CAIRNMEAD

PROJECT BASELINE RISK ASSESSMENT

Project: STAND Railton

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Baseline Hazard Identification and Risk Assessment Register ©

1 **Building Projects**

2 **Methodology**

3 **HIRA**

4 **Risk Assessment**

Configuration Management

Prepared By	Cairnmead Industrial Consultants (Pty) Ltd	**Register Number**	CIC 26654-HS-01
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2. Methodology

Seriousness Rating	Description
1	No injury or illness
2	First-aid treatment case, medical treatment case and temporary discomfort case
3	Medical mitigation case; occupational disease with non-permanent effects
4	Lost Time injury. Occupational disease with permanent consequences e.g., hearing loss
5	Fatality (as a result of incident or occupational disease e.g., asbestosis)
6	Multiple fatalities or multiple permanent occupational diseases

Determine the likelihood that the event will occur	
Category	**Criteria**
E	• 99% probability, or • Impact is occurring now, or • Could occur within “days to weeks”
D	• >50% probability, or • Balance of probability it will occur, or • Could occur within “weeks to months”
C	• >20% probability, or • May occur shortly but a distinct probability it will not, or • Could occur within “months to years”
B	• >5% probability, or • May occur but not anticipated, or • Could occur within “years to decades”
A	• >5% probability, or • Occurrence requires exceptional circumstances, or • Only occurs as a “100-year event”

Plot consequence & likelihood in risk matrix to determine risk priority level

Seriousness						
	6	III	II	I	I	I
	5	III	II	II	I	I
	4	IV	III	II	I	I
	3	IV	III	II	II	I
	2	IV	IV	III	II	II
	1	IV	IV	III	III	III
		A	B	C	D	E
		Likelihood				

Evaluate the risk based on the level of risk determined, as well as the effectiveness of the current risk controls			
Priority	**Risk Ranking**	**Action Required**	**Escalation**
I	Very High	Immediate action required	Report to CEO and Client Agent
II	High	Strong Mandatory action required	Report to Contractors Manager and Client Agent
III	Medium	Action required, possibly at administrative level	Report to Contracts Managers
IV	Low	Minor or no action required	No escalation required

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3. Hazard Identification, risk assessment and determining controls

The organization shall establish, implement, and maintain a procedure(s) for the on-going hazard identification, risk assessment, and determination of necessary controls.

The procedure(s) for hazard identification and risk assessment shall consider:

a) routine and non-routine activities;
b) activities of all persons having access to the workplace (including contractors and visitors);
c) human behaviour, capabilities and other human factors;
d) identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization;
e) hazards created in the vicinity of the workplace by work-related activities under the control of the organization;
f) infrastructure, equipment, and materials at the workplace, whether provided by the organization or others;
g) changes or proposed changes in the organization, its activities, or materials;
h) modifications to the OH&S management system, including temporary changes, and their impacts on operations, processes, and activities;
i) any applicable legal obligations relating to risk assessment and implementation of necessary controls;
j) the design of work areas, processes, installations, machinery/equipment, operating procedures, and work organization.

The organization's methodology for hazard identification and risk assessment shall:

a) be defined with respect to its scope, nature, and timing to ensure it is proactive rather than reactive; and
b) provide for the identification, prioritization and documentation of risks, and the application of controls, as appropriate.

For the management of change, the organization shall identify the OH&S hazards and OH&S risks associated with changes in the organization, the OH&S management system, or its activities, prior to the introduction of such changes.

Cairnmead Industrial Consultants has developed a site auditing system to measure the compliance of sites and to categorize the specific activities under High-Risk Activities of which we have 16 different categories identified. This project baseline risk assessment will indicate under which of the 16 categories each item will fall, and it is the responsibility of the principal contractor and their appointed contractors to implement task specific risk assessments to eliminate, reduce or mitigate each of the risks identified. These categories are as follows and are indicated by the individual icons.


WORKING AT HEIGHTS


ELECTRICAL


ELECTRICAL ISOLATION


GROUND DISTURBANCE


LIFTING OPERATIONS


MOBILE PLANT AND EQUIPMENT


CONFINED SPACES


HOT WORKS


HAZARDOUS MATERIAL


HOUSEKEEPING


MATERIAL HANDLING


PPE


ADMINISTRATION


INFECTIOUS DISEASES


NOISE


SITE OPERATIONS

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Hazard Identification, Risk Assessment and Controls

Before construction start, the Baseline Risk Assessment is a theoretical assessment before the construction start in order to highlight the foreseen hazards, but this is not intended to be seen as an absolute 100% of hazards that may occur.

