

Project Number	YE-3425	Issued by Hitachi Zosen Inova AG Hardturmstrasse 127 CH-8005 Zurich www.hz-inova.com Tel. +41 (0)44 277 1111 Fax +41 (0)44 277 1313	
Project Name	Tees Valley ERF		



FCC Environment
 Ground Floor West
 900 Pavilion Drive
 Northampton Business Park
 Northampton
 NN4 7RG
 United Kingdom

Rev	Author (Name, Date, Signature)	Reviewer (Name, Date, Signature)	Approver (Name, Date, Signature)	Short description of change
0.0	Astrid de Cosson 05.07.2021	Mihai Mititelu 06.07.2021	Chris Hibbert 12.07.2021	First Issue
1.0	ECL 01/03/2023	ECL 01/03/2023	FCC 01/03/2023	Section 2.4.
2.0				
3.0				

DocType	JHS-Proposal	HZI Doc No _ Rev	50134151_1.0
Issued by (acronym)	HZI/ECL	Construction Phase Plan (CPP)	

Table of Content

1	Introduction	5
1.1	HSE Philosophy	5
1.2	Purpose.....	5
1.3	Scope	6
1.4	Acronyms and Definitions.....	6
2	General Project Information	8
2.1	Project Description	8
2.2	Programme Details.....	8
2.3	Project Stakeholders and Duty Holders under Construction (Design and Management) Regulations.....	9
2.4	Adjacent Facilities	10
2.5	Special Project Risk	10
3	HSE Management.....	15
3.1	HSE Management System Overview	15
3.2	HZI HSE Policy.....	15
3.3	HSE Risk Identification.....	15
3.3.1	HZI HSE Risk Identification	15
3.3.2	Contractor HSE Risk Identification	16
3.4	HSE Compliance Obligations	16
3.5	HSE Objectives and Targets	17
3.5.1	Corporate Goals	17
3.5.2	Project HSE Goals.....	17
3.6	Project HSE Roles and Responsibilities	18
3.6.1	General.....	18
3.6.2	Project Director.....	18
3.6.3	Site Manager	18
3.6.4	Construction Manager(s).....	18
3.6.5	Commissioning Manager.....	19
3.6.6	Site Supervisors	19
3.6.7	Site HSE Manager.....	19
3.6.8	Site HSE Advisor	20
3.6.9	Environmental Responsibilities	21
3.6.10	Contractor Site HSE Representative	21
3.6.11	Employees.....	21
3.7	Contractor Site HSE Team Ratio.....	21
3.8	Site Disciplinary	22
3.8.1	Yellow Cards	22
3.8.2	Red Cards.....	23
3.8.3	HSE Improvement Notices	23
3.9	HSE Inductions and Training.....	23
3.9.1	HZI Site HSE Induction	23
3.9.2	Contractor Inductions	24
3.9.3	Site Specific Training.....	24
3.9.4	Competence	24
3.9.5	Toolbox Talks	25
3.10	Communications.....	26
3.10.1	General.....	26

3.10.2 Site HSE Meetings	26
3.10.3 Workforce Communication and Feedback	26
3.10.4 Community Complaints and Liaison Meetings	27
3.10.5 Community Programme	27
3.11 Inspections and Audits	27
3.11.1 Site HSE Teams.....	27
3.11.2 HZI Central HSE Team	28
3.11.3 Enforcement Authority Visits	28
3.12 Management of Change	28
3.13 HSE Reporting	28
3.13.1 HZI.....	28
3.13.2 Contractor	28
3.14 HSE Management Review	29
3.15 Documentation and Record Retention	29
3.15.1 HZI.....	29
3.15.2 Contractors.....	29
4 The Selection and Control of Contractors.....	30
4.1 Selection of Contractors	30
4.2 Contractor HSE Implementation Plan.....	30
5 Site Operations	32
5.1 General Site Rules	32
5.2 Welfare Area	32
5.2.1 Control of Legionella.....	32
5.2.2 Display Screen Equipment	33
5.3 Lighting.....	33
5.4 Security Arrangements	34
5.5 Drugs and Alcohol.....	34
5.6 Mobile Phones.....	34
5.7 Construction Traffic, Parking and Delivery Routes	34
5.8 Vehicles and Plant.....	35
5.9 Construction Working & Construction Traffic Hours	36
5.10 Personal Protective Equipment	36
5.11 Control of Work Processes.....	38
5.11.1 Permit to Work Process.....	38
5.11.2 Point of Work Risk Assessment – Pre-Job Risk Assessment (Take 5).....	38
5.12 Excavation, Soil Movement	39
5.12.1 Water Runoff and Drainage	40
5.12.2 Contaminated Land.....	40
5.13 Electrical Safety.....	41
5.13.1 Underground Cables	41
5.14 Confined Spaces.....	42
5.15 Lifting Equipment and Lifting Operations.....	43
5.16 Barricades and Barriers.....	45
5.17 Floor and Wall Openings	46
5.18 Roofing Work.....	46
5.19 Hazardous Materials or Substances.....	46
5.20 Spill Prevention and Control.....	47
5.21 Tools and Work Equipment	48
5.21.1 Cartridge Operated Fixing Tools	48

5.21.2 Abrasive Wheels	48
5.21.3 Knife Policy	49
5.21.4 Mobile Elevating Working Platforms (MEWPs).....	49
5.21.5 Platforms suspended by Crane.....	50
5.22 Compressed Air / Air Receivers	51
5.23 Fire Extinguishers.....	51
5.24 Tidiness / Housekeeping	51
5.25 Explosives	52
5.26 Working at Height.....	52
5.27 Falling Objects.....	53
5.28 Scaffolding.....	53
5.28.1 Tube and Fitting Scaffolding.....	53
5.28.2 System Scaffolding	53
5.28.3 Lightweight Mobile Tower	53
5.28.4 Scaffolding Inspection.....	54
5.28.5 Scaffolding Design	54
5.29 Temporary Works.....	56
5.30 Ladders	56
5.31 Fire Prevention and Protection.....	57
5.32 Hot Works & Welding	57
5.33 Compressed Gas	58
5.34 Manual Handling	59
5.35 Noise and Vibration	60
5.36 Radiography.....	60
5.37 Exposure to UV Radiation – Sunlight	61
5.38 Dust.....	61
5.39 Grit Blasting.....	62
5.40 Dedicated Environmental Control Systems to be Applied in the Relevant RAMS	62
5.40.1 Pressure Tests	62
5.41 Lock Out Tag Out (LOTO).....	62
5.42 Commissioning.....	63
5.43 Working in Explosive Atmospheres	63
5.44 Night shift	63
5.45 Incidents and Emergencies	64
5.45.1 HSE Incidents.....	64
5.45.2 Emergency Arrangements	64
5.45.3 First Aid.....	64
5.45.4 Rescue and Recovery from Height or Confined Space	65
5.45.5 Site Alarms	65
5.45.6 Emergency Services	65
5.45.7 Measures against COVID-19	65
6 Appendices.....	66
6.1 Appendix A: HZI Central HSE Documents.....	66
6.2 Appendix B: Project Documents Referenced in this CPP.....	67

1 Introduction

1.1 HSE Philosophy

Hitachi Zosen Inova’s HSE strategic and operational focus is on providing a safe and healthy working environment for all our employees and partners. The strategy is built around our value of actively caring for our people and the environment with our aim of zero incidents based on three core principles:

Competence

A core team provides professional guidance on technical requirements, defines clear responsibilities and accountabilities, simplifies processes to ensure everyone can perform their role safely and without harm to the environment.

Compliance

HZI has developed a set of minimum requirements for HSE performance expected at every construction and operational facility worldwide to ensure consistency and to promote best practice. Furthermore, we verify compliance through a rigorous audit programme.

Community

The executive board actively support HZI’s HSE strategy and provide the leadership and resources that demonstrates their personal connection to our strategy and to their co-workers.



Our HSE strategy, policies and procedures provide orientation, but it is our actions demonstrating how we actively care for all our fellow employees and partners, so they return home safely to their families every day that make us a successful and profitable business.

1.2 Purpose

This preliminary Construction Phase Plan (CPP) has been prepared by HZI for the tender process of the Tees Valley ERF.

As HZI applies an integrated approach to health, safety and environmental (HSE) management this document is a joint HSE plan, or CPP. This CPP sets out the intended methods and procedures of effectively managing joint HSE issues arising from the construction of the facility. This CPP shall be read in conjunction with the CEMP, which gives specific details environmental management and mitigations.

The chapters of this CPP are as follows:

- Chapter 2 contains general information about the project
- Chapter 3 describes HZI HSE management system requirements
- Chapter 4 outlines process for selection and control of Contractors
- Chapter 5 details process and procedures relating to site operations
- Appendices A and B list other HSE documents (e.g. procedures, forms and management plans etc.) relevant to this project.

This document has been developed to conform with relevant HSE legislation and other compliance requirements. It must be read alongside:

- The Construction Environmental Management Plan (50134216)
- Any Construction Method Statements and referenced documents.

This CPP is a living document that shall be revised as the construction advances and prior to the start of commissioning and operations. Revisions shall be made available to all Contractors.

1.3 Scope

HZI as well as any contractors working on the project shall comply with the requirements set out in this document and its appendices.

1.4 Acronyms and Definitions

CCNSG	Client Contractor National Safety Group (Operative Competence Cards)
CDM	Construction (Design and Management) Regulations 2015
CEMP	Construction Environmental Management Plan
CISRS	Construction Industry Scaffolders Record Scheme
CONTRACTOR	The person or persons, firm or company named as such in the Contract Agreement, who has undertaken to execute the works under this contract
CPCS	Construction Plant Competence Scheme (Plant Driver Competence Cards)
CPP	Construction Phase Plan
CSCS	Construction Skills Certification Scheme (All Levels Competence Cards)
EPP	Emergency Preparedness Plan
ES	Environmental Statement
ERF	Energy Recovery Facility
HAZCON	An assessment of Hazards in Construction
HAZID	Initial Hazard Identification Workshop
HAZOP	An assessment of Hazards in Operation
HSE	Health, Safety and Environment
HSEMS	HSE Management System
HZI	Hitachi Zosen Inova
LoTo	Lock Out Tag Out
LTI	Lost Time Injury (as per OSHA). See OSHA 1904
LTIFR	$([\text{Number of lost time injuries in the reporting period}] \times 200,000) / (\text{Total hours worked in the reporting period})$
OSHA	Occupational Safety and Health Administration
PC	Principal Contractor
PMS	Process Management System

POWRA	Point of Work Risk Assessment
PPE	Personal Protective Equipment
PTW	Permit to Work
RAMS	Risk Assessment Method Statement
RPE	Respiratory Protective Equipment
SCC	Safety Certificate for Contractor (acc. Doc. 18 Operative Competence Certificate, or acc. Doc.17 Supervisor Competence Certificate)
SAP	Senior Authorised Person
SDS	Safety Data Sheet
SOR	Site Observation Report
SSSTS	Site Supervisors Safety Training Scheme
STDC	South Tees Development Corporation
TC	Tower Crane
TII	Purchaser Technical Implementation Instruction: general technical information
TRIFR	The total recordable injury frequency rate (TRIFR), or total recordable injury rate, is $([\text{number of fatalities} + \text{lost time injuries} + \text{medical treatment} + \text{restricted work cases in the reporting period}] \times 200,000 / (\text{Total hours worked in the reporting period}))$

2 General Project Information

2.1 Project Description

The proposed Energy Recovery Facility (ERF) site in North Yorkshire, is part of a large area of brownfield known as the Prairie, lying north of Grangetown and east of South Bank. This is part of a wider area managed by South Tees Development Corporation.

The project will involve all works associated with the construction of an ERF. The facility is designed to recover energy in the form of steam and electricity for export to the national grid through the thermal treatment of non-recyclable waste. In addition, the facility will be Carbon Capture ready, for the later addition of Carbon Capture Plant.

The project comprises civil and process aspects, including two process lines, fuel reception, storage, shredding, fuel and air supply systems, boiler, facilities for the treatment of exhaust gases, on-site facilities for handling and storage of residues and waste water, stack, control systems for process operations, data acquisition and storage.

2.2 Programme Details

The table below outlines the sequence of works to be undertaken and a description of activities which pose significant risks.

Project Phase	Description of Activities
Install site infrastructure and accommodation Earthworks (cut and fill) Install construction drainage	Construction plant Mobile cranes
Create site roads and hardstanding Construct concrete waste bunker and all other reinforced concreting works	Tower Crane (TC) Erection Slip-form and formwork/false-work Construction plant Mobile cranes
Installation of structural steelwork	Mobile cranes Mobile Elevated Work Platforms Deliveries/ Construction Plant
Mechanical erection phase Installation of boiler Installation of process systems	Mobile cranes Mobile Elevated Work Platforms Hot-work Abnormal loads
Commissioning through to handover	Process operations Introduction of chemicals/hydrocarbons
Construction Completion	Process operations

2.3 Project Stakeholders and Duty Holders under Construction (Design and Management) Regulations

The project meets the criteria for notification to the Health and Safety Executive under the Construction (Design and Management) Regulations (or equivalent).

CDM Duty	Name and Address of Duty Holder
Site Address	Prairie Grangetown Middlesbrough TS6 7BH
Client	FCC Environment Ground Floor West 900 Pavilion Drive Northampton Business Park Northampton NN4 7RG
Principal Designer	Hitachi Zosen Inova AG Hardturmstrasse 127 CH – 8005 Zurich Tel 0041 44 277 11 11
Designer	Hitachi Zosen Inova AG Hardturmstrasse 127 CH – 8005 Zurich Tel 0041 44 277 11 11
Principal Contractor (PC)	Hitachi Zosen Inova AG Hardturmstrasse 127 CH – 8005 Zurich Tel 0041 44 277 11 11
Contractor	TBA

2.4 Adjacent Facilities

The proposed ERF site is within the South Tees Development Corporation (STDC) area, which comprises 1,800 hectares of land that forms part of the STDC’s Regeneration Master Plan.

The STDC area, has been divided into specific zones. A principal area of development land comprising 2,890 hectares that was predominately occupied by the former Sahaviriya Steel Industries (SSI) and Tata Steel land in Redcar, Lackenby, Grangetown and South Bank.

The proposed ERF site occupies a 10 hectare site situated at the southwestern corner of the STDC area, within the Grangetown Prairie Zone. It lies 1.2 km south of the River Tees and approximately 6.5 km to the north east of Middlesbrough Town centre.

The site of the proposed ERF is the first zone within the area ‘Phase 1’ to be brought forward for development.

The proposed site comprises of relatively flat grassland. The site is brownfield land and was once dominated by industrial buildings at the heart of the steel making industry on Teesside. Some industrial buildings / plant still surround the Grangetown Prairie site on its the south, east and western boundaries.

The SSI Torpedo Shed, lies to the south of the site and is still in operation. Lackenby steelmaking complex is situated to the east. South Tees Freight Park lies to the west. South Bank Coke Ovens are located to the north east.

The site is well defined by existing infrastructure corridors such as the Tees Valley Railway Line, which runs along the north of the site, beyond which is an existing landfill and waste management facility. The A66 is located south of the site.

An additional parcel of land comprising 1.3055 hectares to the east of the site will be utilised during the construction phase of the proposed ERF for construction laydown and parking.

2.5 Special Project Risk

Details of any special risks identified within the project. Risks to project execution relating to the potential for protected species and other ecology issues are detailed in the Environmental Management and Mitigation Plan.

