

Transnet National Ports Authority

an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

REQUEST FOR PROPOSAL (RFP)

FOR THE APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS) IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS

RFP NUMBER	: TNPA/2023/02/0002/22112/RFP
ISSUE DATE	: 08 March 2023
COMPULSORY BRIEFING	: 20 March 2023
CLOSING DATE	: 11 April 2023
CLOSING TIME	: 16h00
TENDER VALIDITY PERIOD	: 12 weeks from closing date

Contents

Number	Heading

The Tender

Part T1: Tendering Procedures

T1.1	Tender Notice and Invitation to Tender
T1.2	Tender Data

Part T2: Returnable Documents

T2.1	List of Returnable Document
T2.2	Returnable Schedules

The Contract

Part C1: Agreements and Contract Data

C1.1	Form of Offer and Acceptance
C1.2	Contract Data (Parts 1 & 2)

Part C2: Pricing Data

C2.1	Pricing Instructions
C2.2	Activity Schedule

Part C3: Scope of Work

C3.1	Works Information

Part C4: Site Information

C4.1	Site Information



Transnet National Ports Authority

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DESCRIPTION OF THE WORKS: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS) IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS

T1.1 TENDER NOTICE AND INVITATION TO TENDER

SECTION 1: NOTICE TO TENDERERS

1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

DESCRIPTION	APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS
TENDER ISSUE AND DOWNLOADING	TENDER ISSUE DATE: 08 MARCH 2023 This Tender may be downloaded directly from the National Treasury eTender Publication Portal at www.etenders.gov.za and the Transnet website at https://transnetetenders.azurewebsites.net (please use Google Chrome to access Transnet link) FREE OF CHARGE. To download RFP and Annexures: • Click on "Tender Opportunities"; • Select "Advertised Tenders"; • In the "Department" box, select Transnet SOC Ltd; Once the tender has been located in the list, click on the 'Tender documents' tab and process to download all uploaded documents
COMPULSORY TENDER CLARIFICATION MEETING	A Compulsory Tender Clarification Meeting will be conducted at Emendi Building, eLwandle Boardroom, Ground Floor, Port of Ngqura, Port Elizabeth on 20 March 2023 at 10:00am [10 O'clock] for a period of ± 2 (two) hours. [Tenderers to provide own transportation and accommodation]. The Compulsory Tender Clarification Meeting will start punctually and information will not be repeated for the benefit of Tenderers arriving late.



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	A Site visit/walk will take place, tenderers are to note: • Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will have to undergo breathalyser testing. • All forms of firearms are prohibited on Transnet properties and premises. • The relevant persons attending the meeting must ensure that their identity documents, passports or drivers licences are on them for inspection at the access control gates. Certificate of Attendance in the form set out in the Returnable Schedule T2.2-01 hereto must be completed and submitted with your Tender as proof of attendance is required for a compulsory site meeting and/or tender briefing. Tenderers are required to bring this Returnable Schedule T2.2-01 to the Compulsory Tender Clarification Meeting to be signed by the Employer's Representative. Tenderers failing to attend the compulsory tender briefing will be disqualified.
CLOSING DATE	11 April 2023 at 16:00 Tenderers must ensure that tenders are uploaded timeously onto the system. If a tender is late, it will not be accepted for consideration.

2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet eTenders management platform website (<https://transnetetenders.azurewebsites.net>);

- Click on "ADVERTISED TENDERS" to view advertised tenders;
- Click on "SIGN IN/REGISTER – for bidder to register their information (must fill in all mandatory information);
- Click on "SIGN IN/REGISTER" - to sign in if already registered;
- Toggle (click to switch) the "Log an Intent" button to submit a bid;
- Submit bid documents by uploading them into the system against each tender selected.



- **Tenderers are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Tenderer can upload 30mb per upload and multiple uploads are permitted.**
- b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.
- c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

3. CONFIDENTIALITY

All information related to this RFP is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

4. DISCLAIMERS

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable;

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- 4.4. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5. Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.6. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.8. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.9. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.
- 4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof.
- 4.11. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended. Tenderers are required to indicate in tender returnable [clause 12 on T2.2-20], [**Breach of Law**] whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.
- 4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:
- unduly high or unduly low tendered rates or amounts in the tender offer;
 - contract data of contract provided by the tenderer; or
 - the contents of the tender returnables which are to be included in the contract.

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5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at <https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number..... and Unique registration reference number
..... (Tender Data)

**Transnet urges its clients, suppliers and the general public
to report any fraud or corruption to
TIP-OFFS ANONYMOUS: 0800 003 056 OR Transnet@tip-offs.com**

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts. The Standard for Uniformity in Construction Procurement was first published in Board Notice 62 of 2004 in Government Gazette No 26427 of 9 June 2004. It was subsequently amended in Board Notice 67 of 2005 in Government Gazette No 28127 of 14 October 2005, Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006, Board Notice No 9 of 2008 in Government Gazette No 31823 of 30 January 2009, Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010, Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015 and Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

This edition incorporates the amendments made in Board Notice 423 of 2019 in Government Gazette 42622 of 8 August 2019. (see www.cidb.org.za).

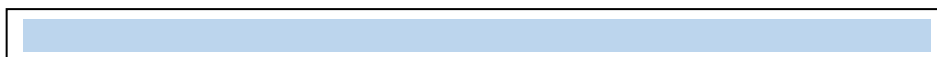
The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data
C.1.1 The Employer is	Transnet SOC Ltd (Reg No. 1990/000900/30)
C.1.2 The tender documents issued by the Employer comprise:	
Part T: The Tender	
Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data
Part T2 : Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules
Part C: The contract	
Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2) C1.3 Form of Securities
Part C2: Pricing data	C2.1 Pricing instructions C2.2 Activity Schedule

	Part C3: Scope of work	C3.1 Works Information
	Part C4: Site information	C4.1 Site information
C.1.4	The Employer's agent is:	Procurement Officer
	Name:	Bhatisani
	Address:	eMendi Building Port of Ngqurha Port Elizabeth 6001
	Tel No.	063 251 8721
	E – mail	Bhatisani.Widzani@transnet.net

- C.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:



1. Stage One - Eligibility with regards to attendance at the compulsory clarification meeting:

An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7

2. Stage Two - Eligibility in terms of the Construction Industry Development Board:

- a) Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, designation of **4 GB or higher** class of construction work, are eligible to have their tenders evaluated.

b) Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation of not lower than one level below the required class of construction works under consideration and possesses the required recognition status; and
3. the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a or higher class of construction work or a value determined

in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry
Development Regulations
The tenderer shall provide a certified copy of its signed joint venture agreement

Any tenderer that fails to meet the stipulated eligibility criteria will be regarded as an unacceptable tender.

3. Stage Four - Functionality:

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is 60 points.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion are as stated in C.3.11.3 below.

Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.

C.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register.

Tenderers are also **required to bring their RFP document to the briefing session and have their returnable document T2.2-01 certificate of attendance** signed off by the Employer's authorised representative.

C.2.12 No alternative tender offers will be considered.

C.2.13.3 Each tender offer shall be in the **English Language.**

C.2.13.5 The Employer's details and identification details that are to be shown on each tender
C2.15.1 offer are as follows:

Identification details:

The tender documents must be uploaded with:

- Name of Tenderer:
- Contact person and details:
- The Tender Number:
TNPA/2023/02/0002/22112/RFP
- The Tender Description
- APPOINTMENT OF THE CONTRACTOR FOR
ENGINEERING DESIGN AND CONSTRUCTION

SERVICES FOR THE PORT OF NGQURA, EMENDI
BUILDING FLOOR EXTENTIONS (ATRIUMS)

Documents must be marked for the attention of:

Employer's Agent:

C.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

C.2.15 The closing time for submission of tender offers is:

Time: **16:00** on the **11 April 2023**

Location: The Transnet e-Tender Submission Portal:

(<https://transnetetenders.azurewebsites.net>);

NO LATE TENDERS WILL BE ACCEPTED

C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

C.2.23 The tenderer is required to submit with his tender:

1. A valid Tax Clearance Certificate issued by the South African Revenue Services.

Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status.

2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership in case of all EMEs and QSEs with 51% black ownership or more together with the tender;

3. A valid CIDB certificate in the correct designated grading;

4. Proof of registration on the Central Supplier Database;

5. Letter of Good Standing with the Workmen's compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

Note: Refer to Section T2.1 for List of Returnable Documents

C3.11 The minimum number of evaluation points for functionality is: **60**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

Only those tenderers who attain the minimum number of evaluation points for Functionality will be eligible for further evaluation, failure to meet the

minimum threshold will result in the tender being disqualified and removed from any further consideration.

Functionality Criteria

The functionality criteria and maximum score in respect of each of the criteria are as follows:

Functionality criteria	Sub-criteria	Sub-criteria points	Maximum number of points
T2.2-03 Programme	Programme The Tenderer must provide a programme which provides the detail that would indicate the order and timing of activities to carry out the services in terms of the Employer's requirements and within the stipulated timeframes. The tenderer shall produce a level 4 schedule according to the Employer's objectives. Tenderers should propose the main activities for the implementation of the project indicating/describing their contents, durations, major resources utilised (personnel, plant & equipment) and critical path milestones demonstrating that the project can be delivered within a period of 8 months. The tenderer shall demonstrate the following: 1.Ability to Provide the Services 2.Provision of Dates 3.Resourcing & Equipment 4.Progress Measurements & Tracking Sheets	12 5 2 3 2	12

T2.2-04 Management & CVs of Key Persons	Project Manager/Lead	3	25
	Architect (Pr.Arch or Pr. Arch Tech)	3	
	Construction Manager (Pr. CM registered with SACPCMP)	3	
	Structural Engineer (Pr. Eng or Pr Tech Eng)	3	
	Mechanical Engineer (Pr. Eng or Pr. Eng Tech)	3	
	Mechanical Engineer (HVAC)	3	
	Electrical Engineer (Pr. Eng or Pr. Eng Tech)	2	
	Installation Electrician (wireman's licence)	2	
	Safety, Health & Environmental Officer	2	
T2.2-5Quality Management	Quality Management Quality Management Tenderer has indicated all of the following: Project Quality Plan for the contract SHALL cover project scope and be aligned to ISO 9001:2015 QMS requirements. Quality Manual that is aligned to ISO 9001:2015 QMS requirement. - Project Specific Quality Data Book Index Quality Officer with ISO 9001:2015 Quality Understanding and Implementation Certificate (short course) with a minimum of 3 years' experience in similar projects.	5	5

	5. Quality Control Plan MUST cover all Engineering disciplines and clearly identify all inspection, test, verification requirements to meet contractual obligations, specification and drawings as required by the project scope.		
T2.2-6 Environmental Management	Environmental Management The Tenderer must review the following documents for context to meet the environmental requirements, namely: a) Construction Environmental Management Programme (CEMP) (1124367X-02-RPT-0004 –Annexure D) which comprises of the following as a minimum: - Minimum Standard Environmental Specifications for Construction Environmental Management - Project Environmental Specifications specifically for projects in the Port of Ncqura Where applicable, the following may also apply: - Any other operational/maintenance environmental plans or specifications 1.The tenderer must provide a Project specific Environmental Management Plan which describes relevant roles and responsibilities, and how potential environmental impacts will be identified and managed including the monitoring and recording thereof. 2. The tenderer must provide an environmental policy signed by Top Management which, as a minimum:	2 3	8

	- Is appropriate given the purpose and context of the tenderer's business; - Includes a commitment to fulfil the tenderer's environmental compliance (legal) obligations; - Includes a commitment to the protection of the environment, including prevention of pollution; - Provides framework for setting environmental objectives; and - Includes a commitment to continual improvement of their EMS; 3. The tenderer must provide an Organisational Chart depicting key environmental staff and the chart must be accompanied by CV's showing staff competencies, experience and qualifications relevant to project environmental management functions. 4. The tenderer must provide a list of projects where environmental duties of a similar nature have been executed including a brief description of such duties together with client reference contact details. 5. The tenderer is to sign the declaration of understanding (refer to T2.2-38) acknowledging understanding thereof and the budget provision for the implementation of environmental management requirements	1	
		1	
		1	

T2.2-7 Health and Safety Requirements	Compliance to Health and Safety Submit the following documents as a minimum with your tender: 1. The Tenderer must provide their Contract specific health and safety plan addressing the requirements of Transnet health and safety specification and include the following documents: • Health and Safety Company Policy signed by the accounting officer. List the five elements - 1. Commitment to Safety, prevention of pollution, 2. Continual improvement, 3. Compliance to legal requirements, appropriate to the nature of contractor's activities, 4. Hold management accountable for development of the safety system 5. Include objectives and targets. 2. Roles and responsibilities of legal appointees a) In terms of OHSA 85 of 1993 and its Regulations. I. S16.1 CEO, II. S16.2 Assistant to CEO, III. CR8.7 Construction Supervisor, IV. CR9.1 Risk Assessor V. GSR First Aider	1 2	10

	b) In terms of Project and Construction Management Professional Act 48 of 2000 I. CR8(1) Construction Manager's CV and proof of registration. c) In terms of Construction Regulations, 2014 I. CR8(5) Health and Safety Officer's CV and proof of SACPCMP registration.		
	3 List of key responsible persons (job categories) for project and health and safety competencies required per category	1	
	4 Overview of the tenderer's Risk Assessment methodology, and submission of risk assessments indicating major activities of the project	2	
	5 Two years synopsis of Health and Safety incidents, description, type and action taken to prevent re-occurrence	1	
	6 Submission of completed health and safety cost breakdown sheet	1	
	7 Complete and return with tender documentation the Contractor Health and Safety Questionnaire with supporting documentation included as an Annexure.	2	



T2.2-08 Previous Experience	Tenderer must show evidence of previously completed similar projects undertaken in the Past 5 Years. All tenderers to submit detail portfolio of projects detailing: • The value of project in rand value • Key areas of specialty in the following services: ○ Site Supervision ○ Construction (new builds or alteration works) ○ Bulk services (Heating Ventilation and Airconditioning, fire fighting system, lighting) ○ Testing and commissioning of building accessories • Hand-over and Close-out Tenders to submit detail portfolio of projects demonstrating competency in the Key area of specialty as mentioned in the scope of service for: • Design (Structural, Mechanical, Electrical and Plumbing (MEP) and Building Services) This will be assessed as several services counted as per the key area/s mentioned. 1. Architectural layout (Office Alteration and Interior Finishes). 2. MEP Design 3. Coordination of MEP installations with space layout. 4. Building Management System and Instrumentation Structural alterations/additions to existing structures	5 10	20

	Written References to be submitted from clients (or Clients' Representative/s) of previously completed projects including Client name and contact details, detailed project description, duration and contract value)	5	

T2.2-9 Approach Paper/Method Statement	The method statement must respond to the scope of work (the Works Information) and outline the proposed methodology including that relating to the Programme, quality, health and safety and environmental considerations. The method statement should articulate what value add the tenderer will provide in achieving the stated objectives for the project. The tenderer must as such explain his / her understanding of the objectives of the assignment and the Employer's stated and implied requirements, highlight the issues of importance, and explain the technical approach they would adopt to address them. The method statement should also correlate with the tenderer's quality plan outlining the processes, procedures, and associated resources, applied by whom and when, to meet the requirements and indicate how risks will be managed and what contribution can be made regarding value management. Method of construction and commissioning Process: Tender should narratively demonstrate the approach to site establish, pre-construction activities and meetings, interfaces with other	6 4 4 6	20

	discipline including the client, construction logistics, commissioning procedures and handover.		
Maximum possible score for Functionality			100

Functionality shall be scored independently by not less than 3 (three) evaluators and averaged in accordance with the following schedules:

- T2.2-3 Programme
- T2.2-4 Project Organogram, Management & CVs of Key Persons
- T2.2-5 Quality Management
- T2.2-6 Environmental Management
- T2.2-7 Health and Safety Requirements
- T2.2-8 Previous Experience
- T2.2-9 Approach Paper or Method Statement

Each evaluation criteria will be assessed in terms of scores of 0, 20, 40, 60, 80 or 100 (linear scale, more suitable for NEC3, ECC (construction related procurement)) or 0, 40, 70, 90 or 100 (logarithmic scale, more suitable for NEC3, PSC or Supply Contract). Compilers, please delete sentences in RED as and when the Procurement/CFST decides on the relevant scale.

The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

Note: Any tender not complying with the above mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.

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- C.3.11. Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 80/20 preference points systems as described in Preferential Procurement Regulations.

80 where the financial value of one or more responsive tenders received have a value equal to or below R50 million, inclusive of all applicable taxes,

Up to 100 minus W_1 tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed.

Should the BBBEE rating not be provided, tenderers with no verification will score zero points for preferencing.

Note: Transnet reserves the right to carry out an independent audit of the tenderers scorecard components at any stage from the date of close of the tenders until completion of the contract.

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- C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
2. the tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. the tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.
4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are **objective criteria** which will justify the award of the tender to another tenderer. Objective criteria include but are not limited to the outcome of a due diligence exercise to be conducted. The due diligence exercise may take the following factors into account inter alia;

the tenderer:
 - a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
 - b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional

and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,

c) has the legal capacity to enter into the contract,

d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,

e) complies with the legal requirements, if any, stated in the tender data and

f) is able, in the option of the employer to perform the contract free of conflicts of interest.

C.3.17 The number of paper copies of the signed contract to be provided by the Employer is 1 (one).



T2.1 List of Returnable Documents

2.1.1 These schedules are required for pre-qualification and eligibility purposes:

T2.2-01 **Stage One as per CIDB: Eligibility Criteria Schedule** - Certificate of attendance at Compulsory Tender Clarification Meeting

T2.2-02 **Stage Three as per CIDB: Eligibility Criteria Schedule** - CIDB Registration

2.1.2 Stage Five as per CIDB: these schedules will be utilised for evaluation purposes:

T2.2-03 **Evaluation Schedule:** Programme

T2.2-04 **Evaluation Schedule:** Project Organogram, Management & CV's

T2.2-05 **Evaluation Schedule:** Quality Management

T2.2-06 **Evaluation Schedule:** Environmental Management

T2.2-07 **Evaluation Schedule:** Health and Safety Management

T2.2-08 **Evaluation Schedule:** Previous experience

T2.2-09 **Evaluation Schedule:** Method Statement

2.1.3 Returnable Schedules:

General:

T2.2-10 Authority to submit tender

T2.2-11 Record of addenda to tender documents

T2.2-12 Letter of Good Standing

T2.2-13 Risk Elements

T2.2-14 Availability of equipment and other resources

T2.2-15 Schedule of proposed Subcontractors (if subcontract in terms of PPPFA is not eligibility)

T2.2-16 Site Establishment requirements

Agreement and Commitment by Tenderer:

T2.2-17: CIDB SFU ANNEX G Compulsory Enterprise Questionnaire

T2.2-18 Non-Disclosure Agreement

T2.2-19 RFP Declaration Form

T2.2-20 RFP – Breach of Law

T2.2-21 Certificate of Acquaintance with Tender Document

T2.2-22 Service Provider Integrity Pact

T2.2-23 Supplier Code of Conduct

T2.2-24 POPIA



1.3.2 Bonds/Guarantees/Financial/Insurance:

- T2.2-25 Insurance provided by the Contractor
- T2.2-26 Form of Intent to provide a Performance Guarantee
- T2.2-27 Three (3) years audited financial statements
- T2.2-28 Supplier Declaration Form

2.2 C1.1 Offer portion of Form of Offer & Acceptance**2.3 C1.2 Contract Data****2.4 C1.3 Forms of Securities****2.5 C2.1 Pricing Instructions (Activity Schedule)****2.6 C2.2 Activity Schedule****C3 Works Information****Employer's Works Information****Annexure 1- Employer's Drawings****Annexure 2- Health Safety****Annexure 3- Transnet Quality Standard****Annexure 4- Mechanical Drawings**

T2.2-01: Eligibility Criteria Schedule:

Certificate of Attendance at Tender Clarification Meeting

This is to certify that

(Company Name)

Represented
by:

(Name and
Surname)

Was represented at the compulsory tender clarification meeting

Held at:		
On (date)		Starting time:

Particulars of person(s) attending the meeting:

Name

Signature

Capacity

Attendance of the above company at the meeting was confirmed:

Name

Signature

**For and on Behalf of the
Employers Agent.**

Date

T2.2-02: Eligibility Criteria Schedule - CIDB Grading Designation

Note to tenderers:

Tenderers are to indicate their CIDB Grading by filling in the table below. **Attach a copy of the CIDB Grading Designation or evidence of being capable of being so registered.**

CRS Number	Status	Grading	Expiry Date

- Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **4 GB** class of construction work, are eligible to have their tenders evaluated.

2. Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

- every member of the joint venture is registered with the CIDB;
- the lead partner has a contractor grading designation of not lower than one level one level below the required grading designation in the class of construction works under consideration and possesses the required recognition status; and
- the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **4 GB** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
- the Contractor shall provide the employer with a certified copy of its signed joint venture agreement;
- and in the event that the joint venture is an 'Incorporated Joint Venture' the Memorandum of Incorporation to be provided within 4 (four) weeks of the Contract Date.

T2.2-3: Evaluation Schedule: Programme

Functionality Criteria (12 Points)

Note to Tenderers:

The Tenderer details the proposed programme below or makes reference to his proposed programme and attaches it to this schedule. If the Tenderer is awarded the contract this document will become the Accepted Programme, subject to Clarifications issued by the Employer.

For clarity the tenderer shall also note the following:-

- Submission of the program using MS Project or Primavera P6 or PDF
- Key milestones and sectional completion dates as listed in contract data Part One - "Data provided by the Employer" and be logically linked to activities in the schedule.
- To be "sorted" by activity.
- All activities to be logically tied using critical path method (CPM).
- All activity durations to be realistic and based on quantities and activities that can be measured in days/weeks. The calendar on the schedule should represent the actual work week/month used. e.g. Weekends and pay weekends as non-working periods.
- A Level 4 Programme is developed electronically and an electronic copy to be supplied with the Tender document. This should be in a MS Project or Primavera P6 format.
- Against each activity or grouping of activities (i.e. by CWP) the Tenderer indicates its "time risk allowances". These allowances are NOT float, are owned by the Tenderer, can be included in the activity duration and illustrated in the schedule (i.e. in a code field) or as an attachment.
- The programme conforms to the requirements of our technical evaluation requirements under programme.

The table below is for information purposes only to indicate the method of scoring that will be followed to evaluate the programme submitted by the Tenderer:

Scoring will be as follows:

	Programme (12)
Score 0	Submitted no information or inadequate information to determine scoring.
Score 20	The schedule is extremely poor, the plan fails to capture important areas and demonstrates no proper understanding of the scope. The schedule is inconsistent with the timing of the most important project deliverables. There is insufficient breakdown of tasks/activities.
Score 40	The schedule is vague. The plan does not show depth in terms of scope and its deliverables including breakdown of tasks and activities. Further, the schedule is inconsistent with the timing of the most important project deliverables and required time frames.
Score 60	The schedule is complete and detailed, representing all activities involved, and complies with Level 4 requirements. The technical level and composition of the schedule is adequate and is consistent with both the project timing and the required deliverables. The proposed resource levels are consistent and meets the project timeframe requirements.
Score 80	In addition to meeting the "60 score" rating, the schedule is well detailed, clearly indicating and defining deliverables. Major milestones are represented in the schedule. The programme is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may occur during execution. The project duration meets the time requirements.
Score 100	In addition to meeting the "80 score" rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge of state-of-the-art approaches. The programme details ways to improve the project outcomes and the quality of the outputs.

The undersigned, who warrants that he I she is duly authorised to do so on behalf of the Tenderer, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

Name

Position

Tenderer

T2.2-04: Evaluation Schedule: Management and CV's

Functionality Criteria (25 points)

Note to Tenderers:

The tenderer must be able to demonstrate that the project personnel have sufficient knowledge, experience, and qualifications to provide the required service.