The Principal Contractor or their appointed Contractor should take this and whatever hazards that may be presented, due to the unique process which get used to execute the specific construction activity.

This Baseline Risk Assessment provides recommendations regarding the control measures, it is however the Principal Contractor duties to ensure that detailed control measured are addressed in the applicable unique Risk Assessment by the Principal Contractor or their appointed Contractor. The risk rating is deliberately rated high because there are no controls in this and without the required controls the possibility of the potential risk is very high, as indicated.

2. NOTIFICATION OF CONSTRUCTION WORK

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 002	Notification of Construction	• Contractor not submitting notification to the DOL as required by legal requirement. • Notification not containing the correct information as required by the DOL. • Notification of construction not submitted in the prescribed timeframe. • Notification of construction not available in the health and safety file on site.	**Cairnmead Recommendations:** Refer to section 4 (Notification of Construction Work) in the Client Health and Safety specification and Construction Regulation 4.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

3. CLIENT DOCUMENTATION

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 003	File Approval as per OHS Requirements and Client Specification	• Work commencing prior to the file being available and approved. • No valid registration with COID. • Health and Safety plan not site specific / not in file. • Employees appointed not in possession of required or valid competencies as per Client Spec and OHS Act.	**Cairnmead Recommendations:** Refer to section 5 (Client documentation) and section 7 (Principal Contractor and Contractors) in the Client Health and Safety specification and Construction Regulations.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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4. DUTIES OF THE DESIGNER

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 004	Client and Designer Duties	• Designers not appointed in writing and not made aware of their duties. • Designers not following their legal duties throughout the project. • Designer not taking into consideration the health and safety specification. • Designer not providing the Client the required information pertaining to the structure.	**Cairnmead Recommendations:** Refer to section 6 (Duties of the Designer) in the Client Health and Safety specification and Construction Regulations 6.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

5. PRINCIPAL CONTRACTOR AND CONTRACTORS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 005	Medical certificate of fitness and induction Required legal documentation as per OHS act.	• Induction being conducted on employees without them being in possession of a valid medical certificate of fitness in the form of an Annexure 3. • Documentation not site-specific. • Policies and procedures not in place and approved. • Employees not trained on policies and procedures and legal requirements. • Employees entering site not being inducted.	**Cairnmead Recommendations:** Refer to section 7 (Principal Contractor and Contractors) in the Client Health and Safety Specification and Construction Regulations 7.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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6. MANAGEMENT AND SUPERVISION ON SITE

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 006	Inadequate management / supervision on site	• No Construction Manager appointed / person appointed does not have the required knowledge / experience / qualification. • No Construction Supervisor / Assistant construction supervisor appointed / person appointed does not have the required knowledge / experience / qualification. • No safety officer appointed. • People not appointed as required in terms of the Occupational Health and Safety Act / Construction Regulations and Client Health and Safety Specification. • Inadequate supervision on site.	**Cairnmead Recommendations:** Refer to section 7 (Principal Contractor and Contractors) in the Client Health and Safety Specification and Construction Regulations 7.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

7. RISK ASSESSMENTS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 007	Risk Identification	• Method of works not site specific. • Risk identification not in place or conducted. • Risk identification not site-specific. • Risk controls not sufficient. • Risk Assessor not competent. • Continues risk evaluation not conducted. • Method statements / risk assessments / safe work procedures not approved before work commences. • Method statement / risk assessment / safe work procedure not communicated with employees involved in the activity before work commences.	**Cairnmead Recommendations:** Refer to section 9 (Risk Assessments) and Construction Regulations 9.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

8. FALL PROTECTION

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No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 008	Fall protection	• No site and task specific fall protection plan available for the work at hand. • Employees not trained on the fall protection plan. • Fall protection plan not compiled and approved by a competent and approved fall protection planner. • Fall protection plan not implemented and maintained throughout project.	**Cairnmead Recommendations:** Refer to section 10 (Fall Protection) and Construction Regulations 10.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 009	Working at heights / elevated positions	• Falling objects. • Not hooking safety harness catch to anchor point. • Anchor point not secure or strong enough. • Not keeping all debris, rocks, scraps and rubble away from the work area edges. • Employees working at heights not certified to work at heights in accordance with the SAQA requirements for working at heights training. • No rescue plan in place for employees working at heights. • Employees allowed to work at heights who is not medical fit and not in possession of a valid medical certificate of fitness. • Deliberately dropping materials or equipment.	**Cairnmead Recommendations:** Refer to section 10 (Fall Protection) and Construction Regulations 10.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 010	Edge barricading Erecting & dismantling of edge barricading.	• No solid edge barricading installed on all open edges of buildings / excavations where there is a fall risk to employees. • Edge barricading not secured into position. Only installing guard rails and no knee rails in scaffolding tubing or similar system. • Edge barricading not inspected daily. • Unauthorized removal of edge barricading.	**Cairnmead Recommendations:** Refer to section 10 (Fall Protection) and Construction Regulations 10.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 011	Roof structure installations	• Falling down. • Roof structure not secured properly and if sufficient temporary bracing is not in place, structure could fall. • Tools falling down top areas below. • Incorrect levels and alignment. • Employees erecting structure falling from height.	**Cairnmead Recommendations:** Refer to section 10 (Fall Protection) and Construction Regulations 10.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 012	Roof coverings / Sheeting / Tiling etc.	• If not secured properly, the covering could fall. • Tools could fall down. • Overloading of structure with covering. • Falling objects. • Not hooking safety belt catch to anchor point. • Anchor point not secure or strong enough. • Deliberately dropping materials or equipment.	**Cairnmead Recommendations:** Refer to section 10 (Fall Protection) and Construction Regulations 10.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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9. STRUCTURES