Risk	Consequence	Mitigation
Covid-19	Sickness of personnel	Maintain social distancing on site (2-meter rule). Wash hands/sanitise hands on a very regular basis
	Risk of infecting others	Face coverings must be worn inside all buildings and when social distancing cannot be maintained Use the One-way systems Temperature testing Additional cleaning of offices, welfare and canteen areas Following instructions from the dedicated Covid Marshal Ventilation of offices where practical.
Work at Height	Falls from Height	Task Specific RAMS Use of WAH Hierarchy of controls
	Dropped Objects	Tool tethering Exclusion zones Drop Zones

Risk	Consequence	Mitigation
		Take 5 (POWRA) to be completed daily
Confined Space	Asphyxiation Drowning	Confined Space RAMS Confined Space Permit to Work Gas Testing Topman/Supervisor over-seeing the task Rescue Plan & Emergency arrangements Only trained and competent persons to work in a Confined Space Take 5 (POWRA) to be completed daily
Excavations	Collapse Suffocation Electrocution	Task Specific RAMS (to also ground gas etc.) Excavation Permit to Work Proprietary Temporary Works design for deep excavations Exclusion Zones. Cable records/Test for buried cables before breaking ground Gas testing Shoring and barriers in place Safe Access/Egress Inspection & Inspection records Take 5 (POWRA) to be completed daily
Electrical Works	Electrocution	Task Specific RAMS HZI SAP to issue Electrical Permit to Work Only trained and qualified persons to work on electrical systems Record/drawing and cable detection to be used to identify electrical systems Only Battery powered or 110v tools used on site Take 5 (POWRA) to be completed daily
Overhead lines	Electrocution	Goalposts and other mitigations as relevant and as specified in Guidance Note GS6
Delivery and removal of materials	Crushing and collision	Access routes to and from site to be defined Supervision of loading and unloading Traffic management plan to be followed All delivery vehicles to be escorted onto and off site Segregation of pedestrians and vehicles Banksman/vehicle marshals to be used Any lifting to be carried out in accordance with HZI lifting procedure

Risk	Consequence	Mitigation
Temporary Works	Collapse of structures	Take 5 (POWRA) to be completed daily
		Temporary works coordinator
		Temporary Works Design Temporary Works Sign-off
Lifting Operations	Dropping of loads from height	Task specific RAMS
		Lift Plan
		Barriers/exclusion zones
		Appointed Person to control Lifting operations
		LOLER to be followed
		Banksmen Communication Whistles to identify lift in progress
Plant & Equipment	Slips, trips and falls.	All items of plant to be certified tested and in date P.A.T of portable tools
	Entrapment	PUWER to be followed Cable management
	Injury	Housekeeping
	CoSHH Storage	Fire & Explosion
Environmental Impact		SDS for all products CoSHH stores to be locked, vented & banded to 110%
Surface/ground water pollution		Emergency spill kits to be near work areas and CoSHH stores CoSHH to be located away from water course and drains
Hot Works		Fire & Explosion
	Burns Injury	Hot Works Permit to Work
	Fumes	Gas bottles to be secured in trolley/bottle banks via chains
		Flash back & Spark arresters and to be used
		All Gas bottles connection to be crimped (No temporary clamps)
		Fumes, HSE Welding guidelines to be followed
		Engineering Controls (Extraction where possible)
		RPE (respiratory protection equipment to be appropriate for the task)
Health Surveillance and monitoring (Contractors to ensure occupational health questionnaire and monitoring is undertaken (annual lung function test)		
Take 5 (POWRA) to be completed daily		

Risk	Consequence	Mitigation
	Asbestos Asbestosis (Lung disease)	<p>If asbestos is discovered or suspected during work activities, then the work shall stop, and the incident reported to the HZI Site Manager/HSE Manager</p> <p>The four areas where Asbestos has already been identified were cordoned off, and external Asbestos contractor attended site and took samples, once identified as low risk asbestos cement, the asbestos was removed by a qualified competent Asbestos contractor.</p>
Noise & Vibration	Tinnitus	<p><u>Noise</u></p> <p>Regular noise assessments shall be undertaken by HZI, where appropriate;</p> <p>Measuring noise exposure to workers;</p> <p>Reducing noise at source wherever practicable.</p> <p>All Contractors must provide suitable hearing protection at the first action level (80 dB(A)), and introducing controls at the second action level (85dB(A))</p> <p>Informing workers of the noise levels they may be exposed to, how their hearing may be at risk and what they must do to protect it.</p> <p>Designated hearing protection zones with appropriate signage</p>
	Hand/Arm Vibration Syndrome	<p><u>Vibration</u></p> <p>Consideration of alternative methods of work</p> <p>Use of tools designed for low vibration</p> <p>Correct maintenance of tools</p> <p>Programmed work breaks/job rotation/ensuring operative is warm and circulation is adequate</p> <p>Provision of appropriate PPE and clothing</p> <p>Provision of information and training</p> <p>Monitoring</p>
Dust	Inhalation of Dusts	<p>Tasks or processes which create dust must be controlled at source with the inclusion of dust suppression equipment or damping down where appropriate. Consideration shall be given to alternative methods of work to ensure dust production is minimised or eliminated.</p> <p>Access road shall be damped down during warm weather.</p> <p>PPE/RPE to be used, as per the task risk assessment</p>
Exposure to UV Radiation	Sun Burn Heat stroke Skin Cancer	<p>All operatives shall wear full body protection at all times whilst on site. Sun block shall be supplied when necessary to avoid sun burn of exposed skin. Fresh drinking water shall be made readily available for all operatives at all times by their employer.</p>
Manual Handling	Back strain Muscle injury	<p>Avoiding unnecessary handling – mechanical methods are to be used wherever possible.</p> <p>Load sharing for heavy or awkward loads. Maximum individual load of no more than 25 kg for a manual lift. 15kg for restricted access</p>

Risk	Consequence	Mitigation
Safety Signage	Collisions, slips trips and falls	<p>Selection of workers on the basis of age, strength, skill and experience (training).</p> <p>Providing workers with information on the hazards and training in correct lifting techniques.</p> <p>Contractors will undertake Manual Handling assessments for relevant tasks.</p> <p>Safety signage will be multi-lingual and pictorial where practical.</p>

3 HSE Management

3.1 HSE Management System Overview

HZI HSE Management System (HSEMS) is both ISO 14001 and 45001 certified (see Appendix C). All persons on site, including Contractors, shall comply with the HSE requirements as detailed in this document and its appendices.

The scope of this HSEMS applies to activities carried out within the construction site boundary fence. In addition:

- Any significant traffic resulting from the construction of Tees Valley ERF in the adjacent area (see Section 5.7) will be managed under the Project HSEMS; and
- Any Project activities outside the boundary fence shall be managed under the Project HSEMS.

The requirements of this plan shall apply to all Contractors. Contractors shall also ensure their sub-contractors comply with their HSE Implementation Plans and in doing so, the requirements of this plan.

3.2 HZI HSE Policy

At the core of the HSEMS are the HZI Health and Safety and the HZI Environmental Policies. Copies of these shall be displayed on site and every employee shall be made familiar with the key elements of the policies as applicable to site through the induction process (see Section 3.9).

3.3 HSE Risk Identification

3.3.1 HZI HSE Risk Identification

As Principal Designer under CDM 2015, HZI will ensure that internal and external design review meetings are held to ensure that designers have identified a safe method for construction and that the designs include the information needed by others to allow them to work safely and without risk to health or the environment. These will be attended by the client, designers, the CDM Manager, Site Supervisor and Contractors. Issues identified at these meetings will be recorded on the Design Risk Assessments and residual risks will be transferred and recorded in the CDM Hazard Log maintained by the CDM Manager.

Significant HSE risks encountered during the design and construction will be identified by the following studies: Hazards in Construction (HAZCON) and Hazard and Operability (HAZOP). The Principal Designer will arrange meetings, invite attendees, record the output from these meetings.

The following meetings where HSE risks will be reviewed will be held (as a minimum) during the construction phase:

- Construction meeting (monthly internal, quarterly all contractors)
- HAZCON meeting (quarterly)
- Project CDM review (monthly as part of the technical meeting).

These reviews shall be used to focus the attention of the HZI Project Management team and appointed Contractors, on all the key HSE issues and to inform prospective contractors before they are appointed. The HSE Risk Matrix (GP426 F59) shall also be used as a tool to identify key HSE risks associated with each stage of construction.

3.3.2 Contractor HSE Risk Identification

Design work undertaken by the Contractor shall be subject to design review by HZI. This includes temporary works, where HZI Temporary Works procedure (AA426 30) shall also be applied.

Information on HSE risks relating to the project shall be communicated by HZI to the relevant Contractors in writing.

For all work on site, Contractors shall assess the HSE impacts and risks of their services and complete the HZI Risk Assessment Form GP462 F01, TII Erection Description Risk Assessment or similar for all works and submit to HZI for approval.

All activities are to be described in dedicated Risk Assessment and Method Statements (RAMS) (see templates GP426 F24 and GP426 F01) to be submitted to HZI for approval. The Contractor may use their own certified management system, RAMS format or for more complex tasks the TII Erection Description in place of the Method Statement upon receiving approval from HZI HSE Department. Once a Method Statement is approved by HZI task leader, relevant Risk Assessment shall be submitted to HZI HSE Dept or person in charge for approval.

No activity is allowed if relevant RAMS is not approved.

It is imperative that the relevant task Line Supervisors / Engineers and Managers are involved in the development of Risk Assessments to ensure that the right assumptions are being made and are correctly used. HSE Supervisors / Managers shall guide Supervisors / Engineers and Managers to ensure a structured and effective approach has been adopted to identify the hazards and control measures.

Detailed Work Method statements will be developed by the executor for all the work activities, to ensure the appropriate safeguards are identified for the safe execution of the job and will be submitted to HZI for review and approval. Submission of work method statements to HZI shall be done in good time for review, comment and approval. The final revision of the Work Method Statement will include the safety precautions (Risk Assessment) and will be included in PTW where applicable.

It is the duty of the relevant Supervisor to ensure that all hazards, risks and control methods are communicated to all relevant or affected personnel through the daily take 5 briefing which should be recorded and maintained.

All persons involved in an activity must be made fully aware of their authority and responsibility to stop the job when there is a doubt about the safety of the operation.

In addition, it must be made clear that the job must be stopped if conditions or personnel change, or if there is any deviation from the established controls.

For additional details please refer to Risk Assessment and Method Statement Creation Procedure Doc. No. AA426 01

3.4 HSE Compliance Obligations

HZI HSE compliance obligations come from the following sources:

- National Legislation: HZI HSE Manager or delegate shall maintain a register of national HSE legislation (see PM 10 HSE Management System Manual). This shall be communicated to relevant works on site to manage HSE legal requirements relevant to site and tracked until closure
- Environmental Statement and Planning Requirements: Environmental requirements are detailed and managed as stated in the Construction Environmental Management Plan (CEMP). Closure of these actions is tracked by the Site Manager
- HZI HSE requirements: These are contained within the Health Safety and Environmental TII and specified within this document

- Client HSE requirements as detailed in the contract.

Contractors shall comply with relevant compliance obligations. Any deviations from these requirements need to be raised in writing with HZI. These must be approved by HZI in writing prior to work commencing. A record of all such deviations shall be kept by HZI Site HSE Team.

3.5 HSE Objectives and Targets

3.5.1 Corporate Goals

Corporate HSE Goals will be available on Central Process Management System (PMS) on the HZI intranet system and disseminated to HZI Site HSE Team by Central HSE Team as relevant. HZI annual targets applicable to this project are:

- Under 0.5 Lost Time Incident frequency rate per 200,000 hours worked;
- Not more than 0.9 Total Recordable Injury Frequency Rate per 200,000 hours worked;
- In excess of 95% (weight) of non-hazardous project waste shall be reused, recycled or recovered, and therefore diverted from landfill.

3.5.2 Project HSE Goals

HZI's vision is to create a positive HSE culture free from incident and injury. HZI believe that all incidents are preventable, and an incident and injury free project is achievable. HZI will encourage individuals to work as a team and to complete construction work in such a way as to leave a safe legacy. HZI will aspire to implement HSE best industry practice. Contractors involved in the project shall actively support the HZI HSE vision.

To achieve this, the following project goals have been developed:

- To complete the project without any HSE incidents
- To have zero breaches in planning conditions, prohibition, enforcement and prosecution notices
- To demonstrate a positive HSE culture (evidence of leadership, behavioural safety, HSE inspections, signature practices, employee climate surveys (6 monthly))
- To report all near misses and hazards.

The project HSE team shall also set a target for energy consumption reduction appropriate to the company targets in place at the time.

HZI and their Contractors will support the Target Zero approach on the project which will be achieved by:

- Effective and visible leadership on HSE matters by all levels of management
- Careful planning and constant review of all site activities to ensure that organisational decisions reduce risks as far as possible
- Management of the site environment / logistics to ensure a 'safe place to work' for all involved
- Detailed planning of day to day activities by the workforce at all levels
- Clear and respectful communications of expectations, directions and feedback through consultation, meetings and notices
- Recognition and acknowledgement of safe working

- A robust but fair system for dealing with infringements

3.6 Project HSE Roles and Responsibilities

3.6.1 General

Suitable and sufficient management resources shall be applied to the project to ensure HSE performance is monitored, maintained and continuously improved throughout the project. The HZI Project Director and HZI Site Manager shall take responsibility for overall management of HSE issues on site. The structure of the site organisation is shown in Site Organigramme.

HSE professionals from both HZI and Contractors working on the project will be invited to work as a joint HSE team (see Section 3.10.2). Their aim shall be to ensure there is a consistent and professional approach to addressing HSE issues and to continuously challenge best practice and look for new and innovative ways of taking HSE issues beyond compliance.

3.6.2 Project Director

- Takes overall responsibility for Project HSE requirements and for the achievement of Project HSE objectives as per HSE Policy and compliance requirements
- Ensure that HSE Management System is implemented throughout all phases of the Project;
- Ensure that sufficient and competent resources are allocated for all HSE requirements;
- Monitor Project HSE performance.

3.6.3 Site Manager

- Takes overall responsibility for HSE performance on site and ensures that HSE Management System is implemented
- Ensure a prompt investigation and reporting in case of incidents
- Review and approve RAMS together with HSE Manager when appropriate
- Issue Permits to Work for high risk activities or delegate to Commissioning Manager or Construction Manager
- Assist in emergency response at site
- Ensure that all relevant HSE requirements are well known and implemented by the Site personnel, and that all delegations of responsibility and authority concerning HSE are fully understood and appreciated
- Periodically (usually weekly) participate at the HSE meeting organised by HZI and Client
- Lead periodical (Weekly) HSE walkdowns

3.6.4 Construction Manager(s)

- Assist the Site Manager in planning and implementing the HSE Management System
- Ensure that all facilities are:
 - Built in accordance with construction HSE standards

- Maintained to standards or corrected in order to meet operating and HSE requirements.
- Perform and co-ordinate construction work in the safest manner
- Conduct regular HSE inspections on the area of competence to ensure that all Contractors are aware of and comply with the HSE requirements
- Verify that inspection and audit follow up actions are completed in a timely and appropriate manner
- Participate in the investigation of incident and accident
- Promote corrective actions in case of unsafe acts or conditions.

3.6.5 Commissioning Manager

- Assist the Site Manager in planning and implementing the HSE Management System
- Ensure that all the Pre-commissioning and Commissioning activities are:
 - Performed in accordance with project HSE standards
 - Maintained to standards or corrected in order to meet operating and HSE requirements.
- Conduct regular HSE inspections and Audits on the area of competence to ensure that all Contractors are aware of and comply with the HSE requirements
- Verify that inspection and audit follow up actions are completed in a timely and appropriate manner
- Participate in the incident investigation process
- Promote corrective actions in case of unsafe acts or conditions
- Issue Commissioning PTW or delegate to Deputy Commissioning Manager.

3.6.6 Site Supervisors

- Be familiar with and enforce all HSE requirements in all areas of site activity not just their allocated area of responsibility
- Attend actively and consistently demonstrate strong leadership in the Construction HSE Meetings
- Actively participate in pre-job planning activities. Specifically, in approval of Method Statements and Risk Assessments (RAMS)
- Supervisor shall ensure that only competent persons are assigned work tasks. This includes ensuring the worker has the skills, physique and knowledge to safely execute the work task.

3.6.7 Site HSE Manager

- Ensure that a professional and competent team of HSE Advisors is in place and manage team to provide support in all HSE matters related to company operations;
- Maintains the site HSE Management System in accordance with ISO 14001 and 45001 guidance and ensures it is implemented on site
- Play a key role in monitoring Contractor HSE Supervision Team;
- Provide a dedicated audit and inspection program and ensure the compliance with this CPP, the CEMP and HSE legal and other compliance requirements;

- Assist Construction Manager, Supervisors and foremen in promoting a preventive approach within their respective work groups;
- Execute periodical, audits and inspections on site, and address appropriate corrective and preventive actions and prepare audits and inspection formal reports and verify the follow up;
- Provide a site HSE Training program
- Assist in the reviewing and approval of RAMS and Permit to Work
- Coordinate and directly participate, while appropriate, the HSE Training activities on site
- To organise and participate to all relevant site HSE Meetings and minute as appropriate
- Verify the implementation of the PTW system
- Guide and facilitate the investigation in case of accidents, incidents and near misses;
- Maintains incident records, identifying the areas where corrective or improvement measures are required
- Lead and coordinate the activities of the Site HSE Committee (when applicable)
- Lead and coordinate the site emergency response team and fire prevention/fighting team, organising training and emergency drills
- To prepare and update the Site HSE Statistics, verify the performance versus the Project and corporate HSE Objective, Targets and performance indicators and propose recovery plan in case of deficiencies
- Monitor regularly the HSE performance through the dedicated KPIs and implement continuous improvement
- Hold and chair the Monthly HSE Committee Meeting

3.6.8 Site HSE Advisor

- Monitor and observe site activities by carrying out daily site HSE inspections and other audits to ensure HSE requirements are followed, and record and report all incidents and deviations from this CPP and the CEMP
- Actively participate in monitoring the HSE activities including auditing, sampling and inspection under their area of responsibility
- Lead/Support investigations of all incidents, accidents and near misses
- Check constantly compliance with PTW System
- Check adequacy between PTW and the work effectively performed
- Ensure that Fire Fighting and Safety equipment is regularly inspected and serviced
- Assist in the reviewing and approval of RAMS and Permit to Work.
- Ensure adequate close out action belong Contractor responsibility is undertaken by Contractor line management persons (e.g. Contractor Supervisor, Contractor HSE Advisors, etc.).
- Assist in emergency response at site
- Assist in the organisation of medical examinations (i.e. drug and alcohol testing, etc.) of staff on the project
- Assist in maintaining and seeking continuous improvement in the company's HSE policies and procedures in relation to current industry good practice and minimum statutory requirements, and

- Deputise and undertake further responsibilities for the Site HSE Manager as required.