Submit the following documents as a minimum with your tender document:

1. Project organizational structure to include a clear indication of roles and responsibilities and specific function of each team member.
2. The experience of assigned key persons in relation to the scope of work will be evaluated from two different points of view, namely:
 - a. Relevant experience.
 - b. The education, training, and skills. (Proof of education and training must be attached.
Proof of all registrations must be attached.)
 - c. Key personnel should include at least, amongst others but not limited to:
 - Project Manager/Lead (Pr. CPM/PMP)
 - Architect (Pr. Arch or Pr. Arch. Tech)
 - Construction Manager (Pr. CM)
 - Structural Engineer (Pr. Eng. or Pr. Eng. Tech)
 - Mechanical Engineer (Pr. Eng. or Pr. Eng. Tech) Fire Specialist (registered with ASIB)
 - Mechanical Engineer (Pr. Eng. or Pr. Eng. Tech) HVAC Specialist (registered with SARACCA)
 - Electrical Engineer (Pr. Eng. or Pr. Eng. Tech)
 - Installation Electrician (trade test or wireman's licence, registered with Department of Labour)
 - SHE Officer (registered with SACPCMP and SACNSP)

No.	Key Persons	Name and Surname	CV attached (Yes/No)	Registered (Yes/No)
1.	Project Manager/Lead			
2.	Architect			
3.	Construction Manager			
4.	Structural Engineer			
5.	Mechanical Engineer (Fire)			
6.	Mechanical Engineer (HVAC)			

7.	Electrical Engineer			
8.	Installation Electrician			
9.	SHE Officer			

Note: Conditions to be met prior scoring

- 1. CV's and profiles should show experience, background, and track record in similar types of projects.**
- 2. Submissions will not be scored if proof of employment with Contractor is not provided (i.e. Letter of appointment, letter of intent, payslip, employment contract).**

The table below will be used as guidelines for scoring / evaluating the management and CV's of key persons submitted by the Tenderer:

	Project Manager/Lead	Architect	Construction Manager	Structural Engineer	Mechanical Engineer (Fire)	Mechanical Engineer (HVAC)	Electrical Engineer	Installation Electrician	Safety, Health & Environmental Officer
Points (25)	3	3	3	4	3	3	2	2	2
	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience employ of the bidder to be included with CV. Bidder submitted valid qualification NQF 7 certificates in Civil and/or Building Services from a recognised Higher learning institute with minimum 5 years' experience in similar projects post professional registration Pr.CPM or PMP with SACPCMP or PMI.	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, employ of the bidder to proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with; CV of Pr. Arch or Pr. Arch. Tech with SACAP registration with 6 to 7 years in similar projects.	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV. Bidder submit a valid qualification NQF 7 certificates from a recognised Higher learning institute with at least 4 years' experience post professional registration (Pr. CM with SACPCMP) in similar projects	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, employ of the bidder to proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with; CV to be included with Structural Engineer Pr. Eng or Pr. Tech ECSA registration with 6 to 7 years in similar projects.	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV. Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with ASIB, with 6 to 7 years working experience in similar projects.	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV. Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with Sarraca, with 6 to 7 years in similar projects.	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV. Electrical Engineer Pr. Eng or Pr Tech ECSA registration with 6 to 7 years in similar projects.	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV. Registered installation Electrician with Wireman's Licence and with at least 3 years' experience	Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder proof submitted in the form of payslip or appointment letter or employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV. Bidder submit a valid qualification NQF 7 certificates from a recognised Higher learning institute with 3 to 4 years' experience post professional

									registration (with SACPCMP and SACNSP) in similar projects
Score 0	No NQF certificate in Civil and/or Building Services from a recognized Higher Learning Institute with less than 5 years experience as a Project Manager on similar projects/no response submitted	No proof of registration as Pr. Arch or Pr. Arch.Tech (SACAP registration) submitted	No NQF certificate from a recognized Higher Learning Institute with less than or equal to 1 year experience as a Construction Manager (Pr. CM with SACPCMP) on similar projects /no response submitted	No proof of registration as Structural Pr. Eng /Pr.Eng Tech. submitted	No proof of registration as Mechanical Pr. Eng. /Pr.Eng Tech. submitted	No proof of registration as Mechanical Pr. Eng. /Pr.Eng Tech. submitted	No proof of registration as Pr. Eng Electrical/Pr.Eng Tech submitted	No proof of wireman licence submitted	No NQF certificate from a recognized Higher Learning Institute with less than or equal to 1 year experience as a SHE Officer (registered with SACPCMP and SACNSP) working on similar projects /no response submitted
Score 20	No NQF certificate in Civil and/or Building Services from a recognized Higher Learning Institute with 5 years or more experience as a Project Manager on similar projects.	Pr. Arch or Pr. Arch.Tech (SACAP registration) with less than or equal to 3 years' experience in relevant similar projects	No NQF certificate from a recognized Higher Learning Institute with 2 to 3 years experience as a Construction Manager (Pr. CM with SACPCMP) on similar projects	Pr.Eng Structural /Pr.Eng Tech with less than or equal to 3 years' experience in relevant similar projects	Pr.Eng Mechanical/Pr.Eng Tech. ECSA registered, no registration with ASIB and has less than or equal to 3 years experience in relevant similar projects	Pr.Eng Mechanical/Pr.Eng Tech with less than or equal to 3 years experience in relevant similar projects	Pr.Eng Electrical/Pr.Eng Tech with less than or equal to 3 years experience in relevant similar projects	Registered with department of labour, Electrician with less than or equal to 1 year experience in relevant similar projects	No NQF certificate from a recognized Higher Learning Institute with 1 to 2 years experience as a SHE Officer (registered with SACPCMP and SACNSP) working on similar projects
Score 40	NQF 5 certificate in Civil and/or Building Services from a recognized Higher Learning Institute with 5 years or more experience as a Project Manager on similar projects.	Pr. Arch or Pr. Arch. Tech with 4 to 5 years' experience in relevant similar projects	NQF 5 certificate from a recognized Higher Learning Institute with 3 years or more experience as a Construction Manager (Pr. CM with SACPCMP) on similar projects	Pr.Eng Structural / Pr.Eng Tech with 4 to 5 years' experience in relevant similar projects	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered, no registration with ASIB and has 4 to 5 years' experience in relevant similar projects	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered, no registration with Sarraca and has 4 to 5 years' experience in relevant similar projects	Pr.Eng Electrical Pr.Eng Tech with 4 to 5 years' experience in relevant similar projects	Registered with department of labour, Electrician with 1 to 2 years' experience in relevant similar projects	NQF 5 certificate from a recognized Higher Learning Institute with 2 to 3 years experience as a SHE Officer (registered with

									SACPCMP and SACNSP) working on similar projects
Score 60	NQF 7 certificate in Civil and/or Building Services from a recognized Higher Learning Institute with 5 to 7 years or more experience in similar projects post professional registration Pr.CPM or PMP with SACPCMP or PMI.	Pr. Arch or Pr. Arch. Tech with 6 to 7 years' experience in relevant similar projects	NQF 7 certificate from a recognized Higher Learning Institute with 4 years or more experience as a Construction Manager (Pr. CM with SACPCMP) on similar projects	Pr.Eng Structural /Pr.Eng Techwith 6 to 7 years' experience in relevant similar projects	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with ASIB, with 6 to 7 years working experience in similar projects	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with Sarraca, with 6 to 7 years working experience in similar projects	Pr.Eng Electrical/Pr.Eng Tech with 6 to 7 years' experience in relevant similar projects	Registered with department of labour, Electrician with 3 years' experience in relevant similar projects	NQF 7 certificate from a recognized Higher Learning Institute with 3 to 4 years experience as a SHE Officer (registered with SACPCMP and SACNSP) working on similar projects
Score 80	NQF 7 certificate in Civil and/or Building Services from a recognized Higher Learning Institute with 8 to 9 years or more experience in similar projects post professional registration Pr.CPM or PMP with SACPCMP or PMI.	Pr. Arch or Pr. Arch.Tech with 8 to 9 years' experience in relevant similar projects	NQF 7 certificate from a recognized Higher Learning Institute with 5 to 6 years experience as a Construction Manager (Pr. CM with SACPCMP) on similar projects	Pr.Eng Structural / Pr.Eng Tech with 8 to 9 years' experience in relevant similar projects	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with ASIB, with 8 to 9 years working experience in similar projects	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with Sarraca, with 8 to 9 years working experience in similar projects	Pr.Eng Electrical/Pr.Eng Tech with 8 to 9 years' experience in relevant similar projects	Registered with department of labour, Electrician with 4 years' experience in relevant similar projects	NQF 7 certificate from a recognized Higher Learning Institute with 4 to 5 years experience as a SHE Officer (registered with SACPCMP and SACNSP) working on similar projects
Score 100	NQF 7 certificate in Civil and/or Building Services from a recognized Higher Learning Institute with equal or greater than 10 years experience in similar projects post professional registration Pr.CPM or	Pr. Arch or Pr. Arch.Tech with equal or greater than 10 years' experience in relevant similar projects	NQF 7 certificate from a recognized Higher Learning Institute with equal or greater than 7 years experience as a Construction Manager (Pr. CM with SACPCMP) on similar projects	Pr.Eng Structural / Pr.Eng Tech with equal or greater than 10 years' experience in relevant similar projects	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with ASIB, with equal or greater than 10 years working experience in similar projects.	Mechanical Engineer Pr. Eng./s or Pr. Tech. ECSA registered and has registration with Sarraca, with equal or greater than 10 years working experience in similar projects	Pr.Eng Electrical/Pr.Eng Tech with equal or greater than 10 years experience in relevant similar projects	Registered with department of labour, Electrician with equal or greater than 5 years experience in relevant similar projects	NQF 7 certificate from a recognized Higher Learning Institute with equal or greater than 6 years experience as a SHE Officer (registered with

	PMP with SACPCMP or PMI.								SACPCMP and SACNSP) working on similar projects

Note: CV’s and profiles should show experience, background and track record in similar types of projects

The following table is to be populated by the tenderer identifying the resources for the key roles for the works.

Key Person Role	Name of Resource
Contracts Manager	
Construction Manager	
HVAC Specialist	
Fire Specialist	
Electrical Engineer	
Installation Electrician	
Planner	
Quality Officer	
SHE Practitioner	
Document Controller	

Attached submissions to this schedule:

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The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed	Date
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Name	Position
.....	
Tenderer	
.....	

TRANSNET NATIONAL PORTS AUTHORITY

ENQUIRY NUMBER: TNPA/2023/02/0002/22112/RFP

DESCRIPTION OF SERVICES: APPOINTMENT OF A CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)



T2.2-05: Evaluation Schedule: Quality Management

Functionality Criteria (5 points)

Due consideration must be given to the deliverables required to execute and complete the contract as per the Quality Management Standard QAL-STD-0001 - General Quality Requirements for Contractors and Suppliers and ISO 9001:2015 QMS requirements and should include but not be limited to:

1. Project Quality Plan for the contract SHALL cover project scope and be aligned to QAL-STD-0001 General Quality Requirements for Contractors and Suppliers.
2. Quality Manual that is aligned to ISO 9001:2015 QMS requirements.
3. Project Specific Quality Data Book Index
4. Quality Officer with ISO 9001:2015 (Quality Understanding and Implementation Certificate) with a minimum of 3 years' experience in similar projects.
5. Quality Control Plan MUST cover all Engineering disciplines and clearly identify all inspection, test, verification requirements to meet contractual obligations, specification and drawings as required by the project scope.

The scoring will be as follows:

Point (5)	Project Specific Quality Plan for the contract (1)	Quality Manual aligned to ISO 9001:2015 (1)	Quality Data Book Index (1)	CV of Quality Officer with ISO 9001:2015 Implementation Course (1)	Quality Control Plan (QCP's) (1)
Score 0	No PQP submitted.	No Quality manual.	No Quality Data book index submitted	No CVs submitted	No QCPs submitted.
Score 20	PQP is too general with not project specifics	Quality Manual is not ISO 9001:2015 aligned	Quality Data book index is not project specific	CV with neither quality qualifications nor quality experience	QCPs are not project specific
Score 40	PQP is project specific but inadequate to	Quality Manual covers few ISO 9001:2015 requirements.	Quality Data book index is project specific but inadequate	CV with less than 3 years quality experience with	QCPs are project specific but inadequate

	cover project scope		to cover project scope	no quality qualifications	to cover project scope
Score 60	PQP shows adequate understanding of project quality requirements	Quality Manual meets adequate ISO 9001:2015 requirements	Data book index shows adequate understanding of project quality requirements	CV with 3-5 years quality experience with quality qualifications	QCPs shows adequate understanding of project quality requirements
Score 80	PQP shows above average understanding of the project quality requirements	Quality Manual meets almost all ISO 9001:2015 requirements	Data book index shows above average understanding of the project quality requirements	CV with 6-10 years quality experience with quality qualifications	QCPs shows above average understanding of the project quality requirements
Score 100	PQP covers all and above the project quality requirements of the project scope	Quality Manual meets all ISO 9001:2015 requirements.	The Data book index covers all and above the project quality requirements of the project scope	CV with more than 10 years quality experience with quality qualifications	QCPs covers all and above the project quality requirements of the project scope

Attached submissions to this schedule:

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The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed	Date
Name	Position
Tenderer	

T2.2-06: Evaluation Schedule: Environmental Management

Functionality Criteria (8 points)

Note to Tenderers:

The Tenderer must review the following documents for context to meet the environmental requirements, namely:

- a) Construction Environmental Management Programme (CEMP) (1124367X-02-RPT-0004 – Annexure D) which comprises of the following as a minimum:
- Minimum Standard Environmental Specifications for Construction Environmental Management
 - Project Environmental Specifications specifically for projects in the Port of Ncqura

Where applicable, the following may also apply:

- Any other operational/maintenance environmental plans or specifications

1. The tenderer must provide a Project specific Environmental Management Plan which describes relevant roles and responsibilities, and how potential environmental impacts will be identified and managed including the monitoring and recording thereof. **(2)**

2. The tenderer must provide an environmental policy signed by Top Management which, as a minimum: **(3)**

- Is appropriate given the purpose and context of the tenderer's business;
- Includes a commitment to fulfil the tenderer's environmental compliance (legal) obligations;
- Includes a commitment to the protection of the environment, including prevention of pollution;
- Provides framework for setting environmental objectives; and
- Includes a commitment to continual improvement of their EMS;

3. The tenderer must provide an Organisational Chart depicting key environmental staff and the chart must be accompanied by CV's showing staff competencies, experience and qualifications relevant to project environmental management functions. **(1)**

4. The tenderer must provide a list of projects where environmental duties of a similar nature have been executed including a brief description of such duties together with client reference contact details. **(1)**

5. The tenderer is to sign the declaration of understanding (refer to T2.2-38) acknowledging understanding thereof and the budget provision for the implementation of environmental management requirements **(1)**

By signing this Tender Schedule, the tenderer confirms that they will comply with the above requirements and in particular Transnet policy statements and environmental specifications.

The scoring of the Tenderer's Environmental Management submission will be as follows:

	Programme (8)

	Environmental Management Plan (EMP) (2)	Environmental Policy (4)	Organogram-Roles & Responsibility (1)	List of projects where environmental duties of a similar nature (1)	Declaration of understanding (1)
Score 0	The tenderer has submitted no information.				
Score 20	EMP indicates Tenderer has a poor understanding of the Scope Policy only responds to 1-2 of the items listed under 2 above. Organogram provided does not include the key environmental resources with the roles and responsibilities of the environmental management team and will not meet the Employer's requirements as stipulated in the works. Tenderer has only completed 1 project of similar nature				
Score 40	EMP indicates Tenderer has a less than acceptable understanding of the Scope. Policy only responds to 3-4 of the items listed under 2 above. Organogram includes the key environmental resources but excludes the roles and responsibilities of the reporting lines of the environmental management team. Tenderer has only completed 2 projects of similar nature				
Score 60	EMP indicates Tenderer has an acceptable understanding of the Scope. Policy responds to all items listed under 2 above. Organogram includes key environmental resources with either the roles and responsibilities or the reporting lines of the environmental management team. Tenderer has completed 3 projects of similar nature				
Score 80	EMP indicates Tenderer has a more than acceptable understanding of the Scope. Policy responds to all items listed under 2 above and includes additional commitments to environmental performance. Organogram includes key environmental resources with either the roles and responsibilities and clear reporting lines of the environmental management team.				

	Tenderer has completed 4 projects of similar nature
Score 100	EMP indicates Tenderer has an excellent understanding of the Scope. Policy responds to all items listed under 2 above, includes additional commitments to environmental performance and has been certified according to international best practice standards. Organogram provided will exceed the Employer's minimum requirements. Tenderer has completed 5 or more projects of similar nature

Attached submissions to this schedule:

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The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed	Date
.....	
Name	Position
.....	
Tenderer	
r	
.....	

TRANSNET NATIONAL PORTS AUTHORITY

ENQUIRY NUMBER: TNPA/2023/02/0002/22112/RFP

DESCRIPTION OF SERVICES: APPOINTMENT OF A CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS) IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS



T2.2-07: Evaluation Schedule: Health and Safety

Functionality Criteria (10 points)

Submit the following documents as a minimum with your tender:

1. The Tenderer must provide their Contract specific health and safety plan addressing the requirements of Transnet health and safety specification and include the following documents:
 - Health and Safety Company Policy signed by the accounting officer. List the five elements -
 - Commitment to Safety, prevention of pollution,
 - Continual improvement,
 - Compliance to legal requirements, appropriate to the nature of contractor's activities,
 - Hold management accountable for development of the safety systems
 - Include objectives and targets.
2. Roles and responsibilities of legal appointees
 - a) In terms of OHS Act 85 of 1993 and its Regulations.
 - I. S16.1 CEO,
 - II. S16.2 Assistant to CEO,
 - III. CR8.7 Construction Supervisor,
 - IV. CR9.1 Risk Assessor
 - V. GSR First Aider
 - b) In terms of Project and Construction Management Professional Act 48 of 2000
 - I. CR8(1) Construction Manager's CV and proof of registration.
 - c) In terms of Construction Regulations, 2014
 - I. CR8(5) Health and Safety Officer's CV and proof of SACPCMP registration.
3. List of key responsible persons (job categories) for project and health and safety competencies required per category
4. Overview of the tenderer's Risk Assessment methodology, and submission of risk assessments indicating major activities of the project
5. Two years synopsis of Health and Safety incidents, description, type and action taken to prevent re-occurrence.
6. Submission of completed health and safety cost breakdown sheet
7. Complete and return with tender documentation the Contractor Health and Safety Questionnaire with supporting documentation included as an Annexure.

Attached submissions to this schedule:

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The scoring of the Tenderer's Health and Safety requirements will be as follows:

	Signed Health and Safety Company Policy with listed elements (s16.2 appointee) 1. Commitment to Safety, prevention of pollution, 2. Continual improvement, 3. Compliance to legal requirements, appropriate to the nature of contractor's activities, 4. Hold management accountable for development of the safety systems 5. Include objectives and targets.	Roles & Responsibility: a) In terms of OHSA 85 of 1993 and its Regulations. i) S16.1; ii) S16.2 Assistant CEO; iii) CR8.7 Construction Supervisor; iv) CR9.1 Risk Assessor; v) GSR 3(4) First aider as per the Occupational health and safety Act 85 of 1993; b) In terms of Project and Construction Management	List of key responsible persons (job categories) for the project and health and safety competencies required per category (Training matrix)	Overview of the tenderer's Risk Assessment methodology, and submission of risk assessments indicating major activities.	Two years synopsis of health and safety incidents, description, type and action taken to prevent re-occurrence.	Submission of completed health and safety cost breakdown sheet.	Complete and return with tender documentation the Contractor Health and Safety Questionnaire with required supporting documentation included as an Annexure.



		Professional Act 48 of 2000 i) CR8(1) Construction Manager's CV and proof of registration. c) In terms of Construction Regulations, 2014 i) CR8(5) Health and Safety Officer's CV and proof of SACPCMP registration.					
Points	1	2	1	2	1	1	2
Score 0	The Tenderer has submitted no information or inadequate information to determine a score.						
Score 20	Two (2) elements addressed	Roles and responsibilities do not meet the Occupational health and safety	Not all key responsible persons included and no health and safety competencies	Information supplied is totally insignificant/inadequate to achieve the	Information supplied is totally insignificant/inadequate to	Health and safety Budget submitted is totally insignificant/inadequate to achieve the	Information supplied is totally insignificant/inadequate to achieve the required



		Act as per construction regulations and Transnet health and safety specification.	required per category included	required standard of service.	achieve the required standard of service.	required standard of service, 0 to 1% allocated.	standard of service.
Score 40	Three (3) elements addressed	Roles and responsibilities are unlikely to ensure compliance as per the Works information and not in line with OHS Act and Transnet health and safety specification.	Not all key responsible persons have health and safety competencies included	Poor response/answer/solution lacks convincing evidence, medium risk that stated employer's requirements will not be met.	Poor response/answer/solution lacks convincing evidence, medium risk that stated Employer's requirements will not be met.	Health and safety Budget submitted is insignificant/inadequate /answer/solution to the returnable, Employer's health and safety requirements will not be met, 1.1 – 2% allocated.	Poor response/answer/solution lacks convincing evidence, medium risk that stated Employer's requirements will not be met.
Score 60	All Five (5) elements addressed	Satisfactory response on roles and responsibilities as per Employer's requirements.	Satisfactory response on the list of job categories and trainings as per proposed project organogram structure. Training matrix covers most of the trainings listed on Transnet	Satisfactory response/answer/solution to the particular aspect of the requirement, evidence given that the stated Employer's requirements will be met.	Satisfactory response/answer/solution to the particular aspect of the requirement, evidence given that the stated Employer's	Health and safety Budget submitted is Satisfactory response/answer/solution to the returnable, Employer's health and safety requirements will be	Satisfactory response/answer/solution to the particular aspect of the requirement, evidence given that the stated Employer's



			Health and safety specification.		requirements will be met.	met, 2.1 – 3% allocated.	requirements will be met.
Score 80	All elements addressed with a signature and date but not signed by OHS Act, Section 16.2	Roles and responsibilities are likely to ensure compliance as per Works Information, OHS Act and Transnet health and safety specification.	Most of key persons listed on the training matrix as per proposed project organogram structure. Trainings specified on the matrix are in line with Transnet health and safety specification.	Good response/answer/solution which demonstrates real understanding and evidence of ability to meet stated Employer's requirements.	Good response/answer/solution which demonstrates real understanding and evidence of ability to meet stated Employer's requirements.	Health and safety Budget submitted is Good response/answer/solution to the returnable, Employer's health and safety requirements will be met, 3% - above allocated.	Good response/answer/solution which demonstrates real understanding and evidence of ability to meet stated Employer's requirements.
Score 100	All elements addressed with a signature and date and signed by OHS Act, Section 16.2	Roles and Responsibilities most likely to ensure compliance as per requirements of OHS Act and Transnet Health and Safety Management Specification and CV and proof of professional registration with	All key responsible persons and health and safety competencies per job category included.	Very good response/answer/solution gives real confidence that the tenderer is most likely to ensure compliance with stated Employer's requirements.	Very good response/answer/solution gives real confidence that the tenderer is most likely to ensure compliance with stated Employer's requirements.	Health and safety Budget submitted is Very good response/answer/solution to the returnable, Employer's health and safety requirements will be met, 4% - above allocated.	Very good response/answer/solution gives real confidence that the tenderer is most likely to ensure compliance with stated Employer's requirements.



		SACPCMP submitted.					

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

Name

Position

Tenderer

T2.2-08: Evaluation Schedule: Previous Experience

Functionality Criteria (20 points)

Note to tenderers:

The Tenderer is required to demonstrate performance in comparable projects of similar size and nature by supplying the following:

- A list of past/current comparable projects. The Tenderer shall ensure that for all projects listed, a completion certificates have been submitted for each project to be considered.
- Traceable references to substantiate experience indicated (Client name and contact details, detailed project description, duration and contract value).

Structural alterations of existing multi-storey buildings which included addition or removal of main structural elements			
Project Description	Client name and contact details	Contract value and duration	Date of project completion

Mechanical installations which include but not limited to fire protection systems and HVAC			
Project Description	Client name and contact details	Contract value and duration	Date of project completion

Criteria	Construction 5	Design 10	Written References 5
	Tenderer must show evidence of previously completed similar projects undertaken in the Past 5 Years. All tenderers to submit detail portfolio of projects detailing: • The value of project in rand value • Key areas of specialty in the following services: ○ Site Supervision ○ Construction (new builds or alteration works) ○ Bulk services (Heating Ventilation and Air conditioning, fire fighting system, lighting) ○ Testing and commissioning of building accessories ○ Hand-over and Close-out	Tenders to submit detail portfolio of projects demonstrating competency in the Key area of specialty as mentioned in the scope of service for: • Design (Structural, Mechanical, Electrical and Plumbing (MEP) and Building Services) This will be assessed as several services counted as per the key area/s mentioned. 5. Architectural layout (Office Alteration and Interior Finishes). 6. MEP Design 7. Coordination of MEP installations with space layout. 8. Building Management System and Instrumentation 9. Structural alterations/additions to existing structures	Written References to be submitted from clients (or Clients' Representative/s) of previously completed projects including Client name and contact details, detailed project description, duration and contract value)

Score 0	No response	No response	No response
Score 20	Information is insufficient and/or not related (or Covers 1 service)	Information is insufficient and/or not related (or Covers Structural alterations only)	1 reference letter and/or completion certificate submitted
Score 40	Poor (Covers 2 services)	Poor (Covers Structural alterations and 1 other services)	2 reference letters and/or completion certificates submitted
Score 60	Satisfactory (Covers 3 services)	Satisfactory (Covers Structural alterations and 2 other services)	3 reference letters and/or completion certificates submitted
Score 80	Good (Covers 4 services)	Good (Covers Structural alterations and 3 other services)	4 reference letters and/or completion certificates submitted
Score 100	Excellent (Covers All 5 or more services)	Excellent (Covers Structural alterations and all other services)	5 or more reference letters and/or completion certificates submitted

Index of documentation attached to this schedule:

.....

.....

.....

.....

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

Name

Position

Tenderer

T2.2-09: Evaluation Schedule: Method Statements

Functionality Criteria (20 points)

Note to Tenderers:

Submit a method statement which responds to the scope of work and outlines construction methodology including that relating but not limited to programme, quality, safety, and an understanding of the project objective.

The method statement should articulate what the tenderer will provide in achieving the stated objectives for the project and demonstrate alignment to Programme as contained under T2.2-03. Tenderers to also exhibit a clear understanding of the project and has shown a concise method statement for all activities incorporating best practice.

The Tenderer must as such explain his / her understanding of the objectives of the works and the Employer's stated and implied requirements, highlight the issues of importance, and explain the construction sequencing they would adopt to address them. The method statement should explain the methodologies which are to be adopted and demonstrate its compatibility. The approach should also include and outline processes, procedures, and associated resources, to meet the requirements and indicate how risks will be managed.

