

APPOINTMENT OF A SERVICE PROVIDER FOR THE REFURBISHMENT AND UPGRADE OF COLD WATER, HOT WATER, DRAINAGE RETICULATION SYSTEM AND WATER HEATING REFURBISHMENTS AT STUDENTS' RESIDENCE OF SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY

SPECIFICATION FOR OCCUPATIONAL HEALTH AND SAFETY IN ENGINEERING AND CONSTRUCTION WORKS CONTRACTS.

1 Scope

This specification establishes the overarching framework within which a contractor is required to satisfy general requirements for occupation health and safety in an engineering and construction works contract.

- Note:** 1) This specification establishes general requirements to enable the employer and the contractor to satisfy the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Construction Regulations, 2003.
- 2) The Construction Regulations, 2003, require an employer to stop any contractor from executing construction work which is not in accordance with the contractor's health and safety plan for the site or which poses to be a threat to the health and safety of persons.

2 Definitions

Act: the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

Competent person: any person having the knowledge, training and experience specific to the work or task being performed

ergonomics: the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimise human well-being and overall system performance

Hazard: a source of or exposure to danger

incident: an event or occurrence occurring at work or arising out of or in connection with the activities of persons at work, or in connection with the use of plant or machinery, in which, or in consequence of which-

- a) any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or to continue with the activity for which he was employed or is usually employed;
- b) a major incident occurred; or
- c) the health or safety of any person was endangered and where-
 - i) a dangerous substance was spilled;
 - ii) the uncontrolled release of any substance under pressure took place;
 - iii) machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or machinery ran out of control

Inspector: a person designated as such under section 28 the Act

Major incident: an occurrence of catastrophic proportions, resulting from the use of plant or machinery, or from activities at a workplace

Reasonably practicable: practicable having regard to:

- a) the severity and scope of the hazard or risk concerned;
- b) the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk;
- c) the availability and suitability of means to remove or mitigate that hazard or risk; and
- d) the cost of removing or mitigating that hazard or risk in relation to the benefits deriving therefrom;

Risk: the probability that injury or damage will occur

Safe: free from any hazard

Scaffold: any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both

Specification data: data, provisions and variations that make this specification applicable to a particular contract

Structure

- a) 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, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
- b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or
- c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two metres or more

Substance: any solid, liquid, vapour, gas or aerosol, or combination thereof

Suitable: capable of fulfilling or having fulfilled the intended function or fit for its intended purpose

3 Interpretation

- 3.1** The Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this specification.

3.2 Compliance with the requirements of this specification does not necessarily result in compliance with the provisions of the Act.

4 Requirements

4.1 General requirement

4.1.1 The contractor shall execute the works in a manner that complies with all the requirements of the Act and all its associated regulations, and in so doing, minimize the risk of incidents occurring.

4.1.2 The contractor shall with respect to the site and the engineering and construction works that are contemplated:

- a) Identify the hazards and evaluate the risks associated with such work constituting a hazard to the health and safety of such employees and the steps that need to be taken to comply with the Act; and
- b) as far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.

4.1.3 The contractor shall as far as is reasonably practicable, cause every employee to be made conversant with the hazards to his health and safety attached to any work which he has to perform, any article or substance which he has to produce, process, use, handle, store or transport and any plant or machinery which he is required or permitted to use, as well as with the precautionary measures which should be taken and observed with respect to those hazards.

4.1.4 The contractor shall ensure that all employees under his or her control are:

- a) informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and
- b) issued with proof of health and safety induction training issued by a competent person and carry proof such induction when working on site.

4.1.5 The contractor shall not allow or permit any employee to enter any site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

4.1.6 The contractor shall ensure that each visitor to a construction site, save where such visitor only visits the site office and is not in direct contact with the construction work activities:

- a) Undergoes health and safety instruction pertaining to the hazards prevalent on the site; and
- b) is provided with the necessary personal protective equipment.

4.1.7 The contractor shall provide suitable on-site signage to alert workers and visitors to health and safety requirements.