3.6.9 Environmental Responsibilities

Details of responsibilities relating to the roles below are detailed in the CEMP:

- Central Environmental Manager
- HSE Advisor (Environmental)
- Environmental Specialists

3.6.10 Contractor Site HSE Representative

- To constantly guide Contractor workers, to implement the required HSE protection measures required at each work phase and to ensure the requirements of this CPP and the CEMP are implemented
- To inspect the personnel of their crew on site for at least 70% of their day, in order to ensure the implementation of appropriate HSE measures and compliance with RAMS / permits
- To participate in the HSE meetings and HSE walk-rounds of the project
- Informs HZI for the arrival of new personnel and ensures training and information on HSE matters is given as required
- Reports incidents as per procedure and assists in emergency response at site
- To give toolbox talks for HSE issues to their personnel
- Reports on HSE key figures monthly (or when requested) to HZI as required
- To keep and maintain relevant HSE records and documents (training matrix, certificates, machinery register, permits etc.)
- Control/check means and efficiency of firefighting and first aid provision at site
- Support Contractor and Subcontractor personnel to close out unsafe condition identified through inspection/walk around/reporting

3.6.11 Employees

- Employees must know, understand and comply with the HSE requirements as applicable to the work they perform;
- Employees must report to their Supervisor any equipment malfunction that may affect the safe operation of the equipment;
- Employees must advise their immediate Supervisor whenever unsure of the instructions for a task or where concerned about the safety status or environmental impact of any task;
- Employees must report all incidents;
- Employees must comply with and facilitate the HSE inspections and audit.

3.7 Contractor Site HSE Team Ratio

The number of HSE personnel required by each individual Contractor working for HZI will be decided by the total numbers of Contractor personnel on site, as shown in the table below:

Number of Contractor Personnel on Site	Number of Full Time On-Site Contractor HSE Personnel Required
1-20	0-1 (Risk Dependent)
21-75	1 HSE Manager
76-125	1 HSE Manager + 1 HSE Advisor
126-175	1 HSE Manager + 2 HSE Advisors
176-225	1 HSE Manager + 3 HSE Advisors + 1 HSE Admin
+ 50 additional staff thereafter	+ 1 HSE Advisor
* Excludes office based (only) / welfare area staff who do not attend construction area more than once a month	
** Risks higher than construction activity and high-risk non-construction specialist contractor	

The minimum qualification for the Contractor HSE Manager is a NEBOSH General Certificate / NEBOSH Construction Certificate or equivalent, along with suitable construction experience.

Where a Contractor has more than one HSE person based on site, one must have at least one year's suitable HSE management experience. Whilst a full time HSE Manager is being sourced, the Contractor Site Manager may assume this role (if they have suitable qualifications and experience).

Prior to their appointment, the CV of the proposed Contractor HSE Manager shall be provided to the HZI HSE Manager for review and acceptance. HZI reserve the right to not accept proposed individuals onto the project following reviews of competence and experience. The Contractor's HSE Manager shall liaise with the HZI HSE Manager to ensure that all necessary HSE precautions are being adhered to and that any information or instruction on HSE matters issued by HZI is being properly followed by all workers. This does not remove the responsibility of all Contractor site supervision and management levels to ensure that their operations are carried out in a safe, effective and environmentally responsible manner.

All Contractors must consider the need for weekend and night cover and provide suitable resources to manage this accordingly. The resource requirements will depend upon the number of people and risk of activity on site.

3.8 Site Disciplinary

Non-compliance with HSE Requirements by an individual or organisation will be treated as misconduct and the individual or organisation concerned may be issued with a Yellow Card, a Red Card or an HSE Improvement notice. Guidance for HZI personnel is given in Management of Site Disciplinary procedure AA426 33.

All costs associated by Site HSE disciplinary are not chargeable to HZI.

3.8.1 Yellow Cards

For a significant breach or a series of breaches of Project HSE Standards, a Yellow Card may be issued by the HZI Site Manager. A Yellow Card will be in place for a period of 3 months from the date issued and shall be confirmed to both the individual and their employer in writing.

The individual shall be re-inducted by HZI and be given a toolbox talk by their employer before recommencing work.

3.8.2 Red Cards

If the breach is deemed serious by the HZI Site Manager, this may result in the issue of a Red Card without going through the Yellow Card process.

The issue of a Red Card to either an individual or company will result in their removal from site.

3.8.3 HSE Improvement Notices

Where a Contractor is deemed to have worked unsafely, then an HSE improvement notice may be issued by the HZI Site Manager.

The issue of an HZI HSE improvement notice shall be confirmed to the most senior person in the Contractor organisation onsite that is being issued with the improvement notice in writing.

The Contractor shall be stopped from working upon the issuance of an improvement notice and will not return to work until the HZI Site Manager has accepted that remedial actions have been put into place and are effective to address the purpose of the initial notice.

3.9 HSE Inductions and Training

3.9.1 HZI Site HSE Induction

All persons who are not a visitor or delivery driver must undertake a full HZI Site HSE induction. A full induction must be taken when first arriving at site or after an absence of 3 months or more. A refresher induction will be required every 12 months. HZI will provide a shorter HSE induction for delivery drivers and visitors.

For minor maintenance activities at Site that involve work for less than one shift a short induction training can be conducted instead of full induction training, in such case those personnel shall be escorted/monitored full time by HZI fully inducted member of the site team.

For people whose first language is not English an interpreter will be provided by the Contractor for the HZI Site HSE Induction.

Personnel wishing to attend an induction must submit:

- Their name, job title, employer (Contractors) name and an acceptable form of identification to HZI at least 3 days prior to induction
- Provide competency documentation for review
- Provide evidence of their right to work within the country.

Inductees must complete:

- A health assessment form
- Induction training form with a written proficiency test. Proficiency test with 80% of positive score will attest the understanding of the trainees. In case the minimum score is not achieved the induction shall be repeated till a max of 3 attempts, in case of 3 failed attempts the operative will not be authorized to enter.

HZI will record inductions using form GP426 F26.

For those Projects when Site HSE induction is delivered by HZI Contractors, HZI shall approve the HSE induction training and questionnaires and periodically assess the efficiency and suitability.

3.9.2 Contractor Inductions

In addition to the HZI site HSE induction, Contractors shall provide their own HSE induction to their employees and any subcontractors.

3.9.3 Site Specific Training

HZI will arrange and deliver to relevant Contractor individual's site-specific training for:

- Risk assessment and method statement production and review
- Permit Acceptor course
- Site specific environmental aspects requirements (if not covered in the site HSE induction).

3.9.4 Competence

HZI HSE training and competency requirements are detailed in the Central HSE Training Matrix (GP426 F25). Contractors shall produce a training matrix comprising including all their personnel and including:

- Roles and responsibilities
- HSE responsibilities
- Competency requirements, and
- Other special skills or competencies.

This training matrix must be submitted to HZI for acceptance prior to mobilisation to site.

Contractors shall retain evidence of competency at site and make this available to HZI for audit purposes.

Personnel on the project (with the exception of office staff, delivery drivers and visitors with the HZI Site Manager's approval) need to demonstrate a minimum level of safety competence with an appropriate qualification as detailed below.

Discipline	Scheme	Card/passport
General operative	Construction Skills Certification Scheme (CSCS), CCNSG, IOSH Safety Passport or Safety Certificate for Contractors (SCC)	CCNSG, CSCS, IOSH or SCC or equivalent
Plant operator (appropriate to the type of plant)	Construction Plant Certification Scheme (CPCS)	CPCS or equivalent
Scaffolder	Construction Industry Scaffolder's Record Scheme (CISRS)	CISRS or equivalent
Supervisor	Site Supervisor Safety Training Scheme (SSSTS) or IOSH Safety Health and Environmental for Construction Site Managers (SHECSM)	SSSTS, SHECSM or equivalent
Project/Construction Manager	SSSTS or IOSH SHECSM	SSSTS or SHECSM

Site HSE Manager	NEBOSH	Diploma
Rigger & Slinger	Third party training	
Vehicle & equipment Operators	Third party training	
First Aider	Third party training (min 1-day training or longer as per local legal requirements)	
Electricians	Third party training	

Should an individual possess none of the minimum competency outlined above, a review of their resume supported by proof of competence may be acceptable however this will be at HZI’s discretion. It is incumbent on the Contactor to provide a full translation of the qualification and proof to HZI that the equivalent scheme is equal to, or better than the schemes highlighted above.

All Contractors should ensure that all individuals have the necessary competence both technically and with regards to HSE to work on site prior to starting on site. HZI will check competency at Site HSE Induction and records of competency shall be retained on site.

A minimum number of one Contractor supervisor, fluent in English, shall be available for every 15 workers. An English-speaking translator shall be readily available at all times while any work is being carried out by the work party.

Training and competence of HZI employees shall be managed in line stated in HSEMS Manual (PM 10).

HZI will ensure to deploy competent personnel with appropriate qualifications, experience, skills and knowledge for their roles sufficient to perform the work in full conformance with the COMPANY HSE requirements, applicable legal requirements and HSE-MS procedures.

HZI Site Manager (or most senior person at Site) shall ensure that the line management and supervisory personnel are competent to identify and assess HSE risks systematically and versed with and are capable to define the standards, plans, procedures and resources necessary to manage them and that important crafts such as crane operators, mobile equipment operators, riggers, scaffolders, etc., are well qualified, trained and experienced for their job. Essential trainings shall be provided as required. The position descriptions describe the competency requirements which are regularly assessed, and any gaps identified may translate into a training requirement for the individual.

Craft competency / Task-specific training is performed as per the HZI training programme.

HZI Site Manager with the support of Site HSE Manager shall ensure the effectiveness of the competence assurance process and cascade it to Contractors. HZI Site HSE Manager shall perform regular audits on the Contractors’ competence assurance process and quality of training provided and shall take specific actions to bring those in line with the legal and HZI requirements as necessary.

3.9.5 Toolbox Talks

Contractors shall prepare toolbox talks to cover specific HSE issues raised during the works as and when required. Examples may include; use of ladders, waste management, dust mitigation measures housekeeping, access / egress, emergency procedures (incl. spill response). Contractors may be requested to deliver toolbox talks on specific subject at the request of HZI. The toolbox talks will be presented by Site Supervisors. Contractors shall retain toolbox talk records and forward these to HZI. Central HSE Team has a number of Environmental Toolbox Talks which are available for use on request.

3.10 Communications

3.10.1 General

The site will ensure that a suitable set of communication requirements are in place for the project. A site Risk Board will be situated in a prominent position at the entrance to the construction site. This will be supported by a number of other notice boards throughout the site.

Consultation with all staff is encouraged through daily pre-job toolbox talks, welfare committee, during periodical inspections/walkover, training and site observation reporting (SOR) where applicable.

3.10.2 Site HSE Meetings

HZI will ensure safe working, co-ordination and co-operation between Contractors. Contractors shall attend the following project specific meetings as a minimum where HSE shall be an agenda item:

- Kick-off meeting with 'primary' Contractors (4 weeks prior to mobilisation)
- Contractor co-ordination / progress meetings (weekly): to discuss issues anticipated over the coming weeks including RAMS submissions
- Planning and co-ordination meetings (daily): to discuss issues anticipated over the coming days
- On-site co-ordination meetings (daily): to be held at the beginning of each shift to discuss coordination issues anticipated during that day
- In addition, the following meetings shall be held where HSE is main topic
- HZI Management meetings (quarterly)
- HZI HSE Manager and Contractor HSE Manager meetings (weekly), and
- HZI HSE Team plan of the day meeting (daily).

3.10.3 Workforce Communication and Feedback

The HSE Site Manager or delegate will chair a (minute) HSE non-management worker representatives meeting at least once a month. The attendees will volunteer or be chosen by their own company to represent the workforce and will be consulted and participate in the following areas:

- Objectives and targets for the project and current performance in achieving them
- Ways to improve the HSE site arrangements
- Site training requirements for individuals
- Information on recent SORs posted and what has been done as a result of SORs
- Outcome of HSE Inspections, Audits and Walk Rounds
- Input into ongoing Incident Investigations and feedback from completed Incident Investigations.

Additional feedback can be given or received at any time in either written or verbal forms. The following will be employed as direct means of gathering information from and communication with the workforce:

- Through the SOR Scheme (AA426 29 Site Observation Reports)
- Specific HSE subject audits
- Point of Work Risk Assessment (POWRA) procedure

- A variety of notice boards (mess facility, on-site, electronic)
- HSE Newsletter
- Toolbox Talks (weekly)
- HSE Alerts
- Site HSE Bulletins
- HSE briefings and 'stand downs'
- HSE induction.

3.10.4 Community Complaints and Liaison Meetings

A scheme for handling complaints received from local residents will ensure that appropriate corrective action is taken (AA426 04 Incident Reporting and Investigation). The person making the complaint will be directed to the most senior member of the project site personnel and the complaints will be formally logged. A complaint summary register will be created and kept updated to record the complains and their close out.

If possible, the nature of the complaint will be dealt with immediately. If not, the person making the complaint will be given some indication of when he or she will receive a response to their complaint. The target shall be that an acknowledgement is sent within 2 working days, and that the complaint is resolved within 30 working days.

A contact number will be provided for local residents to phone during office hours should they have any queries or complaints.

Local liaison committee meetings between representatives from the project and the local community will be held as required. All community liaison shall be managed by the client, however a representative of HZI (Site Manager or Site HSE Manager or delegate) and Contractors will attend meetings as required.

3.10.5 Community Programme

HZI and Contractors shall implement and support community schemes where appropriate. The Contractor will support such schemes in proportion with their scope of work on site.

3.11 Inspections and Audits

3.11.1 Site HSE Teams

All inspections and audits on site will cover HSE topics. HZI and Contractor(s) shall both schedule HSE monitoring activities based on risk. Monitoring activities may be carried out jointly as well as separately.

Contractors should develop their own schedule of monitoring activities and submit to HZI for approval. This should include the following documented inspections as a minimum: weekly HSE inspections, monthly environmental inspections and monthly audits of Contractor's Supervisor HSE performance. Copies of these audits and inspections are required to be submitted to HZI.

HZI HSE Team shall carry out as a minimum the following documented inspections / audits in addition to daily (undocumented) site walkarounds:

- Weekly HSE Inspections
- 6 Week Post Mobilisation Contractor HSE Inspection (using GP426 F55)

- Monthly environmental inspections (using GP426 F30)
- Senior Management HSE Tour (GP426 F54).

3.11.2 HZI Central HSE Team

In addition to site lead inspections and audits, the HZI Central HSE Team shall carry out inspections and audits. This shall include as a minimum:

- Quarterly Scored HSE Inspections (GP426 F27)
- Annual HSE Management System Audits in line with requirements from ISO45001 and ISO14001.

Supplier HSEMS audits will also be carried out as documented in the HSEMS Manual (PM 10).

3.11.3 Enforcement Authority Visits

Planned or unplanned enforcement authority visits shall be reported immediately to HZI who shall manage them in accordance with the HSE MS Manual (PM 10).

3.12 Management of Change

All Contractor changes of design must be managed as per the contractor design change procedure. Changes in design which have an impact on construction methods, sequence of working, resources, program or any aspects of HSE must be communicated by the Contractor to the project design supervisor, HZI and client and agreed in writing before any change is implemented. All design changes to temporary works must be in accordance with the HZI Temporary Works procedure (AA426 30) and may only be undertaken when suitable assessments have been made to ensure that the changes do not give rise to HSE risks.

Changes initiated by HZI are managed either through Change Order Requests (sent by Contracts Department to Site Manager then cascaded down) or raised directly with the people responsible at site meetings.

Changes must be recorded and relevant documentation (Risk Assessments, Method Statements, Programme etc.) updated prior to work commencing.

Any change to the Site HSE Requirements will be authorised by the Site HSE Manager and HSE Central HSE Managers and then recorded in this Plan. The revision date and summary of change will then be recorded on the front page of this plan.

3.13 HSE Reporting

3.13.1 HZI

HZI HSE Team shall submit monthly HSE reports onto Power BI. This shall include details on HSE statistics, incidents, complaints and waste statistics. This shall be submitted to the HZI Central HSE team not more than 5 working days after month end.

3.13.2 Contractor

Contractors will provide a monthly HSE report using form GP426 F22 which must be submitted to HZI Site HSE Team by the two working days after month end.

