrests (Property damages)								Method Statement and Safe Operation Procedures, risk assessment and blasting plan to be communicated with other contractors, employees, surrounding businesses and members of the public	- Blasting Plan - Method Statement - Issue-based Risk Assessment - Checklist - Competency - Appointments - Permits - Public Notes - Signages - Wayleaves - DSTI's - Medical Fitness to work												
		Excessive Noise																						
		Dust																						
		Excessive Vibrations			5	5	5	5	3	3	26													
		Unsafe Surrounding structures or houses	Employees, other contractors or members from public entering the danger zone during a blast could result in serious injuries or fatalities									Company conducting the blasting may only transport explosives if they were issued with a permit to transport the explosives. In transit, transportation vehicle may not be left unattended at any time. Vehicle must be road worthy.												
		Unauthorized blasting / no permit										Public Notices must be done at least 24 hours in advance before blasting takes place. Emergency contacts must be shared with all surrounding public members, businesses, houses, schools etc.												
		Uncontrolled ejection of rock and debris when blasting																						
		Fire	Uncontrolled debris striking employees, other contractors, visitors or members from the public against the head could cause serious head injuries																					
		Incorrect charging of holes																						
		Uncontrolled use of hydraulic jack hammer										Use of suitable materials (Ground) to cover blasting areas, to ensure blast is contained												

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK																	
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR											
			Transporting of explosives without required permit could result in fines from authorities								All other construction activities, or end-user activities must be stopped until blast has been completed, and area is declared safe by competent person																			
			Incompetent blaster responsible for managing the blast could cause uncontrolled blasting, misfires causing serious injuries, multiple fatalities and serious property damages																											
			Excessive Vibrations caused by hydraulic Jackhammers could lead to Hand-arm Vibration syndrome / white finger syndrome and nerve damage to the operators' back. Resulting in serious injuries																											
			Excessive noise caused by the blast or by operating of hydraulic jack hammers could cause noise induced hearing loss and might also result in disabling injuries																											
S5-38	Exposure to poisonous /	Snake bites Spider bites	Venomous snake bites could cause person to	4	2	2	3	4	4	19	The principal contractor to ensure that the following are duly adhered to:	• Inductions • Medical fitness to work	3	2	1	2	2	2	12											

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION								PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
			I	C	D	E	P	F	R	I			C	D	E	P	F	R		
Venomous or other dangerous animals, reptiles or insects And exposure to animals, insects, birds, reptiles, amphibians in their natural habitat	Scorpion Sting Bee sting Wasp sting Uncontrolled removal of Fauna and Flora in an area. Habitat destruction / habitat loss and fragmentation	hyperventilate, vomit and even paralysis. If not treated in time could result in disabling injuries or even a fatality									- the emergency procedure to be expanded to provide for the effective treatment of employees or other persons visiting exposed to bites or stings from poisonous animals and insects, i.e. the contact details of the nearest medical unit that could treat employees exposed to bites or stings be obtained and arrangements be made with this service provider on the procedures to be followed to ensure swift response when required. - confirmation to be obtained or made available from the nearest medical unit that they have anti venom reserved to treat employees or other persons visiting that may be exposed to snake bites or scorpion stings. - competent / appointed first aiders to be available to facilitate the treatment of employees or other persons visiting exposed to stings or bites. - the potential exposure posed by poisonous or venomous animals or insects and awareness thereof to be discussed with all employees as part of the toolbox talks and general awareness training and other persons visiting as part of the pre-site visit induction process If Snakes are located on site, contact nearest snake handler to assist with removal of the snake. Do not attempt to remove snake if not trained. Emergency contacts to be freely available on site and in safety file. Environmental impact assessment to be conducted to ensure the project does not have an impact on the Fauna and Flora to the specific location of the project All bee hives should not be disturbed in their	• Toolbox talks • Posters and Signages								
		Non-venomous snake bite could cause injury to body, tissue damage, swelling and severe pain																		
		Scorpion Sting could cause difficult breathing, muscle twitching, sweating and vomiting.																		
		Uncontrolled removal of Fauna and Flora could result in the loss or destruction of native plants and animals from a specific area. This can have an impact on biodiversity, ecosystem stability and the well-being of humans																		

ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK											
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR					
S5-39											natural environment, if distrusting of construction works, a beekeeper must be contacted to remove the hive in a safe manner to relocate the beehive. Do not hit or remove the hives yourself.													
	Working in Inclement weather	Exposed to thunderstorms / lightning Strong winds Rain Sand / dust storms Extreme hot conditions	Exposure to working in thunderstorms / lightning outdoors could cause the employee to be struck by the lightning resulting in cardiac arrest, respiratory arrest, loss of consciousness, and burns. Long-term effects may include neurological damage, cognitive impairments, and chronic pain. This could also result in a fatality Exposure to working in very hot conditions / temperatures could cause heat exhaustion – fatigue, dizziness, nausea, headache, moist skin. Heat stroke – hot dry skin, confusion, convulsions and eventual loss of consciousness. This can result in a fatality if not detected at an early stage Working in rain could cause cold stress and hypothermia if low temperatures. It could		5	4	3	2	3	3	20	The principal contractor to implement an early warning system to identify inclement weather and to prevent such weather from posing negative implications on the safety of employees and other persons visiting The early warning system too, as a minimum. Provide for the following: - Construction work done during electrical storms a) The principal contractor to ensure that all employees are removed from heights and all employees are as safe as possible, in inclement weather conditions. b) No work to be allowed on the construction site during electric storms where employees cannot be protected from it. Protection involves: - eating area fitted with a lightning mast - workshops - inside buildings c) No work to be allowed in electrical storms on top of open structural steel, even when earthed. d) No work to be allowed on height where the lightning is within a 10-kilometer radius. e) After inclement weather on-site risk assessments to be reviewed to include wet conditions. - Crane operations during inclement weather a) Crane operations to stop during lightning within a 10-kilometer radius and wind above	• Toolbox Talks • DSTI's • PTO • Medical fitness to work • SOP/SWP • Issue-based Risk Assessment • Wind anemometer • Lightning alarm	3	2	2	2	2	2	13				

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK						
			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
S5-40	Working in Confined	Poisonous gas, fume or vapor	also cause slip and fall injuries on wet surfaces. If working with electrical tools equipment could cause electrical shock and damages to tools and equipment resulting in financial losses. Working in dust storms could cause skin irritation and short-term eye / vision impairment. Working at heights during extreme weather condition such as rain and strong winds could cause scaffold to fall over if not secured and employees falling from heights resulting in serious injuries even fatalities							28 km/h, crane driver will not be allowed to leave the crane with the booms extended. b) Lifting operation to stop during rain, rigging and hand lifts. c) Booms on all cranes to be retracted. d) All rigging operations to stop and employees will be removed from site. - Construction work done during rain a) During rainy conditions all work on steel structures to stop. b) No electrical tools to be used during rainy weather in open areas. c) If necessary, work only to be done in waterproof areas where there is a zero risk for electrocution. - Scaffolding activities during inclement weather conditions a) During inclement weather only limited scaffolding actions to be permitted i.e. erecting and dismantling activities. b) When necessary to allow scaffolding activities to continue during abnormal equipment and process conditions so not to impair personnel safety or pose an environmental risk. In such cases, scaffolding activities may continue with the provision that the relevant team ensures that a comprehensive risk assessment is done, whilst considering both work and weather conditions. c) All scaffold users to: - Ensure that scaffolding is inspected immediately after inclement weather conditions. - Ensure that the risks associated with working at heights during inclement weather are identified and reasonably mitigated. - Be cautious of slip/trip hazards when performing activities during inclement weather.								
			5	5	3	2	3	3	21	Principal Contractor to ensure confined	• SOP/SWP	3	3	2	2	2	2	14