The Method statement should cover:

- Outline of proposed approach;
 - Narrative related to the programme;
 - Detailed method statement, technical approach, and construction sequencing in terms of the Works Information (design philosophy);
 - Demonstrate an understanding of the project objectives; and
 - Detailed list of equipment and number thereof to execute the works, and areas it will be utilized.
1. Structural building works:
 - i. Methodology for demolition,
 - ii. temporary works,
 - iii. structural concrete works,
 - iv. building works
 - v. electrical,
 - vi. Mechanical works including fire systems and HVAC

vii. Commissioning

2. Schedule for works (including construction sequencing)
3. Details of equipment to be used for the works.

The Tenderer must attach his / her method statement to this page. The method statement shall include as a minimum but not limited to the following (the contractor must refer to the works information for a full description of the scope of the works):

	The method statement must respond to the scope of work and outline the proposed methodology including that relating to the Programme, quality, health and safety and environmental considerations.	The method statement should articulate what value add the tenderer will provide in achieving the stated objectives for the project.	Explain his/her understanding of the objectives of the assignment and the Employers stated and implied requirements.	Method of construction and commissioning process. Tender to narratively demonstrate the approach to site establish, pre-construction activities and meetings, interfaces with other discipline including the client, construction logistics, commissioning procedures and handover.
Points (20)	6	4	4	6
Score 0	The Tenderer has submitted no information or inadequate information to determine a score.			
Score 20	The method statement is not acceptable, as it will not satisfy project objectives or requirements. The tenderer has misunderstood the scope of work and does not deal with the critical aspects of the project.			
Score 40	Tenderer has submitted a method statement with major omissions and/or irregularities. Tenderers technical approach and / methodology is			

	poor, not realistic, generic and unlikely to satisfy project objectives or requirements. The tenderer misunderstood the scope of works and does not deal with the critical aspects of the project. The approach to managing works too generic.
Score 60	Tenderer has submitted an acceptable method statement with minor omissions and/or irregularities and / or partially complete and does encompass and detail the works objectives and requirements to be undertaken; the approach does not deal fully with the characteristics of the project.
Score 80	Tenderer has submitted an extensive method statement: 1. Approach clearly articulated and based on this project; the works are aligned with scope of works and project schedule. 2. The proposed construction methodology will ensure that the design meets the specifications and quality standards. The proposed tools/equipment meets the requirements set out in the Works Information/applicable technical specifications and relates to the programme. 3. The method statement covers all the aspects of the Works Information. 4. Sufficiently flexible to accommodate changes that may occur during Executions.
Score 100	Tenderer has submitted an outstanding method statement: 1. Approach clearly articulated and based on this project, the works are aligned with the scope of works and project schedule. 2. The proposed construction methodology will ensure that the design meets the specifications and quality standards. The proposed tools/equipment meets the requirements set out in the Works Information/applicable technical specifications and relates to the programme. 3. Besides meeting the "80" rating, the important issues are approached in an innovative and efficient way, indicating that the Tenderer has outstanding knowledge of state-of-the-art approaches. The methodology details ways to improve the project outcomes and quality of outputs

T2.2-10: Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

A - COMPANY	B - PARTNERSHIP	C - JOINT VENTURE	D - SOLE PROPRIETOR

A. Certificate for Company

I, _____ chairperson of the board of directors _____
_____, hereby confirm that by resolution of the
board taken on _____ (date), Mr/Ms _____,
acting in the capacity of _____, was authorised to sign all
documents in connection with this tender offer and any contract resulting from it on behalf of
the company.

Signed

Date

Name

Position

Chairman of the Board of Directors

B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as _____

_____ hereby authorise Mr/Ms _____

acting in the capacity of _____, to sign all documents in

connection with the tender offer for Contract _____ and any

contract resulting from it on our behalf.

Name	Address	Signature	Date

NOTE: This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms _____, an authorised signatory of the company _____, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract _____ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity

D. Certificate for Sole Proprietor

I, _____, hereby confirm that I am the sole owner of the
business trading as _____.

Signed

Date

Name

Position

Sole Proprietor

T2.2-11: Record of Addenda to Tender Documents

This schedule as submitted confirms that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this specific tender offer:

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

T2.2-12 Letter/s of Good Standing with the Workmen's Compensation Fund

Attached to this schedule is the Letter/s of Good Standing.

1.

Name of Company/Members of Joint Venture:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

T2.2-13: Risk Elements

Tenderers to identify and evaluate the potential risk elements associated with the Works and possible mitigation thereof. The risk elements and the mitigation as identified thereof by the Tenderer are to be submitted.

If No Risks are identified "No Risks" must be stated on this schedule.

Tenderers are also to evaluate any risk/s stated by the Employer in Contract Data Part C1, and provide possible mitigation thereof.

Tenders to note: Notwithstanding this information, all costs related to risk elements which are at the Contractor's risk are deemed to be included in the tenderer's offered total of the Prices.

T2.2-14: Availability of Equipment and Other Resources

The Tenderer to submit a list of all Equipment and other resources that will be used to execute the works as described in the Works Information.

Equipment Type and Availability – Description	Hourly Rate	Number of Equipment	Details of Ownership

T2.2-15: Schedule of Proposed Subcontractors

The tenderer is required to provide details of all the sub-contractors that will be utilised in the execution of the works.

Note to tenderers:

- In terms of PPPFA Regulation 6 (5), A tenderer may not be awarded points for B-BBEE status level of contributor if the tender documents indicate that the tenderer intends subcontracting more than 25% of the value of the contract to any other person not qualifying for at least the points that the tenderer qualifies for, unless the intended subcontractor is an EME that has the capability to execute the subcontract.
- In terms of PPPFA Regulation 12 (3), A person awarded a contract may not subcontract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level of contributor that the person concerned, unless the contract is subcontracted to an EME that has the capability and ability to execute the contract.

Tenderer to note that after award, any deviations from this list of proposed sub-contractors will be subject to acceptance by the Project Manager in terms of the Conditions of Contract.

Provide information of the Sub-contractors below:

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans
	☐	☐	☐	☐	☐	☐		☐

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans
	☐	☐	☐	☐	☐	☐		☐
Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work

% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans
	☐	☐	☐	☐	☐	☐	☐

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work	
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans	
	☐	☐	☐	☐	☐	☐		☐	

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

T2.2-17: ANNEX G Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member must be completed and submitted.

Section 1: Name of enterprise: _____

Section 2: VAT registration number, if any: _____

Section 3: CIDB registration number, if any: _____

Section 4: CSD number: _____

Section 5: Particulars of sole proprietors and partners in partnerships

Name	Identity number	Personal income tax number

* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

Section 6: Particulars of companies and close corporations

Company registration number _____

Close corporation number _____

Tax reference number: _____

Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.

Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

Name

Position

Enterprise
name

SBD 6.1**PREFERENCE POINTS CLAIM FORM**

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [**B-BBEE**] Status Level of Contribution.

Transnet will award preference points to companies who provide valid proof of their B-BBEE status using either the latest version of the generic Codes of Good Practice or Sector Specific Codes (if applicable).

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to **not exceed** R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.

OR

1.3 Either the 80/20 preference point system will apply Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contribution.

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION	20
Total points for Price and B-BBEE must not exceed	100

1.5 Failure on the part of a bidder to submit proof of B-BBEE status level of contributor

together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (c) **"B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **"EME"** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **"functionality"** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **"Price"** includes all applicable taxes less all unconditional discounts.
- (i) **"Proof of B-BBEE Status Level of Contributor"**
 - i) the B-BBBEE status level certificate issued by an authorised body or person;
 - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
 - iii) any other requirement prescribed in terms of the B-BBEE Act.
- (j) **"QSE"** means a Qualifying Small EEnterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (k) **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:
80/20

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Comparative price of bid under consideration

$P_{\min}$ = Comparative price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

- 4.1 preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

- 4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
Large	Certificate issued by SANAS accredited verification agency
QSE	Certificate issued by SANAS accredited verification agency Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned) [Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at www.dti.gov.za/economic_empowerment/bee_codes.jsp .]

EME¹	Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard

- 4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.
- 4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 4.5 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.
- 4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

5. BID DECLARATION

- 5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

- 6.1 B-BBEE Status Level of Contribution: . = ...(maximum of 10 points)
- (Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

¹ In terms of the Implementation Guide: Preferential Procurement Regulations, 2017, Version 2, paragraph 11.11 provides that in the Transport Sector, EMEs can provide a letter from accounting officer or get verified and be issued with a B-BBEE certificate by SANAS accredited professional or agency as the Transport Sector Code has not been aligned to the generic Codes. EMEs in the Transport Sector are not allowed to provide a sworn affidavit as the generic codes are not applicable to them.

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted?

(Tick applicable box)

YES		NO	

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE.

(Tick applicable box)

YES		NO	

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

8.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
☐ Supplier
☐ Professional Service provider
☐ Other Service providers, e.g. transporter, etc.
 [TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor,, which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) if the successful bidder subcontracted a portion of the bid to another person without disclosing it, Transnet reserves the right to penalise the bidder up to 10 percent of the value of the contract;
 - (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
 - (f) forward the matter for criminal prosecution.

WITNESSES

1.
2.

.....

SIGNATURE(S) OF BIDDERS(S)

DATE:

BIDDER'S DISCLOSURE**1. PURPOSE OF THE FORM**

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

- 2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest² in the enterprise, employed by the state? **YES/NO**

- 2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

² the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....

3 DECLARATION

I, _____ the _____ undersigned,
 (name).....in submitting
 the accompanying bid, do hereby make the following statements that I certify to
 be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;

3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor.

-
- However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....	
Signature	Date
.....	
Position	Name of bidder

³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

T2.2-18 NON-DISCLOSURE AGREEMENT

Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:

THIS AGREEMENT is made effective as of day of 20 by and between:

TRANSNET SOC LTD

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Transnet Corporate Centre 138 Eloff Street , Braamfontein , Johannesburg 2000

and

.....
.....

(Registration No.....), a private company incorporated and existing under the laws of South Africa having its principal place of business at

.....
.....
.....
.....

WHEREAS

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Tender Document.

IT IS HEREBY AGREED

1. INTERPRETATION

In this Agreement:

- 1.1 **Agents** mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;
- 1.2 **Bid or Bid Document** (hereinafter Tender) means Transnet's Request for Information [RFI] Request for Proposal [RFP] or Request for Quotation [RFQ], as the case may be;
- 1.3 **Confidential Information** means any information or other data relating to one party [the **Disclosing Party**] and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party [the **Receiving Party**] or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or after the date of this Agreement, and whether in writing or otherwise, including any information, analysis or specifications derived from, containing or reflecting such information but excluding information which:
- 1.3.1 is publicly available at the time of its disclosure or becomes publicly available [other than as a result of disclosure by the Receiving Party or any of its Agents contrary to the terms of this Agreement]; or
- 1.3.2 was lawfully in the possession of the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] free of any restriction as to its use or disclosure prior to its being so disclosed; or
- 1.3.3 following such disclosure, becomes available to the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] from a source other than the Disclosing Party or its Agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the Disclosing Party in relation to such information;
- 1.4 **Group** means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 **Information** means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by machine-readable medium.

2. CONFIDENTIAL INFORMATION

- 2.1 All Confidential Information given by one party to this Agreement [the **Disclosing Party**] to the other party [the **Receiving Party**] will be treated by the Receiving Party as secret and confidential and will not, without the Disclosing Party's written consent, directly or indirectly communicate or disclose [whether in writing or orally or in any other manner] Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.3 Notwithstanding clause 2.1 above, the Receiving Party may disclose Confidential Information:
- 2.3.1 to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.2 above, provided that the Receiving Party shall ensure that such Agents are made aware prior to the disclosure of any part of the Confidential Information that the same is confidential and that they owe a duty of confidence to the Disclosing Party. The Receiving Party shall at all times remain liable for any actions of such Agents that would constitute a breach of this Agreement; or
- 2.3.2 to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.4 below.
- 2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.3.2 above, it shall promptly notify the Disclosing Party and cooperate with the Disclosing Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement.

- 2.5 In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps [including the institution of legal proceedings] as shall be necessary to remedy [if capable of remedy] the default and/or to prevent further unauthorised copying, disclosure or use.
- 2.6 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

3. RECORDS AND RETURN OF INFORMATION

- 3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.
- 3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.
- 3.3 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:
- 3.3.1 return all written Confidential Information [including all copies]; and
 - 3.3.2 expunge or destroy any Confidential Information from any computer, word processor or other device whatsoever into which it was copied, read or programmed by the Company or on its behalf.
- 3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.3.2 above.

4. ANNOUNCEMENTS

- 4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.
- 4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

5. DURATION

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Tender and continue thereafter for a period of 5 [five] years.

6. PRINCIPAL

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Tender and in complying with the terms of this Agreement.

7. ADEQUACY OF DAMAGES

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

8. PRIVACY AND DATA PROTECTION

- 8.1 The Receiving Party undertakes to comply with South Africa's general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender and shall procure that its personnel shall observe the provisions of such Act [as applicable] or any amendments and re-enactments thereof and any regulations made pursuant thereto.
- 8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

9. GENERAL

- 9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.
- 9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further

exercise or the exercise of any right, power or privilege under this Agreement or otherwise.

9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.

9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.

9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.

9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts.

Signed

Date

Name

Position

Tenderer

T2.2-19: RFP DECLARATION FORM

NAME OF COMPANY: _____

We _____ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this tender and the requirements requested from tenderers in responding to this tender have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below:

[Respondent to indicate if this section is not applicable]

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

Indicate nature of relationship with Transnet:

[Failure to furnish complete and accurate information in this regard may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]

We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet (other than any existing and appropriate business relationship with Transnet) which could unfairly advantage our company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this tender will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first be exhausted before judicial review of a decision is sought. (Refer "Important Notice to respondents" below).
7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.
8. We have acquainted ourselves and agree with the content of T2.2-22 "Service Provider Integrity Pact".

For and on behalf of duly authorised thereto
Name:
Signature:
Date:

IMPORTANT NOTICE TO TENDERERS

- Transnet has appointed a Procurement Ombudsman to investigate any material complaint in respect of tenders exceeding R5,000,000.00 (five million S.A. Rand) in value. Should a Tenderer have any material concern regarding an tender process which meets this value threshold, a complaint may be lodged with Transnet's Procurement Ombudsman for further investigation.
- It is incumbent on the Tenderer to familiarise himself/herself with the Terms of Reference for the Transnet Procurement Ombudsman, details of which are available for review at Transnet's website www.transnet.net.

-
- An official complaint form may be downloaded from this website and submitted, together with any supporting documentation, within the prescribed period, to procurement.ombud@transnet.net
 - For transactions below the R5,000,000.00 (five million S.A. Rand) threshold, a complaint may be lodged with the Chief Procurement Officer of the relevant Transnet Operating Division.
 - All Tenderers should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a tenderer on its List of Excluded Bidders.

T2.2-20: REQUEST FOR PROPOSAL – BREACH OF LAW

NAME OF COMPANY: _____

I / We _____ do hereby certify that **I/we have/have not been** found guilty during the preceding 5 (five) years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Tenderer is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences.

Where found guilty of such a serious breach, please disclose:

NATURE OF BREACH:

DATE OF BREACH:

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any Tenderer from the tendering process, should that person or company have been found guilty of a serious breach of law, tribunal or regulatory obligation.

Signed on this _____ day of _____ 20____

SIGNATURE OF TENDER

T2.2-21 Certificate of Acquaintance with Tender Documents

NAME OF TENDERING ENTITY:

1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with, and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any tender/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) has been requested to submit a Tender in response to this Tender invitation;
 - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

-
- a) prices;
 - b) geographical area where Services will be rendered [market allocation]
 - c) methods, factors or formulas used to calculate prices;
 - d) the intention or decision to submit or not to submit, a Tender;
 - e) the submission of a tender which does not meet the specifications and conditions of the tender; or
 - f) Tendering with the intention not winning the tender.
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this tender relates.
8. The terms of the accompanying tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to tenders and contracts, tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation. In addition, Tenderers that submit suspicious tenders may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed on this _____ day of _____ 20____

SIGNATURE OF TENDERER

T2.2-22 Service Provider Integrity Pact

Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that that have acquainted themselves with, and agree with the content.

The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.

INTEGRITY PACT

Between

TRANSNET SOC LTD

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")

PREAMBLE

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers/Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer/Service Provider/Contractor hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's/Service Provider's/Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and/or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers/Service Providers/Contractor's will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

1 OBJECTIVES

- 1.1 Transnet and the Tenderer/Service Provider/Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:
 - a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
 - b) Enable Tenderers/Service Providers/Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

2 COMMITMENTS OF TRANSNET

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage

from the Tenderer, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.

- 2.2 Transnet will, during the registration and tendering process treat all Tenderers/ Service Providers/Contractor with equity, transparency and fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers/ Service Providers/Contractors the same information and will not provide to any Tenderers/Service Providers/Contractors confidential/additional information through which the Tenderers/Service Providers/Contractors could obtain an advantage in relation to any tendering process.
- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderers/Service Providers/Contractors in any form that could afford an undue advantage to a particular Tenderer during the tendering stage, and will further treat all Tenderers/Service Providers/Contractors participating in the tendering process in a fair manner.
- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers/Service Providers/Contractors participating in the tendering process.

3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER

- 3.1 Transnet has a '**Zero Gifts**' Policy. No employee is allowed to accept gifts, favours or benefits.
 - a) Transnet officials and employees **shall not** solicit, give or accept, or from agreeing to solicit, give, accept or receive directly or indirectly, any gift, gratuity, favour, entertainment, loan, or anything of monetary value, from any person or juridical entities in the course of official duties or in connection with any operation being managed by, or any transaction which may be affected by the functions of their office.
 - b) Transnet officials and employees **shall not** solicit or accept gifts of any kind, from vendors, suppliers, customers, potential employees, potential vendors, and suppliers, or any other individual or organisation irrespective of the value.
 - c) Under **no circumstances** should gifts, business courtesies or hospitality packages be accepted from or given to prospective suppliers participating in a tender process at the respective employee's Operating Division, regardless of retail value.
 - d) Gratuities, bribes or kickbacks of any kind must never be solicited, accepted or offered, either directly or indirectly. This includes money, loans, equity, special

privileges, personal favours, benefit or services. Such favours will be considered to constitute corruption.

- 3.2 The Tenderer/Service Provider/Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer/Service Provider/Contractor commits to the following:
- a) The Tenderer/Service Provider/Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
 - b) The Tenderer/Service Provider/Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.
- 3.3 The Tenderer/Service Provider/Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.
- 3.4 The Tenderer/Service Provider/Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers/Service Providers/Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.
- 3.5 The Tenderer/Service Provider/Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer/Service Provider/Contractor will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided by Transnet as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

-
- 3.6 A Tenderer/Service Provider/Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.
- 3.7 The Tenderer/Service Provider/Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer/Service Provider/Contractor or detriment of Transnet or other competitors.
- 3.8 Transnet may require the Tenderer/Service Provider/Contractor to furnish Transnet with a copy of its code of conduct. Such code of conduct must address the compliance programme for the implementation of the code of conduct and reject the use of bribes and other dishonest and unethical conduct.
- 3.9 The Tenderer/Service Provider/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 3.10 The Tenderer/Service Provider/Contractor confirms that they will uphold the ten principles of the United Nations Global Compact (UNGC) in the fields of Human Rights, Labour, Anti-Corruption and the Environment when undertaking business with Transnet as follows:
- a) Human Rights
- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
 - Principle 2: make sure that they are not complicit in human rights abuses.
- b) Labour
- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
 - Principle 4: the elimination of all forms of forced and compulsory labour;
 - Principle 5: the effective abolition of child labour; and
 - Principle 6: the elimination of discrimination in respect of employment and occupation.
- c) Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

d) Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

4 INDEPENDENT TENDERING

4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:

- a) has been requested to submit a Tender in response to this Tender invitation;
- b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
- c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.

4.2 The Tenderer has arrived at his submitted Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive tendering.

4.3 In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

- a) prices;
- b) geographical area where Goods or Services will be rendered [market allocation];
- c) methods, factors or formulas used to calculate prices;
- d) the intention or decision to submit or not to submit, a Tender;
- e) the submission of a Tender which does not meet the specifications and conditions of the RFP; or
- f) tendering with the intention of not winning the Tender.

- 4.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Goods or Services to which his/her tender relates.
- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.
- 4.7 Should the Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

5 DISQUALIFICATION FROM TENDERING PROCESS

- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer/Service Provider/Contractor into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer/Service Provider/Contractor from its database, if already registered.
- 5.2 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following due procedures and at its own discretion also exclude the Tenderer/Service Provider /Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity

will be determined by the circumstances of the case, which will include amongst others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer/Service Provider/Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.

- 5.3 If the Tenderer/Service Provider/Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system, or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)

- 6.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Tender shall be awarded to a Tenderer whose name (or any of its members, directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Tenderer should it be established, at any time, that a tenderer has been restricted with National Treasury by another government institution.
- 6.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual (CPM included) are included herein by way of reference. Below follows a condensed summary of this restriction procedure.
- 6.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.
- 6.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "prima facie" (i.e. on the face of it) case has been established.

-
- 6.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.
- 6.6 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.
- 6.7 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:
- a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;
 - b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;
 - c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;
 - d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;
 - e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;
 - f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
 - (i) he made the statement in good faith honestly believing it to be correct; and
 - (ii) before making such statement he took all reasonable steps to satisfy himself of its correctness;
 - g) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;
 - h) has litigated against Transnet in bad faith.

- 6.8 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National Treasury's database of Restricted Service Providers or Register of Tender Defaulters.
- 6.9 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

7 PREVIOUS TRANSGRESSIONS

- 7.1 The Tenderer/Service Provider/Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998, which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's/Service Provider's/Contractor's database or any tendering process.
- 7.2 If it is found to be that the Tenderer/Service Provider/Contractor made an incorrect statement on this subject, the Tenderer/Service Provider/Contractor can be rejected from the registration process or removed from the Tenderer/Service Provider/Contractor database, if already registered, for such reason (refer to the Breach of Law Returnable Form contained in the document.)

8 SANCTIONS FOR VIOLATIONS

- 8.1 Transnet shall also take all or any one of the following actions, wherever required to:
- a) Immediately exclude the Tenderer/Service Provider/Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation to the Tenderer/Service Provider/Contractor. However, the proceedings with the other Tenderer/Service Provider/Contractor may continue;
 - b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer/Service Provider/Contractor;
 - c) Recover all sums already paid by Transnet;
 - d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer/Service Provider/Contractor, in order to recover the payments, already made by Transnet, along with interest;

- e) Cancel all or any other contracts with the Tenderer/Service Provider/Contractor; and
- f) Exclude the Tenderer/ Service Provider/Contractor from entering into any Tender with Transnet in future.

9 CONFLICTS OF INTEREST

9.1 A conflict of interest includes, inter alia, a situation in which:

- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and
- b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.

9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:

- a) Private gain or advancement; or
- b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

9.3 If a Tenderer/Service Provider/Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s)/ member(s)/director(s)/partner(s)/shareholder(s) and a Transnet employee/ member of Transnet's Board of Directors in respect of a Tender which will be considered for the Tender process, the Tenderer/Service Provider/ Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal ("RFX") declaration form; or
- b) must notify Transnet immediately in writing once the circumstances has arisen.

9.4 The Tenderer/Service Provider/Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done, Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer/Service Provider/Contractor.

10 DISPUTE RESOLUTION

10.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between

Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;
- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

11 GENERAL

- 11.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.
- 11.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.
- 11.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.
- 11.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.
- 11.5 Should a Tenderer/Service Provider/Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer/Service Provider/Contractor to report this behaviour directly to a senior Transnet official/employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall abide by it. To the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

I duly authorised by the tendering entity, hereby certify that the tendering entity are **fully acquainted** with the contents of the Integrity Pact and further **agree to abide by it** in full.

Signature

Date

T2.2-23 : Supplier Code of Conduct

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Policy – A guide for Tenderers.
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (BBBEE)
- The Prevention and Combating of Corrupt Activities Act (PRECCA); and
- The Construction Industry Development Board Act (CIDB Act).

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

1. Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
- Employees may not receive anything that is calculated to:

-
- Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
 - Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
 - Gain an improper advantage.
- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our “Tip-offs Anonymous” Hot line to report these acts. (0800 003 056).

2. Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.
- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing BBBEE spend (fronting).

3. Transnet’s relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
 - Collusion;
 - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, BBBEE status, etc.);
 - Corrupt activities listed above; and
 - Harassment, intimidation or other aggressive actions towards Transnet employees.

-
- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
 - Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

Conflicts of Interest

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- Doing business with family members.
- Having a financial interest in another company in our industry

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, _____ of _____

(insert name of Director or as per (insert name of Company)
Authority Resolution from Board of
Directors)

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed this on day _____ at _____

Signature

T2.2-24 Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")

1. PREAMBLE AND INTRODUCTION

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 ("POPIA") are included as forming part of the terms and conditions of this contract.

2. PROTECTION OF PERSONAL INFORMATION

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 "(POPIA)":
consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:
Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement , the Operator is (... ..) hereinafter Operator and the Data subject is "Transnet". Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this Agreement and

only for the purposes as detailed in this Agreement and in accordance with any applicable law.

- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.
- 2.7. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.8. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.9. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party, cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.10. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.11. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations.