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 013	Structures	• No structure inspections being done to prevent any part of the structure from being overloaded or becoming unstable. • The structure information not being made available on site to ensure the designs are being complied with. • Structure records and maintenance not done by the owner. • Structure not inspected as legislated in the regulations.	**Cairnmead Recommendations:** Refer to section 11 (Structures) and Construction Regulations 11.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

10. TEMPORARY WORKS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 014	Temporary Works Offloading & storage of temporary works material. Erection & dismantling of temporary works. General working operations on temporary works.	• Temporary works not designed by appointed Engineer. • Temporary works not being signed off by appointed Engineer prior to using temporary works. • Temporary works not being inspected on a daily basis by competent, appointed person. • Temporary works erected by incompetent employees / erectors. • Temporary work erectors not trained on the specific system being used on site. • Temporary work drawings not signed off by appointed, competent Engineer. • Contractor not working from latest revision drawing. • Temporary works not adequately erected, supported, braced and maintained by competent person. • Temporary work structure not erected according to the design. • Employees slipping on temporary work decks due to application of release agents. • Temporary work structure stripped before concrete acquired sufficient strength. • Temporary work structure erected on uneven floor surface. • No safe access for employees onto temporary work structure. • No solid edge barricading installed around temporary work decks. • Employees other than the erectors allowed onto temporary work deck while there are openings in deck.	**Cairnmead Recommendations:** Refer to section 12 (Temporary Works) and Construction Regulations 12.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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11. EXCAVATIONS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 015	Excavations: Digging of excavations using plant and manual labour. Working in and around excavations Trenches	• Materials can fall onto employees due to dislodgement of earth or rock. • Employees not able to enter or exit the excavation safely. • Inappropriate placement of excavated materials, plant or other loads close to/on the edge of the excavation. • Employees being trapped inside excavation due to the collapse of the excavation. • Employees being struck by moving plant working in and around the excavation. • Unstable / loose material causes unsafe conditions. • Inadequate warning signs of deep excavations for employees in close vicinity. • Employees being exposed to hazardous atmosphere in an excavation including welding fumes, gases and arcs. • Excavation work taking place underneath or close to overhead services (power lines) and ground mounted services. • Excavation positioned close or nearby existing structures. • The sides of the excavation are not adequately supported by means of shoring / Shoring installed not of adequate design. • Excavations not being inspected daily by the competent appointed Excavation inspector. • Employees falling into excavation due to inadequate barricading. • Employees being exposed to vibration and high noise levels. • The presence of or possible inrush of water (example: ground water) and the control thereof. • Excavations in public areas not properly barricaded / visible. • Use of explosives inside excavations.	**Cairnmead Recommendations:** Refer to section 13 (Excavations) in the Client Health and Safety specification and Construction Regulation 13.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 016	Soil ramp Building of soil ramp / Construction vehicles & mobile plant driving up and down ramp / Pedestrians walking up and down ramp / Removal of soil ramp.	• No solid barricading along the open edges of the ramp. • Unsafe access area on ramp used by employees / Uncontrolled interaction between pedestrians and construction vehicles / No designated walkway area created for employees to walk down ramp. • Construction vehicles and mobile plant utilizing ramp during inclement weather.	**Cairnmead Recommendations:** Refer to section 13 (Excavations) in the Client Health and Safety specification and Construction Regulation 13.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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BLD 017	Piling	• Piles located in positions with restricted working space, e.g. corners of site and adjacent to public areas outside the site - Personal injury from falling debris, crushing. • Unsafe removal of guards or auger cleaners. Risk to third parties. • Piling near to the top of slopes - Slope failure, rig overturning. • Working in excavations - Access ramps and wall props can impede working space. • Inadequately designed / constructed / maintained working platforms - Rig overturning, unsafe working conditions for operatives. • Underground services - Personal injury or death, loss of amenity, delay to project. • Overhead services - Injury to workforce, electrocution, fire, loss of amenity, and delay to project. • Open pile bores or wall panel excavations, with or without support fluid - Operatives falling into open bore or excavation, injury and possible drowning. • Displaced pile/panel support fluid during concreting - Contamination of open water courses. • Ground water contamination - Damage to water resources. • Immediate environmental impact. • Contaminated soil - Infection of piling operatives, contamination of the site and the surrounding area. • Pile falling from clamp. • Completed piling holes left open. • Rig operator not competent and not appointed. • System used for employee to gain access into piling hole not approved by the Department of Labour and no load test available.	**Cairnmead Recommendations:** Refer to section 13 (Excavations) in the Client Health and Safety specification and Construction Regulation 13.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 018	Lateral Support	• Unsafe platforms used to work from. • No screens in place to prevent gunnite from spraying into public area. • Dust level not maintained and controlled. • Lateral support design not available. • Method statement not approved by Engineer.	**Cairnmead Recommendations:** Refer to section 13 (Excavations) in the Client Health and Safety specification and Construction Regulation 13.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 019	Shoring	• Temporary works / shoring not designed by appointed Designer. • Temporary works / shoring not being signed off by appointed Designer. • Temporary works / shoring not inspected daily by competent person. • Temporary works / shoring not inspected immediately after inclement weather. • Contractor using defective temporary works / shoring equipment. • Erection of temporary works / shoring structure done incorrectly. • Dismantling of temporary works / shoring structure done incorrectly.	**Cairnmead Recommendations:** Refer to section 13 (Excavations) in the Client Health and Safety specification and Construction Regulation 13.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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14. SCAFFOLDING