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION								PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK							
			I	C	D	E	P	F	R	I			C	D	E	P	F	RR		
Confined spaces	present in confined space.	with lack of oxygen could cause dizziness, nausea, loss of awareness or judgement and can even result in a fatality									space works comply with the following	• Issue-based Risk Assessment • Method Statement • Toolbox talks • DSTI's • Gas testing results • Gas tester competency • Gas testing machine calibration certificate • Medical Fitness to work • Entry register • Checklists								
	Lack of oxygen for employees working in confined space area.									- Ventilation a) The confined space to be opened and allowed to ventilate for at least 15 minutes before entering the manhole. All open manholes to be barricaded and manned at all times.										
	The presence of flammable gasses in confined space can lead to fire or explosion.	Working in a confined space where chemical fumes or vapors are present could cause asphyxiation and poisoning resulting in the employee to become unconscious and suffocating that could lead to a fatality									A gas monitor to be lowered to the bottom of the confined space with a rope to test the presence of any toxic/flammable gas. If any gas is detected, the space to be force ventilated by means of a blower for at least 15 minutes where after the air should be tested again. Under no circumstances may any space be entered while there is a toxic/flammable gas present.									
	Employees being exposed to excessive high noise levels in confined space.	Noise levels can be amplified in confined area causing noise levels to exceed the safe exposure limit. This could result in short-term hearing loss and even long-term hearing loss if exposed for long durations									After the undertaking of the necessary work, the person in charge of the activities to confirm that all the employees are accounted for.									
	Employees being exposed to extreme temperatures / changes in temperature in confined space.										- Entering a confined space a) When entering a confined space, the person entering the space to wear a safety harness and fully operational gas detector. A lifeline should be attached to the safety harness and a person on the surface should be in continuous contact with the person in the confined space. At least one person on the surface to be trained in basic first aid (level 1) with proof of such training as well as a fully equipped first aid box available on site.									
	Insufficient safe access for employees in and out of work area.										b) No person shall remain within a confined space for a period of more than one hour at a time. A minimum of 5-minute rest periods on the surface to be taken after this period before re-entering.									
	Risk of exposure to hazards associated with lack of adequate ventilation for activities in confined spaces.	Working In confined space during extreme temperatures could cause a heat stroke/ stress, severe dehydration and fainting									c) Should the alarm sound on the gas monitor, all employees to exit the confined									
	Employees not medically fit																			
	Poor visibility																			
			Workers unable to gain access into and out of the confined space could cause employees to gain access unsafely by climbing in and out this could result in slip and fall injuries. Being unable																	

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION								PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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S5-41	Public health & safety	Uncontrolled Access by	Members of public or	5	5	2	2	2	2	18	space and the immediate area should also be evacuated immediately. The area to be properly ventilated and re-tested before re-entering the confined space. Professional support should be called for if necessary.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
and Pedestrians access to site	members of public and children	children entering a								for ensuring that non-employees affected by	• Site Access control register • Signages • Posters • Site Safety Rules							
	No site hoarding	construction site could								the construction work are made aware of the								
	No warning signages	cause serious injuries,								dangers likely to arise from said construction								
	Unprotected trenches and excavations	even fatality as these								work as well as the precautionary measures								
	Uncontrolled Access to heights	members would not								to be observed to avoid or minimize those								
		understand hazards and								dangers. This includes among others:								
		risks associated with								- Non- employees entering the site for								
		construction activities or								whatever reason.								
		being exposed to								- The surrounding community.								
		heights, confined areas,								- Public bystanders								
	noise, dust, trip and falls,	heights, confined areas,								Appropriate signage must be posted to this								
	moving objects and plant	noise, dust, trip and falls,								extent and all employees on site must be								
	etc.	etc.								instructed to ensure that non-employees are								
		Unprotected trenches								protected at all times.								
		and excavations could								All non-employees entering the site must								
		result in children or								receive site applicable induction into the								
		members from public								hazards and risks and the control measures								
		entering these areas that								for these.								
		could result in falling into								Only visitors who are medically fit will be								
		open trench or								allowed to enter the construction work areas.								
		excavation resulting in								If not medically fit, he will only be allowed to								
		serious injuries, if water								enter the site offices								
		in trench or excavation								Safe demarcated walkway to be erected /								
		could result in drowning								conducted or displayed for visitors								
		of members or children								Pedestrian crossings to be conducted and								
										utilized								
		Uncontrolled access to								No Construction work near public vehicles.								
		heights by members of								Construction area must be barricaded (No								
		the public and children								Danger tape) or fenced to prevent Public								
		could cause individuals								from entering work area.								
		to fall from unprotected																
		edges resulting in																
		serious injuries and even																
		fatality																
		No warning signages																
		posted on construction																
		site could cause																
		unauthorized members																
		of public or children to																
		enter unsafe areas that																
		could result in serious																