- 2.12. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the information of a third party given to it by Transnet in line with the 8 conditions of the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:

YES		NO	

- 2.13. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

- 2.14. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/infoereg/>, click on contact us, click on complaints.IR@justice.gov.za

3. SOLE AGREEMENT

- 3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at _____ on this _____ day of _____ 2021

Name: _____

Title: _____

Signature: _____

(Operator)

Authorised signatory for and on behalf of who warrants that he/she is duly authorised to sign this Agreement.

AS WITNESSES:

1. Name:_____

Signature:
2. Name:_____

Signature:

T2.2-25: Form of Intent to Provide a Performance Guarantee

It is hereby agreed by the Tenderer that a Performance Guarantee drafted **exactly** as provided in the tender documents will be provided by the Guarantor named below, which is a **bank or insurer registered in South Africa**:

Name of Guarantor
(Bank/Insurer)

Address

The Performance Guarantee shall be provided within **2 (Two)** weeks after the Contract Date defined in the contract unless otherwise agreed to by the parties.

Signed

Name

Capacity

On behalf of (name of
tenderer)

Date

Confirmed by Guarantor's Authorised Representative

Signature(s)

Name (print)

Capacity

On behalf of Guarantor
(Bank/insurer)

Date

T2.2-26: Insurance provided by the Contractor

Clause 84.1 in NEC3 Engineering & Construction Contract (June 2005)(amended June 2006 and April 2013) requires that the Contractor provides the insurance stated in the insurance table except any insurance which the Employer is to provide as stated in the Contract Data.

Please provide the following details for insurance which the Contractor is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

Insurance against (See clause 84.2 of the ECC)	Name of Insurance Company	Cover	Premium
Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract			
Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R5 000 000/R10 000 000.			
Insurance in respect of loss of or damage to own property and equipment.			

T2.2-27: Three (3) years audited financial statements

Attached to this schedule is the last three (3) years audited financial statements of the single tenderer/members of the Joint Venture.

NAME OF COMPANY/IES and INDEX OF ATTACHMENTS:

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T2.2-28 SUPPLIER DECLARATION FORM

Transnet Vendor Management has received a request to load / change your company details onto the Transnet vendor master database. Please return the completed Supplier Declaration Form (SDF) together with the required supporting documents as per Appendix A to the Transnet Official who is intending to procure your company's services / products, to enable us to process this request. Please only submit the documentation relevant to your request.

Please Note: all organisations, institutions and individuals who wish to provide goods and/or services to organs of the State must be registered on the National Treasury's Central Supplier Database (CSD). This needs to be done via their portal at <https://secure.csd.gov.za/> **before applying to Transnet.**

General Terms and Conditions:

Please Note: Failure to submit the relevant documentation will delay the vendor creation / change process.

Where applicable, the respective Transnet Operating Division processing your application may request further or additional information from your company.

The Service Provider warrants that the details of its bank account ("the nominated account") provided herein, are correct and acknowledges that payments due to the Supplier will be made into the nominated account. If details of the nominated account should change, the Service Provider must notify Transnet in writing of such change, failing which any payments made by Transnet into the nominated account will constitute a full discharge of the indebtedness of Transnet to the Supplier in respect of the payment so made. Transnet will incur no liability for any payments made to the incorrect account or any costs associated therewith. In such an event, the Service Provider indemnifies and holds Transnet harmless in respect of any payments made to an incorrect bank account and will, on demand, pay Transnet any costs associated herewith.

Transnet expects its suppliers to timeously renew their Tax Clearance and B-BBEE certificates (Large Enterprises and QSEs less than 51% black owned) as well as sworn affidavits in the case of EMEs and QSEs with more than 51% black ownership as per Appendices C and D.

In addition, please take note of the following very important information:

1. If your annual turnover is R10 million or less, then in terms of the DTI Generic Codes of Good Practice, you are classified as an Exempted Micro Enterprise (EME). If your company is classified as an EME, please include in your submission a sworn affidavit confirming your company's most recent annual turnover is less than R10 million and percentage of black ownership and black female ownership in the company (Appendix C) OR B-BBEE certificate issued by a verification agency accredited by SANAS in terms of the EME scorecard should you feel you will be able to attain a better B-BBEE score. It is only in this context that an EME may submit a B-BBEE verification certificate. These EME sworn affidavits must be accepted by the . Government introduced this mechanism specifically to reduce the cost of doing business and regulatory burden for these entities and the template for the sworn affidavit is available at no cost on the website www.thedti.gov.za or EME certificates at CIPC from www.cipic.co.za.

The B-BBEE Commission said "that only time an EME can be verified by a SANAS accredited verification professional is when it wishes to maximise its B-BBEE points and move to a higher B- BBEEE recognition level, and that must be done use the QSE Scorecard".

2. If your annual turnover is between R10 million and R50 million, then in terms of the DTI codes, you are classified as a Qualifying Small Enterprise (QSE). A QSE which is at least 51% black owned, is required to submit a sworn affidavit confirming their annual total revenue of between R10 million and R50 million and level of black ownership (Appendix D). QSE 'that does not qualify for 51% of black ownership, are required to submit a B-BBEE verification certificate issued by a verification agency accredited by SANAS their QSEs are required to submit a B-BBEE verification certificate issued by a verification agency accredited by SANAS.

Please Note: B-BBEE certificate and detailed scorecard should be obtained from an accredited rating agency (e.g. SANAS Member).

3. If your annual turnover exceeds R50 million, then in terms of the DTI codes, you are classified as a Large Enterprise. Large Enterprises are required to submit a B-BBEE level verification certificate issued by a verification agency accredited by SANAS.

Please Note: B-BBEE certificate and detailed scorecard should be obtained from an accredited rating agency (e.g. SANAS Member).

4. The supplier to furnish proof to the procurement department as required in the Fourth Schedule of the Income Tax Act. 58 of 1962 whether a supplier of service is to be classified as an "employee", "personal service provider" or "labour broker". Failure to do so will result in the supplier being subject to employee's tax.

5. No payments can be made to a vendor until the vendor has been registered / updated, and no vendor can be registered / updated until the vendor application form, together with its supporting documentation, has been received and processed. No payments can be made to a vendor until the vendor has met / comply with the procurement requirements.

6. It is in line with PPPFA Regulations, only valid B-BBEE status level certificate issued by an unauthorised body or person OR a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice, OR any other requirement prescribed in terms of the Broad- Based Black Economic Empowerment Act.

7. The B-BBEE Commission advises entities and organs of state to reject B-BBEE certificates that have been issues by verification agencies or professionals who are not accredited by South African National Accreditation Systems ("SANAS) as such B-BBEE certificates are invalid for lack of authority and mandate to issue them. A list of SANAS Accredited agencies is available on the SANAS website at www.sanas.co.za.

8. Presenting banking details. Please note: Banks have decided to enable the customers and provide the ability for customers to generate Account Confirmation/Bank Account letters via their online platform; this is a digital approach to the authentication of banking details.

SUPPLIER DECLARATION FORM

Supplier Declaration Form

Important Notice: all organisations, institutions and individuals who wish to provide goods and/or services to organs of the State must be registered on the National Treasury Central Supplier Database (CSD). This needs to be done via their portal at <https://secure.csd.gov.za/> before applying to Transnet.

CSD Number (MAAA)::

Company Trading Name						
Company Registered Name						
Company Registration No Or ID No If a Sole Proprietor						
Company Income Tax Number						
Form of Entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor
	Non-profit (NPO's or NPC)	Personal Liability Co	State Owned Co	National Govt	Provincial Govt	Local Govt
	Educational Institution	Specialised Profession	Financial Institution	Joint Venture	Foreign International	Foreign Branch Office

Did your company previously operate under another name?					Yes	No
If YES state the previous details below:						
Trading Name						
Registered Name						
Company Registration No Or ID No If a Sole Proprietor						
Form of Entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor
	Non-profit (NPO's or NPC)	Personal Liability Co	State Owned Co	National Govt	Provincial Govt	Local Govt
	Educational Institution	Specialised Profession	Financial Institution	Joint Venture	Foreign International	Foreign Branch Office

Your Current Company's VAT Registration Status	
VAT Registration Number	
If Exempted from VAT registration , state reason and submit proof from SARS in confirming the exemption status	

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

If your business entity is not VAT Registered, please submit a current original sworn affidavit (see example in Appendix I). Your Non VAT Registration must be confirmed annually.

Company Banking Details		Bank Name	
Universal Branch Code		Bank Account Number	

Company Physical Address			
		Code	
Company Postal Address			
		Code	
Company Telephone number			
Company Fax Number			
Company E-Mail Address			
Company Website Address			

Company Contact Person Name	
Designation	
Telephone	
Email	

Is your company a Labour Broker?	Yes		No	
Main Product / Service Supplied e.g. Stationery / Consulting / Labour etc.				
How many personnel does the business employ?	Full Time		Part Time	
Please Note: Should your business employ more than 2 full time employees who are not connected persons as defined in the Income Tax Act, please submit a sworn affidavit, as per Appendix II.				

Most recent Financial Year's Annual Turnover	<R10Million EME		>R10Million <R50Million QSE		>R50Million Large Enterprise	

Does your company have a valid proof of B-BBEE status?						Yes		No						
Please indicate your Broad Based BEE status (Level 1 to 9)						1	2	3	4	5	6	7	8	9
Majority Race of Ownership														
% Black Ownership		% Black Women Ownership		% Black Disabled person(s) Ownership		% Black Youth Ownership								
% Black Unemployed		% Black People Living in Rural Areas		% Black Military Veterans										
Please Note: Please provide proof of B-BBEE status as per Appendix C and D:														

- Large Enterprise and QSEs with less than 51% black ownership need to obtain a B-BBEE certificate and detailed scorecard from an accredited rating agency;
- EMEs and QSEs with at least 51% black ownership may provide an affidavit using the templates provided in Appendix C and D respectively;
- Black Disabled person(s) ownership will only be accepted if accompanied with a certified letter signed by a physician on the physician's letterhead confirming the disability;
- A certified South African identification document will be required for all Black Youth Ownership.

Supplier Development Information Required			
EMPOWERING SUPPLIER An Empowering Supplier is a B-BBEE compliant Entity which complies with at least three criteria if it is a large Entity, or one criterion if it is a Qualifying Small Enterprise ("QSE"), as detailed in Statement 400 of the New Codes. In terms of the requirements of an Empowering Supplier, numerous companies found it challenging to meet the target of 25% transformation of raw materials or beneficiation including local manufacturing, particularly so, if these companies imported goods or products from offshore. The matter was further compounded by the requirement for 25% of Cost of Sales, excluding labour cost and depreciation, to be procured from local producers or suppliers.	YES	☐	NO ☐
FIRST TIME SUPPLIER A supplier that we haven't as yet Traded within Transnet and will be registered via our database for the 1 st time.	YES	☐	NO ☐
SUPPLIER DEVELOPMENT PLAN Supplier Development Plan is a plan that when we as Transnet award a supplier a long term contract depending on the complexity of the Transaction. We will negotiate supplier development obligations that they must meet throughout the contract duration. e.g. we might request that they (create jobs or do skills development or encourage procurement from designated groups. (BWO, BYO & BDO etc.).	YES	☐	NO ☐
DEVELOPMENT PLAN DOCUMENT Agreed plan that will be crafted with the supplier in regards to their development (It could be for ED OR SD in terms of their developmental needs they may require with the company.	YES	☐	NO ☐
ENTERPRISE DEVELOPMENT BENEFICIARY	YES	☐	NO ☐

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

A supplier that is not as yet in our value chain that we are assisting in their developmental area.	
SUPPLIER DEVELOPMENT BENEFICIARY A supplier that we are already doing business with or transacting with and we are also assisting them assisting them in their developmental area e.g. (They might require training or financial assistance etc.)	YES ☐ NO ☐
GRADUATION FROM ED TO SD BENEFICIARY When a supplier that we assisted with as an ED beneficiary then gets awarded a business and we start Transacting with.	YES ☐ NO ☐
ENTERPRISE DEVELOPMENT RECIPIENT A supplier that isn't in our value chain as yet but we have assisted them with an ED intervention	YES ☐ NO ☐

By signing below, I hereby verify that I am duly authorised to sign for and on behalf of firm / organisation and that all information contained herein and attached herewith are true and correct			
Name and Surname		Designation	
Signature		Date	

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

APPENDIX B

Affidavit or Solemn Declaration as to VAT registration status

Affidavit or Solemn Declaration

I, _____ solemnly swear/declare
that _____ is not a registered VAT
vendor and is not required to register as a VAT vendor because the combined value of taxable supplies
made by the provider in any 12 month period has not exceeded or is not expected to exceed R1million
threshold, as required in terms of the Value Added Tax Act.

Signature: _____

Designation: _____

Date: _____

Commissioner of Oaths

Thus signed and sworn to before me at _____ on this the _____
day of _____ 20_____,

the Deponent having knowledge that he/she knows and understands the contents of this Affidavit,
and that he/she has no objection to taking the prescribed oath, which he/she regards binding on
his/her conscience and that the allegations herein contained are all true and correct.

Commissioner of Oaths

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

APPENDIX C

SWORN AFFIDAVIT – B-BBEE QUALIFYING SMALL ENTERPRISE – GENERAL

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.

2. I am a Member / Director / Owner of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Enterprise Physical Address:	
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):	
Nature of Business:	
Definition of "Black People"	As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians – (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisation- i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"

Definition of "Black Designated Groups"	Black Designated Groups means: (a)unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; (b) Black people who are youth as defined in the National Youth Commission Act of 1996; (c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act; (d) Black people living in rural and under developed areas; (e)Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"

3. I hereby declare under Oath that:

- The Enterprise is _____% Black Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Designated Group Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Owned % Breakdown as per the definition stated above:
- Black Youth % = _____%
- Black Disabled % = _____%
- Black Unemployed % = _____%
- Black People living in Rural areas % = _____%
- Black Military Veterans % = _____%
- Based on the Financial Statements/Management Accounts and other information available on

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

the latest financial year-end of _____, the annual Total Revenue was between

R10,000,000.00 (Ten Million Rands) and R50,000,000.00 (Fifty Million Rands),

- Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

100% Black Owned	Level One (135% B-BBEE procurement recognition level)	
At Least 51% black owned	Level Two (125% B-BBEE procurement recognition level)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.

5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature

.....

Date

.....

Commissioner of Oaths

Signature & stamp

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

APPENDIX D

SWORN AFFIDAVIT – B-BBEE EXEMPTED MICRO ENTERPRISE – GENERAL

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Member / Director / Owner of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Enterprise Physical Address:	
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):	
Nature of Business:	

Definition of "Black People"	As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians – (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisationi- i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"
Definition of "Black Designated Groups"	"Black Designated Groups means: (a)unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; (b) Black people who are youth as defined in the National Youth Commission Act of 1996; (c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act; (d) Black people living in rural and under developed areas; (e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"

3. I hereby declare under Oath that:

- The Enterprise is _____% Black Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Designated Group Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

- Black Designated Group Owned % Breakdown as per the definition stated above:
- Black Youth % = _____ %
- Black Disabled % = _____ %
- Black Unemployed % = _____ %
- Black People living in Rural areas % = _____ %
- Black Military Veterans % = _____ %
- Based on the Financial Statements/Management Accounts and other information available on the latest financial year-end of _____, the annual Total Revenue was R10,000,000.00 (Ten Million Rands) or less
- Please Confirm on the below table the B-BBEE Level Contributor, **by ticking the applicable box.**

100% Black Owned	Level One (135% B-BBEE procurement recognition)	
At least 51% Black Owned	Level Two (125% B-BBEE procurement recognition level)	
Less than 51% Black Owned	Level Four (100% B-BBEE procurement recognition level)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the Owners of the Enterprise which I represent in this matter.

5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature

.....

Date

.....

Commissioner of Oaths

Signature & stamp

Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

VENDOR REGISTRATION DOCUMENTS CHECKLIST

Please note that you will have to provide the first two documents on the list (highlighted in red) and the rest will be provided by the supplier:

	Yes	No
1. Complete the "Supplier Declaration Form" (SDF) (commissioned). See attachment.		
2. Complete the "Supplier Code of Conduct" (SCC). See attachment.		
3. Copy of cancelled cheque OR letter from the bank verifying banking details (with bank stamp not older than 3 Months & sign by Bank Teller).		
4. Certified (Not Older than 3 Months) copy of Identity document of Shareholders/Directors/Members (where applicable).		
5. Certified copy of certificate of incorporation, CM29 / CM9 (name change).		
6. Certified copy of share Certificates of Shareholders, CK1 / CK2 (if CC).		
7. A letter with the company's letterhead confirming both Physical and Postal address.		
8. Original or certified copy of SARS Tax Clearance certificate and Vat registration certificate.		
9. BBBEE certificate and detailed scorecard from a SANAS Accredited Verification Agency and/or Sworn Certified Affidavit.		
10. Central Supplier Database (CSD) Summary Registration Report.		

C1.2 Contract Data

Part one - Data provided by the Employer

Clause	Statement	Data
1	General The conditions of contract are the core clauses and the clauses for main Option	A: Priced contract with activity schedule
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X2 Changes in the law X3: Multiple currencies X4: Parent Company guarantees X5: Sectional Completion X7: Delay damages X13: Performance Bond X16: Retention X18: Limitation of liability X20: Key performance indicators Z: Additional conditions of contract
	of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)	
10.1	The Employer is:	Transnet SOC Ltd (Registration No. 1990/000900/30)

	Address	Registered address: Transnet Corporate Centre 138 Eloff Street Braamfontein Johannesburg 2000
	Having elected its Contractual Address for the purposes of this contract as:	Transnet National Ports Authority eMendi Building N2 Neptune Road Off Klub Road Port of Ngqura Port Elizabeth 6100
10.1	The Project Manager is: (Name)	Thulisa Zukulu
	Address	Transnet National Ports Authority eMendi Building N2 Neptune Road Off Klub Road Port of Ngqura Port Elizabeth 6100
	Tel	066 294 7746
	e-mail	Thulisa.Zukulu@transnet.net
10.1	The Supervisor is: (Name)	Yandisa Siralarala
	Address	eMendi Building N2 Neptune Road Off Klub Road Port of Ngqura Port Elizabeth 6100
	Tel No.	+27605694491
	e-mail	Yandisa.Siralarala@transnet.net
11.2(13)	The works are	APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

11.2(14) The following matters will be included in the Risk Register

- 1. Weather. Inclement weather ie. Extreme rain, snow and strong winds. The contractor needs to take precautions when planning the sequence and resources for the works. Reliable wind speed meters should be acquired and recordings to be kept during periods where work could not be done due to high winds in the area.**
 - 2. Existing infrastructure. Damage to all existing infrastructure and equipment will be for the Contractor to replace/rebuild. All construction delays and procurement for the said infrastructure and equipment will be for the Contractor and not billed back to Transnet.**
 - 3. Health care facilities. The contractor is to note where the nearest health care facilities are and the response time of emergency medical rescue service providers in case of an emergency.**
 - 4. Theft. The site and working areas are to be guarded to ensure that no theft can take place that will affect the continuity of supply or loss to the employer's existing assets.**
 - 5. Material suppliers. Steel suppliers to meet all Transnet requirements. Any disputes between the suppliers and the Contractor will not be handled by Transnet.**
 - 6. Labour issues. These issues are to be properly managed in the event that local labour is to be hired to limit any disruptions of the work by local residents.**
 - 7. Time. This contract has to be completed within the contract period. Any delays will have a negative impact on subsequent activities as well as to**
-

the stability of the head office operations.

11.2(15)	The boundaries of the site are	As stated in Part C4.1."Description of the Site and it surroundings"	
11.2(16)	The Site Information is in	Part C4: Site Information	
11.2(19)	The Works Information is in	Part C3: Scope of Work and all documents and drawings to which it makes reference.	
12.2	The law of the contract is the law of	the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.	
13.1	The language of this contract is	English	
13.3	The period for reply is	2 weeks	
2	The Contractor's main responsibilities	No additional data is required for this section of the conditions of contract.	
3	Time		
11.2(3)	The completion date for the whole of the works is	15 December 2023	
11.2(9)	The key dates and the conditions to be met are:	Condition to be met	key date
		1 Project submission	Schedule 15 May 2023
		2 Engineering Completed	Designs 24 July 2023
		3 Construction commences	3 August 2023
30.1	The access dates are	Part of the Site	Date
		1 First Floor	1 August 2023
		2 Second Floor	12 September 2023
		3 Third Floor	9 October 2023
		4 Fourth Floor	23 October 2023
31.1	The Contractor is to submit a first programme for acceptance within	2 weeks of the Contract Date.	

31.2	The starting date is	1 May 2023
32.2	The Contractor submits revised programmes at intervals no longer than	2 weeks of the Contract Date.
35.1	The Employer is not willing to take over the works before the Completion Date.	
4	Testing and Defects	
42.2	The defects date is	52 (fifty two) weeks after Completion of the whole of the works.
43.2	The defect correction period is	2 weeks
5	Payment	
50.1	The assessment interval is monthly on the	25th (twenty fifth) day of each successive month.
51.1	The currency of this contract is the	South African Rand.
51.2	The period within which payments are made is	Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.
51.4	The interest rate is	the prime lending rate of Standard Bank of South Africa.
6	Compensation events	
60.1(13)	The weather measurements to be recorded for each calendar month are,	the cumulative rainfall (mm) the number of days with rainfall more than 10 mm the number of days with minimum air temperature less than 0 degrees Celsius the number of days with snow lying at 08:00 hours South African Time and these measurements: mm
	The place where weather is to be recorded (on the Site) is:	The Contractor's Site establishment area

The weather data are the records of past weather measurements for each calendar month which were recorded at:

South African Weather Service 012 367 6023 or info3@weathersa.co.za

and which are available from:

South African Weather Service 012 367 6023 or info3@weathersa.co.za.

7	Title	No additional data is required for this section of the conditions of contract.
8	Risks and insurance	
80.1	These are additional Employer's risks	None
84.1	The Employer provides these insurances from the Insurance Table	
	1 Insurance against:	Loss of or damage to the works, Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.
	Cover / indemnity:	to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are:	as stated in the insurance policy for Contract Works / Public Liability
	2 Insurance against:	Loss of or damage to property (except the works, Plant and Materials & Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability
	Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are	as stated in the insurance policy for Contract Works / Public Liability

3	Insurance against:	Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability
	Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are:	As stated in the insurance policy for Contract Works / Public Liability
4	Insurance against:	Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon
	Cover / indemnity	Cover / indemnity is to the extent provided by the SASRIA coupon
	The deductibles are	The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.
	Note:	The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."

84.1

The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract for any one event is

The Contractor must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.

The Contractor provides these additional Insurances

1 Where the contract requires that the design of any part of the works shall be provided by the Contractor the Contractor shall satisfy the Employer that professional indemnity insurance cover in connection therewith has been affected

2 Where the contract involves manufacture, and/or fabrication of Plant & Materials, components or other goods to be

incorporated into the works at premises other than the site, the Contractor shall satisfy the Employer that such plant & materials, components or other goods for incorporation in the works are adequately insured during manufacture and/or fabrication and transportation to the site.

3 Should the Employer have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the Contractor's policies of insurance as well as those of any sub-contractor

4 Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000/R10 000 000.

7 The insurance coverage referred to in 1, 2, 3, 4, 5 and 6 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the Employer. The Contractor shall arrange with the insurer to submit to the Project Manager the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the Contractor.

84.2 The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and

Whatever the Contractor requires in addition to the amount of insurance taken out by the Employer for the same risk.

	Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract for any one event is	
84.2	The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:	Principal Controlled Insurance policy for Contract
9	Termination	There is no additional Contract Data required for this section of the conditions of contract.
10	Data for main Option clause	
A	Priced contract with Activity Schedule	No additional data is required for this Option.
11	Data for Option W1	
W1.1	The Adjudicator is	Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the Adjudicator, the Chairman of the Association of Arbitrators will appoint an Adjudicator.
W1.2(3)	The Adjudicator nominating body is:	The Chairman of the Association of Arbitrators (Southern Africa)
	If no Adjudicator nominating body is entered, it is:	the Association of Arbitrators (Southern Africa)
W1.4(2)	The tribunal is:	Arbitration
W1.4(5)	The arbitration procedure is	The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)
	The place where arbitration is to be held is	Johannesburg, South Africa
	The person or organisation who will choose an arbitrator	

- if the Parties cannot agree a choice or
- if the arbitration procedure does not state who selects an arbitrator, is

The Chairman of the Association of Arbitrators (Southern Africa)

12 Data for secondary Option clauses

X2 Changes in the law No additional data is required for this Option

X4 Parent company guarantee No additional data is required for this Option

X5 Sectional Completion

X5.1	The completion date for each section of the works is:	Section	Description	Completion date
		1 Design	100% Detailed Engineering	28 July 2023
		2 1st Floor	Construction	1 September 2023
		3 2nd Floor	Construction	29 September 2023
		2 3rd Floor	Construction	3 November 2023
		3 4th Floor	Construction	8 December 2023

X5 & X7 Sectional Completion and delay damages used together

X7.1 Delay damages for late Completion
X5.1 of the sections of the works are:

Section	Description	Amount per day
1 Design	100% Detailed Engineering	R15 000
2 1st Floor	Construction	R15 000
3 2nd Floor	Construction	R15 000

		4 3rd Floor Construction	R15 000
		5 4th Floor Construction	R15 000
	Remainder of the works		R15 000
X13	Performance bond		
X13.1	The amount of the performance bond is	5% of the total of the Prices	
X16	Retention		
X16.1	The retention free amount is	Nil	
	The retention percentage is	10% on all payments certified.	
X18	Limitation of liability		
X18.1	The Contractor's liability to the Employer for indirect or consequential loss is limited to:	Nil (this is the default position depending on a risk assessment; therefore, this can go up to Total of the Prices)	
X18.2	For any one event, the Contractor's liability to the Employer for loss of or damage to the Employer's property is limited to:	The deductible of the relevant insurance policy	
X18.3	The Contractor's liability for Defects due to his design which are not listed on the Defects Certificate is limited to:	The cost of correcting the Defect	
X18.4	The Contractor's total liability to the Employer for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	The Total of the Prices	
X18.5	The end of liability date is	3 years after Completion of the whole of the works	

Z	Additional conditions of contract are:
Z2	Additional clause relating to Performance Bonds and/or Guarantees
Z2.1	The Performance Guarantee under X13 above shall be an irrevocable, on-demand performance guarantee, to be issued exactly in the form of the Pro Forma documents provided for this purpose under C1.3 (Forms of Securities), in favour of the Employer by a financial institution reasonably acceptable to the Employer.
Z3	Additional clauses relating to Joint Venture
Z3.1	Insert the additional core clause 27.5 27.5. In the instance that the Contractor is a joint venture, the Contractor shall provide the Employer with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date. The Joint Venture agreement shall contain but not be limited to the following: • A brief description of the Contract and the Deliverables; • The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture; • The constituent's interests; • A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents;

- **Details of an internal dispute resolution procedure;**
- **Written confirmation by all of the constituents:**
 - i. **of their joint and several liabilities to the Employer to Provide the Works;**
 - ii. **identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the Contractor's representative;**
 - iii. **Identification of the roles and responsibilities of the constituents to provide the Works.**
- **Financial requirements for the Joint Venture:**
 - iv. **the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time;**
 - v. **the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.**

Z3.2

Insert additional core clause 27.6

27.6. The Contractor shall not alter its composition or legal status of the Joint Venture without the prior approval of the Employer.