3.14 HSE Management Review

HSE performance shall be reviewed by HZI Site team and Central HSE Team. Central HSE Team reviews are detailed in HSEMS Manual (PM 10).

Site HSE performance reviews shall include a review of site HSE performance and identify opportunities for continuous improvement. The Site review shall be minimum quarterly and shall be chaired by the Site Manager.

3.15 Documentation and Record Retention

3.15.1 HZI

HZI project documentation shall be managed through the site document control system (PIRS). HZI Central HSE documentation can be found on the Central Process Management System (PMS) or HSE PIRS website. All records (e.g. training, competence) shall be retained for a minimum of 5 years after the end of the project.

3.15.2 Contractors

Contractors shall manage their documentation through their own document control system.

The following registers shall be maintained on site by each Contractor as a minimum.

- Inspection of excavations / barriers
- Inspection of lifting equipment
- Inspection of cartridge operated tools
- Inspection of electrical power hand tools
- Inspection of pressure vessels i.e. air receivers.

Inspection forms and test records where applicable shall also be retained and made available for inspection on request.

All records (e.g. training, competence) shall be retained for at least 5 years after demobilisation.

4 The Selection and Control of Contractors

4.1 Selection of Contractors

The competency of Contractors will be evaluated at prequalification in co-ordination with HZI procurement procedures as detailed in Supplier Qualification (AA422 03) and Supply Base Management and Supplier Performance Evaluation (AA422 08).

The key elements to be demonstrated in prequalification documentation will be:

- The ability to manage the HSE aspects of the proposed works
- The ability to provide competent, trained advice
- Previous experience of HSE performance
- Any previous breaches of HSE legislation.

This information will inform the overall assessment of bidder competence and selection.

4.2 Contractor HSE Implementation Plan

Contractors shall develop an HSE Implementation Plan proportional to their scope of work and ensure this is supported by an auditable management system. The plan shall reflect HZI's HSE vision, and project goals and comply with the requirements of this CPP and the CEMP and any other legal requirements applicable to Contractor Scope of Work.

The plan shall be submitted to HZI for review and acceptance at least 14 calendar days prior to mobilising to site and shall be updated every 3 months or at a frequency to ensure the plan is current. Contractor HSE Implementation Plans should, as a minimum, contain the following information proportional to their scope of work.

Section 1	Scope and Limitations	<ul style="list-style-type: none"> • Describe the location and type of work being undertaken, list the plant and equipment involved and the approximate timeline of the works
Section 2	Organisation	<ul style="list-style-type: none"> • Include an organogram showing Contractor project team
Section 3	Supervisory Structure	<ul style="list-style-type: none"> • Define management and supervisor's HSE responsibilities • Describe the structure for HSE support and advice • Describe the ratio of operatives/tradespersons to supervisors
Section 4	Competencies	<ul style="list-style-type: none"> • List the trades and supervisors involved in the work and the trade and HSE training they need
Section 5	Hazards and Risk Controls	<ul style="list-style-type: none"> • Detail significant high-level hazards associated with the contractors works and what high level measures are in place to control risks
Section 6	Communication	<ul style="list-style-type: none"> • Detail method of consulting about and communicating hazard and risk information to workforce, including subcontractors
Section 7	Subcontractor Management	<ul style="list-style-type: none"> • Identity any Subcontractors and their scope of work
Section 8	Health Monitoring	<ul style="list-style-type: none"> • Define any requirements for health monitoring and the programme for delivering • Detail any pre-employment health checks (relevant to the risks associated with the work).

Contractors must raise any concerns they have with either the content of this CPP or the CEMP or with their scope of work and their ability to safely manage the works directly with HZI or at the communications meetings described in Section 3.7.4.

5 Site Operations

5.1 General Site Rules

All persons on site, including Contractors and Subcontractors will abide by the HZI HSE Principles. In addition the client golden safety rules of: reverse parking only in worker car park; and everyone holding handrail on stairs (both on site and in welfare area), shall apply to all workers.

Eating and drinking are only permitted in designated areas and not in the construction area.

The trading of any goods is prohibited on site.

Smoking (including e-cigarettes) is only permitted in designated areas. A smoking shelter shall be provided in the welfare area. Smoking is not permitted:

- . In the construction area
- In an indoor workplace or substantially enclosed space.

Smoking materials (e.g. lighters and matches) are not permitted in the construction area.

Personal electrical / devices, mobile phones and pagers are not permitted in the construction area unless authorised by the HZI Site Manager.

The use of cameras on site shall be strictly controlled. Requests to use cameras for recording progress must be agreed with the HZI Site Manager. Any photos or films for external use must be approved by the HZI Site Manager on a case by case basis.

At no point should photographs or videos be taken on any HZI Project and used on social media platforms incl. Facebook, LinkedIn, Twitter, Instagram etc. without the prior approval from HZI site management.

Willful misuse or defacing of any item of plant or equipment will be treated as gross misconduct.

Construction materials that are causing an obstruction on the site or for which an owner cannot be found will be moved to a quarantine area. The items will be left for the owner to remove. If this removal doesn't occur within 48 hours, then the contractors will be charged for removal.

According to the local legal legislation, workers might be subject to health fit to work check-up, if so the employer shall provide evidence of the medical fit to work certificate to HZI (health or HSE Dept) when requesting the access at Site. Contractor employer representative declaration may be considered sufficient to assess the employee as fit to work.

5.2 Welfare Area

Site accommodation shall be situated in a designated secure location and shall be suitable for the number of personnel on site.

Sanitary and welfare facilities shall be cleaned on a regular basis. All Contractors are required to respect the facilities.

A fire risk assessment (FRA) of the welfare area shall be carried out the HZI HSE Team. The facilities shall be provided with suitable firefighting equipment as identified in the FRA. Inspections of the equipment shall be carried out at the intervals specified in the FRA.

5.2.1 Control of Legionella

An assessment shall be undertaken and recorded, and an action plan developed if:

- Water is stored or re-circulated in the system
- The water temperature in all or some parts of the system may be between 20 and 45°C degrees
- It is possible for water droplets to be produced and disperse
- It is likely that any workers, visitors, the public, etc. could be exposed to contaminated droplets. To minimise risks:
 - A log will be made to identify all areas that need testing or cleaning. This will be filled in to demonstrate that Legionella controls are in place
 - Water outlets (taps, shower heads, etc.) not regularly used should be flushed through regularly
 - Appropriate water treatment process shall be installed to either kill Legionella (and other microorganisms) or limit their ability to grow where appropriate
 - Stored water shall be maintained either below 20°C or, if part of a hot water system, above 60°C
 - Standing / stored water in tanks, pressurised water bottles etc. shall be replaced regularly during warmer weather where temperatures reach higher than 20°C
 - Water systems shall be drained during demolition or refurbishment where possible to prevent water stagnation
- Control the release of any water spray.

5.2.2 Display Screen Equipment

Where individuals are deemed to be users under national Display Screen Equipment (DSE) Regulations then DSE assessments shall be carried out.

5.3 Lighting

The following minimum average luminescence lighting requirements shall apply on site:

- Internal areas, walkways, staircases and access – 20 lux for access only
- Internal work areas, task lighting – 200 lux
- Internal emergency lighting – 15 lux
- External areas, including site roads, temporary access roads and laydown areas – 20 lux
- External areas, welfare area – 20 lux
- External areas, excavation and large area works – 50 lux
- External areas, mechanical and electrical task lighting – 100 lux.

Portable electric lights shall not be permitted unless fixed to a stable tripod or to the structure and supplied at 110 volts AC. The supply to all other portable lamps shall not exceed 25 volts AC. These shall be tested and recorded at a suitable time period not greater than every 3 months.

5.4 Security Arrangements

HZI will ensure that all areas of the construction site are secure and prevent public access through the use of appropriate site fencing and manned security gates. Contractors shall consider security arrangements for their plant and equipment whilst on site, and ensure equipment is secured and / or locked when not in use.

HZI shall issue pictorial identity cards to all individuals employed on site. Visitors will be provided a visitor induction sheet, which will be issued to them on the day of their attendance and should be returned upon their exit from site.

Site security will undertake periodic perimeter patrols at agreed intervals. This will be managed via the use of a 'Dyster' system or equivalent. Where any breaches of the perimeter are detected then site security will inform site management as soon as is reasonably practical. Until appropriate action can be taken additional patrols will be undertaken.

HZI reserve the right to undertake locker and vehicle searches in order to maintain security on site.

Contractors shall notify HZI and site security in advance of any visitors or deliveries to the site. Contractors shall make suitable arrangements to escort all visitors / deliveries from the security gatehouse onto the site.

5.5 Drugs and Alcohol

There is no acceptable limit for illegal drugs, and the alcohol limit is the current drink drive limit. Random drugs and alcohol testing shall be carried by appropriately accredited independent parties.

Where HZI believe an individual is under the influence of drugs or alcohol, they reserve the right to test them. In addition, following any accident or incident HZI reserve the right to undertake a drugs and alcohol test of those involved.

HZI will enforce a procedure in relation to Drugs and Alcohol as per HZI Drugs and Alcohol procedure (AA426 09).

Prior to the administering of the drugs and alcohol test individuals must declare if they are on any medication (prescription or otherwise). Failure to declare medication or otherwise may result in the individual not being allowed access to site.

Where declared medication produces a non-negative result and this is being taken to treat a health issue, the Site Manager in consultation with the HSE Manager will exercise their discretion in whether to allow the person tested to start work ahead of the laboratory test results.

5.6 Mobile Phones

Use of mobile phones will be restricted on site. Only those that have been authorised, placed onto the site user register and with the relevant signage indicated by helmets stickers (or site agreed signage) will be permitted to use phones within the site construction area, and only when stationary in safe areas.

5.7 Construction Traffic, Parking and Delivery Routes

A Construction Phase Traffic Management Plan shall be developed by HZI.

Contractors shall provide advance notice of any construction traffic to the construction site to HZI. HZI shall create a site access and delivery plan detailing the requirements for site deliveries. This will be available for all Contractors to provide to delivery companies. All site related deliveries must report to the gatehouse and

they will be directed accordingly. Contractors shall make delivery personnel aware of and ensure compliance with the PPE standards on exiting their vehicle.

A designated car parking facility shall be provided for construction workers. No parking is allowed outside the designated area.

All HZI and associated contractor vehicles will be fitted with a flashing beacon and shall adhere to the 10 miles per hour speed limit.

When working within a traffic route, an individual should ensure a suitable barrier is placed around them to act as a safety barrier. In all cases, communication must be made (and recorded) to traffic on site to inform them on individuals working in the live traffic route.

All traffic routes shall be suitably signposted and include speed limit and direction of flow.

All pedestrian crossings shall be clearly identified.

Travel routes for cranes and crane standing must be agreed with HZI in advance in order to avoid overhead lines and other structures, underground services, excavations, made up ground, etc.

Diesel- and gas-powered vehicles or equipment shall be prohibited inside enclosed buildings unless prior written approval by HZI.

Vehicles and equipment shall not block or restrict exits, walkways, loading areas, fire hydrants or emergency equipment.

The wheel-wash facility shall be used for all vehicles if necessary, prior to exiting the site to prevent the deposit of mud on roads.

Mobile plant/equipment must be accompanied by a trained and competent vehicle marshal while operating. Only when working in low risk situations (plant working in isolation or travelling between workfaces) is a vehicle marshal not required. Vehicle marshals shall be easily recognisable to the driver (i.e. bib, vest). Note: vehicle marshals are required for all vehicles that reverse on site.

The national Highway Code applies on site. Drivers must comply with all signage and instructions. Drivers and occupants must wear seatbelts.

Drivers / operators of vehicles / plant must not use a communication device (mobile phone or two-way radio) in transit. This applies to both hands-free and non-hands-free devices. To use such a device, the vehicle must first be brought to a halt in a safe location.

Drivers / operators must only operate vehicles / plant / equipment if they are trained, competent and familiar with the vehicle / plant.

Drivers operating plant with windows open must wear eye protection when in the cab of the machine.

5.8 Vehicles and Plant

All vehicles, plant and equipment (including pile drivers, mobile cranes on-road load handling equipment i.e. fork lift trucks, cherry pickers etc. and any type of mechanical man lifting equipment) shall be:

- Approved prior to arrival on site by HZI
- Inspected on arrival at site by a competent person
- Clearly marked with a unique identification number and name of company responsible for the vehicle on site
- Maintained and supported by a vehicle / plant register (containing inspection, maintenance and certification records)

- All site vehicles and items of mobile plant shall have an amber rotating flashing beacon, reversing warning/audible alarm, seat belts; whenever possible roll-over protection and reversing cameras
- Subject to pre-use inspection by the operator
- provided with means of ensuring full visibility around vehicles so as to reduce risk to pedestrians.

Only persons who can prove they are certified to operate that particular class of equipment shall be allowed to operate it.

Defective vehicles and plant must be immediately quarantined and removed from service.

All plant / equipment shall be isolated / locked overnight. Keys must be removed from plant when not in use.

5.9 Construction Working & Construction Traffic Hours

The construction site is open to Contractors for work normal construction work between the following hours:

- Monday – Friday 07.00 to 19.00 hrs
- Saturday 07.00 to 16.00 hrs

Any construction activities that require to be undertaken outside these hours e.g. during the internal fit out of buildings, delivery of abnormal loads by reason of instruction/order from the local police or the relevant highway authority, or due to exceptional works (such as time dependent concrete pours) shall be agreed with the local authority prior to any such work commencing.

5.10 Personal Protective Equipment

Within the construction area, all persons to site must wear the appropriate Personal Protective Equipment (PPE). PPE is not required in the office.

Contractors shall ensure that their personnel are provided with the correct and appropriate PPE or clothing for the respective work, including but not limited to:

- Long sleeve high visibility top and long high visibility trousers EN 471 (class 3)
- Hard hat with chin strap EN 397
- Laced safety boots EN 345 (S3) -not rigger boots-
- Safety glasses EN 166
- Gloves (specific to work type) (EN 388, EN 407).

Further PPE are required based on the work performed.

The following Project Minimum PPE requirements are to be worn on the construction site at all times:

- **Hard Hat** EN 397 or equivalent (showing Contractor's logo and employee's name at the front) incorporating a chinstrap or other means of securing the helmet. The following helmet colours will apply on the project unless differently specified by Clients or agreed with HZI HSE Corporate Dept.:
 - White Hat – General Workers
 - Yellow – Client/Employer
 - Black – Contractor managers and Supervisors
 - Green – HSE Advisors
 - Orange – Slinger / signallers and Banksmen

- Blue – Emergency response team.

Hard hat, safety glasses and hand gloves shall be worn at all times in the construction area. All hard hats shall be fitted with a chin strap or other effective means of retention.

- **Clothing** with fully-covered torso (no visible arms or legs) in high-visibility yellow/orange with reflective stripes to a minimum standard of EN 471 Class 3 (or equivalent) shall be worn on site.

Note: Only banksmen (or those specified by law or risk assessment) may wear orange high-visibility clothing.

In warm weather a high-visibility polo shirt may be worn providing it complies in all respects with EN 471 Class 3 (or equivalent); this includes covering the arms and torso. This shall be matched with high-visibility polycotton trousers also to EN 471 Class 3 (or equivalent).

Baggy or separate high-visibility clothing should not be used where there is a risk of entanglement in work equipment.

The Contractor shall make arrangements for the welfare of workers exposed to extreme or inclement weather. Sheltered work areas (sheeting, habitats) shall be provided; where this is not practical, clothing (hat liners, glove liners, thermal work wear/underwear) shall be issued.

Orange jacket or long sleeved top and trousers for Slinger / Signallers, Riggers and

Banksman. Green and yellow stripes on helmets for Qualified Occupational First-Aider.

- **Footwear:** Safety boots (no trainers or shoes) with toe and mid-sole protection approved to 200 joule EN ISO 20345 (or equivalent) shall be worn in all construction areas and elsewhere when there is a risk of foot and ankle injuries. Boots shall be able to be fastened/laced to provide necessary ankle support, ('rigger' boots without lacing are not allowed).

Contractors shall take steps to ensure that underfoot conditions in their work areas remain dry and stable. The wearing of impervious boots (Wellingtons) is not permitted, unless as identified by the risk assessment or with written permission of the HZI Site Manager

- **Gloves** (specific to work type): The wearing of gloves is mandatory in the construction area. The appropriate gloves for each task shall be identified by risk assessment. Contractors shall clearly display the gloves available with respect to the range of hazards associated with their tasks.

General purpose gloves complying with EN 388 (or equivalent) are the minimum requirement. Gloves for handling or using hazardous substances shall comply with EN 374 (or equivalent). Gloves for use with heat shall comply with EN 407 (or equivalent).

- **Eye Protection:** Clear safety glasses (to EN 166 or equivalent) shall be worn at all times on the construction site.