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ACTIVITY (Work to be performed)		POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK														
				I	C	D	E	P	F	R			I	C	D	E	P	F	RR								
			Mixing of cement on ground could cause environmental pollution																								
			Use of unsafe or damaged tools could cause hand and finger injuries																								
			Making use of non-compliant scaffold not erected as per SANS 10085 could cause scaffold to collapse or fall over, the risk of not fully erected scaffold could also cause employees to fall from unprotected platform resulting in serious injuries.																								
S5-43	Asbestos Works (If found on site)	Inhalation of Asbestos fibers.	Exposure to asbestos fibers leading to an Occupational illness and disease (asbestosis). This results in the lung tissue scarring									Asbestos Risk Assessment and Method statement for Handling of Asbestos to be communicated to the relevant exposed employees.	• SOP/SWP • Issue-based Risk Assessment • Asbestos Risk Assessment • Method Statement • Asbestos Management Plan • Medical Surveillance plan • Checklists • DSTI's • PTO's • Medical Fitness to work • Disposal certificate • Clearance Certificate • Competencies • Proof of Registration as Asbestos contractor • Appointment letter														
		Improper Asbestos removal and placing of Asbestos on site	Occupational illness and disease (asbestosis). This results in the lung tissue scarring									Only registered Contractor will be allowed to be removed and dispose Asbestos at a registered (designated) facility - Proof of disposal must be kept on record. Registration and competencies must be verified before handling of asbestos															
		Incompetent person conducting removal	Employees and public exposed to asbestos causing occupational illness and diseases	5	5	4	4	4	3	25		If Asbestos is noticed on site Department of Labour must be informed.															
		Asbestos Contractor not registered	Use of incompetent person or unregistered contractor to remove asbestos could cause his employees to be exposed to health risk associated with asbestos, reputational damages to client and property damages									Only workers with the required task specific PPE and who have been trained will be allowed to handle and remove Asbestos															
		Incorrect PPE worn when removing, making contact with asbestos										Other simultaneous operations in the direct vicinity of Asbestos must be halted / stopped until asbestos has been removed.															
		Unprotected or damaged bags containing asbestos																									
		Strong Winds																									
		No records of disposal																									

ACTIVITY (Work to be performed)	POTENTIAL HAZARD (Injury / Damage / Loss)	POSSIBLE RISK (Type injury/damage/loss)	RISK EVALUATION							PREVENTATIVE MEASURES	CONTROLS (Registers, Policies, Procedure)	RESIDUAL RISK																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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	Public or community exposed to asbestos	Not wearing the correct PPE required to handle asbestos could cause the employees to be exposed to the health risks of making contact or inhaling asbestos fibers									Designated area to be identified on site to be barricaded for the temporary storage of asbestos containing materials. Warning signages must be posted. Plastic bags must be sealed and must be identified as asbestos with asbestos labels																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</