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 022	Scaffolding Erecting & dismantling Access scaffold towers Working operations on scaffolding Specialized scaffolding	• Screens / aprons not installed on scaffolding adjacent to public areas. • Scaffolding not being erected in accordance to SANS 10085 standards. • Trained and appointed scaffolding team not available on site. • Employees working at heights not certified to work at heights in accordance with the SAQA requirements for working at heights training. • Employees allowed to work at heights who is not medical fit and not in possession of a valid medical certificate of fitness. • No rescue plan in place for employees working at heights. • Scaffolding erected on uneven ground level. • No sole boards installed underneath scaffold base jacks when erected on soil surface. • Scaffolding not inspected daily by competent, appointed Scaffold inspector. • No design available for basic or special scaffolding. • No sign on scaffolding indicating safe / unsafe for use. • Area below scaffolding not barricaded off when being dismantled. • Materials not being lowered to ground level correctly while scaffolding are being dismantled. • Scaffolding not sufficiently tied into existing building / structure when required.	**Cairnmead Recommendations:** Refer to section 16 (Scaffolding) in the Client Health and Safety Specification and Construction Regulations 16 and SANS 10085-1:2024.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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19. EXPLOSIVE ACTUATED FASTENING DEVICE

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 027	Explosive actuated fastening device	• Employee operating the device not used with / not wearing the required personal protective equipment. • Operator not trained to operate device and not trained in the maintenance. • Operator not appointed. • Device not provided with protective guard around the muzzle end. • Wrong cartridges used for the scope of work. • Device not cleaned and inspected by competent, appointed person before use. • Safety device on explosive actuated fastening device not in working condition. • Device stored unsafely / incorrectly. • Warning signs not displayed in close vicinity where device is being used. • Issuing and collection of cartridges not done in controlled manner or by competent appointed person. • Issuing and receiving of cartridges not recorded on a register. • Empty cartridges not returned to store area.	**Cairnmead Recommendations:** Refer to section 21 (Explosive Actuated Fastening Device) in the Client Health and Safety Specification and Construction Regulations 21.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

