HEALTH & SAFETY SPECIFICATIONS FOR RENOVATION OF EXISTING BUILDINGS AND CONSTRUCTION OF NEW INFRASTRUCTURE IN THE NZG (PRETORIA AND MOKOPANE) AND THOHOYANDOU BOTANICAL GARDEN

1. PURPOSE

The objective of the Health and Safety Specifications is to provide a guideline for the Principal Contractor in complying with the requirements of the Occupational Health and Safety Act 85 of 1993 (OHS Act) and the relevant regulations, with particular reference to the Construction Regulations 2014.

The Health and Safety Specifications do not replace the OHS Act and relevant regulations, but is a supplementary document to the requirements of relevant legislation and the conditions of the contract agreement between the SANBI and the Principal Contractor.

It does not imply that sections of legislation not referred to in full in this document are of less importance and/or not relevant. The Contractor remains responsible to comply with the Act, regulations and their health and safety plan.

2. SCOPE

This Health and Safety Specification covers construction and associated activities that have the potential to affect, positively or negatively, the health and safety of all persons involved with the above-mentioned project.

As an employer in their own right, it remains the responsibility of the contractor to do what is reasonable and practicable to ensure that they themselves, and other persons who may be affected by their operations, health and safety, are not endangered.

3. APPLICATIONS AND INTERPRETATION

This document is to be read and understood in conjunction with the following, inter alia:

- All regulations published in terms of the OHS Act.
- Construction Regulations, 2014
- SANS codes referred to by the OHS Act.
- Contract Documents
- Basic Conditions of Employment Act (Act 75 of 1997)
- National Environmental Management Act 107 of 1998 and all Regulations
- Compensation for Occupational Injuries and Diseases Act (COIDA) No. 130 of 1993
4. DESCRIPTION OF WORK

Renovation of existing buildings and construction of new infrastructure at the National Zoological Garden (Pretoria and Mokopane) and at the Thohoyandou Botanical Garden.

5. APPLICATION OF THE CONSTRUCTION REGULATIONS, 2014

The intended construction work falls within the scope of “construction work” as defined in the Construction Regulations, 2014 made under the Occupational Health and Safety Act 1993, as amended (“OHS Act”).

SANBI is required to ensure a working environment which, as far as reasonably practicable, is safe and without risk to the health and safety of persons on the site.

The Principal Contractor will ensure and demonstrate to SANBI that he, and all contractors to be appointed on this construction project, has adequately allowed for the cost of health and safety measures which may be required during the construction work.

5.1. PERMIT TO WORK

Where the construction works:
   (i) Exceeds 180 days;
   (ii) Involves more than 1800 person days of construction work; or
   (iii) The works contract is equal to or exceeds R13 Million or Construction Industry Development Board Grading Level 6,

SANBI as the client, must at least 30 days prior to construction work apply to the Department of Labour (DoL) for a construction work permit in the form of CR Annexure 1.

5.2. NOTIFICATION OF CONSTRUCTION WORK

- The Principal Contractor shall notify the local relevant Provincial Director of the Department of Labour, before commencing with construction work, of the intended work in the form of Annexure 2 of the Construction Regulations.
- **A copy of the completed Annexure 2 of the Construction Regulations, as well as proof of notification shall be included in the Health and Safety Plan (Proof of fax or proof of hand delivery is required).**
- A copy of the completed Annexure 2 is to be kept on site by the Principal Contractor.
5.3. LEGAL DOCUMENTATION/APPOINTMENTS

The appointed Principal Contractor must develop a health and safety plan based on this health and safety specification and the following documents must be provided in the safety file:

- Health and Safety Policy signed by CEO or statement of commitment to SHE
- Letter of Good Standing with the Compensation Commissioner, or similar insurer.
- Organogram (or table), outlining the company health and safety management structure, as well as the appointment(s) they have under the Occupational Health and Safety Act and its Regulations.
- The competency of each member of the health and safety team must be provided and should include knowledge, training, experience & qualifications specific to the appointment.

5.4. HEALTH AND SAFETY FILE

The Health and Safety file of the Contractor will contain the records and documentation as required by the OHS Act, relevant legislation as well as the health and safety specifications and will be kept as a hard copy on site at all times.