Z4 Additional obligations in respect of Termination

Z4.1

The following will be included under core clause 91.1:

In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and

Under the second main bullet, insert the following additional bullets after the last sub-bullet:

- **commenced business rescue proceedings (R22)**
- **repudiated this Contract (R23)**

Z4.2 Termination Table

The following will be included under core clause 90.2 Termination Table as follows:

Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"

Z4.3

Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."

Z5 Right Reserved by the Employer to Conduct Vetting through SSA

Z5.1

The Employer reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any Contractor who has access to National Key Points for the following without limitations:

- 1. Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state.**
- 2. Secret – clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state.**
- 3. Top Secret – this clearance is based on information which may be used by malicious, opposing or hostile**

elements to neutralise the objectives and functions of an organ of state.

Z6 Additional Clause Relating to Collusion in the Construction Industry

Z6.1 The contract award is made without prejudice to any rights the Employer may have to take appropriate action later with regard to any declared tender rigging including blacklisting.

Z7 Protection of Personal Information Act

Z7.1 The Employer and the Contractor are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act.

C1.2 Contract Data

Part two - Data provided by the Contractor

The tendering Contractor is advised to read both the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The Contractor is (Name):	
	Address	
	Tel No.	
	Fax No.	
11.2(8)	The direct fee percentage is	%
	The subcontracted fee percentage is	%
11.2(18)	The working areas are the Site and	
24.1	The Contractor's key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	

		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .		
11.2(14)	The following matters will be included in the Risk Register			
31.1	The programme identified in the Contract Data is			
A	Priced contract with activity schedule			
11.2(20)	The activity schedule is in			
11.2(30)	The tendered total of the Prices is	(in figures) (in words), excluding VAT		
	Data for Schedules of Cost Components	Note "SCC" means Schedule of Cost Components starting on page 60 of ECC, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC.		
A	Priced contract with activity schedule	Data for the Shorter Schedule of Cost Components		
41 in SSCC	The percentage for people overheads is:	%		
21 in SSCC	The published list of Equipment is the last edition of the list published by			
	The percentage for adjustment for Equipment in the published list is	% (state plus or minus)		
22 in SSCC	The rates of other Equipment are:	Equipment	Size or capacity	Rate

61	in	The hourly rates for Defined Cost of design outside the Working Areas are	Category of employee	Hourly rate
62	in	The percentage for design overheads is	%	
63	in	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:		

C1.1: Form of Offer & Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS) IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS

The tenderer, identified in the Offer signature block, has

either	examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.
or	examined the draft contract as listed in the Acceptance section and agreed to provide this Offer.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the Contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 15% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the Contractor in the conditions of contract identified in the Contract Data.

Signature(s)

Name(s)

Capacity

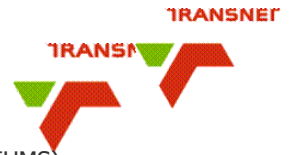
**For the
tenderer:**

(Insert name and address of organisation)

Date

Transnet National Ports Authority
TENDER NUMBER: TNPA/2023/02/0002/22112/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND
CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)
IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS



Name &
signature of
witness

Tenderer's CIDB registration number:

Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now Contractor) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

**for the
Employer**

Transnet SOC Ltd

(Insert name and address of organisation)

Name &
signature of
witness

Date

Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		
5		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

For the tenderer:

For the Employer

Signature

Name

Capacity

On behalf
of

(Insert name and address of organisation)

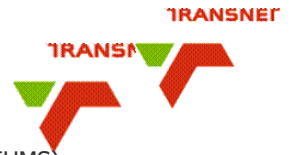
Transnet SOC Ltd

Name &
signature
of witness

Transnet National Ports Authority

TENDER NUMBER: TNPA/2023/02/0002/22112/RFP

DESCRIPTION OF THE WORKS: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS) IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS



Date

.....

.....

PART C3: SCOPE OF WORK

Document reference	Title	No of page
	This cover page	1
C3.1	Employer's Works Information	82
C3.2	Annexure 1- Employer's Drawings	
C3.3	Annexure 2- Health Safety	
C3.4	Annexure 3- Transnet Quality Standard	
	Total number of pages	83

C3.1 EMPLOYER'S WORKS INFORMATION

Contents

PART C3: SCOPE OF WORK.....	1
SECTION 1	4
1 Description of the works	4
1.1 Executive overview.....	4
1.2 Employer's objectives	4
1.3 Scope of Works.....	7
2 Engineering and the Contractor's design.....	37
2.1 Parts of the works which the Contractor is to design	37
2.2 Review and Acceptance of Contractor Documentation	38
2.3 Use of Contractor's design	38
2.4 As-built drawings, operating manuals, and maintenance schedules.....	40
2.5 Anticipated timelines for the project.....	41
3. Construction.....	43
3.1 The following considerations shall be made in the construction phase.....	43
3.2 Completion, testing, commissioning, and correction of Defects.....	56
4 Plant and Materials Standards and Workmanship.....	61
4.1 Investigation, Survey and Site Clearance.....	61
4.2 Drawings issued by the Employer	62
SECTION 2.....	66
5 Management and start up	66
5.1 Management meetings	66
5.2 Documentation Control.....	68
5.3 Health and Safety Management.....	70
5.4 Environmental constraints and management	72
5.5 Quality assurance requirements.....	74

5.6	Programming constraints	76
5.7	Contractor's management, supervision, and key people.....	77
5.8	Insurance provided by the Employer	79
5.9	Contracts change management	79
5.10	Provision of bonds and guarantees	79
5.11	Records of Defined Cost, payments & assessments of compensation events kept by Contractor	80
5.12	The Contractor's Invoices	80
5.13	CONTRACTOR LIABILITY	81
5.14	INDUSTRIAL ACTION BY CONTRACTOR EMPLOYEES	82
5.15	Plant, Equipment and Materials	83
ANNEXURES.....		85

SECTION 1

1 Description of the works

1.1 Executive overview

Transnet National Port Authority's Head Office have recently relocated from Parktown, Johannesburg and Kingsmead, Durban offices to Port of Ngqura's eMendi Building. The eMendi building was commissioned in April 2017, however there was some outstanding scope that couldn't be done due to budget constraints.

With the relocation of the TNPA head office to the Port of Ngqura (eMendi building), an opportunity has presented itself to maximise the occupancy potential of the building through a reconfiguration of the office space. The scope of this project shall include closure of eMendi atrium space to create additional office space.

1.2 Employer's objectives

The Employer aims to maximise the occupancy potential of the Emendi building through reconfiguration of the office space, to ensure it is fit for use and accommodates the new capacity of the Port and Head Office (HQ) employees.

The Employer's objective is to enter into a contract with a Contractor to provide detailed engineering design service to 100% including Approved For Construction (AFC) drawings, prepare for construction works and procure critical long lead and non-critical items and construction management for the building extensions at the atriums in the eMendi building (Port of Ngqura), Eastern Cape. This also includes all other relevant services of the Project Lifecycle Process (PLP) for project delivery.

Transnet National Ports Authority (TNPA) employs a methodology of capital infrastructure approval called the PLP which involves incremental development of projects in terms of their engineering detail and associated cost estimates through 5 stages of development and the stages are:

- Concept study
- Pre-feasibility study
- Feasibility studies
- Execution and commissioning phase
- Handover and close out phase

TNPA has prepared floor layout plans for the eMendi building and consequently now wishes to procure the services of a Contractor to:

- Use the floor layout plans and existing building model (where available) to perform the simulation and design development for the extension of each of the four floors, and produce the schedules, cost estimates, constructability sequencing, risks and assumptions associated with the new alterations to the building
- Undertake the detailed engineering design work to bring the Contractor's conceptual design to 100% which includes the development of design works to a level that is fit for purpose to support procurement, construction, and project controls. Detailed engineering activities produce deliverables that are integral to the ability to procure properly sized and technically correct equipment, components and materials to enable construction and commissioning activities. The level of engineering, including preparations of drawings, would be advanced quite considerably in order to be able to support a definitive estimate and preparation of procurement documentation for critical long lead items.

The Contractor is to provide the following below services:

- Procurement to source equipment and materials for construction works
- Undertake the construction works on each of the four floors
- Undertake construction management services
- Undertake pre-commissioning activities including planning, coordination, management and up to ready for commissioning
- Undertake project commissioning until the building is certified and fit for usage and the systems are certified to operate
- Provide cost, schedule and contract management for and on behalf of and in line with the Employer's relevant procedures and policies
- Supply end of project documentation – project close-out

The tasks necessary to execute the services are listed below, however, the exclusion or one or more of the tasks or portions thereof from this contract will be solely at the discretion of the Employer in terms of the NEC 3 ECC Option A contract. The Tenderer therefore needs to price in such a way that the rates offered in this tender hold good irrespective of the number of tasks or portions thereof that are ultimately awarded or issued under this contract by the Employer.

The Contractor shall undertake the works with the clear understanding that they are acting as Employer's service provider and therefore be fully aware and know and be

knowledgeable of the Transnet business requirements, policies, and procedures. The Contractor will comply with the relevant Transnet requirements, policies, and procedures.

The scope of services shall be executed as per the following four packages:

PACKAGE A – Structural assessment and preliminary designs

- Carry out structural condition assessment for the four work areas to confirm structural integrity and capacity and produce the condition assessment report for the Atriums.
- Develop the multi-disciplinary preliminary designs, engineering reports, specifications, and conceptual drawings as detailed in the scope of work
- Review the existing engineering 3-D design model for the building (where available)
- Develop the multi-disciplinary engineering 3-D design model for the building
- Produce the preliminary engineering design report

PACKAGE B – Detailed design

- Develop detailed drawings to 100% engineering detail including all associated specification documents
- Produce detailed engineering design reports
- Develop and finalize project cost estimates and project schedule for the construction works
- Procurement for construction works
- Allowance for biweekly technical meetings, monthly progress meetings, reports, and presentations
- Finalize all Atriums engineering designs to 100% AFC with relevant supporting technical documentation and schedule of quantities
- Produce the complete functional engineering 3-D design model
- Deliver the project execution plan with all relevant supporting management plans for construction (project execution)

PACKAGE C – Construction

- Undertake construction works (building alterations) to the four floors
- Provide construction supervision and quality assurance for construction works
- Prepare and present constructability sequencing report including risks and assumptions associated

-
- Prepare procurement schedules required to achieve the Four Floors construction completion Date
 - Allowance for biweekly technical meetings, monthly progress meetings, reports, and presentation
 - Plan, prepare, co-ordinate cold commissioning activities and documentation required to for use during hot commissioning phase
 - Construction management including project controls and construction schedule management, supervision, and co-ordination of all technical aspects during construction.
 - Address all field engineering queries and provide solutions and resolve for the duration of construction and during the hot commissioning phase

PACKAGE D – Construction Management and Commissioning Stages

- Plan, prepare, co-ordinate cold commissioning activities and documentation required to for use during hot commissioning phase
- Construction management including project controls and construction schedule management, supervision, and co-ordination of all technical aspects during construction.
- Address all field engineering queries and provide solutions and resolve for the duration of construction and during the hot commissioning phase
- Prepare and provide all necessary close-out documentation as required
- Allowance for bi-weekly technical meetings, monthly progress meetings, reports, and presentation

1.3 Scope of Works

The Tenderer shall propose deliverables to achieve the required scope of work for acceptance by the Employer. The Tenderer shall propose the skilled staff to be formally mobilised to ensure that the deliverables of this project are met. Furthermore, the Employer and Contractor shall agree the interface particulars as and when applicable. All Owners' team representatives shall be consulted prior to commencement of each package. All relevant policies and procedure documents shall be made available to the Contractor upon request. The Scope of work for this project includes the scope for Architecture, Structures, Electrical, Civil, Mechanical Engineering and Controls and Instrumentation.

The scope of work below is to be read in conjunction with the Architectural layouts.

a) Detailed Engineering Design

The Contractor shall undertake full design responsibility for the total design solution of the closure of eMendi Atrium space to create additional office space. The main parts of the works which the Contractor is to undertake shall be the Detailed Design phase and Execution phase deliverables. The Contractor shall submit all detailed design drawings to the Employer for acceptance prior to the execution stage. The Contractor's ECSA registered engineering designers shall approve all design drawings and documentation prior submission to the Employer.

The Contractor shall complete Detailed designs of Architectural, Structural, Electrical, Mechanical and Controls and Instrumentation as this Works information requires. Detailed scope of work for each Engineering discipline is described from 1.3.1 below. The Contractor shall submit designs as the 'Works Information' requires to the Project Manager for review and acceptance by the Employer's Engineers. Following the approved detailed design, The Contractor shall complete the AFC drawings, specifications and the BOQ of the approved design.

The Contractor grants the Employer a licence to use the copyright in all design data presented to the Employer in relation to the works for any purpose in connection with the construction, re-construction, refurbishment, repair, maintenance, and extension of the works with such licence being capable of transfer to any third party without the consent of the Contractor. The Contractor vests in the Employer full title guarantee in the intellectual property and copyright in the design data created in relation to all works, irrespective of where or what those works may be.

b) Construction Phase

The Contractor shall submit a Method Statement and the Construction Schedule shall be submitted to the Employer for approval before execution. Furthermore, prior to execution the Contractor shall meet all environmental management requirements detailed in the tender evaluation criteria, these include EMP, the submission of the Site establishment plans which should detail Heritage Resource Management, fauna and flora Management, Environmental Policy, appointment of a SHE resources with environmental management competencies such as managing environmental management daily duties on site. The SHE officer must be depicted on the organogram. The Contractor shall minimizedisruptions of business operations in and around the eMendi Admin precinct during the

execution phase of the work. The Contractor shall ensure that a Quality Assurance Plan is in place and shall ensure that the quality of the work is as per the approved scope of work. The Contractor shall submit a Detailed Programme of the planned commissioning procedures to the Project Manager and Employer's Engineers before commissioning commences. The installation shall be comprehensively tested and commissioned as individual and integrated systems as may be required by the configuration, after the Works are substantially complete.

On or before the Completion Date the Contractor shall have done everything required to Provide the Works, including removal of his establishment, waste, and equipment from the site. The Project Manager cannot certify Completion until all the work is completed and is also free of Defects, which would have, in his/her opinion, prevented the Employer from using the works and Others from doing their work. Contractor shall, upon completion, furnish the Employer with As-built data in native (CAD) and PDF format.

The detailed engineering design and the architectural construction scope of works is outlined below.

1.3.1 Architectural

***Read in conjunction with the latest version of the Architectural Layouts**

The various work areas have been coded as per below and clearly marked on the floor plans.

1.3.1.1 FIRST FLOOR: Work Area 1.0

CONSTRUCT MEETING ROOM IN ATRIUM OPEN SPACE

REFER TO DRAWING XHOE0006-1-300-A-LA-0002-01

- Construction to be done on existing balcony space.
- Design and construct structural beams and floor above, to level up with second floor (as roof for this floor).
- Design and construct a suspended ceiling with suitable acoustic properties and bulkheads along the perimeter.
- Design, supply and install glass shopfront partitions including 2 double glass doors, each 1,5m wide, from floor to ceiling to match existing shopfronts in the building.
- Allow for frosted decals on all glazed areas.

-
- Allow for signage to doors, to match that on existing doors.
 - Allow for new carpet tiles on floor.
 - Remove existing spotlights at façade.
 - Make good to affected floors and walls.
 - Allow for provision / alteration to Electrical, HVAC and Fire Layouts.
 - Allow for audio visual (A/V) fit-out.

1.3.1.2 SECOND FLOOR: Work Area 2.0

CONSTRUCT MEETING ROOM IN ATRIUM OPEN SPACE

REFER TO DRAWING XHOE0006-1-400-A-LA-0002-01

- Install timber floorboards suitable to carry the load for office use
- Design and construct structural beams and floor above, to level up with third floor (as roof for this floor).
- Design and construct a suspended ceiling with suitable acoustic properties and bulkheads along the perimeter.
- Design, supply and install glass shopfront partitions including 1 single glass door (900 wide) from floor to ceiling to match existing shopfronts in the building.
- Install new drywall between existing Boardroom and new space to create a passage.
- Partially remove existing drywall (create opening) between concrete column and the new drywall to create a passage.
- Remove last module of existing shopfront and install a single glass door to create access via a new passage to the new space.
- Allow for new carpet tiles on the floor.
- Make good the affected floors, walls, and ceilings.
- Allow frosted decals on glazing.
- Allow for signage to match existing.
- Allow for alteration to Electrical, HVAC and Fire layouts
- Allow for A/V fit-out.

1.3.1.3 THIRD FLOOR: Work Area 3.0

CONSTRUCT MEETING ROOM IN ATRIUM OPEN SPACE

REFER TO DRAWING XHOE0006-1-500-A-LA-0002-01

- Install timber floorboards suitable to carry the load for office use

-
- Design and construct structural beams and floor above, to level up with fourth floor (as roof for this floor).
 - Design and construct a suspended ceiling with suitable acoustic properties and bulkheads along the perimeter.
 - Design, supply and install glass shopfront partitions including 1 single glass door (900 wide) from floor to ceiling to match existing shopfronts in the building.
 - Install new drywall between existing Boardroom and new space to create a passage.
 - Partially remove existing drywall (create opening) between concrete column and the new drywall to create a passage.
 - Remove last module of existing shopfront and install a single glass door to create access via a new passage to the new space.
 - Allow for new carpet tiles on the floor.
 - Make good the affected floors, walls, and ceilings.
 - Allow frosted decals on glazing.
 - Allow for signage to match existing.
 - Allow for alteration to Electrical, HVAC and Fire layouts
 - Allow for A/V fit-out.

1.3.1.4 FOURTH FLOOR: Work Area 4.0

CONSTRUCT MEETING PODS IN ATRIUM OPEN SPACE

REFER TO DRAWING XHOE0006-1-600-A-LA-0002-01

- Install timber floorboards suitable to carry the load for office use
- Reconfigure existing shopfront and install a single glass door to create access via existing office to the new space.
- Allow for new carpet tiles on floor (created as roof for third floor)
- Allow for alteration to Electrical, HVAC and Fire layouts.
- Design supply and install modular “pods” suitable for small meeting rooms / think tanks. (Provide connection points for Electrical and HVAC) Contractor to propose a solution.
- Install stainless steel balustrade to match existing.
- Make good to affected floors and walls

**NB: THESE LAYOUTS ARE SUBJECT TO THE FIRE CHIEF'S APPROVAL
PRIOR TO IMPLEMENTATION**

1.3.2 Structural Engineering

The requirements for the structural design of the eMendi building floor expansion project to be carried out by the Contractor shall include the following:

- Full structural design of the proposed new floors as indicated on the conceptual architectural layouts.
- The design live load for each new floor shall be a minimum of 3kN/m² (general office occupancy).
- Verify that the existing structure will be capable of carrying the additional loads imposed from the new floors. As built drawings inclusive of layouts, bending schedules and reinforcement diagrams will be provided.
- Liaise with the structural engineer who undertook the original design of the eMendi building and verify if they will continue to maintain design responsibility of the atrium area taking into consideration the introduction of the proposed new floor areas. If they are not willing to maintain design responsibility, the designer of the proposed new floors shall take over the design responsibility of all the structural elements in atrium areas affected by the proposed new floors in the eMendi building.
- Carry out structural condition assessment for the four work areas to confirm structural integrity and capacity and produce the condition assessment report for the Atriums.
- Develop the structural engineering designs, reports, specifications, and detailed drawings (AFC).
- Develop the multi-disciplinary engineering 3-D design model for the building.
- Produce the detailed engineering design report, bending schedules and reinforcement drawings.

1.3.3 Mechanical Engineering

- a. The summary of works to be carried out by the Contractor shall include:
- Review of the as built drawings of the building.
 - Physical assessment/evaluation of the building's HVAC, fire detection, and fire suppression systems.
 - Review of the Employer's conceptual designs and altering the design where necessary. This means that the Contractor will take full responsibility of the designs.
 - Preparation of a baseline report, and detailed design drawings for acceptance by the Employer.
 - Design, Supply, installation, testing, and commissioning of the HVAC, fire detection, and fire suppression systems.
- b. The detailed works to be carried out by the Contractor shall include:
- Complete review of the as built drawings for the building.
 - Physical Assessment/evaluation of the building's HVAC, fire detection, water reticulation and fire protection systems (Portable fire suppression equipment, Fire and emergency signage and evacuation plans).
 - Detailed design of Air Conditioning, Ventilation, Smoke extraction, Water Reticulation, Portable and fixed Fire Suppression Equipment, Fire and emergency signage, Fire detection, Sprinkler Systems and all related systems for their correct operation. The Employers conceptual design shall be used as the basis of design; however, the Contractor shall verify all design data and shall take on full responsibility for the design of the systems. Where the conceptual design utilised available capacity on existing plant the Contractor shall verify that the plant is capable of delivering the capacity, or alternatively provide a suitable solution in the detailed design.
 - The Contractor is to ensure that current sprinkler system complies with latest rules of ASIB, and that it meets the requirements of all new partitioning within the building. Where the design does not comply, the Contractor is to include in the detailed design for the modifications required to ensure complete compliance to the rules.

-
- The Contractor's scope shall include all supporting infrastructure required for all mechanical works. Including but not limited to all structural supports for the fire and potable water reticulation systems regarding, thrust blocks, and anchoring down supports for the pipeline or bridges, plant bases or plinths, plant supports and fixings for all equipment.
 - The Contractor shall conduct flow and pressure analysis on all existing water tie in points to ensure sufficient flow and pressure requirements are met to comply to SANS and local regulations as well as correct operation. This shall include the flow and pressure on both the potable water lines as well as the manual and automatic fire suppression systems
 - The Contractor shall ensure all painting and corrosion protection is designed to comply with the SANS codes, Transnet standards and to meet the environmental conditions.
 - The design shall also include the complete integration of the systems into the current BMS system, and all plant selected shall be compatible with the current BMS infrastructure. All components and systems required for the BMS integration as well as all electrical infrastructure such as all control and actuation systems; MCC panels and Electrical Distribution Boards required for the mechanical Plant; and Electrical work including connection to power isolators, wiring between switchboards, unit mounted sensors, control devices, etc. and wiring between controllers and remote sensors, remote set point adjusters, etc. required for the correct working of the systems shall form part of the scope of the Contractor. The Contractor shall ensure that all air-conditioning, ventilation, fire detection and fire sprinkler equipment (new and existing), be integrated into the existing BMS system. The activation of the sprinkler system or the fire detection system shall shut down all HVAC equipment to ensure fire is not spread throughout the building.
 - The Contractor shall provide all detailed workshop and fabrication drawings (approved by an ECSA registered professional) for Air Conditioning, Ventilation, Smoke extraction, Water Reticulation, Portable and fixed Fire Suppression Equipment, Fire and emergency signage, Fire detection, Sprinkler Systems, including pipe schedules, equipment and duct routing, services clashes, and weld maps for acceptance prior to the conclusion of Package B. The drawings shall be accompanied by all calculations and all

drawings shall be provided in both PDF and DWG format. Where equipment needs to be removed due to the new design, the Contractor shall provide a decommissioning and removal plan. The Contractor shall show in his detailed workshop drawings all existing items that are to be repurposed or reused in the new design.

c. The detailed works to be carried out by the Contractor for construction include:

- The Contractor shall supply, construct, test, commission, and hand over, in complete working order, the Air Conditioning, Ventilation, Smoke extraction, Water Reticulation, Portable and fixed Fire Suppression Equipment, Fire and emergency signage, Fire detection, Sprinkler Systems, controls and electrical plant as well as all other systems and plant required as per the accepted designs.
- The Contractor shall provide a complete set of as-built drawings comprising the existing as well as new plant and systems in the building. This shall include but not be limited to the Air Conditioning, Ventilation, Smoke extraction, Water Reticulation, Portable and fixed Fire Suppression Equipment, Fire and emergency signage, Fire detection, Sprinkler Systems, controls, and electrical plant.
- The Contractor shall ensure all drawings mentioned in the Works Information, be supplied to the Employer, in both PDF a native DWG format for use on AutoCAD software.
- Once complete the Contractor shall obtain an approval certification from ASIB showing that the entire building system complies and is approved. Should there be any items that need rectification the Contractor shall be liable to resolve these issues as well as to bear any further cost for reapplying for the certification. The works will only be regarded as complete once the ASIB approval is obtained.
- The Contractor shall provide a detailed testing and commissioning plan including all FAT, Site Acceptance Testing (SAT) and Commissioning tests and activities prior to the commencement of any testing activities.