Task Specific PPE will be as a minimum:

- Safety glasses shall be upgraded to mono-goggles (close-fitting lightweight goggles) when dismantling scaffolds or if there is risk of airborne particles
- Adequate face protection must be worn in addition to suitable eye protection when grinding, chipping, jack hammering, and power-sawing or when conducting other tasks that involve such face and/or eye hazards as identified by risk assessment
- Prescription safety glasses must be provided in preference to over glasses for all employees who will be on site for more than 2 weeks
- Welding goggles (to EN 166 1F and EN 169 or equivalent) shall be worn by the welder and any other operative within the optical exposure zone
- Dark-tinted safety glasses are prohibited except where these reduce risks as identified by risk assessment. Exemptions may include crane operators.

- **Hearing protection** must be available and worn as indicated by risk assessment or when noise levels exceed 80 decibels (dB) (when normal speech cannot be heard at a distance of two metres). Hearing protection must be worn where noise levels are above 85 (dB). Hearing protection shall meet the requirements of EN 352 or equivalent.
- **Respiratory Protection Equipment (RPE)** shall be suitable for the hazard identified through risk assessment (which will include reference to the relevant Safety Data Sheet (SDS) for any chemicals used). The type and protection factor of the RPE shall be detailed in the RAMS and will comply with the relevant EN standard.

The user of the RPE must be trained and deemed competent in the use and proper fitting of the RPE and have completed a medical questionnaire and assessed as fit to use the RPE. Records must be retained on site.

- **Full Body Safety Harnesses and Lanyards:** Full body safety harnesses and fall arrest lanyards shall comply with EN 361-365 standards (or equivalent). The use of double lanyards shall be mandatory where deemed necessary following a work at height risk assessment where alternative means of effective physical fall protection cannot be provided to the workers.

Harnesses, lanyards or any other fall arrest equipment such as mini-blocks or inertia reels must have certification and inspection records. All individuals wearing full body safety harnesses and lanyards must be trained and the records retained.

The use of safety belts shall not be allowed on the site.

Each Contractor is responsible for ensuring that PPE is maintained, inspected, repaired and stored so that its protective effect and hygienic standard is retained. Contractor shall train and supervise the correct use of PPE and ensure that its personnel wear PPE in accordance with HSE requirements.

Contractors shall provide replacement PPE for use by visitors and delivery drivers.

5.11 Control of Work Processes

5.11.1 Permit to Work Process

A PTW system is a safe system of work procedure designed to protect personnel and plant and is a formal written system used to control certain type-high risk works such as but not limited to Confined Spaces, Working at Height with fall personal protection system, excavation, pressure tests, radiography tests, several Commissioning activities, LoTo. activities, operation activities, working in areas/equipment/system in operation, heavy and critical lifting, hot work activities when risk of explosion or not in green field.

It consists of an organised and predefined safety procedure. It forms a clear record of all foreseeable hazards which have been considered in advance (e.g. in the Method Statement and Risk Assessment).

HZI will have a documented, structured and standardised PTW system to control hazardous works within the project.

HZI and/or Contractors will conduct regular PTW training courses to ensure that all its personnel are trained and certified appropriately in the PTW procedure.

A permit to work (PTW) system will be utilised on the site as per the PTW Procedure (AA426 03).

5.11.2 Point of Work Risk Assessment – Pre-Job Risk Assessment (Take 5)

It is essential to carry out a Pre-Job Risk Assessment = Point of Work Risk Assessment (POWRA) before starting any task.

It will be applied to all construction work activities and must be implemented before commencing every such activity. Activities include, but are not limited to, hands on work involving tools or equipment, work, operating plant or equipment on the construction or operating site. A POWRA will ensure the work group/worker assess the risks associated with an activity immediately prior to work commencing.

The POWRA (Take 5) process will be carried out as per AA426 01.

Before starting any activity, the executor task supervisor/leader shall collect all the involved personnel in the working area with the relevant job documentation and conduct an HSE briefing using the POWRA.

- The employees performing the pre-job risk assessment and supervisor/leader will sign relevant attendance sheet on the POWRA
- Evidence of POWRA will be displayed and available for review in the immediate work area.

5.12 Excavation, Soil Movement

All excavation work shall require a RAMS and excavation PTW.

Prior to excavating, checks shall be carried out to ensure no underground cables or services, overhead lines or unexploded ordnance and safe practices communicated and implemented accordingly.

All excavations must be safe from collapse no matter what depth; a temporary works assessment shall be made of depth and ground conditions and appropriate measures of collapse prevention implemented before any person is allowed to enter.

Where gas detection is required prior to entry, a test shall be carried out and the results recorded on an excavation inspection report form by a competent person. In such cases, a suitable and calibrated gas monitor shall be lowered into the excavation prior to entering. A gas monitor shall remain in the excavation all the time persons are present if required in the corresponding RAMS.

Excavations shall be suitably fenced with rigid barriers (where excavations cannot be securely covered) or guarded and warning signs posted. Vehicles and pedestrian access routes must be kept at a safe distance from the edges of excavations (minimum 1.5m) and excavations which interfere with vehicle routes should be appropriately signed, guarded and lit.

Excavations will have signage erected to establish ownership with contact details.

Vehicles and all plant (e.g. generators) must be kept a suitable distance from an excavation unless suitable mitigations put in place. Where vehicles are used for tipping materials into an excavation, safety measures, such as securely anchored stop blocks, must be used to prevent the vehicles over-running the edge. Unsupported excavations will require a temporary works design check by a Local Professional Engineer (PE) or Temporary Works Designer (TWD).

Safe access and egress shall be provided on all excavations, with stairs or haki towers for large excavations that will be open for significant lengths of time. Where plant access is required to trench, segregated pedestrian access shall be provided.

Escape and rescue procedures shall be communicated to all staff working in the excavation.

Excavations shall be inspected by a competent person at the start of every shift, after any event that could potentially affect stability of any part of the excavation (e.g. rainfall) or after any accidental fall or dislodgement of material and records of this maintained in an excavation log.

Prior to any earthworks operations a soil resource survey shall be carried out and the results integrated into a Materials Management Plan which shall detail:

- Areas of soil to be protected from earthworks and construction activities
- Methods for stripping, stockpiling and re-spreading and ameliorating landscape soils

- Requirements for imported topsoil and subsoil or disposal of soils.

Soil shall be stripped from all areas that are to be disturbed by construction activities or driven over by vehicles. The following control measures shall apply when handling soil:

- Soil handling should be conducted during the driest conditions possible
- Top soil shall only be handled when it is friable and not plastic
- Construction traffic movement shall be confined to designated routes within the site to minimise compaction of material
- Double handling of material shall be avoided
- Topsoil stripping shall be designed to minimise the length of time the soil is exposed to erosion and the generation of silt in runoff
- Materials of different type should be removed and stored separately (topsoil, subsoil, etc.)
- Earthworks equipment shall be appropriate to the local materials and conditions.

Tracked machinery shall be used where possible to reduce compaction and dozers shall be of low ground bearing pressure type with wide tracks.

Stockpile management should include:

- Choosing a dry / naturally drained location for stockpiling or providing drainage
- Locating stockpiles well away from watercourses, ditches, drains, the root or crown spread of trees and any other sensitive receptors
- Keeping soil storage periods as short as possible
- Removing vegetation (other than grass) and waste materials from storage areas before forming stockpiles
- Restricting topsoil stockpile heights to 4 meters unless agreed otherwise
- Keeping side slope angles of a stockpile below 40° if not seeded and below 25° if seeded
- Ensuring that the top of a stockpile is inclined (slope at 2%)
- Seeding the stockpiles if the soil is to be stockpiled for more than five months or if invasive plants are likely to occur and managing weeds
- Implementing dust mitigation measures.

5.12.1 Water Runoff and Drainage

Measures shall be implemented to ensure that water runoff from the site does not cause pollution or flooding.

Eroded sediments (incl. silt) will be retained on site with erosion and sediment control structures (e.g. such as sediment traps, silt fences, swales, settlement tanks, cut off ditches etc.).

No discharge of silty water or any other water or substance shall take place without treatment and necessary permits.

5.12.2 Contaminated Land

There is evidence to date which indicates the presence of contaminated land, but the risk is low. In the event of contamination being encountered the HZI Site Manager must be informed immediately, who shall inform the client.

Preliminary site investigations, and if necessary exploratory excavations, for contaminated land shall be carried out prior to commencing excavations.

All workers involved in excavations shall be briefed on the signs of contaminated land and the protocol to follow on discovery of suspected contamination.

5.13 Electrical Safety

All material and equipment used in temporary electrical installation shall be accordance with HZI and industry standard requirements.

Electrical cord utility boxes will be the industrial type, properly maintained with spring-loaded covers.

All temporary electrical installation and equipment shall be inspected by qualified electricians and colour coded with Project colour code as applicable.

All work or alterations, including temporary work, to any electrical equipment will only be undertaken by suitably qualified and competent electrical personnel.

Temporary electric power will be used for work in non-hazardous areas only as applicable. In all other cases the electrical equipment shall be either intrinsically safe, ex-proof or its presence and use shall be strictly controlled by the respective RAMS and PTW requirements as applicable.

Adequate cable management shall be put in place. The supply cable running from the hand tools to the transformers shall not, where possible, exceed 2 metres in length and should be elevated above head height using non-metalling hangers/fixing tools or protected by possible crashing with adequate protections. All cable runs should be positioned so as not to give rise to a tripping hazard.

The electrical supply to powered hand tools and emergency lighting shall not exceed 110 volts; centre tapped giving 55 volts to earth.

Where a supply in excess of 110 volts AC is used, the contractor will install a residual current device (RCD) on each circuit appropriate to the hazard and the cable run is a short as is practicably possible. The RCD shall be tested by a competent person before being brought into use on the site and at intervals not exceeding one month, and a label attached to the RCD indicating the date of test and the name of the person who conducted the test.

Electrical lighting for use in confined spaces must not exceed 50 volts a.c. (or 110 volts d.c.) and be explosion proof where applicable. Powered hand tools used in confined spaces should, where possible, be battery operated.

Temporary distribution boards shall be provided with the right protection against water and dust and secured against unauthorised interference. They must be of robust construction and should be supplied by heavy-duty flexible cables. Warning signs shall be posted on them and a fire extinguisher placed near by them. Socket outlets, plug connectors and cable couplers should comply with IEC 60309 or equivalent.

5.13.1 Underground Cables

The cables shall be suitable for the duty and loading expected and buried at a safe depth (as per local and regulatory requirements). Their routes shall be clearly marked both on the site and on the site plans.

The cables should be properly terminated and be provided with efficient circuit protection.

Cable routes shall be so arranged that the minimum of obstruction and hazard to personnel is caused. The cables should be treated with care and given the same supervision and protection as other cables.

The earth connections in all electrical leads shall be checked for continuity by a competent person at intervals not exceeding one month.

5.14 Confined Spaces

Confined Space is Any enclosed or partially enclosed space which:

- Is large enough for any person to bodily enter and perform assigned work and
- Has limited or restricted means of entry or exit and
- Is not designed for continuous occupancy.

In most of the cases it has unfavourable natural ventilation and it has the potential to present hazards that may result in physical injury to personnel within the confined space through changes in the atmosphere.

Where possible confined space entry and working should be avoided and designed out at the planning stage. Where this is not possible then consideration should be given to the use of mechanical aids to remove the need to enter the space. People entering and undertaking confined space work should only be undertaken as a last resort.

All confined space working must be suitably controlled. All confined spaces should be appropriately demarked and where open, they should be barred to prevent unauthorised access.

The confined space must be positively isolated from all piping connections, either by spades or the removal of valves or spool pieces. All electrical-driven equipment connected to, or normally associated with the confined space, must be locked out.

The use of electrical equipment inside confined spaces must be strongly discouraged, however, where this is not possible the maximum voltage is 50 volts a.c. (or 110 volts d.c. with centre tap to earth).

Only air must be used to drive pneumatic tools in confined spaces.

The confined space must be prepared and placed in a safe condition for entry prior to the Permit Issuer completing the Permit to Work. The actual preparation of an individual confined space will vary according to its design, construction and use. However, in all cases, adequate lighting, ventilation and safe means of access and egress must be provided. Ensure that torches are available for emergency lighting in case of generator failure.

All tools, equipment, cables, tube, ventilation, lighting must enter the confined space from a separate opening. When possible, man hole shall be exclusively reserved to men egress/access.

Evaluations for heat stress must be carried out by the Contractor Supervisor and HZI Supervisor prior to start of work and at regular intervals, and appropriate action taken.

Whenever more than one group of workers is working simultaneously inside a confined space a proper coordination will be organized by HZI and relevant Contractors and the coordination measures shall be reported in the RAMS.

No hot work will be allowed inside a confined space until appropriate control measures are introduced, based on the Method Statement and Risk Assessment.

The ventilation system, preferably air driven, must be arranged such that only fresh air is drawn or blown into the confined space. Ventilation ducting shall be of non-flammable type and correctly grounded (static electricity).

In most cases Oxygen and Gas tests must be carried out by Site HSE Department or Site HSE person in charge prior to initial entry, and then by a Competent Person at intervals determined by the Permit Issuer.

Note: For certain activities continuous monitoring may be required.

The Topman/Attendant must be briefed by the Permit Issuer on their responsibilities.

The emergency response/rescue plan must be prepared, effectively tested prior work commencement and explained to all persons involved in the confined space entry. The complexity of the plan will be dependent

upon the type of confined space; however, all persons entering must wear adequate PPE, including full body harness.

Vertical access to confined space shall only be allowed by use of retrievable system as tripod.

Cylinders containing oxygen, acetylene, nitrogen or other gases shall not be taken into confined or enclosed spaces.

Internal combustion powered engines shall not be operated in confined spaces.

Low voltage transformers must not be taken into confined spaces.

When issued the Permit to Work must be displayed at the entrance to the confined space.

Each person entering the confined space will attach their ID badge or other personal document to the display board and sign the log sheet, both of which will hang at the entrance to the confined space. Each person leaving the confined space, irrespective of for how long, must sign the log sheet and remove their ID badge.

Gas test value (including Oxygen) to be displayed on the entry board.

Topman / attendant will strictly control entry to the confined space. When there is no one inside, and before he leaves, he/she must either shut the door or place a warning sign to prevent unauthorised entry in their absence. Topman cannot leave their place until a replacement is provided by the Supervisor, in case no replacement is available the Topman has to evacuate the confined space before leaving their position.

Confined Space Attendant shall be stationed outside the entrance point to the confined space at all times. They shall:

- Maintain regular communication with those inside the confined space
- Initiate rescue procedures or summon help in case of an emergency.

Prior to any work commencement, a dedicated means of communication shall be agreed and established between the Confined Space Attendant and the rescue team.

This may include radio, hand signals, verbal communication or a combination of methods. The method of communication used must be reliable.

Excavations and trenches deeper than 1.2 m (3 feet) require atmosphere check before starting any activity and at periodical intervals when requested by relevant RAMS.

A RAMS must be produced for all confined space working in line with AA426 01 and AA426 02.

A permit to work (GP 426 F 06) is required for all confined space, no matter if the work is considered low risk. All permits should be issued in accordance with AA 426 03 and all issuers and receivers must be trained.

The permit must also note any isolation's that are required prior to entry. These isolations must be carried out by a trained and competent individual prior to any confined space working.

For additional info please refer to Doc. No. AA426 21.

5.15 Lifting Equipment and Lifting Operations

All Lifting equipment including cranes and boom trucks will be inspected by third party inspection agency with valid test certificates together with the manufacturer's handbook. This equipment will be operated and maintained in a safe manner. Copies of inspection certificates and operator's daily checklists will always be kept inside the vehicle / equipment for unannounced and routine audits.

All lifting and lifting equipment certification is to be given to HZI HSE department prior to the crane being used on site.

All lifting equipment is tagged in accordance with the colour scheme noted in this CPP.

Tag lines will be used on all items that are likely to be affected by wind or are liable to movement once lifted.

All lifting equipment will be marked appropriately to identify to whom the equipment belongs i.e. company name tag, etc. Defective equipment shall be taken out of service and either destroyed or securely quarantined.

All slinger / signallers must be suitably trained and competent. Competency checks will be carried out on site and during induction.

Lift plans must be developed for all crane lifting activities and shall be compliant with BS 7121 or equivalent. Cranes must be fitted with anti-clash devices unless dictated by risk assessment.

Crane duty charts (load radius tables) must be displayed on or be available in the crane. In addition, the Crane Manufacturers Operating and Erection manuals must be available on site. These must all be available in English and other languages as required.

All cranes shall be fitted with:

- A reverse warning audible alarm
- Load radius indicator
- Automatic safe load indication
- Crane hooks with safety catches
- Anti-two block device (over-hoist limit switch).

All of the above features shall be subject to service in accordance with manufacturer's instructions.

Load spreader pads of sufficient size in thickness area and of suitable material, i.e. metal plates, timber, etc., are to be placed under each outrigger foot, before all crane lifting operations. The ground bearing capacity for outriggers shall be confirmed and defined on completion of a Rigging Study.