20. CRANES AND LIFTING EQUIPMENT

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating	Legal Reference

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BLD 028	Mobile elevated working platform operations	• Operator not trained to operate MEWP. • Operator not conducting daily pre-inspection before operating MEWP. • No valid load test available. • Operator not medically fit to operate MEWP. • Operator falling from machine basket during work operations. • Operator trapped between part of the basket and a fixed structure, e.g. when manoeuvring in confined overhead areas. • Operator operating machine on uneven surfaces and possibility of machine overturning. • The vehicle may collide with pedestrians, overhead cables or nearby vehicles. • Operator using MEWP in close proximity to overhead power lines. • Materials not properly secured in basket of machine, falling from elevated positions. • Working platform not kept tidy, tripping hazards. • Outriggers not extended and chocked before raising the platform. • Work platform not fitted with effective guard rails and toe boards. • Employees not wearing a harness with a short work restraint lanyard or not securing it to a suitable manufacturer provided anchorage point within the basket to stop the wearer from getting into a position where they could fall from the carrier where there is a risk of falling. • Working in high winds can tilt platforms and make them unstable. • Gate of the platform not closed while in use.	**Cairnmead Recommendations:** Refer to section 22 (Cranes and Lifting Equipment) in the Client Health and Safety Specification and Construction Regulations 22 and Driven Machinery Regulations 18.	6	E	**6E**	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 029	Use of lifting tackle	• Use of unsafe lifting tackle. • No test certificate available for lifting tackle. • Lifting tackle not inspected by competent LMI at required intervals. • Lifting tackle not conspicuously and clearly marked. • Defective lifting tackle being used on site. • Lifting tackle exposed to extreme weather conditions. • Lifting tackle not stored correctly.	**Cairnmead Recommendations:** Refer to section 22 (Cranes and Lifting Equipment) in the Client Health and Safety Specification and Construction Regulations 22 and Driven Machinery Regulations 18.	6	E	**6E**	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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BLD 030	Tower cranes Erection of tower crane. Tower crane work operation. Dismantling of tower crane.	• Tower cranes not being erected by trained employees. • Road closures needed for erection of tower cranes not planned and controlled. • No wayleave in place for road closures. • Documentation required for tower crane erection not in place as per legal requirements. • Aviation authorities not notified. • Crane bases / establishment carried out incorrectly. • Engineers design and final approval of tower crane base not available / in place. • Erecting tower crane during poor weather conditions (strong winds / inclement weather etc.) • Employees / erectors falling from height while erecting tower crane. • Area where lifting activities is taking place not sufficiently barricaded off. • No warning signs of lifting activities / overhead lifting in place. • No handover certificate issued to client after erection process is complete. • No load test carried out on crane. • No COC available for electrical supply to tower crane.	**Cairnmead Recommendations:** Refer to section 22 (Cranes and Lifting Equipment) in the Client Health and Safety Specification and Construction Regulations 22 and Driven Machinery Regulations 18.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 031	Rigging & banksman activities	• Rigging study not available / done for intricate lifting activities. • Competent / certified rigger not appointed for rigging activities of 5 tons and more. • Competent / certified banksman not appointed for lifting operations. • Not sufficient number of competent banksmen appointed for lifting activities.	**Cairnmead Recommendations:** Refer to section 22 (Cranes and Lifting Equipment) in the Client Health and Safety Specification and Construction Regulations 22 and Driven Machinery Regulations 18.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 032	Crane handling on site Mobile crane. Crane truck.	• The loading of the crane including the outriggers can do damage to underground services. • Unsafe lifting methods. • No competent banks man / rigger appointed and present during lifting processes. • Operator of crane not appointed and not competent. • Operator not conducting pre-start check on crane before operating. • Load being lifted is too heavy. • Employees walking underneath a suspended load. • Operators' visibility restricted during the lifting process. • Incorrect lifting tackle used to lift materials. • Load swinging / load out of control - employees being struck by load. • Toppling over / falling over of crane due to overloading. • Mobile crane / crane truck positioned on uneven surface / close to excavation edge. • No spreader plates / sole plates placed underneath the outriggers of the mobile crane / crane truck if required.	**Cairnmead Recommendations:** Refer to section 22 (Cranes and Lifting Equipment) in the Client Health and Safety Specification and Construction Regulations 22 and Driven Machinery Regulations 18.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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BLD 033	Man cage / Lifting cradle / Personnel cage	• Employee overreaching whilst carrying out work from a man cage. • Man cage not registered / approved with the Department of Labour. • No design available for man cage. • No load test available for man cage. • Man cage used during inclement weather conditions. • No risk assessment conducted for the lifting of persons.	**Cairnmead Recommendations:** Refer to section 22 (Cranes and Lifting Equipment) in the Client Health and Safety Specification and Construction Regulations 22 and Driven Machinery Regulations 18.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