-
- The Contractor shall test and commission the systems in line with the guidelines as per the Works Information as well as the manufacturer's requirements and industry best practices.
 - The Contractor shall provide 3 hard copies and 2 soft copies (On a USB 64gb Flash drive) of the Operation and Maintenance manuals that will include, but is not limited to, quality certificates and tests conducted during fabrication and installation, all FAT and SAT tests conducted, all commissioning documentation, detailed as built drawings and technical specifications of all plant and systems, operation methodologies and information, maintenance methodologies and information and details of spares and replacement components.
 - The Contractor shall guarantee all installations and equipment for twelve (12) months after "practical completion" date of the completed installation, or sections thereof. This is the date confirmed in writing by the Project Manager.

d. General

The Contractor shall familiarize themselves with local site conditions such as safety requirements, access area available on site, type of ground, space available for on-site fabrication, storage, transport, loading and unloading facilities, scaffolding, tackles, and tools needed, as no claims by the Contractor, which may arise from ignorance of the site conditions, shall be considered.

e. Standard of Work, Equipment, and Materials

All equipment and material used shall be of high quality and the work shall be of a high standard of workmanship carried out by qualified staff under proper supervision by experienced and competent officers.

All equipment and material shall comply with the relevant National or International standard specifications. Where equipment does not comply, it shall be submitted to the TNPA mechanical engineer for approval prior to installation.

All installation, testing and termination must be approved by the TNPA Engineer prior to commissioning.

f. Specifications

The design shall be undertaken using the latest revision of applicable SANS and other relevant standard specifications. The sprinkler designs shall comply with the latest

edition of the ASIB rules. The Contractor shall employ a registered Professional Engineer to review and sign off all design documents and drawings submitted to the Employer for acceptance. The design shall be such that it is built by others to satisfy the functional and serviceability requirements and be cost-effective and safe. Sound Engineering judgment shall be exercised in applying these criteria to the system and its components. The Contractor shall communicate with the Employer to coordinate all designs.

The following publications and specifications (latest edition) shall apply:

SANS 10400	The Application of the National Building Regulations
SANS 10400-T	Fire Protection
SANS 10400-W	Fire Installation
SANS 10400-O	Lighting and Ventilation
SANS 10400-XA	Energy Usage in Buildings
SANS 10287	Automatic sprinkler installations for firefighting purposes
SANS 50054-1	Fire Detection and Fire Alarm Systems
SANS 10139	Code of practice for design, installation, commissioning and maintenance of fire detection and alarm systems in non-domestic premises
ASIB	Rules for Automatic Sprinkler Installations, Latest Edition
SANS 193	Dampers Installation and Testing
EN 15650	Duct Mounted Fire Dampers
SANS 1424	Filters for Use in Air-Conditioning and General Ventilation
SANS 1238	Air Conditioning Ductwork

SANS 10173	The Installation, Testing, and Balancing of Air Conditioning Ductwork
SANS 10147	Refrigerating Systems, Including Plants Associated with Air-Conditioning Systems
SANS 10252	Water Supply and Drainage for Buildings
ASHRAE 55	Thermal Environmental Conditions for Human Occupancy
ASHRAE 62.1	Ventilation for Acceptable Indoor Air Quality
ASHRAE 90.1	Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE 2013	Handbook of Fundamentals
ASHRAE 2012	Handbook HVAC Systems and Equipment
ASHRAE 2011	Handbook HVAC Applications
Occupational Health and Safety Act 85 of 1993.	
The S.A. National Building Regulations and Building Standards Act. (Act 103 of 1977).	
South African National Standards and Codes of Practice.	
IEC Standards and Recommendations.	
International Standards and Codes – ISO, DIN, BS, ASME, ASCE, ANSI, ASTM, EU, NFPA.	
The local, provincial or S.A. Government laws in force at the time.	
Construction Regulations 2014	
National Heritage Resource Act (Act 25 of 1999)	

g. Ductwork

- The Contractor shall evaluate the current duct system.

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- The Contractor shall design, supply, and install ductwork for the first-floor atrium which must be supplied with minimum air flow rate as per SANS 10400 unless the Contractor can rationalise otherwise.
 - The Contractor shall design, supply, and install ductwork for the second floor, atrium which must be supplied with minimum air flow rate as per SANS 10400 unless the Contractor can rationalise otherwise.
 - The Contractor shall design, supply, and install ductwork for the third-floor atrium which must be supplied with minimum air flow rate as per SANS 10400 unless the Contractor can rationalise otherwise.
 - The Contractor shall design, supply, and install ductwork for the fourth-floor atrium which must be supplied with minimum air flow rate in accordance with SANS 10400
 - The Contractor's designs and equipment shall ensure that the air flow rate distributed to the rest of the building is uninterrupted by these changes. The Contractor shall balance the fresh air flowrates of the ductwork in cases where these changes affect the current ductwork.
 - The Contractor's shall use the conceptual design drawings as references to the ductwork required in the atriums.
 - The ductwork shall comply with the applicable requirements stated in SANS 1238:2005. The installation, testing and balancing of air conditioning ductwork shall comply with SANS 10173:2003.

h. Materials and Workmanship

- The Contractor shall ensure all materials shall be of the quality specified and The Contractor shall, furnish proof that the materials are of the specified quality. The Engineer is not responsible for Quality Assurance on behalf of The Contractor but shall be entitled to condemn unsatisfactory work.

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- The Contractor shall ensure all materials and equipment used for the installations shall be new and undamaged. The Contractor shall, if requested by the Project Manager, provide samples of material and Plant for approval. If judged necessary by the Project Manager, such samples may only be returned after the completion of the installation, to ensure that the quality of the installed product is the same as that of the approved sample.
 - Material for which a SABS specification exists, shall be in accordance with such a specification, and shall bear the SABS mark.
 - All fire protection Plant used shall originate from suppliers which have been certified in accordance with SABS ISO 9001 (ISO 9001) or SABS ISO 9002 (ISO 9002) for Quality assurance. Copies of certificates of approval shall be provided by the Contractor. Plant designed to BS 5446, Fire systems for residential premises, or similar other standards, are not acceptable.

i. Design and Drawings

- The Contractor shall ensure all Plant is positioned and installed in such a way as to ensure proper access for service and maintenance.
- The Contractor shall ensure that all control panels, wiring and components of the electrical installation comply with all application safety codes standards and regulations. All electrical works associated with the mechanical plant shall comply with the requirements of electrical works detailed in this document.
- The Contractor shall ensure the designs must be cost effective and energy efficient.
- The Contractor shall furnish details of any Plant that is other than, or different to, that specified by the Employer's Engineers, to the Supervisor for Approval by the Employer's Engineers. The Contractor is prohibited from installing said without the required prior authorization from the Employer's Engineers. The approval shall only apply to the selection of the type of Plant and in doing so, the Employer's Engineers assume no responsibility or accountability for the proper functionality of Plant or associated systems designed by The Contractor in any way whatsoever.
- The Contractor shall ensure all design calculations and simulations shall be submitted to the Project Manager for acceptance by the Employer's Engineer together with the workshop drawings. The drawings shall be submitted in PDF as well as DWG formats for all submissions. The Contractor shall price in the works for the submission of the calculations and drawings as well as schedule

the time for acceptance of all designs and approval of plant type (should there be any deviation from the specifications).

j. Plant Supports, Bases and Foundations

- The Contractor shall design all foundations required for mechanical Plant as per the recommendations of the Plant suppliers and to comply with the requirements of the Works Information and Technical Specifications.
- The Contractor shall design supports, stands, hangers, and suspended platforms for equipment, tanks or other Plant as required.
- The Contractor shall design bases and plinths for all items of plant to comply with the requirements as specified in this document.
- The Contractor shall ensure that all designs of foundations, bases and plinths are compatible with the type of floor designed by their own Structural Engineers and be able to tie into the floor to provide a continuous surface.

k. Workshop Drawings

The Contractor shall ensure preparation of complete workshop drawings is the responsibility of the Contractor. The workshop drawings must be prepared as follows:

- The Contractor shall ensure the latest Architect's, Structural Engineer's, Civil Engineer's and Electrical Engineer's drawings regarding co-ordination, layout, and design.
- The Contractor shall make use of the actual Plant offered in the Tender and Approved by the Project Manager. No work may be put in hand before the relevant workshop drawings have been reviewed by the Project Manager for acceptance. The Employer's responsibility in this regard is limited to checking conformance with the works information and co-ordination with other disciplines where necessary. This does not absolve The Contractor of any responsibility in terms of the contract or for errors or omissions in the shop drawings. Comments, amendments, or corrections of shop drawings are not intended to cause any variation in the cost of the work, and
- The Contractor shall include time in the schedule for acceptance of workshop drawings and Approval of Plant by the Employer. All workshop drawings submitted shall be signed by an ECSA registered Professional Engineer.

The workshop drawings shall include but not be limited to the following:

- P&ID showing the entire system layout and plant details.
- Detailed drawings of all plant.

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- Plant Specifications, including fixing details and materials.
 - Piping schedules.
 - Detailed piping drawings, including joint details and positions.
 - Welding schedules and weld maps (if applicable).
 - Foundation, Plinth and Base details of all plant.
 - Corrosion protection specifications for all plant and materials.
 - Cable schedules; and
 - General arrangement drawings and component lists for electrical and controls works associated with the mechanical plant.

I. Builders Work Drawings

Openings

The Contractor shall show all openings and other finishes on layout drawings in such a way as to constitute a clear instruction to others.

m. Plant Foundations, Bases and Plinths

The Contractor shall be responsible for providing detailed Builder's Work drawings for all foundations, plinths, and plant bases as per the manufacturer's recommendations for the Plant selected.

n. Noise and Attenuation

In respect of noise control and attenuation The Contractor shall be responsible for the selection, supply and installation of all sound attenuators, spring mounts, mass bases, flexible connections, spring hangers, etc. as required by the Contractor's detailed design to comply with all relevant SANS standards and the OHS Act.

The Contractor shall ensure that where ducts and pipes pass through concrete, brick or other structural members and finishes. This is achieved without transmission of noise and vibration.

o. Responsibilities of the Contractor

Ordering of Plant and Materials

The Contractor shall be responsible to ensure that the project programme is adhered to and that no delays are caused by late deliveries of Plant and materials. All other activities which must proceed placing of orders must be considered when the Contractor schedules his activities.

Storage of Materials and Plant

The Contractor shall be responsible for the proper storage of all materials and Plant on site to ensure protection against the elements, damage by impact, dirt, builder's rubble dust theft etc.

Protection of the Works

The Contractor shall programme his work to avoid damage by other Trades and shall be responsible for protection of the works against such damage until handover to the Client.

p. Accessibility

The Contractor shall plan suitable accessibility for thermometers, gauges, controls, dampers, and other devices which require reading adjustment, inspection, repair removal or replacement.

The Contractor shall design all systems and plant positioning to enable ease of maintenance or repair and provide sufficient space for removal or replacement of plant if required.

q. Weather Proofing

All outdoor Plant shall be weatherproof and corrosion resistant including minor items such as screws fixers, brackets, etc.

The IP rating for waterproofing of all Plant must be accepted by the Project Manager.

In addition to the above mentioned, The Contractor may comment on aspects of the Employer's design with a view to improvement or cost saving but must draw to the attention of the Engineer any aspect of the design which in his view is not appropriate. The final decision and responsibility rests with the Engineer.

r. Service Conditions

The Plant and Material shall be designed and rated for continuous operation under the following conditions.

s. Ambient/Environment Conditions:

All Plant and Material offered shall be rated for continuous operation under the following conditions:

External Conditions

Summer ambient	: 40 °C DB Maximum
Winter ambient	: -3 °C Minimum
Humidity	: as high as 86%
Altitude	: 0-1800m above sea level
Lightning conditions	Severe, with a maximum lightning ground flash density of 2.0 lashes per km ² per annum

t. Internal Conditions (air-conditioned areas)

Summer	: 22.5 °C Dry bulb – 55 % Relative Humidity
Winter	: 22.5 °C Dry bulb – 55 % Relative Humidity

u. Noise levels

Maximum noise levels caused by the operation of items of Plant shall comply with the OHS Act 85 of 1993 and all other regulations.

The SI ("Le Systeme International d' Unites") – Metric System of Units shall apply. Refer to SANS – M33A: The International Metric System: Guide to the use of the SI in South Africa.

v. Testing and Commissioning of the Works

The Commissioning of each system is done in accordance with the following high-level procedure:

- All work is inspected by The Contractor to ensure all defects are identified and rectified. The Contractor informs the Employer of all defects identified and the remedial action taken.
- Once the defects identified by The Contractor have been rectified, The Contractor and the Supervisor shall jointly inspect the Works. Any further defects shall be recorded and categorised according to the following:

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- Defects that are urgent and require immediate attention to enable testing and commissioning to be completed
 - Defects that can be rectified after Commissioning
 - Items that are out of scope and require approval to be implemented
 - The Contractor and the Supervisor shall jointly inspect once all identified defects have been rectified
 - The Project Manager notifies the Contractor that commissioning may proceed.
 - A safety review is held with the Contractor, Supervisor, Project Manager, and necessary experts for the system being commissioned.
 - Each system and item of major equipment is thoroughly checked using an accepted pre-commissioning check list.
 - Functionality is checked for all items under no load conditions.
 - Once all checks are complete and functionality confirmed, the system is started under test conditions and then put into operation
 - Contractor rectifies all further defects identified during the commissioning process and previously identified defects including approved compensation events.
 - The Contractor and the Supervisor shall jointly inspect once all identified defects have been rectified.
 - The Contractor shall invite the Employers Engineer for all testing and commissioning activities at least 2 weeks prior to the start of the activities. the employers engineer must be present for all testing and commissioning activities

1.3.4 Electrical engineering

1.3.4.1 The works that the Contractor is to perform includes the following:

- Design, supply, and installation of interior Lighting.
- Design, supply, and installation of small power.
- Design, supply, and installation of low voltage cabling.
- Modifications to existing Distribution boards.
- Design, supply and install Earthing and Lightning protection.
- Building Management System integration of additional equipment.
- Testing and commissioning of the installation.

1.3.4.2 Standard of Work, Equipment and Materials

The electrical installation shall conform to the requirements of the latest edition and amendments of SANS 10142-1 Code of Practice for the Wiring of Premises Low-voltage installation and any additional requirements thereto, described in this specification.

Where the local supply authority requirements differ from those specified herein, the Transnet National Ports Authority (TNPA) electrical engineer shall be approached for a decision.

All equipment and material used shall be of high quality and the work shall be of a high standard of workmanship carried out by qualified staff under proper supervision by experienced and competent officers.

All equipment and material shall comply with the relevant National or International standard specifications. Where equipment does not comply, it shall be submitted to the TNPA electrical engineer for approval prior to installation.

All installation, testing and termination must be approved by the TNPA Engineer prior to commissioning.

1.3.4.3 Service Conditions

The equipment shall be designed and rated for continuous operation under the following conditions:

Altitude	0 – 1800 above sea level
Ambient temperature	-3°C to +40 °C
Relativity humidity	As high as 86%
Lightning conditions	Severe, with a maximum lightning ground flash density of 2.0 lashes per km ² per annum
Atmosphere	Atmosphere will be of a highly saline and dust-laden nature

1.3.4.4 Electrical Conditions:

The voltage may vary within the range of 95% to 105% of the nominal and all equipment installed shall be suitably rated.

The low voltage system of supply will be three phase 400 V, 4 wire, and 50 Hz alternating current.

1.3.4.5 Lightning conditions

All lightning protection equipment offered shall be rated to withstand the following conditions:

Current: The peak lightning current and its rate of rise shall be regarded as severe when $I_{max} = 200kA$.

Voltage: The highest cloud potential shall be assumed to be more than 100MV, where;
 $Q = CV$, where Q is assumed at 100C and C to be $10^{-7} F$

1.3.4.6 Specifications

The following publications and specifications (latest edition) shall apply:

CODES OF PRACTICE

SANS 10142-1	Code of Practice for the Wiring of Premises
SANS 10114-1	Interior lighting Part 1: Artificial lighting of interiors
SANS 10114-2	Interior lighting Part 2: Emergency lighting
SANS 10389-1	Exterior lighting Part 1: Artificial lighting of exterior areas for work and safety
SANS 10389-2	Exterior lighting Part 2: Exterior security lighting
SANS 10389-3	Exterior lighting Part 3: Guide on the limitation of the effects of obtrusive light from outdoor lighting installations
SANS 10400	The Application of the National Building Regulations
SANS 62305-1	Protection against lightning Part 1: General principles
SANS 62305-2	Protection against lightning Part 2: Risk management
SANS 62305-3	Protection against lightning Part 3: Physical damage to structures and life hazard
SANS 62305-4	Protection against lightning Part 4: Electrical and electronic systems within structures

SANS 10313	Protection against lightning - Physical damage to structures and life hazard
SANS 1063	Earth rods, couplers, and connections
SANS 10198-8	The selection, handling, and installation of electric power cables of rating not exceeding 33 kV Part 8: Cable laying and installation
SANS 10199	The design and installation of earth electrodes

1.3.4.7 Transnet Specifications

The following publications and specifications (latest edition) shall apply:

TPD-001-EL&PSPEC	Technical specification for the supply and installation of electrical lighting and power in buildings other than dwelling houses.
TPD-002-DBSPEC	Technical specification for the design and manufacturing of low voltage distribution boards.
TPD-003-CABLESPEC	Technical specification for the installation of medium and low voltage cables.
TPD-004-EARTHINGSPEC	Technical specification for the design, supply and installation of lightning protection and earthing for buildings and structures.

1.3.4.8 Electrical Engineering Detailed Scope:

a) Lighting

The Contractor shall design, supply, deliver, offload, and install recessed and surface mounted luminaires for all the rooms with ceiling. The recessed luminaires shall be connected through individual 5A single socket outlets to isolate luminaires during maintenance.

The Contractor shall design, supply, deliver, and install 16A one lever light switches and light switch dimmers, similar or equal approved to Legrand Arteor. The light switches shall be installed on 4x2 PVC boxes.

The Contractor shall design, supply and install light fitting that are compatible with the BMS used in the TNPA Building. The Contractor shall integrate all new installation into the BMS system used in the eMendi Building.

The Contractor shall design, supply, deliver, and install similar or equal approved to Schneider specification occupancy sensors. The sensor shall be recessed into the ceiling using a ceiling mounted adapter plate to secure the sensor. The time delay DIP switch setting on the occupancy sensor shall be set at ten (10) minutes.

The Contractor shall design, supply, deliver and install SABS approved, 20mm outer diameter, PVC conduit flush mounted in the wall. The PVC conduit shall be used as wireways, linking all flush mounted PVC boxes to the distribution board and luminaires. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc. shall be included to ensure a safe neat link for the conduit system.

The Contractor shall design, supply, deliver, offload, and install SABS approved PVC insulated house wire for all lighting circuits. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The wire shall be installed inside the Uni-strut system and conduit.

Where new conduits are installed in masonry walls, the Contractor shall do the necessary chasing and all these areas will be made good after installation.

b) Switched Socket Outlets

The Contractor shall also design, supply, deliver, offload, install 3-tier power skirting, one compartment shall be dedicated to Electrical and the other two Data/communications. The size of both the compartments shall be 70mm². The power skirting shall be supplied with all fastening accessories such as screws, and end covers. The power skirting shall be installed in the position as indicated in drawings.

The Contractor shall design, supply, deliver, and install 16A single, dedicated, and non-dedicated switched socket outlets.

The Contractor shall also design, supply, deliver, and install 16A double, flush mount, switched socket outlets. The socket outlets shall be installed 300mm and 1350mm above the floor.

The Contractor shall design, supply, deliver and install SABS approved, 20mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all socket outlets to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc. shall be included to ensure a safe neat link for the conduit system.

The Contractor shall design, supply, deliver, offload, and install appropriately length of SABS approved, 32mm outer diameter, PVC conduit. The conduit shall be used as a wire way system to provide a path for data wires to connect from the power skirting to the data swing frame panel. The conduit wire way system shall be flush mount in the wall. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc. shall be included to ensure a safe neat link for the conduit system.

The Contractor shall design, supply, deliver, offload, and install SABS approved PVC insulated house wire for all socket outlet circuits. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit and trunking.

c) Switched Isolators

The Contractor shall design, supply, deliver, offload, and install 20A flush mount, double pole, single phase switched disconnecter (isolator). The isolators shall be installed at various heights to accommodate the equipment being supplied. Location of isolator should comply with SANS 10142-1 requirements.

The Contractor shall also design, supply, deliver, offload, and install surface mounted weatherproof, single phase and three phase switched disconnectors (isolators), for all areas disposed to water.

The Contractor shall design, supply, deliver and install SABS approved, 20mm outer diameter and 32mm outer diameter, PVC conduits flush mounted in the wall. The PVC conduit shall be used as a wireway, linking all isolators to the distribution board. All necessary accessories such as fasteners, bends, junction boxes, adaptors, etc. shall be included to ensure a safe neat link for the conduit system.

The Contractor shall design, supply, deliver, offload, and install SABS approved PVC insulated house wire for all isolator circuits. The PVC insulated wire shall comply with Transnet specification TPD-003-CABLESPEC. The PVC insulated house wire shall be installed in conduit.

d) Distribution Boards

The Contractor shall modify existing Low Voltage Distribution Boards, install circuit breakers and cables to the existing board.

The Contractor shall test and re-commission the DB boards once completed.

The Distribution Board shall contain the following signage.

- Name of the Distribution Board as indicated in drawing number ("TNPA Distribution Board DB ").
- The rated Voltage level of the Distribution Board
- The rated Short Circuit Current for distribution board
- The rated current rating for the distribution board
- Description of circuits fed by the associated circuit breaker as indicated in attached drawings. For example, Lighting Circuit LC - 1.
- Full description of the type of cable (Copper PVC insulated ECC, SWA), the size in mm² of the cable terminated in the associated circuit breaker and the cable run length to the load.
- Danger sign for electrical power exposure

e) Cable and Cable Way System

The Contractor shall design, supply, deliver, offload, install and terminate 4-core low voltage 600/1000V, SWA, ECC, PVC insulated copper cable between the distribution boards. The PVC insulated, ECC, SWA, 4 core LV cables shall be terminated, and glanded neatly and appropriately using suitable sized Cable Corrosion Glands

The cables shall also be also installed on a cable ladder system. The OEM bending radii requirements of the cable shall be adhered to. The cable ladder system shall be used to sufficiently support the weight of PVC insulated, ECC, SWA, 4 core LV cables. The cable ladder and all associated mechanical supports such as anchor fixings bolts to the wall, suspending rods, supporting channel, etc. shall be made of stainless steel (grade 3CR12) and shall be powder coated grey. The cable ladder system shall be suitably bonded and connected to the nearest building earth bar with an appropriately sized protective earth conductor in compliance to SANS 10142-1 and TPD-004-EARTHINGSPEC. The Contractor shall submit, to the Employer's Engineer, all design aspects of the cable ladder system prior to any procurement of materials for acceptance.

f) Earthing and Lightning Protection

The Contractor shall design, supply, and install earthing and lightning protection for and in accordance with specification No. TPD: 004-EARTHINGSPEC. The earthing and lightning protection design shall be submitted to TNPA electrical engineer for acceptance before any installation commences.

Design and installation of earthing and lightning protection system shall be in strict accordance with the latest SANS Codes of practice 10313, 10199, and 1063 in conjunction with SANS 62305 1-4.

g) Building Management System

The Building Management System (BMS) shall use industry standard protocols; TCP/IP, Bacnet, Modbus, and OPC network interfaces. The software shall reside on a dedicated computer terminal with a GUI to represent the key equipment in the building. The energy management system shall record data collected from various items of equipment. It shall also allow the user to configure the requirements for the operation settings, time of use, etc.

It shall be able to operate in customizable modes of operation such as night mode, day mode, summer mode, winter mode, and any combination of these as required

by the user. A database application residing on this dedicated terminal shall record data and event histories from the BMS. This database will be accessible by authorized users through their user account configurations over an internet connection and will enable them to manipulate the BMS to different security and permission settings. The BMS shall be equipped to collect energy use data from the different systems such as lighting, power, HVAC, hot water systems etc. The BMS shall be enabled to effect energy saving concepts such as daylight harvesting, grey water use data, and potable water use data.

1.3.4.9 Testing and Commissioning of the Entire Installation

The Contractor shall conduct a Factory Acceptance Test (FAT) for all Plant's to be installed as part of the Works to be executed in this Contract prior to delivery to site. The FAT shall be conducted in the presence of the Employer's Engineer. The legal transfer of ownership from the Plant's supplier to the Contractor shall be held by the Contractor until the Plant is fully installed, tested and commissioned on the Employer's designated site.