Means of communication (radios) shall be provided for use with all cranes.

Supervisor / Foreman will check the stability of the ground before positioning any lifting equipment on the ground before attempting any lift. All mobile equipment will be inspected by the operators on daily basis.

Lifting gear will be inspected and maintained regularly with an appropriate colour coding system and registers. Lifting gear will also be inspected prior to use by work Supervisor/ Foreman and/or Rigging Supervisor.

Only qualified/ approved operators will be authorised to operate cranes on the Project.

Routine maintenance will be performed in accordance with the installation planned maintenance system.

HZI will ensure all mobile equipment operators and rigging personnel are experienced and trained as per HZI standard requirements.

A Project specific Lifting and Rigging Plan shall be developed and implemented by Contractor in line with HZI Management of Lifting Operations and Equipment procedure (AA426 25), Mobile Elevated Working Platform Procedure (AA426 51) and Safe use of Crane Suspended Work Platforms (AA426 52).

Contractors' lifting personnel will be subject to HZI approval.

A Lift Plan shall be issued for all lifting operations. Lift Plans can be:

- Generic Lift Plans (for lifts within the safe operating envelope of the equipment) which can be prepared for a series of lifts or a period of use
- Critical Lift Specific Lift Plans.

Critical Lift Plans are for lifts that meets one of the following criteria:

- When the load exceeds 20 tonnes or as agreed with HZI
- When the gross load value exceeds crane manufacturers standard operating envelope

- The item to be lifted requires exceptional care in handling because of size, weight, close-tolerance installation, difficulty in estimating the centre of gravity, high susceptibility to damage or another unusual factor
- When the lift requires two or more cranes
- When the lift is performed in proximity of live electrical conductors or operating equipment
- When the lift requires exceptional care in handling due to restricted space or other factors
- When the lift requires the use of special equipment (personnel lifting basket, fly jib etc.). The lift plan must include the following:
 - Details of the crane(s), lifting equipment and accessories to be used
 - Bearing capacity check of the ground where the crane is to be stood and surrounding conditions
 - Plans and views showing the geometry of the lifting operation
 - Description and details of load(s) to be lifted (weight, overall dimensions, indication of position of centre of gravity, lifting / slinging points, pickup radius, final location radius, height to which the load has to be lifted, overall weight (load with lifting accessories)
 - Design of crane mats to distribute the load to ground
 - Instructions and recommendations by the suppliers
 - Type of rigging and lifting capacity with valid inspection certificates for all accessories
 - Definition and description of all actions from arrival of the load on site until installation to its final position
 - Roles and responsibilities for each person involved in the lifting operation.

5.16 Barricades and Barriers

Contractors will be responsible for properly erecting and maintaining barricades and barriers in such a manner that they provide adequate protection.

Barricades and barriers shall have appropriate signs and tags indicating the nature of the hazard and the responsible supervisor.

Barricades on or in close proximity to roadways shall be properly equipped with flashing amber lights, after dark.

Barricading devices, such as tape or plastic chains, shall not be used as a substitute for a barricade as they do not offer adequate protection from falls.

Tape and chains shall be used only in those applications where temporary identification of a hazard is needed, but not as a primary means of protecting employees from exposure.

Barricades and barriers must not obstruct emergency routes or equipment and must not interfere with other activities.

Contractors will ensure that all employees understand and comply with barricade and barrier procedures. For more details see AA426 39.

5.17 Floor and Wall Openings

Standard rail systems shall be erected as a primary means for preventing fall or other injuries associated with floor and wall openings.

Contractor shall provide standard handrail systems to protect floor and wall openings in their scope of work.

Handrails shall be constructed with the top rail 120 cm from the floor or platform level and shall have a mid-rail and toe-board. Toe-boards shall extend 15 cm above the floor or platform level.

Vertical support posts for handrails shall be provided at intervals of not more than 2.5 meters.

All floor/roof openings not afforded standard rail system protection shall be covered with substantial covers. Such covers will be properly labelled and will show the maximum permitted loading.

All floor and wall opening protection, either handrails or covers, shall be tagged with signs: 'DANGER - RISK OF FALLING - DO NOT REMOVE'.

5.18 Roofing Work

Prior to performing any work, including preliminary inspection, the structural integrity of the roof will be verified in order to confirm the roof capability of supporting the intended loads.

Roof access and work shall be prohibited at night unless appropriate and adequate illumination is provided, and authorisation is obtained from the HZI HSE Manager.

Employees engaged in roofing work will be protected from falling from all unprotected sides and edges of a roof by one of the following methods:

- Standard handrail systems shall be erected as a primary means for preventing fall and will be installed at the perimeter of all open sides that present a fall exposure of more than 1.8 m
- In the cases where the installation of a standard handrail system is not feasible, other fall protection devices shall be used, such as safety nets systems or personal fall arrest systems or a combination of them, as defined by the relevant Method Statements / Risk Assessment (RAMS).

5.19 Hazardous Materials or Substances

Use of hazardous materials shall be minimised and shall not be used where a practicable safer alternative exists. Storage of hazardous materials on site shall be kept to lowest practical levels. Adequate processes and procedures shall be in place to limit spillage and deal with emergency situations.

All hazardous substances on site will be furnished with Safety Data Sheets (SDS) in English and local language. These SDS shall be approved by the HZI Site HSE Manager, prior to shipment of the material. The HZI Site HSE Manager and Contractor shall both hold a central register on site, which shall be accessible at all times to the site medic and emergency response team. The HZI Site HSE Manager should be informed when any substances are removed from site and the register should be updated.

The HZI register should contain, but not be limited to:

- The name of the substance (including common names)
- The location of storage
- Company in charge of the substance
- The reference for the SDS
- The reference for the Chemical Assessment.

All Contractors should ensure that each substance must have a SDS and a Chemical Assessment in place prior to being used. The Contractor will implement a safe system of work and provide all relevant PPE to ensure that the risks associated with the use, handling and disposal of such substances are minimised. The Contractor will ensure that any persons handling such substances have received instructions regarding the hazards, the system of work to be adopted and the actions required in the event of spillage and be aligned with the site EPP. The Chemical Assessment shall be included in the work packs (PTW, RAMS, POWRA etc.).

All use of chemical substances shall be adequately covered in the relevant RAMS documentation.

Chemical stores shall be kept locked and shall be bunded in such a way that if substances leak whilst stored or handled the leak will be contained within the bunded area.

All containers shall be properly labelled.

All stores shall comply with the hazardous materials SDS store requirements.

All hazardous substance stores (including fuel) shall be located at least 20m from any watercourses or bodies and located as far as practicable from pathways to sensitive receptors (e.g. drains).

No modification to tanks or drums which have contained flammable liquid shall be undertaken at the site.

Emergency arrangements must be in place for chemical substances on site. This should be contained within the site EPP.

The Management of Chemicals and Hazardous Substances procedure (AA426 23) provides additional information for HZI HSE Team on management of hazardous substances and a template for Chemical Assessment (GP426 F38).

5.20 Spill Prevention and Control

The possibility of spills shall be minimised by:

- Bunded storage (to contain 110% of largest tank or 25% of total volume whichever the greater)
- Double skinned tanks (particularly for bowsers or permanent tanks)
- Drip trays (for temporary storage of chemicals)
- Appropriate spill kits.

Potential contamination from re-fuelling will be prevented by ensuring that such activities are:

- In accordance with a clear and written instruction / procedure on careful control of tank filling operations
- Carried out carefully in a designated area with an impermeable surface sited away from any watercourses, ditches or drains
- Always supervised and never left unattended
- Executed by pump, where possible, with automatic cut-off trigger nozzles, which can't be left propped open
- Vehicles and machines shall be regularly maintained, and leaks repaired immediately.

When not directly being used, containers shall be kept sealed on site. When in use on site containers of chemicals and hazardous substances shall be placed in suitable secondary containment such as drip trays. Any unused substances shall be returned to storage facilities at the end of the day.

Training shall be given to workers to ensure they are aware of spill response procedures.

Where a spill has occurred on site, this shall be recorded as an incident and reported to HZI.

See the CEMP for more pollution control measures.

5.21 Tools and Work Equipment

All equipment shall be in good condition, checked by the user and only be used by trained and competent personnel.

Supervisors are responsible for implementing and recording their arrangements for ensuring plant and equipment used on site is fit for purpose. All inspection and test certificates and maintenance records must be obtained and checked before the equipment is used. This includes hired as well as company owned equipment.

All tools shall be CE marked or equivalent.

Daily and weekly inspection records for all items of plant and equipment shall be made available to HZI. Where possible records of inspections and calibration expiry dates should be displayed locally on the equipment, this could take the form of a plant tag or visual display in the machinery cab. Thorough examination certificates for cranes and Mobile Elevated Working Platforms (MEWP) should be presented to HZI for examination before the equipment is used on the site.

All hand-held power tools must be equipped with constant pressure switches that will automatically shut off power when pressure (worker's grip) is released. Hand-held power tools with on/off or lock on switches are not permitted.

All portable electrical equipment shall be subject to a full inspection every 3 months by a competent trained person.

Equipment and tools shall not be altered in any way without written approval from the manufacturer of the equipment and HZI.

Ground fault circuit interrupters shall be used to protect all temporary electrical wiring and cord sets. For compressors and associated air driven tools, all pressure hose connections must have 'whip checks' fitted.

5.21.1 Cartridge Operated Fixing Tools

Contractors who intend on using cartridge operated fixing tools must first obtain the permission of HZI prior to bringing the tools on site. A written RAMS must detail the following:

- Authorised users
- Training given
- Storage arrangements for machines and cartridges
- Control measures for issue and return of equipment and cartridges
- Limitations on the type of work undertaken
- Safety precautions required during use
- Means by which cartridges shall be disposed of
- Type of cartridge(s) to be used

Authorised persons must be properly trained and competent in the safe use of the equipment and must be in possession of a certificate detailing their appointment in writing.

Misfires, penetration through the fixing material or other accidents / incidents must be reported to the HZI Site HSE Manager.

5.21.2 Abrasive Wheels

Anyone changing abrasive wheels must have attended an approved course of training.

If supported by local legal requirements, persons authorised to change wheels must have a certificate issued by a suitable training organisation. Details of each employee trained must be available to the Contractor issuing the abrasive wheels equipment.

Machines used to drive abrasive wheels must be in good condition and properly guarded.

Pedestal or bench-mounted grinders must have an emergency stop button, be fitted with a properly adjusted tool rest and Perspex shielding between user and wheel.

All material being cut using a cutting disc shall be carried out in a suitable location, e.g. work bench.

The material to be cut must be secured prior to cutting / grinding operations taking place.

Abrasive wheels used on site must be used within the timeframe specified by the manufacturer.

5.21.3 Knife Policy

The use of fixed blade knives is to be, wherever possible, avoided and alternative cutting tools must be used.

Where a knife is considered by risk assessment to be the safest and most appropriate tool, it must be used with safety gloves with the appropriate cut protection.

Knives are to have self-retracting blades and where possible round-ended blades to minimise stabbing injuries.

Workers are not permitted to bring their own knives to work. Appropriate cutting tools will be maintained and provided at the worksite. Cutting tools and safety knives should be inspected prior to use, any damage reported and a replacement sourced.

5.21.4 Mobile Elevating Working Platforms (MEWPs)

Only competent persons shall be allowed to plan works involving MEWP or operate the MEWP machine. Operator competency shall be proven through a combination of training and practical knowledge / experience/familiarisation on the MEWP type.

For MEWP operations, training shall include those for:

- MEWP Operators - Those tasked with operating MEWP must have attended a recognised basic MEWP operator training course in addition to any specified client training requirement for MEWP operators. They shall obtain a training certificate, card, or licence e.g. IPAF Powered Access Licence (PAL) card or equivalent.

All MEWP operator training certificate, card or licence shall:

- Be verifiable
- List the categories of MEWP the operator is trained to operate
- Have the expiry date clearly indicated.

MEWPs shall not be used as cranes.

However, where materials are lifted to/lowered from height using a MEWP, specific RAMS shall be completed identifying how such materials will be raised or lowered as well as the weight of the materials in consideration to the rated capacity of the MEWP. The HZI competent person shall approve the risk assessment.

All MEWP operations shall be conducted in line with the site control of work process to ensure that such operations are conducted safely and in consideration to other ongoing work activities in the area. The control of work shall include the following (not exhaustive):

- Risk assessment for the MEWP operation and its outcome communicated to all personnel e.g. through tool box talk

- Ground conditions – MEWPs shall be used on firm and level ground. Any temporary covers shall be strong enough to withstand the applied pressure. Localised ground features e.g. trenches, manholes and uncompacted backfill can all lead to overturning and therefore shall be considered. Ground condition checks (for stability) shall be completed before the MEWP is driven from one work location to another
- Weather condition – a maximum safe wind speed established for the MEWP operation. The MEWP platform shall be inspected before use following any severe weather condition
- Communication requirements – a mechanism established for communications between the MEWP operator / anyone working on the MEWP platform and those on ground level. The communication mechanism shall be tested to assure its effectiveness before the work starts
- Segregation/exclusion zone – adequate controls shall be implemented to reduce the risk of dropped objects. Exclusion (drop) zones shall be established and maintained around MEWP operations to protect pedestrians / workers/other vehicles from contact with the MEWP vehicle. Tools, equipment, and materials shall be adequately secured to prevent potential fall from the MEWP basket and becoming dropped objects risks.

A banksman shall be appointed to guide the MEWP operator whenever the MEWP is being driven.

For additional info on MEWP please refer to Doc. No. AA426 51.

5.21.5 Platforms suspended by Crane

Crane suspended work platforms can only be used where other means of reaching an elevated work location are more hazardous or not feasible because of structural design or work site conditions.

Use of crane suspended work platforms requires HZI Site Management authorisation in writing. Authorisations shall be approved on a case-by-case basis.

Safety of the employees performing the work in an elevated location is the only factor to be considered in deciding whether to use a crane-hoisted personnel platform.

When the carriage of personnel by crane suspended work platform is required, and subject to HZI restriction/approval, the crane suspended work platforms must be suitably tested by an authorised Inspector, have a current test certificate and have the Safe Working Load (SWL) and / or Number of People clearly marked on the frame. The basket must be clearly marked MAN RIDING ONLY.

Contractor will submit a Risk Assessment and Method Statement (RAMS) for approval by HZI. All the personnel involved with the activity will be briefed and given suitable training.

All sides of the crane suspended work platform shall be enclosed by a top guard rail, 1.1 meters high and include an intermediate guardrail at equal distance between the floor and top rail. All sides must be enclosed by a toe-board not less than 200mm high.

The floor of the crane suspended work platform shall have a solid non-slip surface with drain points to prevent water accumulation.

Four independent sling wires shall be used for lifting the crane suspended work platform. All wire ropes and other attached lifting equipment shall have a valid test certificate.

All persons using the crane suspended work platform must be secured by a safety harness fixed to the master link of the supporting slings or to the hook of the crane.

Crane hooks must be fitted with safety catches, or equivalent, and the operator must be in the cab at all times.

All cranes used for lifting crane suspended work platforms must be fitted with anti-two block devices to prevent over winding and a dead man's handle facility to ensure that the brake is applied when the control lever is released (no free-fall permitted). Where Free-Fall capacity is present it will be locked out or disabled. Safety devices shall be tested daily before raising people in the basket.

Tag lines shall be used to control the basket while being lifted or lowered where there is no risk of entanglement.

Man riding baskets shall conform to EN 14502-1:2005 or equivalent.

For additional info on Platforms suspended by Crane please refer to Doc. No. AA426 52.

5.22 Compressed Air / Air Receivers

All air receivers and compressors shall be in good condition and properly maintained. Air receivers shall be individually identified and marked with their safe working pressure. Air receivers shall be examined, and the pressure relief valve tested by an independent examiner at yearly intervals. Air receivers shall be accompanied by a valid test certificate.

All air receivers must be fitted with a properly set pressure relief valve.

The requirements also apply to compressor mounted air receivers.

All compressed air hose fittings shall be provided with safety pins and whip checks along the full length of the working system to prevent them from whipping should the coupling separate.

Only hose clamps designed for compressed air service shall be used. Worm drive (Jubilee) clips are not acceptable.

Compressed air must never be used for cleaning clothes.

Nozzles used for air blowing must be fitted with a dead man's handle or valve.

Horseplay involving compressed air will not be tolerated; personnel found to be in breach will be subject to immediate disciplinary action.

5.23 Fire Extinguishers

Fire extinguishers shall be available on site. The Contractor must ensure that there is an adequate number of fire extinguishers and will determine where these extinguishers should be placed. All staff must know where the fire extinguishers are.

Contractor fire extinguishers shall be inspected at the time of installation and then at least every six (6) months by qualified person and visually inspected and documented by the Contractor at the frequency specified in the approved fire risk assessment.