21. CONSTRUCTION VEHICLE, MOBILE PLANT AND PUBLIC ROADS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 034	Operating of construction vehicles and mobile plant Transport of employees & materials to site. Operating plant on site.	• One construction vehicle can bump into another. • A construction vehicle can bump/drive over pedestrians. • Unauthorized use of construction vehicle and mobile plant. • Operator of construction vehicle not appointed and not competent. • No reverse hooter installed / not in working condition. • Operator not conducting pre-start inspection on machine before operating. • Operator leaving the vehicle / plant unattended whilst the engine is still running or with the key still in the ignition. • Operator speeding on site. • Construction vehicle / mobile plant parked at an incline without stop blocks being put in place behind the wheels. • Construction vehicle or mobile plant overturning. • Construction vehicles and mobile plant operating in close vicinity or next to power lines. • Inclement weather. • Unauthorized / unsafe transportation of employees. • Integration between pedestrians and construction vehicles not planned and controlled.	**Cairnmead Recommendations:** Refer to section 23 (Construction Vehicle, Mobile Plant and Public Roads) in the Client Health and Safety Specification and Construction Regulations 23.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

22. ELECTRICAL INSTALLATIONS

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No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 035	Solar PV Installation	• Material loaded onto roof area not being secured. • Employees not provided with safe access to the installation area. • Employees not secured while working at fall risk positions. • Material handling on roof area not done in a safe manner to prevent displacement of existing roofing. • Material not placed in correct area damaging the current roof structure. • Hoisting of material not done in a safe manner with the use of correctly certified equipment. • PV installation not done under the supervision of a competent person. • Employees not trained on the risks of the work taking place at fall risk positions. • Working areas not demarcated and secured.	**Cairnmead Recommendations:** Refer to section 24 (Electrical Installations) in the Client Health and Safety Specification and Construction Regulations 24.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 036	Battery Energy Storage System (BESS) installation	• Possible Electrical shock. • Manual handling of unbalanced or unstable load can result in equipment falling. • Compromised battery compartments. • Heat during the day - Batteries generate heat within enclosed building / containers.	**Cairnmead Recommendations:** Refer to section 24 (Electrical Installations) in the Client Health and Safety Specification and Construction Regulations 24.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 037	Electrical installations	• Unfamiliarity with the site and/or uncertainty about the job. • Faulty electrical installations or equipment may result in electrocution, burns or other injuries to employees. • Employees doing the electrical installations not competent. • Electrical shock causing injury or death of employee. • Fire resulting from an electrical fault. • Changes to wiring / installation not being reflected in drawings. • Inadequate lock out procedures / lock out procedures not implemented correctly. • Cramped working conditions, including cable trenches and cable pits. • No COC issued for permanent / temporary electrical installations. • Temporary electrical installations not inspected weekly by competent, appointed person. • Contractor conducting electrical installation work not registered with the Department of Labour as an electrician. • Cable trays should not be used by any person as a "scaffold" support.	**Cairnmead Recommendations:** Refer to section 24 (Electrical Installations) in the Client Health and Safety Specification and Construction Regulations 24.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 038	Busbar installation	• Lifting of busbar sections. • Damage to busbars. • Storage of busbars prior to installation. • Installation of busbar trunking. • Energizing.	**Cairnmead Recommendations:** Refer to section 24 (Electrical Installations) in the Client Health and Safety Specification and Construction Regulations 24.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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23. HAZARDOUS CHEMICALS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 039	Storage and use of flammable liquids	• Flammable liquids, solids, and gasses not stored correctly. • Required notices and signs not clearly displayed in the area where flammable liquids, solids or gasses is stored / located. • No fire extinguishers / insufficient fire extinguishers available in close proximity. • Safety data sheets not available & not communicated with employees.	**Cairnmead Recommendations:** Refer to section 25 (Hazardous Chemicals) in the Client Health and Safety Specification and Construction Regulations 25.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

24. HOUSEKEEPING AND GENERAL SAFEGUARDING

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 040	Housekeeping	• Housekeeping not being maintained daily. • Scrap, waste and debris not removed from site at appropriate intervals. • Construction areas near build up areas not sufficiently hoarded. • Housekeeping conditions not managed by the site management team.	**Cairnmead Recommendations:** Refer to section 27 (Housekeeping) in the Client Health and Safety Specification and Construction Regulations 27.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 041	Temporary hoarding to separate public and construction work.	• Fence erected in the incorrect position. • When digging for fence poles, services can be damaged. • Fence not adequate to prevent public access / unauthorized entry into the construction site. • Where movable hoarding is required, the hoarding not secured properly. • Movable hoarding footings protruding into public areas. • No mandatory warning signs displayed at the entrance of the construction area.	**Cairnmead Recommendations:** Refer to section 27 (Housekeeping) in the Client Health and Safety Specification and Construction Regulations 27.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.
BLD 042	Security	• No security in place at entrances to construction site. • Unauthorized entry to site. • Theft of materials and equipment.	**Cairnmead Recommendations:** Refer to section 27 (Housekeeping) in the Client Health and Safety Specification and Construction Regulations 27.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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BLD 043	Access control	• To prevent unauthorized entry into the construction area, beyond the area, which was fenced off as per the Engineers drawing, from the gate which the contractor controls up to the furthest point of the hoarded area. • Access control measures not in place at access gates. • Accessing site from unsafe areas. • Unauthorized entry onto site due to lack of access control measures.	**Cairnmead Recommendations:** Refer to section 27 (Housekeeping) in the Client Health and Safety Specification and Construction Regulations 27.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