5.5 CONTRACTOR HEALTH AND SAFETY PLANS

The Principal Contractor and sub-contractor working on the site must prepare a health and safety plan to address and manage all applicable sources of risk as per items under Section 9 of this specification as well as any other sources of risk which are identified during the contractor’s own risk assessment. The Principal Contractor shall incorporate these into a single health and safety plan for the execution of the entire contract works. Should any further risks be identified in the course of the construction work, such risks must be assessed and addressed in amended health and safety plan which must then be submitted to the SANBI for approval.

The health and safety plan must also address the following matters:

- Procedures for compliance with all requirements of the OHS Act and in particular Sections 8 and 9 of the Act.
- Undertaking and procedure to stop any work which endangers the safety or health of any person.
- Systems for recording and reporting of incidents both internal and external to the Department of Labour.
- Copy of the Act and its Regulations to be kept on the site and to be readily available to employees.
• Incident registers to be kept on the site.
• Employment and appointment of any people who are competent and have the necessary knowledge, training, qualifications and experience to perform the required construction work safely and effectively.
• Procedures and arrangements for first aid facilities on the site.
• Procedures and arrangements for prompt reporting of injuries and other losses/incidents.
• Emergency plans to deal effectively with potential site emergencies.
• Use of effective processes for the identification and close out of root causes of incidents and accidents.
• Attendance by all contractors of monthly site health and safety meetings.
• Demonstration by all contractors of their health and safety monitoring and auditing system to ensure compliance with their health and safety, as part of their health and safety plan.

6. APPOINTMENTS

<table>
<thead>
<tr>
<th>APPOINTMENT</th>
<th>OHS ACT / REGULATION REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 16.2 appointment</td>
<td>Section 16.2</td>
</tr>
<tr>
<td>HSE Representative (if necessary)</td>
<td>Section 17(1)</td>
</tr>
<tr>
<td>Incident Investigator</td>
<td>GAR 9(2)</td>
</tr>
<tr>
<td>First Aiders</td>
<td>GSR 3(4)</td>
</tr>
<tr>
<td>Fire Fighters</td>
<td>ER 9 &amp; CR 29</td>
</tr>
<tr>
<td>Risk Assessor</td>
<td>HCS Reg (Incl. Asbestos &amp; Lead); CR 9</td>
</tr>
</tbody>
</table>

The following information must be provided in the health and safety plan:

• Indicate the estimated number of employees to be working on site.
• Indicate the expected number of sub-contractors to be appointed by the Principal Contractor.

The following competent persons, where applicable, shall be appointed in writing by the Principal Contractor, prior to any work being carried out, and shall adhere to the requirements of the specific sub-regulations.

The competency of each of these appointed competent persons must be provided and should include knowledge, training, experience & qualifications specific to the appointment.
The table below indicates the applicability of the appointments but contractors should by no means be limited to these indications.

<table>
<thead>
<tr>
<th>APPOINTMENT</th>
<th>OHS ACT / REGULATION REFERENCE</th>
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</thead>
<tbody>
<tr>
<td>Construction Manager</td>
<td>CR 8 (1)</td>
</tr>
<tr>
<td>Assistant Construction Manager</td>
<td>CR 8 (2)</td>
</tr>
<tr>
<td>Construction H&amp;S Officer where applicable</td>
<td>CR 8 (5)</td>
</tr>
<tr>
<td>Construction Supervisor</td>
<td>CR 8 (7)</td>
</tr>
<tr>
<td>Construction Assistant Supervisor</td>
<td>CR 8(8)</td>
</tr>
<tr>
<td>Risk assessor</td>
<td>CR 9(1)</td>
</tr>
<tr>
<td>Fall Protection Competent Person</td>
<td>CR 10 (1)</td>
</tr>
<tr>
<td>Temporary works competent person</td>
<td>CR12 (2)</td>
</tr>
<tr>
<td>Excavation Work Supervisor</td>
<td>CR 13 (1)(a)</td>
</tr>
<tr>
<td>Demolition Work Competent Person</td>
<td>CR 14 (1)</td>
</tr>
<tr>
<td>Competent Person (Use of Explosives for Demolition Work)</td>
<td>CR14(11)</td>
</tr>
<tr>
<td>Competent Person (Use of Explosives for Demolition Work)</td>
<td>CR14(11)</td>
</tr>
<tr>
<td>Scaffolding Erector/ Team Leader/ Inspector</td>
<td>CR 16 (1)</td>
</tr>
<tr>
<td>Suspended platform Competent Person</td>
<td>CR 17(1)</td>
</tr>
<tr>
<td>Rope Access Work Competent Person</td>
<td>CR 18 (1)(a)</td>
</tr>
<tr>
<td>Material Hoist Competent Person</td>
<td>CR 19(8)(a)</td>
</tr>
<tr>
<td>Bulk Mixing Plant Competent Person</td>
<td>CR 20 (1)</td>
</tr>
<tr>
<td>Explosive Powered Tools Competent Person</td>
<td>CR 21(2)(b)</td>
</tr>
<tr>
<td>Construction Vehicle and Mobile Plant Competent Person</td>
<td>CR23 (1)(d)</td>
</tr>
<tr>
<td>Electrical Machinery Competent Person</td>
<td>CR 24 (c)</td>
</tr>
<tr>
<td>Stacking and Storage Supervisor</td>
<td>CR 28 (a)</td>
</tr>
<tr>
<td>Fire Equipment Inspector</td>
<td>CR 29(h)</td>
</tr>
</tbody>
</table>