5.24 Tidiness / Housekeeping

The workplace must be kept clean and tidy at all times to ensure easy access and to prevent accidents. Contractors are responsible for routine tidying of their own work area and cleaning up at the end of the day to prevent any waste, materials and tools causing disruption or blocking access routes.

A policy of 'clean as you go' must be followed by workers. This involves the correct and safe storage of all materials, and removal of wastes. Materials for no more than one day's work may be stored at the workplace. Other materials must be stored in designated laydown areas and stores.

Construction materials that are causing an obstruction on the site or for which an owner cannot be found will be moved to a quarantine area by HZI at a cost to the owner contractor. The items will be left for the owner to remove. If this doesn't occur within 48 hours the Contractor will be charged for removal.

5.25 Explosives

Use of explosives or bursting equipment shall be avoided where possible. However, for structures greater than 1.5m in sectional dimension, the Contractor may use explosives or any safe methods to complete the works in a controlled manner by a specialist contractor when approved by HZI. The Contractor shall select the method deemed the most advantageous to the schedule with minimal human Interface.

Approved cartridges used in cartridge-operated fixing tools will require advance approval from the HZI Site HSE Manager.

5.26 Working at Height

Works should be designed and planned to minimise the need to work at height using the hierarchy of control. Where working at height cannot be prevented, priority should be given to the use of work equipment or other measures to prevent falls. This should be given priority over the use of work equipment which minimises the distance or consequence of a fall.

The Contractor must submit to HZI a RAMS / Erection Description Risk Assessment for all work where there is a risk of falling from height and such work, where appropriate, shall be under a PTW. The Contractor must have a rescue plan that includes rescue of people working at height.

Work at height shall always be controlled by a safe system of work. All work at height should be planned and, where appropriate, be under a PTW. It shall be coordinated and undertaken by trained, fit and competent personnel.

Exposed edges must be protected by a hard barrier which is either the fixed permanent barrier or one made of fixed scaffold tubing which is subject to weekly inspection. For temporary edge protection barriers (in place for no longer than two weeks) non-fixed barriers may be used as long as they are placed no closer than 2m to the edge and not crossed for any reason.

All Contractor personnel exposed to the risk of falling from height shall be provided with adequate fall prevention measures by the Contractor. When it is not possible to implement collective fall prevention measures, all persons exposed to a risk of falling from height must use a fall restraint full body harness with double lanyard comply with EN 361-365 standards (or equivalent) that is all times attached to a secure anchor point or life line.

Fall protection equipment, full body harnesses, lanyards, lifelines and inertia reel or any other types of fall protection equipment, shall be used where staging, scaffolding or other safe means of access is not practicable, i.e. any work where there may be persons working outside of standard access-ways, incomplete platforms, scaffold erection. Fall protection must be maintained 100% of the time when exposed to a fall.

Equipment used for working at height such as inertia reels, harnesses, lanyards, etc. shall be fit for purpose, shall be third party certified and checked by the user daily; records shall be made available to the HZI upon request. All harnesses, mobile elevated work platforms and other relevant equipment used for Work at Height or of fall prevention or protection must be subject to formal regular inspection by the Contractor. All defective or non-inspected equipment that is or could be used for Work at Height or for fall prevention or protection must be either removed from Site or physically prevented from use by the Contractor personnel.

All briefing on the activities involving working at height should be carried out by the responsible supervisor; this should include but not be limited to:

- The types of equipment to be used and the checks to ensure that it is fit for purpose
- Rescue arrangements
- Communications
- Exclusion zones and working areas

- Access arrangements.

This briefing should be carried out as part of the POWRA and be recorded.

Safe means of promptly rescuing a fallen worker or a worker suspended by fall arrest shall be available at all times.

5.27 Falling Objects

Materials, equipment or plant shall be properly secured to prevent them falling from a height.

Tool lanyards must be used where the risk of an item being dropped exists.

A drop zone shall be implemented with hard barriers and with warning signs. Nobody will be authorized to enter inside a drop zone. Drop zones shall be approved by HZI.

Other steps e.g. nets, container boxes, and warning notices shall also be implemented as appropriate and approved by HZI.

Installation shall be performed by trained and approved personnel. All nets shall be inspected and signed off by the competent person prior to any work commencing above the nets. Such metal barriers shall be removed as soon as the risk of falling objects is removed.

5.28 Scaffolding

All scaffolds, work platforms and walkways used to prevent fall from height shall be constructed from materials that are designed for scaffold and shall be in accordance with the HSE Requirements and manufacturer's instructions (in compliance with EN 12811 or equivalent).

Only qualified personnel may design, erect, inspect and dismantle or modify scaffolding. Conformity certificates for scaffold materials must be submitted to HZI HSE department for all scaffold materials on site.

5.28.1 Tube and Fitting Scaffolding

Traditional steel tube and fitting scaffolds including 'system type' components such as 'Readylok or Easifix transoms', extending transoms, steel and aluminium ladder beams and unit beams must be used in strict accordance with the manufacturer's instructions, design drawing guidance, and the information supplied to site upon request. Tube and fitting and system scaffolding is not to be mixed unless supported by design.

5.28.2 System Scaffolding

All types / brands of systems scaffolding used on site must conform to the relevant approved Standards and erected as per the manufacturer's instructions.

5.28.3 Lightweight Mobile Tower

Mobile scaffolds / towers will not be constructed with a height greater than 3 times the minimum base width, they shall have side step internal ladders, only be used on firm level ground and have outriggers attached.

A nominated person is permitted to erect, inspect, use, move, alter and/or dismantle a lightweight Mobile Tower if they are competent and hold a recognised qualification that specifically includes mobile towers.

5.28.4 Scaffolding Inspection

All scaffolds shall be inspected by an authorised and qualified person before use. The record of the initial and all other scaffold inspections should be retained for the duration of the project. Before use, the scaffold should then also be tagged with a scaffold inspection record tag secured in a prominent position at the base of all ladder access points, showing the following information as a minimum:

- Location
- Requested by
- Access scaffold classification
- Maximum distributed load/working lift
- Maximum number of working lifts to be used simultaneously
- Date erected
- Erected by
- Date inspected
- Inspected by.

Scaffolds shall be inspected and documented after assembly, and then every 7 days and/or or after any event likely to have affected stability or structural integrity (e.g. adverse weather, or modification) by the authorised scaffold inspector, who shall sign and date the 'scaffold tag' after each inspection. Scaffolding not considered safe shall have the scaffold tag turned to display the 'DO NOT USE' side of the tag. There is no need to inspect and report every time a mobile tower designed to be moved whilst in use is moved without being dismantled within a defined work area.

A scaffold register shall be kept by the authorised scaffold inspector. This shall contain:

- Date of first and subsequent weekly inspections
- Individual identifications of all scaffolds which shall be cross referenced to the scaffold tag identity number.

No scaffold may be erected which impedes normal access or can be accidentally struck by moving plant unless a safe system of work has been agreed.

No scaffolding or equipment can be erected or carried near live overhead electrical cables, because of the danger of conductive metal scaffold tubes making accidental contact with electrically charged equipment.

If there is any doubt about the security of any anchorage, suspension points or ties for a scaffold e.g. strength of existing buildings/structures, or those under construction, scaffolding shall not be disturbed or altered by any unauthorised persons. Alterations, if required shall be carried out and approved by the authorised persons.

All scaffolds shall be provided with suitable access and, where ladders are used for this

purpose. 5.28.5 Scaffolding Design

Where additional scaffolding design input is required (i.e. those scaffolds that do not meet or fall within the standard solutions) the design shall be provided by a competent scaffold designer and the appropriate design standard followed.

System Scaffolds shall be designed to prove adequate strength, stability and rigidity whilst erected, used and dismantled if not already covered in the manufacturer's instructions.

Where design drawings are produced, they shall include an elevation of the scaffold with all tie positions marked on the drawing clearly stating the required tie classification light duty (3.5 KN), standard (6.1 KN) or heavy duty (12.2 KN) and all imposed point loads as required under the management of temporary works.

Where appropriate, standard scaffold design solutions may be permitted to determine design input of certain scaffold structures (stair towers etc.).

All sheeted scaffolds must have design / design input and allow for the site wind classification.

Scaffold design must be issued to user / HZI for acceptance and sign off, and copies are to be held on site.

Where internal ladder is not possible, external ladder access should be erected to a step off level no more than 4.7m maximum.

Considerations that need to be made regarding the assessment of suitable access and egress from scaffolds may include:

- Height and width of scaffold
- Number of people using the scaffold at any one time
- Duration of scaffold hire
- Localised emergency requirements (fire, evacuation etc.)
- Type of work to be undertaken on scaffold (e.g. access to confined space entry work and enclosures whilst using full face respirators etc. requires a higher degree of assessment for access and egress.

All scaffold structures must be compliant with national requirements or have design and calculations completed to prove their strength and stability.

All operatives must be competent and hold approved qualifications to carry out the works.

Method of access i.e. stair or ladder must be stated for every scaffold. Ladder access and some proprietary stairs are not suitable for emergency access and egress or rescue (e.g. internal boiler access where possible).

The method of tying in must be stated for every scaffold.

The ground or base must be suitable for the scaffold being constructed.

The build must comply with the following requirements:

- Sole boards to be placed underneath ALL standards rested on gantry gratings
- NO standards to be placed on a gantry without a steel support underneath (use extra standards if necessary)
- Double transoms placed at the ladder access when stepping on directly at the board ends (in case the board slides when stepped on)
- All ladders to be tied in 2 places
- All boards used on the working platform to be end banded
- All boards to have a minimum of 3 transoms underneath and no greater than 1.2m apart
- All boards to be secured down in 2 places with either lashing or board ties
- No materials to be stored on standing scaffolds (unless agreed with scaffold coordinator)
- Scaffold inspection tag holders to be used and displayed as soon as the first bay is erected (or last bay dismantled)
- Polypropylene fitting bags with SWL clearly identified on them, used to raise or lower fittings with (by hand line or gin wheel)
- All ladders not in use to be secured (chain and lock or a tube through the rungs, secured at either end)
- All scaffolds built to general purpose unless stated otherwise
- Swing gates to be used wherever possible (if possible make scaffold bigger to accommodate)

- Temporary works register number to be displayed prominently on scaffold inspection tag on every scaffold
- Harnesses to be worn at all times by all scaffolders who are wearing a scaffold belt
- Corral (handrail) around all ladder accesses above 2.4m
- If a scaffold is left in an incomplete state for any length of time, then a physical barrier should be installed, or the ladder removed
- Safe zones must be incorporated into all scaffolds that are progressively being vertically erected
- All scaffolding materials must be passed from hand to hand or raised and lowered in a controlled manner (e.g. light line or gin wheel and rope). The uncontrolled passing or dropping of any scaffolding materials is not permitted.

Where materials are to be positioned on scaffolding the contractor shall ensure that the scaffolding is suitably rated for such loading, and design calculations shall be submitted in advance for unusual loading arrangements and events.

5.29 Temporary Works

Temporary Works means an 'Engineered Solution' that may include any structure, access provision, item or technique that, is used during the course of the construction process, to enable the permanent works to be constructed or to support / protect the permanent works until they become self-supporting. The temporary works can be incorporated into the permanent works, left in place but do not necessarily contribute to the performance of the permanent works or they are completely removed. It may also include the stability of the permanent works in the temporary condition.

The Management of Temporary Works procedure (AA426 30) is applicable to all works that require the use of temporary works.

5.30 Ladders

A ladder can only be used for work at height if a risk assessment is carried out and has demonstrated that the use of more suitable work equipment is not justified because:

- The level of risk is low, and
- The duration of use is short, and
- Existing features at the place of work cannot be altered.

Ladders must comply with relevant EN Standard or equivalent e.g. BS 1129: Timber Ladders, BS 2037: Aluminium Ladders. All ladders must be securely tied, footed or held. All ladders shall be clearly marked with the contractor's name and a distinctive number. Ladders must be in good condition, free from defects, i.e. no broken rungs or split stiles and must not be painted.

Aluminium ladders may not be used in areas where there is process equipment containing acids or alkalis, or in locations close to live electrical conductors.

Ladders shall be inspected weekly. All ladders shall be clearly identified with the name of the owner and a tag indicating date of last inspection. Before use and during weekly inspection, ties or clips must be checked to ensure they are secure, particularly during periods of heavy use.

Ladders must be erected from a firm level base (unless they are a fixed part of a mobile tower). All ladders must be securely tied, footed or held to keep them from shifting, slipping, being knocked or blown over. Side stops/stays must be fitted where appropriate.

On scaffold structures, ladders must be of an adequate length and securely fixed to scaffold tubes on both stiles at the top and at the base, so they cannot move in any direction and placed in position within the confines of the scaffold. Ladders must be fixed using one of the following methods:

- Wire ties/rope must be passed around each stile and tube, tightened and securely tied
- Steel ladder clips.

Note: ladder clips must be of robust design which cannot become detached from the scaffolding even if they are not completely tight.

Ladders used for access must be long enough to protrude sufficiently above the place of landing to which they provide access, unless other measures have been taken to ensure a firm handhold. Long ladder runs of more than 3 metres vertical rise shall provide platform stages and/or fall protection.

Ladders must be at an angle of 1 metre out for every 4 metres vertical drop.

When not in use, ladders shall be pulled or barriered with a plank.

5.31 Fire Prevention and Protection

Fire precautions include, but are not limited to:

- training of personnel in correct application and use of firefighting equipment
- provision of the correct type of fire extinguisher (normally dry powder) colour coded in accordance with existing CE standards
- in high-risk fire areas, and to protect other workers, it may be necessary to sheet in the work area with flame retardant sheeting, provide additional firefighting means and nominate a fire watcher. This could be a member of the work squad
- Heavy-duty fire blankets will be required below and immediately around work areas during hot work, to protect scaffolding boards etc.
- more than one escape route shall be provided for hot works being executed from access scaffold where practicable
- Offices/cabins shall have at least one water type and one CO₂ fire extinguisher located at the access/exit door. Fire points will be established and clearly indicated within the cabins. No point within any office/cabin shall be more than 20 metres from a fire extinguisher.

Any engine driven plant brought onto site shall have one dedicated dry powder extinguisher mounted on or adjacent to it as dictated by risk assessment.

5.32 Hot Works & Welding

All hot work shall only be performed when the risks have been identified; control measures defined and permission to proceed sanctioned using the Hot Work permit.

Hot work includes but is not limited to burning, welding, grinding and heat treatment. Steel fabrication involving hot work shall be carried out, as far as is practicable, off site or in the contractors' compound. Where in-situ fabrication is unavoidable, the contractor shall provide and maintain fire-resistant screens to protect site personnel from the hazards of welding arc and grinding and to prevent travelling sparks from igniting or damaging other equipment.

An adequate number of suitable fire extinguishers shall be located within close proximity to hot work areas.

In areas of high fire risk, a trained fire watcher shall be positioned at the worksite or area where there is a potential risk of fire. They shall be provided with suitable communications to raise the alarm/stop the work.

All slag and sparks must be contained within the immediate work area and shall not be permitted to fall onto or affect other worksites or access ways.

Temporary fabrication shelters must be suitable for the task. Flame retardant material must be used.

Welding and burning of certain materials may give rise to hazardous fumes. Where fumes exist, then the Control of Substances Hazardous to Health (COSHH) procedure shall apply and suitable control measures should be implemented. In other more open areas, respiratory protective equipment shall be worn. Welding of galvanised fittings is to be avoided, but when required, respiratory protection must be worn, subject to risk assessment.

Suitable and sufficient signs are to be put in place in all hot work areas.

Welding sets shall be in good condition, properly maintained, and earthed. The contractor's supervisors shall undertake a daily cable management inspection.

Isolation switches on welding sets shall be readily accessible.

Terminals and live components shall be adequately protected.

Cables shall be frequently inspected to ensure they are in good condition and the insulation is intact.

Damaged cables or electrical holders shall be properly repaired or replaced.

The welding return cable shall be secured as near as possible, onto the work piece but shall not be connected to equipment or exposed re-bar.

Proper cable connectors shall be used when connecting runs of cables.

Strict cable management shall be enforced. Cables should be suspended off the ground by a minimum of 2 metres and must not obstruct access to equipment or escape routes. When ground runs are unavoidable and trip hazards are identified, cable covers, or ramps must be fitted.

Welders shall wear:

- Face and eye protection with correct grade of filter. This includes light eye protection under welding hood
- Welder's apron
- Welder's gauntlets
- Long-sleeved flame-retardant overalls
- Neck protection as applicable
- Safety helmets at all times, except while welding, when it is agreed as impractical by the use of a risk assessment, and written permission is granted by HZI, subject to mitigation of hazard, i.e. no work overhead, or shielded from falling objects.

Welding areas should be screened off using flame retardant blanket or other suitable material.

Electric arc welding equipment and accessories shall conform to EN 60974-1 or equivalent. All welding operations must be covered by a Hot Work Permit.