25. STACKING AND STORAGE ON CONSTRUCTION SITES

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 044	Stacking and storage	• Brick pallets double stacked and not secured by being tied or wrapped. • Brick pallets double stacked next to public areas. • No Stacking & storage supervisor appointed. • Laydown areas not inspected weekly by appointed person. • Use of an unsuitable pallet for the loading or storage methods of bricks and other materials. • Continued use of damaged pallets. • Insufficient storage areas provided. • Storage areas not demarcated and clearly identified. • Storage areas not kept neat and under control. • Employees removing materials from the bottom of the stack and not from the top.	**Cairnmead Recommendations:** Refer to section 28 (Stacking and Storage on Construction Sites) in the Client Health and Safety Specification and Construction Regulations 28.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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26. CONSTRUCTION EMPLOYEES' FACILITIES

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 045	Employee facilities Hygiene and Health	• Insufficient employee facilities on site. • Water taps of sources unfit for human consumption. • Drinking water not tested to ensure it is suitable for human consumption. • Facilities not being cleaned and maintained. • No changing facilities available for employees on site. • No dining / sheltered eating areas available for employees on site. • No inspections conducted and no checklist completed. • Employees sleeping on site / not provided with adequate accommodation where required. • Site ablutions not cleaned and maintained resulting in health effects on employees. • Cleaning of hands and working areas not being encouraged daily. • Employees not being encouraged to report any health-related matters to their site management as soon as possible.	**Cairnmead Recommendations:** Refer to section 28 (Construction Employees' Facilities) in the Client Health and Safety specification and Construction Regulation 30.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

27. HEALTH AND SAFETY REPRESENTATIVE

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 046	Health and Safety Representatives	• No Health and Safety rep appointed. • Inadequate number of Health and Safety rep appointed. • Health and Safety rep not conducting duties as required.	**Cairnmead Recommendations:** Refer to section 29 (Health and Safety Representative) in the Client Health and Safety Specification and Section 17 of the Occupational Health and Safety Act.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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28. LADDERS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 047	Ladders	• Damaged ladder being used on site. • Ladder not inspected before use. • Ladder not positioned on level ground surface. • Incorrect ladder being used for activity being performed. • Materials (tools & equipment) falling from ladder. • Ladder not clearly marked / identified by means of a number and not inspected by the appointed Ladder inspector. • Ladder not recorded on the ladder register. • Ladders not stored correctly.	**Cairnmead Recommendations:** Refer to section 28 (Stacking and Storage on Construction Sites) in the Client Health and Safety Specification and Construction Regulations 28.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

29. HAND TOOLS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 048	Hand tools	• Tools not inspected prior to use or issue. • Strike injuries to hand. • "Home-made" hand tools being used. • Cuts from sharp blades.	**Cairnmead Recommendations:** Refer to section 31 (Hand tools) in the Client Health and Safety Specification and relevant legislation.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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30. PORTABLE ELECTRICAL EQUIPMENT

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 049	Electrical Tools	• Incorrect wiring. • Incorrect use of the equipment. • Persons not properly trained. • Tools not inspected prior to use or issue. • Electrical tools being used in inclement weather. • Operator of electrical being electrocuted. • Operator of electrical tool being exposed to high noise levels. • Contact with rotating or moving parts. • Electrical fires. • Moving parts - entanglement. • Vibration. • Dust inhalation.	**Cairnmead Recommendations:** Refer to section 32 (Portable Electrical Equipment) in the Client Health and Safety Specification and Construction Regulation 24.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