The Contractor shall conduct a Site Acceptance Test (SAT) for all Plant's supplied, offloaded, and delivered to the designated Employer's site. The SAT shall be conducted in the presence of the Employer's Engineer. The legal transfer of ownership from the Plant's supplier to the Contractor shall be held by the Contractor until the Plant is fully installed, tested and commissioned on the Employer's designated site.

The Contractor shall test the entire installation, including but not limited to the MV installation, LV installation and the lighting installation as per SANS 10142-1 and hand over all relevant test certificates to the Employers Project Manager for acceptance. The Contractor shall hand over both MV and LV certificate of compliance as per the OHS Act of 85 and SANS 10142-1 and SANS1042-2 for the installations.

The Contractor shall test and commission the entire Earthing and Lightning protection system as per Transnet Specification TPD-004-EARTHINGSPEC and SANS 10142-1 in the presence of the Employer's Engineer. The Contractor shall handover

all test certificates to the Employer's Project Manager for acceptance by the Employer's Engineer.

1.3.5 Control and Instrumentation(C&I)

The works to be carried out by the Contractor shall make provision for ICT. The systems are to be interfaced with the eMendi building existing ICT systems.

The engineering scope and requirements shall be limited to the following scope:

Provision of ICT local area network (LAN) points and Wi-Fi

The system design requirements are indicated below.

1.3.5.1 ICT design requirements

General

- The ICT system shall facilitate, Where applicable, office automation (networked printing).
- The ICT data network shall connect to Transnet National Port Authority (TNPA) corporate network.
- Multi-functional devices (MFD) shall be cabled to the ICT infrastructure network. The MFD shall have 2 data connections.
- The ICT equipment shall be protected from physical and environmental threats in accordance with Transnet ICT Physical and Environmental Security Standard.
- The design and deployment of hosts on the Transnet network shall conform to the Transnet Network Security Standard.

Wired Network

- Network wiring shall comply with EIA/TIA-568.
- Separation from electrical wiring and pathways shall be according to EIA/TIA-569
- Ethernet Cable (RJ 45) shall be connected to an existing Hub Ethernet Port.

Wireless Network

- The Wi-Fi Access Points shall be installed where required
- The Wi-Fi Access Points shall be powered through power over ethernet (PoE)

Digital Boardrooms

The scope for the Contractor includes but is not limited to providing design drawings, supply, installation, construction, integration, testing and commissioning of equipment and associated infrastructure for the Digital boardroom technology and Digital signage technology

- To provide for Digital Signage system where required
- Display screens, Smart board screen
- Complete video conferencing boardroom system including desk console, video conferencing camera, microphones, speakers, video conferencing media controller and a personal computer (PC).
- Wall mount equipment housing cabinet
- A network switch
- Boardroom booking system console
- Media desk mount connectivity modules

1.3.5.2 Acronyms and abbreviations

C&I acronyms and abbreviations are summarized in the following table:

Abbreviation	Description
PoE	Power over Ethernet
ICT	Information and Communications Technology
C&I	Control and Instrumentation
TNPA	Transnet National Port Authority
LAN	Local Area Network
MFD	Multi-Function Device

1.3.5.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
CDR	Contractor Documentation Register
CDS	Contractor Documentation Schedule
CIRP	Contractor's Industrial Relations Practitioner

Abbreviation	Meaning given to the abbreviation
CSHEO	Contractor's Safety, Health and Environmental Officer
CM	Construction Manager
DTI	Department of Trade and Industry
DWG	Drawings
EO	Environmental Officer
Native	Original electronic file format of documentation
NRS	National Regulatory Standard
NEC3 ECC	NEC3 Engineering and Construction Contract
QA	Quality Assurance
QC	Quality Control
R&D	Research and Development
SANS	South African National Standards
SAPS	South African Police Services
SASRIA	South African Special Risks Insurance Association
SAT	Site acceptance tests
SES	Standard Environmental Specification
SHE	Safety, Health and Environment
SSRC	Site Safety Review Committee
TNPA	Transnet National Ports Authority
AFC	Approved For Construction
DGN	Design
DWG	Drawings
EPCM	Engineering, Procurement & Construction Management
NEC 3	New Engineering Contracts
PEP	Project Execution Plan
SANS	South African National Standards
SHE	Safety, Health and Environmental
TNPA	Transnet National Ports Authority
URS	User Requirement Specification

Abbreviation	Meaning given to the abbreviation
ECSA	Engineering Council of South Africa

2. Engineering and the Contractor's design

2.1 Employer's design

N/A

2.2 Parts of the works which the Contractor is to design

2.2.1 The Contractor is to design the following parts of the Work:

- The works as described in each Engineering disciplines Scope of work outlined under Section 1.3;
- Formwork, scaffolding, concrete mix design and shop detailing for approval by the Project Manager.
- The Contractor shall provide all water reticulation and plumbing drawings including pipe routes and diameters, compiled by a services engineer.
- The Contractor shall design the extension of the four floors for the eMendi building described within this document according to the relevant national standards.
- The Contractor shall design all bolted or welded connections. Over designed connections shall be rectified on drawings or on Site at the Contractor's expense.
- The Contractor shall design the strength concrete mix in accordance with SANS 1200 G, and in accordance with the Employer's specifications.

2.2.2 The contractor is responsible in his design for the overall integration of the design of the works.

2.2.3 All residual design responsibility and overall responsibility for the total design solution for the works rests with the Contractor.

2.3 Procedure for submission and acceptance of Contractor's design

2.3.1 The Contractor shall address the following procedures:

- a) The Contractor shall submit detail drawings and material lists for checking by the Project Manager. The member sizes shown on the Project Manager's design drawings shall not be changed without the Project Manager's written consent.

2.4 Review and Acceptance of Contractor Documentation

2.4.1 The Contractor submits designs as required to the Project Manager for review and acceptance.

2.4.2 The Contractor's documentation shall be issued to the Project Manager under cover of the Contractor's Transmittal Note indicating all Contract references (i.e., Project No, Contract No, etc.) as well as the Contractor's Project Document Number, Revision Number, Title, and chronological listing of transmitted documentation.

2.4.3 Formats of Contractor data submitted is dependent on the project procedure and shall be specified by the Project Manager, upon the notified request of the Contractor.

2.4.4 The Contractor shall deliver both hard copies and electronic media copies (CD Rom) to the Project Manager at the address stated within the Contract Data.

2.4.5 All electronic documentation shall be submitted by the Contractor in Adobe Acrobat (.PDF) and Native file format.

2.4.6 Acceptance of documentation by the Project Manager will in no way relieve the Contractor of his responsibility for the correctness of information, or conformance with his obligation to provide the Works. This obligation rests solely with the Contractor.

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- 2.4.7 After review, a copy of the original reviewed/marked-up drawing/document, with the Project Manager's consolidated comments and document status marked on the Contractor Review Label, is scanned and the hard copy shall be returned to the Contractor under cover of the project's Transmittal Note for revision or re-submittal as instructed.
- 2.4.8 The Contractor shall allow the Project Manager 1 (one) week to review and respond to the Contractor's submission of their documentation, i.e., from time of receipt by the Project Manager to the time of despatch.
- 2.4.9 However, work shall proceed without delay in the event of late return of the documentation by the Project Manager with prior notification in writing by the Contractor.
- 2.4.10 On receipt of the reviewed documentation the Contractor shall make any modifications requested/marked-up and resubmit the revised documentation to the Project Manager within 1 (one) week. Queries regarding comments/changes should be addressed with the Project Manager prior to re-submittal.
- 2.4.11 Any re-submittals, which have not included the changes/comments identified, will be returned to the Contractor to be corrected. The Contractor shall re-issue the revised documentation incorporating all comments and other specified details not included in the previous issue within 1 (one) working day of receipt of the marked-up document. No cost arising from any revisions which are a result of the Contractor's omission of critical details and any costs incurred by the Contractor in completing such designs and drawings, may be claimed from the Employer.

2.5 Use of Contractor's design

- 2.5.1 The Contractor grants the Employer a licence to use the copyright in all design data presented to the Employer in relation to the works for any purpose in connection with the construction, re-construction, refurbishment, repair, maintenance, and extension of the works with such licence being capable of transfer to any third party without the consent of the Contractor.
- 2.5.2 The Contractor vests in the Employer full title guarantee in the intellectual property and copyright in the design data created in relation to the works.

2.6 As-built drawings, operating manuals, and maintenance schedules

2.6.1 The Contractor provides the following in both electronic (soft) and 2 x hard copies:

- The Contractor must provide the Employer all necessary as built information, including possible surveyed items, required to update drawings and any other documentation. There must be no compensation for the provision of this data as this must be deemed to be included in the Contractor's rates in the activity schedule.
- As built drawings (2 (two) x hard copy plus editable Pdf and native file) for electrical, architectural, structural, C&I and mechanical work.
- The Contractor must provide the operation and maintenance manuals.
- The Contractor provides manuals in an A4 hard covered, red, grease and waterproof binder, using 2 ring type binders. The manuals are well indexed and user friendly and include a summarized Table of Contents.
- Drawings and charts larger than A4 are folded and those greater than A3 are enclosed in an A4 plastic pocket of adequate strength.
- The Contractor submits the draft Table of Contents to the Project Manager for acceptance prior to the compilation and official submittal of the manuals.
- The originals of all brochures must be issued to the Project Manager. When a general brochure is applicable to a range of equipment, then the specific item, catalogue number or model number must be stated, which is best achieved by introducing a separate index page, which cross-references the specific item to a tag number.
- The address, phone numbers, fax numbers and reference numbers of all Sub-Contractors must be provided.
- Where manuals include drawings that still need to be revised to As-Built status, and such manuals are required prior to As-Built status, the manual must not be considered to be in its final form until the As-Built version of each such drawing has been incorporated.
- Copies (hard and soft) of the Health and Safety file to be handled over the Project Manager upon completion.
- A typical example of what the binder/file(s) must be marked on the spine and the front cover is as follows:

- Project Name
- Manual Title, e.g. Installation, Maintenance and Operating Manual
- FBS No. and Title
- Manual Numbering (e.g. Volume 1 of 2, etc.)
- Contract Number
- Contractor Name

2.7 Anticipated timelines for the project

The following timelines for the various activities of this project are proposed and activities may be performed simultaneously:

Activity No.	ACTIVITY	Time
1.	PACKAGES A - STRUCTURAL ASSESSMENT AND PRELIMINARY DESIGN	1 month
1.1	Carry out structural condition assessment for the four work areas to confirm durability and produce the condition assessment report for the Atriums.	1 week
1.2	Develop the multi-disciplinary preliminary designs, engineering reports, specifications, and conceptual drawings	2 weeks
1.3	Review the existing engineering 3-D design model for the building (where available)	1 week
1.4	Develop the multi-disciplinary engineering 3-D design model for the building	1 week
1.5	Produce the preliminary engineering design criteria and design report	1 week
2.	PACKAGES B – DETAILED DESIGN	2 months
2.1	Develop detailed drawings to 100% engineering detail including all associated specification documents	1 week

2.2	Produce detailed engineering design reports	0.5 week
2.3	Develop and finalize project cost estimates and project schedule for the construction works	0.5 week
2.4	Procurement for construction works	1 week
2.5	Allowance for biweekly technical meetings, monthly progress meetings, reports, and presentations	Ongoing
2.6	Finalize all multi-disciplinary engineering designs to 100% AFC with relevant supporting technical documentation and schedule of quantities	2 weeks
2.7	Produce the complete functional engineering 3-D design model.	Ongoing
2.8	Deliver the project execution plan with all relevant supporting management plans for construction (project execution)	1 week
3.	PACKAGES C – CONSTRUCTION	3 months
3.1	Undertake construction works (building alterations) to the four floors	3 months
3.2	Construction supervision and quality assurance for construction works	Ongoing
3.3	Prepare and present constructability sequencing report including risks and assumptions associated with the phasing methodology	1 week
3.4	Prepare procurement schedules required to achieve the Four Floors construction completion Date	1 week
3.5	Allowance for biweekly technical meetings, monthly progress meetings, reports, and presentations	Ongoing
3.6	Plan, prepare, co-ordinate cold commissioning activities and documentation required for use during hot commissioning phase	3 weeks

3.7	Construction management including project controls and construction schedule management, supervision, and co-ordination of all technical aspects during construction.	Ongoing
3.8	Address all field engineering queries and provide solutions and resolve for the duration of construction and during the hot commissioning phase	Ongoing
4.	PACKAGE D - CONSTRUCTION MANAGEMENT AND COMMISSIONING STAGES (to achieve all four floors construction completion date)	2 months
4.1	Plan, prepare, co-ordinate cold commissioning activities and documentation required to for use during hot commissioning phase	2 weeks
4.2	Construction management including project controls and construction schedule management, supervision, and co-ordination of all technical aspects during construction.	Ongoing
4.3	Address all field engineering queries and provide solutions and resolve for the duration of construction and during the hot commissioning phase	Ongoing
4.4	Prepare and provide all necessary close-out documentation as required	1 week
4.5	Allowance for bi-weekly technical meetings, monthly progress meetings, reports, and presentation	Ongoing

3. Construction Works

3.1 Temporary works, Site services & construction constraints

3.1.1 Employer's Site entry and security control, permits, and Site regulations

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- The Contractor and all their Sub-Contractors shall comply with the requirements of the Employer with regards to site entry, security controls, permits, and site regulations, and these shall be complied with at all times.
 - The Employer will provide magnetically coded ID cards to all Employees of the Contractor and their Sub-Contractors for site access. No charge will be made for initial issues, but lost or damaged cards must be paid for.
 - The Contractor shall not have sole possession of Site Areas. The Contractor shall co-operate with Employer's Employees, Port visitors and any other Contractors and common users in regards to occupation and access (as and where applicable).
 - The construction will be performed in an operational environment. The Employer's Employees, Port visitors and any other Contractors and common users will proceed with normal duties, during the inspection, removal and installation of the building alterations. The Employer's Employees, Port visitors and any other Contractors and common users should be timeously notified so that there will be no disruption to Port business. The Contractor shall liaise with the Project Manager in scheduling work and shall comply with all instructions.
 - The Contractor performs the works and co-operates with the Employer who operates on site during the entire duration of the Contract period.
 - The Contractor shall not commit or permit any act that may interfere with the performance of Port operations and shall carry out work with liaison with the Project Manager.
 - The success of the works depends on the effective interaction and co-operation of all parties on site, and it will be necessary to discuss the Contractor's proposed activities and short term programme on a regular basis with the Project Manager to ensure effective co-operation and a smooth interface between the activities of the Contractor's and others working and operating in this area.

3.1.2 The Contractor complies with the following Security and SHE requirements of the Employer.

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- As stated under item 3.1.1

3.1.3 Restrictions to access on Site, roads, walkways and barricades

- The Contractor shall comply with the following:
- The Works are to be executed on a building that is fully operational.
- The Contractor shall communicate with the project manager the request to access to the working areas and plan the execution of the Works in an orderly manner not negatively influencing the operations of the Port of Ngqura.
- The Contractor and their Sub-Contractor shall not traverse to areas outside of their Works areas or to restricted areas (areas that require authorization) without permission of the Project Manager.
- No wondering around / loitering in the Port will be allowed.
- The Contractor and their Sub-Contractors shall use the roads in accordance with National Road Traffic Regulations.

3.1.4 The Contractor complies with the following Site boundaries requirements of the Employer.

- The Contractor is limited to operate at the eMendi building and immediate surrounding are for their site establishment only.

3.1.5 People restrictions on Site; hours of work, conduct and records:

- The Contractor's personnel shall be suitably qualified to execute the Works.
- The Contractor's personnel shall conduct themselves in an orderly and professional manner.
- Office hours are from 08:00 to 16:00 on working days.

3.1.6 The Contractor complies with the following hours of work for his people (including Subcontractors) employed on the Site:

- The Contractor advises the Project manager of his working hours in the Contractor's programme as per clause 5.6 of the Works Information.

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- The Contractor notifies the Project Manager of any changes in his working hours.
 - The Contractor records the hours of work for each day to demonstrate that the regulations are not contravened.
 - The Contractor gives advance notification to the Project Manager on all occasions when he intends to institute shift working with two or more shifts.
- The Project Manager's office hours are 08:00 to 17:00 Mondays to Fridays.
The offices are closed on Saturdays, Sundays and Public holidays.

3.1.7 The Contractor keeps daily records of his people engaged on the Site and Working Areas (including Subcontractors) with access to such daily records available for inspection by the Project Manager at all reasonable times.

3.1.8 Health and safety facilities on Site

- The Contractor shall comply with Occupational Health & Safety Act and to the Transnet National Ports Authority SHE requirements.
- The Contractor shall also comply with the SHE requirements of the Terminal Operator of the Ngqura Container Terminal.

3.1.9 The Contractor complies with the requirements stated under paragraph 5.3 of C3.1 Employer's Works Information.

3.1.10 Environmental controls, fauna & flora, dealing with objects of historical interest

- The Contractor shall comply with the Ngqura Operational Management Environmental Plan (OPME).

3.1.11 The Contractor complies with the CEMP, SES and PES in the construction of the works, all as described under paragraph 5.4 of C3.1 Employer's Works Information.

3.1.12 Title to Materials from demolition and excavation

- The Employer retains title to all materials arising from excavation and demolition activities undertaken by the Contractor in the performance of the works. The Project Manager shall instruct the Contractor how to label, mark,

set aside and/or dispose of such material for the benefit of the Employer in accordance with ECC Clause 73.1.

3.1.13 The Contractor has title to all Materials arising from excavation and demolition in the performance of the works with the exception of:

- The Employer retains to all materials arising from excavation and demolition activities undertaken by the Contractor in the performance of the works. The Project Manager shall instruct the Contractor how to label, mark, set aside and/or dispose of such material for the benefit of the Employer in accordance with ECC Clause 73.1.

3.1.14 Cooperating with and obtaining acceptance of others

- The Contractor is to liaise with Port Operations through the duration of the contract via the Project Manager.
- The Contractor complies with all instructions issued to him by TNPA (either directly, in the case of emergency or via Project Manager).
- The Contractor is not to impede the operation of the port in any way.

3.1.15 The Contractor performs the works and co-operates with:

- The Contractor shall cooperate with and obtain acceptance from the Port Manager under guidance and direction of the Project Manager.

3.1.16 Publicity and progress photographs

- The Contractor shall treat all information gained through his appointment on this project as strictly confidential. The Contractor is not allowed to prepare or present any paper, publish any article in a technical journal, or derive publicity of his business which makes any reference to any aspect of the work on this project unless the Employer grants special permission, in writing, for the purpose.
- No photographs are to be taken unless the photographer is in possession of a camera permit issued by the TNPA, Port of Ngqura, Security Manager. Photographs are to be taken for record purposes only.

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- The Contractor provides a comprehensive photographic record of the progress of the work by taking photographs at weekly intervals. The initial photographs are to be taken at the start of the project, immediately prior to the commencement of any work. As far as possible, each set of photographs shall be taken from the same locations as previous set.
 - The areas to be photographed and the quality of photographs in each area will be determined by the Project Manager.
 - Progress photographs of all manufacturing work carried out off-site are also required.
 - Photographs are to be submitted in JPEG format , with a minimum resolution of 1200 x 800. Each set of photographs must be accompanied by an index showing:
 - o Contract reference
 - o Photograph file reference
 - o Date of photograph
 - o Subject matter

3.1.17 The Contractor provides a notice board at their site

- The notice board contains some of the following information:
 - o Contract title
 - o Contractor's name
 - o Contractor's Site Manager's name and mobile number
 - o Contractor's Site Safety Officers and mobile number
 - o Project Manager's name and mobile number
 - o Supervisor's name and mobile number
- The notice board is seated in clear view at the entrance to the Contractor's site area

3.1.18 The Contractor does not advertise the contract or the project to any third party, nor communicate directly with the media (in any jurisdiction) whatsoever without the express written notification and consent of the Project Manager.

3.1.19 Contractor's Equipment

- The Contractor keeps daily records of his Equipment used on site and the working areas (distinguishing between owned and hired equipment) with access to such daily records available for inspection by the Project Manager at all reasonable times.
- The Contractor is to ensure that all equipment entering the site is recorded by the Gate Security. Equipment will not be allowed to leave the site, unless it can be proven that the Contractor brought the said equipment into the Port from outside. The Contractor keeps daily records of his equipment used on site and the Working Areas (distinguishing between owned and hired equipment) with access to such daily records available for inspection by the Project Manager at all reasonable times.
- The Contractor shall provide all Plant and Equipment required to provide the works and the Employer shall not provide any Plant and/or Equipment. The Contractor shall keep a tool and material checklist on hand for entering and exiting the Port, for inspection by the Construction Manager and Port Security.
- The Contractor shall provide, all facilities necessary to undertake the works, including establishment of such Equipment, storage facilities and personnel that is necessary to execute the works.

3.1.20 The Contractor complies with the permissions and restrictions in the use of Equipment as required by the Employer:

- All Plant and Equipment used by the Contractor on site shall be properly maintained and operated. All vehicles on public roads shall be roadworthy, with the necessary licenses and safety requirements. A checklist/register shall be implemented which list the operator's qualifications and medical records.
- The Contractor shall comply with the following:

o The Contractor shall supply all necessary materials, labour, tools, plant, PPE, demarcating signage, as per latest maintenance regulations and transport required for the proper completion of the Works.

o The Contractor shall submit a comprehensive list of Plant and Equipment intended for use on this contract.

o The use of all Plant and Equipment shall be subject to approval by the Service Manager, though such approval shall not relieve the of any of their responsibilities under the Contract.

3.1.21 Equipment provided by the Employer

None

3.1.22 The Employer provides the following Equipment on the Site for the Contractor's use:

None

3.1.23 The Contractor complies with the following conditions in using the Employer's Equipment:

N/A

3.1.24 Site services and facilities:

- Where it is practical to do so, the Employer provides a power point and portal water as close as possible to the Contractor's lay-down area. The Employer does not guarantee that electricity and water will be available throughout the working area, nor does the Employer guarantee a continuous supply of electricity and water throughout the duration of the works. The Contractor is responsible for making connections to the supply at the commencement of the project and for disconnecting from the supply at the completion of the project. The Contractor provided a certificate of compliance for his electrical installation before the supply is energised by the Employer. The Contractor provides a new certificate of compliance whenever the installation is changed.
- The Employer will provide water and electricity only. The Contractor provides everything necessary for the works.

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- Wherever the Employer provides facilities (including inter alia, temporary power, water, waste disposal, telecommunications, etc) for the Contractor's use within the Working Areas and the Contractor adapts such facilities for his own use, then the Contractor makes good and provided full reinstatement to the land (including all apparatus of the Employer and Others in, on, or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the Employer.

3.1.25 The Employer provides the following facilities for the Contractor

- Access permit to the Port of Ngqura
- The employer will endeavour to provide the appointed Contractor with all available information that may facilitate the progress of the project. However, in cases where such information is not available, the Contractor shall point out to the Employer for advice on steps to be taken.

3.1.26 Wherever, the Employer provides facilities (including, inter alia, temporary power, water, waste disposal, telecommunications etc) for the Contractor's use within the Working Areas and the Contractor adapts such facilities for use, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the Employer.

3.1.27 Facilities provided by the Contractor:

- The Contractor is to provide all required facilities for his own use in order to provide the works, including offices, toilets and ablutions, rest rooms, etc.
- The Contractor to submit the following drawings to the Project Manager for acceptance before commencing with the establishment of the site facilities:
 - Location drawing showing the area to be occupied by Contractor in relation to the Port Infrastructure.
 - Layout drawings of the proposed facilities.
- Wherever the Contractor provides facilities, all items of equipment involving inter alia, offices, accommodation, laboratories, material storages, compound areas, etc. within the working areas, then the Contractor makes good and

provides full reinstatement to the land (including all apparatus of the Employer and others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and items of Equipment.

- Unless expressly stated as a responsibility of the Employer as stated under 3.1.12. Site services and facilities, all residual requirements for the provision of utilities and all items of Equipment necessary for the Contractor to provide the Works remain the responsibility of the Contractor.

3.1.28 The Contractor provides the following facilities for the Project Manager and Supervisor:

None

3.1.29 Whenever the Contractor provides facilities (either his own or for the Project Manager and/or Supervisor) and all items of Equipment, involving, inter alia, offices, accommodation, laboratories, Materials storage, compound areas etc, within the Working Areas, then the Contractor makes good and provides full reinstatement to the land (including all apparatus of the Employer and Others in, on or under the land) and surrounding areas to its original standard, upon dismantling of such facilities and items of Equipment.

3.1.30 Unless expressly stated as a responsibility of the Employer as stated under 3.1.24 Site services and facilities, all residual requirements for the provision of facilities and all items of Equipment necessary for the Contractor to Provide the Works remains the responsibility of the Contractor.

3.1.31 Existing premises, inspection of adjoining properties and checking work of Others

- The Contractor and Project Manager jointly inspect the buildings and other infrastructure adjacent to the working area immediately prior to the commencement of the site operations and agree on the condition of the items inspected. Photographic records must be made of areas of damage.
- The Contractor shall be held responsible for any damage to existing structures, plant and services, caused by them, their Employees, and Sub-Contractors, fair wear and tear excluded, during the execution of this contract, caused intentionally, accidentally or by negligence and shall repair

damage to the satisfaction of the Project Manager before completion of the contract.