Special attention on welding activities when chromium steel is involved to avoid the inhalation of Hexavalent Chromium Cr(VI) is required.

5.33 Compressed Gas

Gas cylinders shall:

- Be in good condition and not suffering from corrosion
- Be properly colour coded i.e. black-oxygen, maroon-acetylene, red-LPG, blue-argon etc. in accordance with international standards
- Be individually identified
- Hoses shall be properly colour coded to the international standard for the gas being used
- Marked to identify to which contractor they belong
- Be fitted with hose connectors attached by permanent clips. Crimped hose fittings shall only be used. Jubilee clips are not accepted
- Be fitted with an effective flash back arrestor for all oxygen, acetylene and propane cylinders. Cylinders shall be stored:
 - In a secure, purpose built open mesh fenced compound to ensure adequate ventilation
 - With full and empty bottles clearly segregated
 - Oxygen and fuel gas cylinders shall be kept separate with a minimum separation distance of 5 meters
 - With a suitable fire extinguisher located permanently in the storage area
 - With 'No Smoking' and warning signs displayed prominently.

Hoses not in use should be coiled up and put in a safe place. Hoses should, whenever possible, be supported off the ground both during use and storage.

Transportation of cylinders shall be facilitated by competent personnel, using approved trolleys, carriers or cradles and secured. Manual handling shall be minimised. Safety caps must be fitted when being moved. Cylinders shall never be transported, stored or used in a horizontal position but must be secured in an upright position.

When in use:

- Valve guard must be installed on the cylinder (collar type)
- A bottle key shall be kept attached to the cylinders
- Equipment, including hoses, must not cause obstruction of roadways, walkways, manholes, ladders or other means of access where they can cause hazards or be damaged
- During meal breaks and at stopping times, hoses and equipment must be removed from confined spaces or excavations
- Cylinders shall be properly shut off immediately after use.

Where any operation involves the use of gas and oxygen equipment in enclosed or semi-enclosed spaces, supervisors must carry out frequent checks to ensure these requirements are complied with. Oxygen or gas cylinders must not be taken into confined spaces for use or storage.

Users shall check the equipment for perished, damaged hoses, regulators, and pressure gauges, etc. Defects must be reported by users to Supervisors. Suspected leaks may be confirmed by a soap solution. If the leak cannot be cured the equipment must be withdrawn.

5.34 Manual Handling

All operatives must understand their limitations and be aware of manual handling activities and associated risks as identified in RAMS.

Control is achieved by:

- Avoiding unnecessary handling – mechanical methods are to be used wherever possible
- Load sharing for heavy or awkward loads. Maximum individual load of no more than 25 kg for a manual lift or 15 kg for restricted access. Woman lower individual load shall be considered
- Supply of bagged materials in easily handled sizes
- Selection of workers on the basis of age, strength, skill and experience (training)
- Providing workers with information on the hazards and training in correct lifting techniques.

5.35 Noise and Vibration

All construction equipment shall be properly maintained and placed so as to minimise impact on receptors on or off site. When selecting construction methods, due consideration shall be given to minimising noise and vibration. Activities that may cause excessive noise or vibration shall be timed to cause the least disruption both on and off site. See the CEMP for more details of mitigations relating to environmental noise.

Regular noise and vibration assessments should be undertaken where appropriate and in compliance with local legislation and will inform the control measures required. These may include:

- Measuring noise exposure to workers
- Reducing noise at source wherever practicable e.g. utilisation of silencers or soundproof enclosures on construction equipment or provision of site hoardings or similar to provide acoustic screening
- Providing suitable hearing protection at the first action level (80 dB(A)), and introducing controls at the second action level (85dB(A))
- Informing workers of the noise levels they may be exposed to, how their hearing may be at risk and what they must do to protect it
- Designated hearing protection zones with appropriate signage.

The risk of injury from vibration, in particular hand arm vibration shall be identified by RAMS. Control shall be achieved by:

- Consideration of alternative methods of work
- Use of tools designed for low vibration
- Use of anti-vibration mountings
- Correct maintenance of tools
- Programmed work breaks/job rotation/ensuring operative is warm and circulation is adequate
- Provision of appropriate PPE and clothing
- Provision of information and training.

5.36 Radiography

Workers carrying out radiography on the site shall comply with safe systems of work. In particular, they shall ensure the following:

- Radiography work must be supervised by a Qualified Radiation Protection Supervisor. Such Supervisors must be nominated in writing and notified to HZI Site HSE Manager

- The Contractor must complete the HZI approved Radioactive Operations checklist prior to commencing work
- Radiography areas and radioactive source storage areas shall be clearly marked using barrier tapes, notices and flashing lights
- Audible warning (horns) must be sounded before a source is exposed
- Only classified workers may be engaged in radiography work. All other personnel must be clear of the area before radiography takes place
- Any incident which may have resulted in over-exposure of any personnel shall be brought to the attention of HZI for investigation
- A written emergency procedure shall be available to be followed in the event of loss of an isotope or damage or malfunction of associated equipment. This procedure must be submitted to the HZI for approval before commencement
- A calibrated and certified meter appropriate for the radioactive source in use is available on site at all times that the source remains on site
- Statutory notification is made to the relevant authorities as required
- Radiography shall be carried out only at the times agreed with HZI, and notification shall be received by the HZI Site HSE Manager in advance.

All Contractors who are not involved in radiography work must ensure that their personnel observe warning notices, alarms and barriers in use where such work is being carried out. This work will usually take place out of hours when there are limited personnel on site.

5.37 Exposure to UV Radiation – Sunlight

All operatives shall wear full body protection at all times while on site. Sunblock shall be supplied by Contractors when necessary to avoid sunburn to exposed skin.

5.38 Dust

Consideration shall be given to alternative methods of work to ensure dust production is minimised or eliminated. Tasks or processes which create dust must be controlled at source with the inclusion of dust suppression equipment or damping down where appropriate. Dust production should also be included in the assessment of fire or explosion and if necessary, work controlled using a hot work permit.

The site speed limit shall be observed by all vehicles to ensure dust production is minimised and, if required, the access road and any other sources of dust, shall be damped down during warm weather.

Stockpiles shall be screened, sheeted, enclosed and or sprayed as required, especially in dry and windy conditions.

All open bodied vehicles carrying dry loose aggregate, cement or soil into and out of the Site shall be sheeted or sealed so as to prevent the release of such material into the local environment.

No fires shall be allowed on site and plant shall be maintained to minimise emissions.

See Environmental Management and Mitigation Plan for more details of mitigations relating to dust.

5.39 Grit Blasting

Grit blasting uses compressed air to direct a high-velocity stream of an abrasive material to clean an object or surface, remove burrs, apply a texture, or prepare a surface for the application of paint or other types of coatings. Air pressure is typically high and nozzle velocities can approach hundreds of meters per second.

Workers who engage in abrasive blasting, as well as those working in the vicinity, are at an increased risk of exposure to toxic dusts, high noise levels, and a range of other safety and health hazards.

To help minimise HSE hazards associated with grit blasting, Contractors must:

- Substitute toxic or hazardous abrasive blasting materials with no toxic or hazardous alternatives
- Use hose-coupling safety locks and hose whip checks
- Inspect all hoses and connections frequently and replace any that are worn or damaged before worker use
- Equip the nozzle end of the blasting hose with a dead-man control device
- Provide workers with the appropriate PPE when blasting
- Use exhaust ventilation systems in containment structures to capture dust
- Clean and remove accumulated dust from tarps and other equipment on the worksite
- Prohibit eating, drinking or smoking in blasting areas
- Provide dedicated training to workers who engage in abrasive blasting.

5.40 Dedicated Environmental Control Systems to be Applied in the Relevant RAMS

5.40.1 Pressure Tests

As a general rule, hydrostatic testing will be the preferred mean of testing, when feasible.

Contractors shall prepare detailed pressure testing procedures and RAMS and submit them to HZI for approval.

Such procedures will include detailed P&IDs, dimensions and locations of all pressure testing equipment, valving, instrumentation, anchors, supports, expansion joints, launchers and receivers, supply and discharge lines, and all key components of the temporary piping systems associated with such test activities.

Safety barriers, fences, signage and exclusion zones must be implemented prior to testing, according with the calculated stored energy.

5.41 Lock Out Tag Out (LOTO)

Energy sources including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or others, in machines and equipment can be hazardous to workers if not properly controlled

During the servicing and maintenance of electrical panels, machines and equipment, the unexpected startup or release of stored energy can result in serious injury or death to workers.

HZI and Contractors shall establish a LOTO program consisting of:

- Energy control processes

- Employees training
- Periodic inspections.

to ensure that before any person performs servicing or maintenance on a system, machine or equipment where the unexpected energizing, start-up or release of stored energy could occur, such items shall be isolated from the energy source and rendered inoperative.

For further details, please refer to HZI Electrical and Mechanical Safety rules AA 424 25.

5.42 Commissioning

In the commissioning phase a number of new hazards will be introduced to the workplace specifically energised systems. The processes to control these hazards are the same RAMS, PTW and POWRA processes in place for construction.

Where the introduction of energised systems interfaces with an existing RAMS these documents will be amended to take account of the additional hazards and detailed mitigation measures developed and communicated to all those affected by these RAMS. Those affected will re-sign the RAMS document to ensure the additional hazards have been communicated and are controls are understood

A daily commissioning interface meeting will take place between HZI and Contractor teams to discuss proposed commissioning activities. The PTW to perform these commissioning activities will be subject to them being raised and agreed during this meeting.

Notification of handovers from construction to commissioning will be carried out using the MEC Certification System. Details of systems that have had MECs will be held by PTW issuers and Senior Authorised Persons (SAP) or the person responsible for the safety of the system.

All systems that have been subject to the MEC System will require permits under the Mechanical and Electrical Rules (AA426 13).

5.43 Working in Explosive Atmospheres

During the commissioning or operation phase there might be areas considered with explosive atmosphere. For all the working activities in the Ex- Zones safety measures must be followed as per AA426 14 procedure.

Hazardous areas shall be clearly indicated by use of appropriate warning signs (as required by national legislation). Signs shall be placed at the locations where the hazardous area is usually entered / accessed.

5.44 Night shift

Depending on project progress and schedule and on the planned activities, certain tasks might be planned during night shift. Accordingly, the following basic requirements shall be complied with:

- Sufficient number of tower lights and flood lights provided at the work location
- Sufficient lighting is provided for the pedestrian ways, emergency exits, etc.
- Assign trained flagman high visibility vest and with traffic baton/torch
- Heavy Equipment/Vehicle access route identify with barricade and blinker lights.
- Workers wearing reflective vest or coverall with reflective bond

- Clear safety glasses.
- Available proper access and platform. Scaffold platform inspected and green tagged
- Trained first aiders
- Adequate drinking water stations provided
- Rest shelter with proper lighting.

5.45 Incidents and Emergencies

5.45.1 HSE Incidents

All investigations and reporting of incidents/near misses will be as per Incident Reporting and Investigation Procedure (AA426 04). As well as the HZI internal notifications detailed in the procedure, the Client Project Manager will be notified verbally within 30 minutes of HZI becoming aware of an incident.

5.45.2 Emergency Arrangements

Contractors are expected to provide policies, procedures and competent persons to deal with foreseeable emergencies that may arise from their works e.g. adequate first aid arrangements, rescue plans, spills etc. These Contractor documents should reference and interface with the requirements of the site Emergency Preparedness and Response Plan (EPP) (50133106) which shall be developed and maintained by HZI Site Team or by Client.

Contractors Emergency procedures shall be approved by HZI and include as minimum:

- Muster areas and details for raising the alarm
- Internal and external emergency contacts
- Likely emergency scenarios
- Drill frequency.

5.45.3 First Aid

A minimum ratio of one first aider to twenty workers is required. First aid personnel shall be in place before the commencement of the works. Contractors shall ensure that sufficient fully trained first aid personnel are available at all work areas. First aid persons shall be identified by a badge on their helmet.

A first aid box suitable for the number of personnel employed shall be kept in each Contractor's cabin and the contents shall be regularly checked and replenished.

To identify medical requirements on site i.e. paramedic, HZI shall use the First Aid Procedure (AA426 06) and complete the Medical Needs Assessment Form (GP426 F23).

If a worker who does not speak English leaves site for medical treatment (whether an emergency or not) they will be accompanied by an English speaker from their employer's workforce who can assist the worker and report back to the contractor and HZI on the condition of the worker. This person must stay with the worker until such time as they are discharged from medical care or admitted to hospital at which time they must report this back to the Contractor and HZI.

5.45.4 Rescue and Recovery from Height or Confined Space

Contractors shall ensure that for all confined space work and working at height, effective emergency arrangements are in place for:

- Raising the alarm (communications from inside) and
- Carrying out rescue (rescue and resuscitation equipment, trained rescuers).

Contractors shall ensure that for all work at height a safe means of promptly rescuing a fallen worker or a worker suspended by fall arrest shall be available at all times.

HZI will monitor the suitability of contractor's rescue arrangements and arrange for regular meetings, and plan exercises.

5.45.5 Site Alarms

HZI and associated contractors will adhere to the site alarm procedures, specified in the site EPP.

5.45.6 Emergency Services

HZI and associated contractors will align with the HZI EPP.

The project will liaise with all major emergency service to ensure familiarity with the

site. 5.45.7 Measures against COVID-19

Since the spreading of the SARS CoV-2 coronavirus, HZI and its contractors shall be prepared for a possible outbreak on site. During the COVID-19 pandemic it is essential that the workforce is protected to minimise the risk of the infection spreading.

HZI has produced an action plan against COVID-19 based on government guidance in force at the time. This contains all the necessary site arrangements, control measures and actions for addressing virus spreading.

Contractors are required to undertake risk assessments providing information about the control measures that they will implement on site for protection against the virus for their own workers and other site workers.

6 Appendices

6.1 Appendix A: HZI Central HSE Documents

Doc Reference	Title	Applicability*	
		HZI only	HZI and Contractor
PM10	HSE Management System Manual	X	
	HZI Health and Safety Policy		X
	HZI Environmental Policy		X
	HZI HSE Principles		x
AA 426 01	Risk Assessment and Method Statement Creation Procedure		X
AA 426 02	Risk Assessment/Method Statement Evaluation	X	
AA 426 03	Permit to Work Procedure		X
AA 426 04	Incident Reporting and Investigation Procedure		X
AA 426 06	First Aid Provision	X	
AA 426 09	Drugs and Alcohol Procedure	X	
AA 426 19	Management of Plant & Equipment (Mobile and Handheld) Procedure		X
AA 426 20	Management of Enforcement Authority Visits	X	
AA 426 21	Management of Confined Space Working		X
AA 426 22	Management of Work at Height		X
AA 426 23	Management of Chemicals and Hazardous Substances		X
AA 426 24	Control of Noise at Work Procedure		X
AA 426 25	Management of Lifting Operations Procedure		X
AA 424 25	Mechanical and Electrical Rules		X
AA 426 28	Fire Safety	X	
AA 426 29	Management of Site Observation Reports (SOR)	X	
AA 426 30	Management of Temporary Works		X
AA 426 31	Management of Site Security	X	
AA 426 34	Incidents Lessons Learned	X	
AA 426 33	Management of Site Disciplinary	X	
AA 426 39	Barricades and Barriers Procedure		X
AA 426 40	Management of Construction Waste	X	
AA 426 41	Management of Excavation Works and Contaminated Land	X	
AA 426 42	Management of Water Pollution	X	
AA 426 44	Ecology Management	X	
AA 426 46	Consultation, Participation and Communication	X	
AA 426 49	Control of Openings		X

AA 426 50	Occupational Health		X
AA 426 51	Management of Mobile Elevated Work Platforms		X
AA 426 52	Safe Use of Crane Suspended Work Platforms		X
The following HSE forms shall be used on this project and are in addition to any forms referenced in the procedures above.			
GP 426 F22	Contractor Monthly HSE Report Form		X
GP 426 F01	Risk Assessment Form		X
GP 426 F02	Risk Assessment and Method Statement Evaluation Form	X	
GP 426 F25	HSE Training Matrix		X
GP 426 F26	HSE Induction Record		X
GP 426 F27	HSE Scored Inspections	X	
GP 426 F30	Monthly Environmental Inspection	X	
GP 426 F54	Senior Management HSE Tour	X	
GP 426 F55	6 Week Post Mobilisation Contractor HSE Inspection	X	
GP 426 F59	HSE Risk Matrix		X

* Denoted this to limit the amount of documentation that is given to Contractors.

6.2 Appendix B: Project Documents Referenced in this CPP

Doc Reference	Title
TBA	HZI Organisation Chart
TBA	CDM Hazards Log
50134216	Construction Environmental Management Plan
TBA	Site Waste Management Plan
TBA	Construction Traffic Management
TBA	COVID Action Plan
TBA	Delivery Information
TBA	Emergency Preparedness Plan