4.1.8 The contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace.

4.2 Health and safety representatives

4.2.1 The contractor shall appoint in writing one health and safety representative for 50 employees of the contractor working on the site, whenever there are more than 20 employees on the site, to:

- a) Review the effectiveness of health and safety measures;
- b) Identify potential hazards and potential major incidents;
- c) In collaboration with his employer =, examine the causes of incidents;
- d) Investigate complaints by and employee of the contractor relating to that employee's health or safety on the site;
- e) Make representations to the contractor on matters arising from a), b), c) or d) or on general matters affecting the health or safety of the employees at the workplace;
- f) Inspect the site with a view to, the health and safety of employees, at regular intervals;
- g) Participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace; and

- h) Participate in an internal health or safety audit.

4.2.2 Inform the relevant safety representative:

- a) Beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector, and
- b) as soon as reasonably practicable of the occurrence of an incident on the site.

4.2.3 The contractor shall convene health and safety meetings whenever more than two health and safety representative have been appointed for the site. These meetings shall be attended by all health and safety representatives and shall be convened at least once every month to:

- a) Make recommendations to the employer regarding any matter affecting the health or safety of persons on the site; and
- b) Discuss any incident on the site in which or in consequence of which any person was injured, became ill or died.

4.2.4 The contractor shall consult with the health and safety committee on the development, monitoring and review of the risk assessment.

4.3 Appointment of construction supervisor and safety officers

4.3.1 The contractor shall appoint a full-time competent employee designated in writing as the construction supervisor for the site, with the duty of supervising the performance of the work falling within the scope of the contract and may appoint one or more competent employees to assist the appointed construction supervisor.

4.3.2 A contractor may, having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction safety officer in writing, who has in the contractor's opinion the necessary competencies and resources, to assist the contractor to assist in the control of all safety related aspects on the site.

4.3.3 The contractor shall ensure that the construction supervisor is in possession of the most recently updated version of the full protection plan.

4.3.4 The contractor shall ensure that the following activities, as relevant, are carried out under the supervision of a competent person and that such persons are appointed in writing:

- i) All formwork and support work operations;
- ii) Excavation work;
- iii) Demolition work;
- iv) Scaffolding work operations;
- v) Suspended platform work operations;
- vi) Operation of batch plants; and
- vii) The stacking and storage of articles on the site.

4.4 Risk assessment

4.4.1 The contractor performing work falling within the contract shall before the commencement of any such work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing. Such assessment shall as a minimum:

- a) Identify the risks and hazards to which persons may be exposed to;
- b) Analyze and evaluate the identified risks and hazards,
- c) Document a plan of safety work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- d) Provide a monitoring plan; and
- e) Provide a review plan

Note: A risk assessment is an important step in protecting workers as well as complying with the law. It helps you focus on the risks that really matter in a particular workplace – the ones with the potential to cause real harm. Workers and others have a right to be protected from harm caused by a failure to take reasonable control measures. The following four steps are recommended:

- 1) Identify the hazards by looking at what could reasonably expected to cause harm, ask employees or their representative what they think, obtain advice from trade

associations or publications on health and safety, check manufacturer's instructions or data sheets for chemicals and equipment as they can be very helpful in spelling out the hazards and putting them in their true perspective, review accident and ill-health record, think about long-term hazards to health (e.g. high levels of noise or exposure to harmful substances) as well as safety hazards etc.

- 2) Identify who may be harmed and how by identifying how groups of people might be harmed i.e. what type of injury or ill health might occur.
- 3) Evaluate the risks and decide on precautions by doing 'reasonably practicable' to protect people from harm i.e. by looking at how things are done, what controls are in place and how the work is organized and comparing this against good practice to see if more can be done to bring practices up to standard. Consider if the hazard can be got rid of all together, and if not how can the risks be controlled so that harm is unlikely, e.g. try to organize work to reduce exposure to the hazard (e.g. put barriers between pedestrians and traffic); issue personal protective equipment (e.g. clothing, footwear, goggles etc.); and provide welfare facilities (e.g. first aid and washing facilities for removal of contamination).
- 4) Record the findings by writing down the findings of the risk assessment.

4.4.2 The contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analyzed, evaluated and addressed in the risk assessment.

4.4.3 The contractor shall require a competent person to prepare a fall protection plan in compliance with the requirements of the Construction Regulations.