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S6-02	Housekeeping and Waste Management		Transporting of items with unsafe truck or vehicle could cause an accident to happen resulting in multiple serious injuries or fatalities Open excavations and open trenches could cause members of the public or end-user to fall into the opening resulting in leg injuries (bodily injuries) or if water (from rain is present) could cause children to drown in these openings								compacted to its original state. No open wires, or piping must be left unattended.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
										people are stuck inside the building	All flammable materials must be disposed of or removed from site, may not be left unattended for the end-user							
S6-03	Construction Activities at Practical Completion, Works Completion and Final Completion	No Supervision								Conducting work activities without supervision can lead to processes and procedures not followed resulting accidents and serious injuries	All construction activities must be supervised by appointed competent person. Health and Safety resources must be available on site until site is handed over back to the end-user Health and Safety file must be maintained until site is handed over to end-user. Once site is closed, the consolidated file can be submitted to the DBSA							
		No Health and Safety Resources on site								No H&S resource available on site will cause Health and Safety file not to be maintained on a daily basis this could result in Prohibition notices issued by DoEL. This will result in delay of taking Final Completion	Issue-based Risk Assessment for maintenance works must be available and communicated to the team conducting snags							
		No Health and Safety File / Documentation available								Notification of Construction Works or Construction Work permit expired	All tools and equipment must be inspected, and defects recorded before use.							
		Unsafe working practices								Unauthorized access to work areas and working at unauthorized times	All areas where snags are taking place must be closed off to prohibit no unauthorized entry.							
		Unauthorized access to work areas and working at unauthorized times								Unsafe tools and equipment used	Detailed programme of works with approved extension of time (if required) must be submitted to Department of Employment and Labour to request the extension of the Notification of Construction Works or the Construction Work Permit							
		Unsafe tools and equipment used								Use of unsafe tools and equipment could cause hand and finger injuries	All works required after hours need approval by project manager, DBSA and client representative							
			3	3	3	3	3	3	18				2	2	2	2	2	12
S6-04	Consolidated Health and Safety file and Close-out report submitted to DBSA	Non-Submission of close-out report								Close-Out Report not submitted could result in the project not to be closed out and would remain open with the end-user. This will lead to cost implications as	Prepare and agree on the requirements of information provided to DBSA for the continuous health and safety management of the facility including operations and maintenance requirements during its life cycle.							
		Non-Submission or Health and Safety file lost	1	3	1	1	3	3	12				1	1	1	1	2	8

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			I	C	D	E	P	F	R			I	C	D	E	P	F	RR
										the end-user will not pay for the final payment certificate Non-Submission of the Health and Safety File could cause all records to be lost resulting in loss of critical information creating uncertainty and additional cost for DBSA to manage legal obligations	Conduct Health and Safety inspection to ensure close-out report indicates that the site is left in a safe and healthy manner Submit copy of Health and Safety file and electronic copy to DBSA							
S6-05	Exit Occupational Health and Safety Fitness to work medicals	Unidentified illnesses, injuries or health risks contracted from working on this construction project								Unable to identify health concerns or illnesses could result in legal court cases that will have financial implications to the Client. This will also lead to reputational damages	All employees who conducted construction activities on the project must undergo an exit medical to ensure the employee has not contracted any illnesses or health concerns from working on the project. Records of Exit Medicals must be submitted to DBSA in the copy of the Consolidated Health and Safety file	- Consolidated Health and Safety file - Exit Medicals						

7. DECLARATION OF ACKNOWLEDGMENT AND COMPLIANCE

I, _____, hereby confirm the following:

- I have read and understood the Baseline Risk Assessment.
- I confirm my intention to comply with all relevant legislative requirements and that the appointed Construction Health and Safety Agent will prepare a detailed project specific Baseline Risk Assessment based on the assessments, surveys and designs.
- I acknowledge and accept the responsibilities and duties assigned to me and confirm my understanding thereof.

This declaration is made and agreed to at _____, on this _____ day of _____, 2026, in the presence of the undersigned witness.

Signature: _____

Date: _____

Witness Name: _____

Witness Signature: _____

Signed on behalf of (TBA) (PROFESSIONAL SERVICE PROVIDER)