No work involving any of the listed appointments may be performed without the knowledge and approval of an appointed competent person.

7. GENERAL DUTIES OF PRINCIPAL CONTRACTOR

- The Principal Contractor will be responsible for co-operation between all contractors to ensure compliance to the OHS Act and Regulations on site.
- To ensure the above, the Principal Contractor must carry out the following and provide proof of such in his health and safety plan:
• Proof that Contractors health and safety plan has been approved, implemented and maintained.

• Proof that Contractors are registered with the Compensation Commissioner or similar insurer.

• A comprehensive & updated list of all contractors on site, also indicating the type of work being done.

8. DESIGNER GENERAL DUTIES

The designer of a structure must comply with CR 6 and in particular ensure that cognizance is taken of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of the structure such as maintenance and cleaning after completion and commissioning of the structure.

9. POTENTIAL SOURCES OF RISK

The following potential sources of risk to the health and safety of persons on site have been identified, as per the risk assessment which accompanies this health and safety specification, and must, as a minimum, be appropriately addressed by the Principal Contractor’s health and safety plan. In addition, the Principal Contractor must perform its own activity risk assessments to enable it to take precautions to protect the health and safety of persons on site, to comply with the Principal Contractor’s obligations under the Act and all Regulations made there under, including the Construction Regulations. All such precautionary measures and procedures must be included in the Principal Contractor’s health and safety plan, which must be submitted to the SANBI OHS Manager for review and approval and where applicable should include:

• Noise
• Potential presence of asbestos that forms part of the structure (cement fibre)
• Dust - Working at height (fall protection)
• Drilling (Breaking of walls)
• Formwork and support work
• Scaffolding
• Construction vehicles and mobile equipment
• Electrical tools and electrical machinery
• Housekeeping
• Stacking and storage practices
• Fire risks and fire precautions
• Use of jackhammers
• Hot work (steel cutting and welding)
• Portable electrical tools
• Intoxicated persons on site
• Use of ladders
• Working at height
• Impact of construction work upon SANBI neighbours and employees working close to construction site

The risk assessment to be included in the health and safety plan must clearly indicate:
• The methodology used to do the risk assessments.
• Breakdown of processes and activities covered.
• Subsequent hazards identified
• Risk calculations (considering consequence, frequency and likelihood).

All risk assessments are to be conducted by a competent person as appointed under paragraph 9 of this document. The plan must include a declaration in this regard or the risk assessment must contain the signature(s) of this appointed persons.

Risk assessments are to cover safety as well as health hazards and shall include environmental risks.

10. UNDERGROUND SERVICES

The contractor must be provided with available information about site services and their location, e.g. underground services by responsible site manager. The responsible site manager must further provide any information about ground conditions and underground structures or water courses, such as culverts, where this might affect the safe use of plants such as cranes or the safety of groundwork e.g. in the construction of trenches.
11. SAFE WORK PROCEDURES

11.1 Health and Safety

The following Safe Work Procedures are to form part of the health and safety plan and must be compiled for all the high risk activities:

11.1.1. Demolitions and removal of waste
11.1.2. Working at height
11.1.3. Form work
11.1.4. Electrical tools
11.1.5. Waste management

The safe work procedures must address the following elements:

- The work method to be followed to conduct work safely
- Control measures implemented to mitigation & reduce the risks
- Responsibilities of competent persons
- Required personal protective equipment
- Correct equipment/tools/machinery to be used
- Completed Risk Registers
- Completed Risk Assessments

11.2 Environment

11.2.1 Pollution

Any impacts on the environment must be minimized, environmental pollution prevented, efficient use of natural resources and conserving biodiversity during the duration of the contract.