4.4.4 Notwithstanding the provisions of the fall protection plan, the contractor shall ensure that:

- a) All unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;
- b) No person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder;

- c) Notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;
- d) Fall [prevention and fall arrest equipment is:
 - i) Suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and
 - ii) Securely attached to a structure or plant and the structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safety supporting the equipment and any person who is liable to fall;
 - ii) Fall arrest equipment is only used where it is not reasonably practicable to use fall prevention equipment; and
- e) Suitable and sufficient steps are taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.

4.4.5 Where roof work is being performed on a construction site, the contractor shall ensure that it is indicated in the fall protection plan that:

- i) The roof work has been properly planned;
- ii) The roof erectors are competent to carry out the work;
- iii) No employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees;
- iv) Prominent warning notices are to be placed where all covers to openings are not of sufficient strength to withstand any imposed loads and where fragile material exists;
- v) The areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering;
- vi) Suitable and sufficient platforms, covering or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and
- vii) There is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so far as is reasonably practicable, the fall of any person, material or equipment.

4.4.6 The contractor shall ensure that:

- a) All reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work;
- b) No structure or part of a structure is loaded in a manner which would render it unsafe; and
- c) Account of specification data prepared by the designer of the structure is taken into account in the risk assessment;

Note: The specification data provided by the designer should outline known or anticipated dangers or hazards relating to the works and make available all information required for the safe execution of the work. It should provide as relevant, geotechnical information (or make reference to reports provided in the site information), the loading the structures is designed to withstand, the methods and sequence of construction.

4.5 Health and safety plans

4.5.1 The contractor shall prior to commencing the works to which this specification applies, submit to the employer for approval a suitable and sufficiently documented health and safety plan, based on this specification and the risk assessment that is conducted.

4.5.2 The health and safety plan shall as a minimum provide:

- a) The information contained in table 1 in respect of each of the hazards associated with work falling within the scope of the contract.

Table 1: Example of the format of a health and safety plan

What are the hazards	Who might be harmed and how	What are the safe work procedures for the site	What further action is necessary (monitoring and review)	Action by whom	Action by when

b) An outline of the manner in which the contractor intends complying with the requirements of this specification.

4.5.3 The contractor shall discuss the submitted health and safety plan with the employer's representative, modify such plan in the light of the discussion and resubmit the modified plan for approval.

4.5.4 The contractor shall apply the approved health and safety plan from the date of commencement of and for the duration of the works to which this specification applies.

4.5.5 The contractor shall conduct periodic audits for compliance with the approved health and safety plan at intervals agreed upon with the employer, but at least once every month.

4.5.6 The contractor shall update the health and safety plan whenever changes to the works are brought about.

4.6 Subcontractors

4.6.1 The contractor may only subcontract work in terms of a written subcontract and shall only appoint a subcontractor should he be reasonably satisfied that such a subcontractor has the necessary competencies and resources to perform the work falling within the scope of the contract safely. Such a subcontract shall require that the subcontractor shall:

a) shall co-operate with the contractor as far as is necessary to enable both the contractor and sub-contractor to comply with the provisions of the Act; and

- b) as far as is reasonably practicable, promptly provide the contractor with any information which might affect the health and safety of any person at work carrying out work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.

4.6.2 The contractor shall provide any sub-contractor who is submitting a tender or appointed to perform a sub-contract falling within the scope of the contract, with the relevant sections of this specification and associated specification data which might be pertinent to the sub-contract.

4.6.3 The contractor shall take reasonable steps as are necessary to ensure:

- a) Co-operation between all sub-contractors to enable each of those sub-contractors to comply with the requirements of the Act and associated regulations; and
- b) That each sub-contractor's health and safety plan is implemented.

4.6.4 The contractor shall conduct periodic audits for compliance with the approved health and safety plan of each and every sub-contractor working on the site at intervals agreed upon with such contractors, but at least once per month.

4.6.5 The contractor shall stop any contractor from executing construction work which is not in accordance with the contractor's or subcontractor's health and safety plan for the site or which poses a threat to the health and safety of persons.

4.6.6 The contractor shall ensure that where changes to the works occur, sufficient health and safety information and appropriate resources are made available to subcontractor to execute the work safely.