31. FIRST AID, EMERGENCY EQUIPMENT AND PROCEDURES

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 050	Emergency preparedness and response Emergency plan and procedures. Emergency contact numbers. Emergency drill.	• Principal Contractors' emergency plan and procedures not issued to subcontractors on site and not communicated with all employees. • Emergency plan not being revised as deemed necessary by changes in construction site. • Emergency contact numbers not made available and displayed in prominent areas on site. • Emergency evacuation drill not conducted at least once every 6 months. • Principal Contractor not appointing competent Emergency evacuation controller as per Cairnmead specification. • No trained First aider appointed. • No first aid kit readily available on site. • Contractors do not provide sufficient first aid equipment to site. • No trained first aider available where applicable. • First aid equipment not being inspected and kept up to date. • First aid locations not identified on site.	**Cairnmead Recommendations:** Refer to section 33 (First Aid, Emergency Equipment and Procedures) in the Client Health and Safety Specification and relevant applicable legislation.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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32. INCIDENT REPORTING AND INVESTIGATIONS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 051	Incident Reporting procedures Incident investigations Reporting of incidents to Department of Labour	• Incidents not reported as per the Client Health and Safety specification. • Incidents not being reported to the supervisor immediately or before end of shift. • Incident report not comprehensive in terms of the requirements as per the Client Health and Safety specification. • Preventative measures not communicated to employees on site. • Incident not investigated by competent appointed person. • Employees not being trained on Incident reporting procedures.	**Cairnmead Recommendations:** Refer to section 34 (Incident Reporting and Investigations) in the Client Health and Safety Specification and relevant applicable legislation.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

33. WELDING, FLAME CUTTING, SOLDERING, AND SIMILAR OPERATIONS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 052	Flame cutting and welding / Hot-works	• Effect the structural integrity of the structure if welding is not done correctly. • CO2 welding not being protected from weather conditions when doing CO2 welding on site in order to prevent wind from blowing the CO2 away from the welding point. • No flash back arrestors installed on gas welding equipment. • Employees not wearing the correct personal protective equipment. • Fire extinguisher not available in nearby vicinity. • Gas welding & cutting: Fire caused by heat, sparks, molten metal or direct contact with the flame. • Explosion when cutting up or repairing tanks or drums which contain or may have contained flammable materials. • Fire / explosion caused by gas leaks, backfires and flashbacks. • Fumes created during flame cutting. • Fire / burns resulting from misuse of oxygen. • Burns from contact with the flame or hot metal. • Crushing or impact injuries when handling and transporting cylinders.	**Cairnmead Recommendations:** Refer to section 35 (Welding, Flame Cutting, Soldering and Similar Operations) in the Client Health and Safety Specification and relevant applicable legislation.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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36. EXISTING SERVICES AND EXISTING SITE CONDITIONS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 055	Above ground services / Overhead power lines Underground services and servitude	• Overhead services not clearly identified can lead to damages of services during construction activities. • Safety clearances as per the national codes not adhered to. • Material, equipment, and storage areas being located at unsafe distances. • Site rules regarding safety clearances not communicated to all staff members and contractors working on site. • Services not pointed out to the contractor. • Termination of services not documented and certified. • Underground services not clearly identified can lead to damages of services during construction activities.	**Cairnmead Recommendations:** Refer to section 38 (Existing Services and Existing Site Conditions) in the Client Health and Safety Specification and applicable legislation.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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37. ERGONOMICS

No.	Potential Hazard	Potential Risk (Source of the potential risk)	Controls (Occupational Health & Safety)	Risk Rating			Legal Reference
BLD 056	Information, instruction and training. Duties of persons effected by ergonomic risks. Ergonomic risk assessments / control measures	• Potential sources of exposure not identified. • Potential health risks relating to ergonomics not identified. • No control measures implemented to prevent ergonomic risks. • No reporting procedure in place for reporting ergonomic risks. • No medical surveillance of employees relating to ergonomic risks. • Employees not being trained and informed about workplace ergonomic risks for their specific work to be performed. • Employees not co-operating and adhering to the control measures implemented to reduce and prevent ergonomic risks. • Employees not reporting potential ergonomic risks. • Employees not co-operating with the medical surveillance staff. • Ergonomic risk assessments not conducted before commencement of work by a competent person. • Ergonomic risk assessment not reviewed and updated in line with statutory requirements. • Risk assessment does not include and addresses the hazards identified. • The risk assessment does not identify the persons who may be affected by ergonomic risks. • The risk assessment does not identify how employees may be exposed and priorities the risks. • Ergonomic risk assessment not updated when there is a change in work method or scope and equipment used. • Ergonomic risk assessment not updated after medical surveillance revealed an adverse health effect. • Exposure to ergonomic risk where not avoidable not being adequately controlled.	**Cairnmead Recommendations:** Refer to section 39 (Ergonomics) in the Client Health and Safety Specification and Ergonomics Regulations.	6	E	6E	Occupational Health & Safety Act, Regulations (85 of 1993) and incorporated safety standards. Client Health and Safety Specification.

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Risk Assessment Approval

Project Details:
Project: STAND Railton
Register Number: CIC 26654-HS-01
Issue Date: 16 Sept 26

Designation	Name	Signature	Date
Appointed Client Health & Safety Agent / Risk Assessor	CPJ Lourens		16 Sept 26

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