11.2.2 Resource use

Consideration must also be taken for the following:

- Waste minimization
- Energy and water efficiency
- Prevention of water and soil contamination
- Managing oil spillages
12. SAFETY OF PEDESTRIANS

Access to the construction site must be cordoned off as much as possible in all work areas.

All excavations are to be fenced / barricaded to prevent access by public / pedestrians.

Work must be planned in such a manner as to ensure that the minimum amount of trenches are left open after hours or during weekends.

No trenches in which water has accumulated may be left open.

13. REGISTERS

- Examples of the registers listed below must be provided in the health and safety plan.
- All registers must be available at the site offices at all times for inspection.
- The list of registers to be kept is by no means exhaustive and the health and safety plan should list all the registers that are applicable and at what frequency they are going to be maintained.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>FREQUENCY</th>
<th>FORMAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form work / Support work</td>
<td>Daily, prior to any shift</td>
<td></td>
</tr>
<tr>
<td>Excavation work</td>
<td>Daily, prior to any shift, after rain or blasting or after unexpected fall of ground</td>
<td></td>
</tr>
<tr>
<td>Scaffolding</td>
<td>Daily, prior to any shift, after rain or blasting.</td>
<td></td>
</tr>
<tr>
<td>Material hoist</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Construction vehicles and mobile plant</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Temporary electrical installation</td>
<td>Weekly</td>
<td>Annexure 1</td>
</tr>
<tr>
<td>Stacking</td>
<td>Weekly</td>
<td>WCL 2</td>
</tr>
<tr>
<td>Ablution facilities</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Ladders</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Incident register in terms of GAR 9</td>
<td>As Required</td>
<td></td>
</tr>
<tr>
<td>Fall protection equipment</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Portable electrical tools</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Suspended platforms</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Accommodation of traffic</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Firefighting equipment</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Hand tools</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>Visitor induction</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Proof of medical surveillance for every</td>
<td>As Required</td>
<td>Annexure 3 of</td>
</tr>
<tr>
<td>construction worker has been done</td>
<td></td>
<td>CR</td>
</tr>
</tbody>
</table>
14. TRAINING

The Health and Safety file shall indicate the following regarding training:

- A copy of the content to be used for Induction training.
- Attendance registers must be included as proof of training provided for:
  - Induction training
  - Safe work procedure training
  - Risk assessment outcome training
- Method of informing visitors and other persons entering the site of hazards prevalent on site.
- Method of providing personal protective equipment to visitors and non-employees.
- Methodology to be used in the issuing and communication of written instructions/safe work procedures.

15. HEALTH AND SAFETY AUDITS AND INSTRUCTION REGISTER

Health and safety audits will be conducted by SANBI or its appointed person at intervals mutually agreed between the client and Principal Contractor but at least monthly. All Health and Safety instructions will be given via the Safety Office in writing within 7 days of audits.

The Principal Contractor shall be required to sign the instruction to acknowledge any instructions issued and rectify the deviations.

16. GENERAL REQUIREMENTS

16.1. Personal Protective Equipment

The procedures for issuing and control over PPE shall be indicated in the health and safety plan, as well as the enforcement for the wearing thereof.

16.2. Hired Plant

The responsibility for the safe condition and use of all hired plant shall be that of the contractor.

16.3. Signs and notices

The contractor shall erect and maintain on site symbolic safety signage and notices that conform to the SANS requirements. The signage shall include, but not be limited to the following:

- Mandatory signage
- Warning signs
16.4. Certificates of fitness

The Principal Contractor and the subcontractors shall include in their Health and Safety files all copies of the worker’s medical certificates of fitness conducted by an Occupational Health Medical/Nursing Practitioner.

16.5. Site Visitors

A site visitor’s register is to be kept on site and steps are to be taken to ensure that all visitors sign the visitors’ register before entering the site.