4.6.7 The contractor shall ensure that:

- a) Every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site;
- b) Potential subcontractors submitting tenders have made provision for the cost of health and safety measures during the construction process; and

- c) Every subcontractor has in place a documented health and safety plan prior to commencing any work on site which falls within the scope of the contract.

4.6.8 The contractor shall receive, discuss and approve health and safety plans submitted by subcontractors.

4.6.9 The contractor shall ensure that all subcontractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.

4.6.10 The contractor shall reasonably satisfy himself that all employees of subcontractors are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

The contractor shall satisfy himself that ensure that all subcontractor employees deployed in the site are:

- a) Informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment; and
- b) Issued with proof of health and safety induction training issued by a competent person and carry proof such induction when working on site.

4.7 Reporting of incidents

The contractor shall notify the employer's representative of any incident as soon as possible after it has occurred and report such incidence to an inspector.

4.8 Administration

4.8.1 Notification of intention to commence construction work

The contractor shall notify the Provincial Director of Labour in writing using a form similar to that contained in Annexure A of the Construction Regulations issued in terms of the Act before construction work commences and retain a copy of such notification in the health and safety file where such work:

- a) involves the demolition of a structure exceeding a height of 3m;

- b) involves the use of explosives to perform construction work;
- c) involves the dismantling of fixed plant at a height greater than 3m;
- d) exceeds 30 days or will involve more than 300 person days of construction work; and includes:
 - i) excavation work deeper than 1m; or
 - ii) Working at a height greater than 3 m above ground or a landing.

4.8.2 Health and safety file

4.8.2.1 The contractor shall maintain a health and safety file on site which contains copies of the following, as relevant:

- a) the notification made to the Provincial Director of Labour in terms of 4.4.1;
- b) the letters of appointments of health and safety representatives;
- c) The minutes of all health and safety meetings;
- d) a comprehensive and updated list of all the subcontractors (domestic) employed on site by the contractor, indicating the type of work being performed by such sub-contractors;
- e) A copy of each and every subcontract agreement;
- f) The contractor's health and safety plan;
- g) The health and safety plans of all the contractor's subcontractors who are required to provide such plans;
- h) The recommendations made to the contractor by the health and safety committee referred to in 4.2.3
- i) Any report made to an inspector by the health and safety committee referred to in 4.2.3; and
- j) The findings of all audit reports made regarding the implementation of the contractor's or a subcontractor's health and safety plan;
- k) Proof that the contractor and every subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer;
- l) The inputs of the safety officer, if any, into the health and safety plan;
- m) A copy of risk assessments made by competent persons;
- n) Details of induction training conducted whenever it is conducted;
- o) Proof of all subcontractor's induction training whenever it is conducted;

- p) Letters of appointments for competent persons to supervise prescribed activities;
- q) Proof of the following where suspended platforms are used:
 - i) a certificate of system design issued by a professional engineer, professional certificated engineer or a professional engineering technologist;
 - ii) proof of competency of erectors;
 - iii) proof of compliance of operational design calculations with requirements of the system design certificate;
 - iv) proof of performance test results;
 - v) sketches indicating the completed system with the operational loading capacity of the platform;
 - vi) procedures for and records of inspections having been carried out;
 - vii) procedures for and records of maintenance work having been carried out;
 - viii) proof that the prescribed documentation has been forwarded to the provincial director;
- r) Records of the register of inspections made by a competent person immediately before and during the placement of concrete or any other load on formwork; and
- s) The names of the first aiders on site and copies of the first aid certificates of competency.

4.8.2.2 The health and safety file shall be made available for inspection by any inspector, subcontractor, employer's representative, employer's agent, health and safety representative or employee of the contractor upon the request of such persons.

4.8.2.3 The contractor shall hand over the health and safety file to the employer upon completion of the contract together with a record of all drawings, designs, materials used and other similar information concerning the completed structure.

4.9 First aid, emergency equipment and procedures

The contractor shall where more than five employees are employed at a workplace, provide a first aid box or boxes at or near the workplace which shall be available and accessible for the treatment of injured persons at that workplace. Such first aid boxes shall contain suitable first aid equipment.

The contractor shall ensure that where there are more than 10 employees employed on the site that for every group of up to 50 employees at that workplace, at least one person is readily available during normal working hours, who is in possession of a valid certificate of competency in first aid.