An induction must be given to all visitors entering the site and proof thereof must be kept in the health and safety file.

Visitor’s PPE must be made available and at the cost of the contractor and signs should also be provided directing all visitors to report to the site office.

16.6 Housekeeping

CR 27 and CR 28 shall be complied with regarding sustained provision of good housekeeping, stacking and storage practices.

Chutes shall be used for waste and debris removal from high places.

The site shall be suitably cordoned off and access controlled.

Catch platforms or nets shall be used where necessary.

16.7 Welfare Facilities

The Contractor will ensure that adequate ablution and changing facilities are made available to the workers.

The Contractor will also designate appropriate hygienic eating facilities/area for the workers.

17. HAZARDOUS CHEMICAL SUBSTANCES

In addition to the requirements in the HCS Regulations, the Principal Contractor must provide proof in the health and safety plan that:

- Material Safety Data Sheets (MSDS’s) of the relevant materials/hazardous chemical substances are available prior to use by the contractor. Mention
should be made how the Principal Contractor is going to act according to special/unique requirements made in the relevant MSDS’s. All MSDS’s shall be available for inspection by the client at all times.

- Risk assessments must be done for this construction project.
- How the relevant HCS’s are being/going to be controlled by referring to:
  - Limiting the amount of HCS
  - Limiting the period of exposure
  - Using appropriate written work procedures
  - The correct PPE is being used.

HCS are stored and transported according to SABS 072 and 0228.

Training with regards to these regulations was given.

The health and safety plan should make reference to the disposal of hazardous waste on classified sites and the location thereof (where applicable).

18. CONSTRUCTION VEHICLES

For the purposes of these specifications a Construction Vehicle means any vehicle used to transport persons, materials, or both on or off of the construction site for the purposes of performing construction work.

The vehicle must be of a suitable design and construction for the type of work anticipated. Operators must receive appropriate training and be in possession of a medical certificate of fitness before making a written appointment to operate the construction vehicle. The construction vehicle must obey all speed limits.

There must be a safe means of access provided for the operator into and out of the operating cab. Provide the cab with suitable protection for the operator against falling materials and the dangers of being crushed should the vehicle overturn. Fit and maintain an electrically operated acoustic signalling device and a reversing alarm in an operational state.

Construction vehicles exposed to normal public traffic must be fully roadworthy.

Vehicles which may be left unattended at night adjacent to a public road must be fitted with appropriate lights or reflectors.
19. NOISE INDUCED HEARING LOSS

Where noise is identified as a hazard, the requirements of the NIHL regulations must be complied with and the following must be included/ referred to in the health and safety plan:

- Proof of training with regards to these regulations.
- Risk assessment done within 1 month of commencement of work.
- That monitoring carried out by an AIA and done according to SANS 083.
- Medical surveillance programme established and maintained for the necessary employees.

Control of noise by referring to:

- Engineering methods considered
- Admin control (number of employees exposed) considered
- Personal protective equipment considered/decided.

20. FALL PROTECTION

In addition to the requirements of this regulation the following shall apply:

- The fall protection plan for all work at height is to be prepared by a competent person. This competent person must sign the fall protection plan.
- Contents of the fall protection plan must cover all the requirements as stated in the sub-regulation.
- The level of supervision is to be stated in the fall protection plan.
- Medical certificates, work near edges, presence of dew, dangerous walking areas etc. should be addressed in the fall protection plan. Inclement weather conditions must be provided for in the fall protection plan.

21. SANBI OCCUPATIONAL HEALTH AND SAFETY MANAGER

The SANBIs’ OHS Manager will visit the site regularly to monitor and audit the execution of the contractor’s health and safety plan, without thereby limiting the contractor’s own responsibility for health and safety, or attracting any vicarious responsibility or liability for the contractor’s acts or omissions.

22. GENERAL

Nothing contained in or omitted from this Health and Safety Specification, or the health and safety plan based on this specification, shall relieve the Principal Contractor of any of its obligations or liabilities.

The client shall not be liable for any civil claim because of anything contained in, or omitted from, this Health and Safety Specification.
NB: Upon completion of the construction work, a Principal Contractor must hand over to the SANBI OHS Manager a health and safety file including a record of all drawings, designs, materials used and other similar information concerning the completed structure, in accordance with Construction Regulations 7(1)(e).