3.1.32 The Contractor inspects and surveys the following [buildings / premises / facilities] adjacent to the Site accordance and in conjunction with the Project Manager:

- See item 3.1.31 above

3.1.33 The Contractor inspects the work of TNPA with which the works interface in conjunction with the Project Manager:

- See item 3.1.31 above

3.1.34 Survey control and setting out of the works

- The Works will be set up at the eMendi building first floor to fourth floor. The Contractor is responsible for setting out the Works and for carrying out further surveys as necessary as the work progresses.

3.1.35 The Employer provides the following information and survey controls for the Contractor:

- None required for this project.

3.1.36 Excavations and associated water control

- Not Applicable for this project.

3.1.37 The Contractor complies with the following requirements:

- As indicate in this Works Information.

3.1.38 Underground services, other existing services, cable and pipe trenches and covers

- The Contractor shall, before commencing of any work liaise with the Project Manager and establish the location of any existing services and structures situated within the Works area and record all such information on a suitable "marked-up" drawing reference at all times. As far as possible, all existing services and structures have been shown on the drawing included in this contract (where applicable). The drawings showing the existing services and structures are supplied as a guide only.

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- The Contractor shall consult the Project Manager prior to undertaking any work. The Contractor shall therefore exercise due care and attention in carrying out the scope of Works to avoid damage or disruptions to existing services and structures.
 - The Contractor shall be liable for all claims arising from any damage caused to existing services and structures as a result of their operations or negligence of their employees or Sub-Contractors and shall rectify / replace all damaged services and structures at the Contractor's cost.

3.1.39 Where the Contractor encounters existing underground services / existing services cables / pipe trenches the Contractor undertakes the following:

- Notifies the Project Manager.
- Every effort shall be undertaken by the Contractor to obtain excavation permits and ensure that any existing services are taken into account before the Contractor commences with any excavation or drilling on site.
- The Contractor shall be held liable for damages to existing services.

3.1.40 Control of noise, dust, water and waste

- The Contractor acts in accordance with the Health, Safety and Environmental policies.
- All waste material is collected and disposed of in accordance with the Environmental Management Plan. Dumping of waste material in the sea is strictly prohibited.

3.1.41 The Contractor complies with the following:

- Before moving Equipment to site and working areas and commencing operations, the Contractor submits his proposed methods of construction which demonstrates the measures to avoid and/or reduce any nuisance arising from dust, noise and vibration for acceptance by the Project Manager.

3.1.42 Sequences of construction or installation

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- The Contractor must propose construction methodologies and sequencing of the Works as per their method statement which will be part of the tender evaluation criteria. Any changes in the sequencing of Works which might be required on site must be brought to the Project Manager with sufficient evidence.

3.1.43 The Contractor complies with the following:

The proposed general sequencing of the works is as follows:

- Submit and obtain approval of the works and equipment from Employer (Project File).
- Obtain Site Access.
- Inspect and determine the quantity of work to be done.
- Prepare and corrosion protect all Steel.
- Manufacture and deliver to site materials.
- Check Quality Control and Issue Warranty of Corrosion Protection System.

3.1.44 Giving notice of work to be covered up

- The Contractor notifies the Supervisor in writing of any elements of the Works which are to be covered up. This notification is given not less than 24 (twenty-four) hours prior to the proposed covering up. The Contractor must ensure that all arrangements are made for the work inspected and signed-off by Supervisor.

3.1.45 The Contractor notifies the Supervisor of the following elements of the works which are to be covered up:

- Any Works which are to be covered up.

3.1.46 Hook ups to existing works

- The Contractor will use best technical and quality methods in tying up to existing works

3.1.47 The Contractor complies with the following constraints in the execution of the works:

- The facility is located within the Port of Ngqura (TNPA) and therefore a permit to work shall be required from the Port Security before commencement of any work.
- Access to the site traverse through operational areas. The Contractor shall cooperate with other common users of this portion of access.
- The Contractor shall not commit or permit any act that may interfere with the performance of work by any of the other parties.
- The success the project depends on the effective cooperation of all parties on site, and if necessary, it may be required to discuss the programme on a day-to-day basis with the Supervisor to ensure effective cooperation.

3.2 Completion, testing, commissioning, and correction of Defects

3.2.1 The work to be done by the Completion Date:

On or before the Completion Date the Contractor shall have done everything required to Provide the Works, including removal of his establishment and equipment from the site. The Project Manager cannot certify Completion until all the work has been done and is also free of Defects, which would have, in his opinion, prevented the Employer from using the works and Others from doing their work.

Item of work	To be completed by
As built drawings as specified in the Employer's Works Information	Within 14 days prior to Completion.
Performance testing of the works	Sectional completion dates

3.2.2 The Contractor is permitted to carry out the following works after Completion:

3.2.2.1 Only snag list and rectification of defects identified during retention phase and maintenance period for hot dip galvanising and/or corrosion protection.

3.2.3 Use of the works before Completion has been certified

- 3 In the event of Works not being certified complete by the contractual completion date, the Employer reserves the right to make use of the installation, without the Contractor having benefit of final acceptance.

3.2.4 The Employer uses the following part / parts of the works before Completion is certified by the Project Manager which do not constitute take over by the Employer for the reason(s) stated:

None. No part of the Works will be used until installation is complete per floor.

3.2.5 Materials facilities and samples for tests and inspections

3.2.5.1 The Contractor shall provide the following:

- all materials, facilities and apparatus required for any test and/or inspections required by the Works Information; and
- samples (e.g. concrete cube results, warranties for paintwork, galvanizing, electrical and mechanical installations) as required by the Works Information.

3.2.6 Commissioning

- Commissioning will be performed prior to completion.
- All pre-commissioning activities to be planned and the Employer to be informed to witness the commissioning.

3.2.7 Pre-Commissioning Tests and Commissioning

- The Contractor submits the commissioning protocol to the Project Manager for acceptance not less than 14 days before commissioning starts.
- Pre-commissioning is to be carried out on all components and equipment supplied and/or installed by the Contractor in this contract. These tests include appropriate inspections and functional tests to demonstrate that all items of equipment can be operated safely and at their design performance specification during the commissioning test.
- The pre-commissioning tests are carried out after the Contractor's own proving of the equipment and are conducted in the presence of the Supervisor. The required tests on all items of the equipment will be agreed between the Supervisor and the Contractor. Initial defects listing will be done at this time.
- The Contractor gives the Supervisor a minimum of 48 hours' notice of his readiness to carry out the Pre-commissioning activities.

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- The Contractor shall arrange for Factory Acceptance Testing of selected Electrical and Mechanical Plant as required by the Employer's Engineers at the Supplier's Premises before any Plant is despatched to site.
 - The Factory Acceptance Testing shall be witnessed by the Employer's Engineers, but in doing so; the Employer's Engineers assume no responsibility or accountability for the proper functionality of the Plant in any way whatsoever.
 - The Contractor shall arrange Site Acceptance Testing for the selected Plant when it arrives on Site.
 - The Site Acceptance Testing shall be witnessed by the Employers Engineers, but in doing so; the Employer's Engineers assume no responsibility or accountability for the proper functionality of the Plant in any way whatsoever.
 - The cost of the FATs and SATs, including travel, accommodation, and daily stipend for the Employer's Engineers, is part of this contract, and shall be included in the Contractor's Price. The anticipated number of persons to be catered for in this regard is 3 (three) per FAT.
 - The Contractor shall appoint an independent ECSA registered commissioning engineer to conduct and coordinate the commissioning activities. The Curriculum Vitae of the commissioning engineer shall be submitted to the Project Manager and Employer's Engineers for acceptance before his appointment.
 - The Employer's Engineers and/or the Project Manager reserves the right to reject the proposed commissioning engineer if he is deemed unsuitable to carry out the commissioning activities as required by the Employer and the Employer's Engineers.
 - The installation shall be comprehensively tested and commissioned as individual and integrated systems as may be required by the configuration, after the Works are substantially complete.

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- The Contractor shall provide adequate and competent personnel for testing and commissioning of every installation and for the full duration of the commissioning process.
 - The commissioning shall include interaction between other systems and others where interdependence of installations is encountered.
 - The commissioning process shall, after all testing's has been completed be the final proving ground of the systems and during this procedure the installations shall be subjected to all possible inputs and actions which may be encountered under operational conditions.
 - The Contractor shall prove the full operation, working and compliance of the installation in accordance with the specifications.
 - A detailed programme of the planned commissioning procedures shall be submitted to the Project Manager and Employer's Engineers at least 14 days before commissioning commences.

3.2.8 The commissioning programme shall include, but is not limited to:

- A schedule of equipment to be commissioned, the proposed tests to be conducted and the testing methods and the range of acceptable results,
- Commissioning check sheets,
- Commissioning programme dates and duration.

3.2.9 The Contractor shall supply all relevant test equipment, monitoring devices, network analysers, protocol testers/analysers etc. required to test and commission the complete Works.

3.2.10 An accurate record of all commissioning and testing is to be taken and included in the handover documentation as a permanent record.

3.2.11 The Contractor shall perform all tests as required by any Sections or Clauses of the Works Information and all tests required by the Employers Specifications annexed thereto, and all tests required by any applicable SANS Standard, or other Standard, and/or as directed by the Employer's Engineers and the Project Manager.

3.2.12 Testing and commissioning is considered part of the Works and is to be done before completion.

3.2.13 Access for correction of defects:

- Should the Contractor have to return to the Site after completion of the works to conduct an improvement or repair, the Contractor shall arrange all staff members required to perform the work and shall also carry the costs of such access.

3.2.14 The Contractor ensures that the Project Manager has a full and accurate dossier of As-built documents that represent the Civil, Building, Structural, Mechanical, Electrical, Instrumentation, General Layout as appropriate status of the completed works (to include Plant within the works) to present to the Employer.

3.2.15 The Contractor ensures that the Project Manager has a full and accurate dossier of Civil, Building, Structural, Maintenance and Operating Manuals as appropriate at the earlier of take-over or Completion.

3.2.16 The Contractor complies with the following constraints and procedures of the Employer where the Project Manager arranges access for the Contractor after Completion:

- The Contractor shall not have sole possession of the Works Area. The Contractor shall cooperate with the Employer's employees, Employers, Port visitors, any other contractor and common users in regard to occupation and access. (As and where applicable)
- The Works will be performed in an operational environment. The Employers, Port visitors, any other contractor and common users will proceed with normal duties during the inspection and maintenance of fenders. The Employers, Port visitors, any other contractor and common users should timeously be notified so that there will be no disruptions to Port business. The Contractor shall liaise with the Project Manager in scheduling work and shall comply with all instructions.
- The Contractor performs the work and cooperates with the Employer who operates on site during the entire duration of the contract.
- The Contractor shall not commit or permit any act that may interfere with the performance of Port operations and shall carry out work in liaison with the Project Manager.
- The success of the Works depends on the effective interaction and cooperation of all parties on site, and it will be necessary to discuss the Contractor's proposed activities and short term programme on a regular

basis with the Project Manager to ensure effective cooperation and smooth interface between the activities Contractor's and others working and operating in this area.

3.2.17 Access given by the Employer for correction of Defects

- As and when may be required and as determined by the Project Manager at completion.

3.2.18 Performance tests after Completion

3.2.18.1 The Contractor performs the following performance tests after Completion of the works:

- Training and technology transfer

3.2.19 The Contractor facilitates the following requirements for training workshops after Completion for the works in use:

- The Contractor arranges for the following technology transfer to the Employer after Completion for the works in use:

3.2.20 Operational maintenance after Completion

3.2.21 The Contractor performs the following operational maintenance in relation to the works after Completion:

3.3 The following considerations shall be made in the construction phase:

- A Method Statement and Construction Schedule shall be submitted to the Employer timeously for approval prior to execution.
- The Contractor shall minimize disruptions of business operations in and around the eMendi Admin precinct.
- The Contractor shall ensure that a Quality Assurance Plan is in place and shall appoint a Site Agent who shall report to the Employer during the execution phase.
- Contractor shall, upon completion, furnish the Employer with As-built data in native format.

4 Plant and Materials Standards and Workmanship

4.1 Investigation, Survey and Site Clearance

The Contractor is required to protect existing services prior to construction for the full extent of the site.

4.1.1 The Contractor carries out the following investigations at the Site:

- As built information, where available, will be provided by TNPA to the Contractor, but this information must not be relied upon to successfully complete the Works. The Contractor will conduct any necessary site investigations to obtain results capable of allowing successful completion.

4.2 Building Works

4.2.1 Where the Association of South African Quantity Surveyors Model Preamble for Trades 1999 are used within the Works Information, the following interpretations and meanings shall apply

4.2.2 In case of any conflict in interpretation, ambiguity or discrepancy between any Model Preamble for Trades 1999 (whether standard or written as a particular project specification) contained in the Works Information and the conditions of contract, the conditions of contract take precedence within the ECC Contract.

4.2.3 In case of any conflict in interpretation, ambiguity or discrepancy between any Model Preamble for Trades 1999 (whether standard or written as a particular project specification) contained in this paragraph 4.2 of C3.1 Employer's Works Information and specific statements contained elsewhere in C3.1 Employer's Works Information, the specific statements contained elsewhere shall prevail, without prejudice to the Project Manager's express duty to resolve any ambiguity or inconsistency in the Works Information under ECC Clause 17.1.

4.2.4 Within the Model Preambles for Trades 1999, the following amendments and interpretations shall apply:
Where the word or expression "Principal Agent" is used, read "Project Manager" or "Supervisor" as the context requires.

Where the word or expression "Contractor" is used, read "Contractor".

Where the word or expression "Engineer" is used, read "Project Manager" or "Supervisor" as the context requires.

Where the Model Preambles for Trades 1999 mention "rates" for measured work and any contractual statements relating to payment, all such statements shall be discounted, with the ECC conditions of contract taking precedence.

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- 4.2.5 Within the Model Preambles for Trades 1999, A. GENERAL, the following amendments and interpretations shall apply:

Where the word or expression "bills of quantities" is used, this shall be discounted for the purposes of the Works Information. The ECC Contract Data - Part One states the main option to apply within the ECC Contract between the Parties.

- 4.2.6 Within the Model Preambles for Trades 1999, B. ALTERATIONS, B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC and C. EARTHWORKS, C1.4 Materials from demolitions shall not apply. C3.1 Employer's Works Information paragraph 3.1.6 states details of the Contractor's title (if any) to Materials arising from excavations and/or demolitions and how such Materials are either to be disposed of or re-used in the works.
- 4.2.7 Within the Model Preamble for Trades 1999 Q. PLUMBING AND DRAINAGE, Q.24 TESTS shall be deemed to be included within paragraph 3.2.1 of C3.1 Employer's Works Information.
- 4.2.8 Within the Model Preamble for Trades 1999 U. EXTERNAL WORKS, U.3.8 Process control tests shall be deemed to be included within paragraph 3.2.1 of C3.1 Employer's Works Information.
- 4.2.9 The principles, meanings and interpretation stated and established within paragraphs 6.2.1 to 6.2.8 with respect to the Model Preambles for Trades 1999 equally apply to the other Model Preambles for Trades 1999 references used within this paragraph 4.2 of C3.1 Employer's Works Information.

4.3 Civil and Structural Works

- 4.3.1 Where the SANS 1200 series of Specifications are used within the Works Information, the following interpretations and meanings shall apply:
- 4.3.2 In case of any conflict in interpretation, ambiguity or discrepancy between any SANS 1200 Specification (whether standard or written as a particular project specification) contained in the Works Information and the conditions of contract, the conditions of contract take precedence within the ECC contract.
- 4.3.3 In case of any conflict in interpretation, ambiguity or discrepancy between any SANS 1200 Specification (whether standard or written as a particular project specification) contained in this paragraph 4.3 of the Employer's Works Information and specific statements contained elsewhere in C3.1 Employer's Works Information, the specific statements contained elsewhere shall prevail, without prejudice to the Project Manager's express duty to resolve any ambiguity or inconsistency in the Works Information under ECC Clause 17.1.

4.3.4 Within SANS 1200 A: GENERAL, the following amendments and interpretations shall apply:

Where the word or expression "Employer" is used, read "Employer";

Where the word or expression "Contractor" is used, read "Contractor";

Where the word or expression "Engineer" is used, read "Project Manager" or "Supervisor" as the context requires;

Where the word or expression "schedule of quantities" is used, this is deleted in entirety. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein);

4.3.5 Within SANS 1200 A: GENERAL 2.3 DEFINITIONS, the following apply:

"Acceptable. Approved (Approval)" is interpreted as either a Project Manager or a Supervisor communication or instruction in relation to Works Information compliance, consistent with the conditions of contract as the context requires;

"Adequate" is deleted. The Project Manager notifies the Contractor where the Contractor has not complied with the Works Information;

"Measurement and payment" and the further definitions contained within 6.3 c) are deleted. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein);

4.3.6 Within SANS 1200 A: GENERAL 2.6 APPROVAL, the following applies:

"Approval" by either the Project Manager and/or the Supervisor is without prejudice to ECC Clause 14.1 and, inter alia, ECC Clauses 13.1, 14.3 and 27.1.

4.3.7 SANS 1200 A: GENERAL 2.8 ITEMS IN SCHEDULE OF QUANTITIES, is deleted in entirety. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein).

4.3.8 SANS 1200 A: GENERAL 3.2 STRUCTURES AND NATURAL MATERIAL ON SITE, applies only to the extent that it is consistent with paragraph 3.1.6 of C3.1 Employer's Works Information.

4.3.9 Within SANS 1200 A: GENERAL 7.1 PLANT, the following applies:

Where the word or expression "Plant" is used, read "Equipment".

4.3.10 SANS 1200 A: GENERAL 7.2 CONTRACTOR'S OFFICES, STORES AND SERVICES, applies but the Project Manager resolves any inconsistency with statements included within paragraph 3.1.12 of C3.1 Employer's Works Information.

4.3.11 SANS 1200 A: GENERAL 3.1 SURVEY, applies only to the extent that it is consistent with paragraph 3.1.14 of C3.1 Employer's Works Information.

4.3.12 Within SANS 1200 A: GENERAL 3.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS, the following applies:

Where the word or expression "specification" is used, read "Works Information".

4.3.13 SANS 1200 A: GENERAL 3.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES applies only to the extent that it is consistent with the specific statements made elsewhere in C3.1 Employer's Works Information and in any case and at all times consistent with the conditions of contract.

4.3.14 Within SANS 1200 A: GENERAL 5 TESTING, the following applies:

Where the word or expression "Engineer" is used, read "Supervisor".

4.3.15 SANS 1200 A: GENERAL 8 MEASUREMENT AND PAYMENT, is deleted in entirety. Assessment and payment is in accordance with the conditions of contract (and the ECC main and secondary options stated therein).

4.3.16 The principles, meanings and interpretation stated and established within paragraphs 6.3.1 to 6.3.15 with respect to SANS 1200 series and to SANS 1200 A: GENERAL equally apply to the other SANS 1200 specification references [state particulars of SANS 1200 used] used within this paragraph 6.3 of C3.1 Employer's Works Information.

4.4 Electrical and Mechanical engineering works

4.4.1 Where SANS 10142 and/or SANS 10198 specifications are used within the Works Information, then where the term "Equipment" (or the like) is used with

the meaning of installation and items left behind in the works, then please read this term as "Plant" for ECC defined term compliance.

4.5 Process control and IT works

- As per the Contractor's manufacturer's specifications.

4.6 Drawings issued by the Employer

This is the list of drawings issued by the Employer at or before the Contract Date and which apply to this contract.

Drawing number	Title
XHOE0006-1-300-A-LA-0001-01	FIRST FLOOR LAYOUT
XHOE0006-1-400-A-LA-0001-01	SECOND FLOOR LAYOUT
XHOE0006-1-500-A-LA-0001-01	THIRD FLOOR LAYOUT
XHOE0006-1-600-A-LA-0001-01	FOURTH FLOOR LAYOUT

SECTION 2

5 Management and start up

5.1 Management meetings

- 5.1.1 The Contract will be managed through the New Engineering Contract, NEC 3 Engineering Construction, Option A: Priced Contract with Activity Schedule. Meetings of a specialist nature may be arranged as specified elsewhere in this Scope, or if not so specified by persons and at times and locations (Gqeberha or virtual) to suit the Parties, the nature, and the progress of the study. The person arranging the meeting within five (5) days of the meeting shall submit records of these meetings to the Project Manager.
- 5.1.2 The Employer and the Contractor will conduct a Kick-off Meeting, Technical Meetings, Progress Meetings, Risk Reduction and SHE Meetings. All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. The Contractor's key personnel are expected to attend meetings with the objective to resolve problems/challenges including making available to either party, any data that may have bearing in the matter discussed in accordance with this contract.

5.1.3 The Contractor shall attend management meetings, bringing with supporting key personnel at the Project Manager or Engineering Manager's request as set out above. All meetings shall be held in either Gqeberha or virtual depending on the applicability. At these meetings the Contractor shall presents all relevant data including safety, health and environmental issues, progress reports, quality plans, sub-Contractor management reports, as may be required.

5.1.4 It is the Employer's specific intention that the Parties and their agents use the techniques of partnering to manage the contract by holding meetings designed to pro-actively and jointly manage the administration of the contract with the objective of justifying the opposing effects of risk for both Parties Regular meetings of a general nature may be convened and chaired by the Project Manager as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Contract Management Meeting - progress and feedback.	Monthly on a day and time mutually to be agreed.	Port of Ngqura or Virtual	Employer, Contractor, Supervisor and Project Manager.
Contract risk register and Compensation Events.	Monthly on a day and time mutually to be agreed.	Port of Ngqura or Virtual	Employer, Contractor, Supervisor and Project Manager.
Site Inspections.	Ad hoc.	Port of Ngqura	Employer, Contractor, Supervisor and Project Manager.
Contractor Safety Meetings.	Held Monthly with Contractors. Day and time to be agreed.	Port of Ngqura or Virtual	TNPA Safety Advisors; Contractor Safety Officers and Contractor management / supervision and Project Manager.
Safety Pre-Mobilisation Meeting.	Once off at the kick-off meeting.	Port of Ngqura	Employer, Contractor (appropriate key persons), Supervisor (as necessary and

			appropriate delegates), and Project Manager (and appropriate delegates).
Safety, Health and Environment Induction Training.	Once off Induction programme prior to commencing any work on site and each time for a new start.	Port of Ngqura	Contractor (appropriate key persons), Contractor Supervisor (as necessary and appropriate delegates), Foreman and General Workforce.

One (1) x Site investigation– Project site investigation will be an opportunity where the Contractor will meet with local authority to discuss design requirements, highlighting current issues and coordinate with the proposed scope of work.

5.2 Documentation Control

5.2.1 The Contractor shall submit all documentation complying with the Employer's standards and requirements.

- a) The Employer will issue relevant documentation to the Contractor, but control, maintenance and handling of these documents will be the Contractor's responsibility, at their expense and managed with a suitable document control system.
- b) All project documents issued to 3rd Parties and to the Employer must be submitted through the Employer's Document Control Department.
- c) In undertaking the study all documentation requirements for the study shall be dealt with in accordance with document DOC-STD-0001 (Contractor Documentation Submittal Requirements).
- d) The Documentation Schedule (CDS) is as contemplated in DOC-STD-0001.

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- e) The Contractor documentation "Starter kit," as contemplated in DOC-STD-0001, will be issued at the kick-off meeting following award.
 - f) All contract correspondence is issued through document control. All hardcopy communication will be delivered to the Employer via the Lead Document Controller. In the event of urgent communication, electronic communication can be transmitted to the Employer's Agent.
 - g) Each supplier of documentation and data to the Project is responsible for ensuring that all documentation and data submitted conforms to the Project Standards and data Quality requirements in terms of numbering, uniqueness, quality, accuracy, format, completeness, and currency of information. Data not meeting the Project Standards and data Quality requirements will be cause for rejection and returned to the Contractor for corrective action and re-submission.
 - h) Should any change be made to documentation or data, which has already been submitted to the Project, then new or revised documentation or data shall be issued to replace the outdated information.
 - i) All drawings supplied shall comply with the CAD Standards, i.e., ENG-STD-0001.
 - j) It is the responsibility of all Project participants undertaking work on the Project to ensure they obtain and comply with the relevant requirements to suit their deliverables.
 - k) The Contractor is to ensure that the latest versions of the required application software and a suitable 'IT' Infrastructure are in place to support the electronic transmission of documentation.
 - l) All native files are to be submitted to the Employer. Electronic files submitted to the Project shall be clear of known viruses and irrelevant "instructions." The supplier of documentation is required to always have, the latest generation of virus protection software and up-to-date virus definitions.

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- m) The required number of copies shall as a minimum be three (2) (1x original + 1 x hard copy), with the corresponding PDF and 'Native' file formats upon final submission.
 - n) The Contractor shall apply "wet signatures" to the original Documentation before scanning the signed original and prior to formal submission.
 - o) Final issues of all documentation shall be supplied to the Project in "wet signature" format along with the associated corresponding electronic 'native files and PDF renditions.
 - p) The Contractor shall ensure adequate resources are available to manage and execute the Document Control function as per the requirements of the Project.

5.3 Health and Safety Management

5.3.1 The Principal Contractor complies with the following Health and Safety requirements, but not limited to:

- Transnet Health and Safety Project Specification
- Occupational Health and Safety Act (Act 85 of 1993) and Regulations;
- Transnet health and safety policies and procedures;
- National Road Traffic Act.

5.3.2 The Principal Contractor ensures that its Contractors comply with the above-mentioned requirements.

5.3.3 The Employer will acknowledge the achievement of specific safety milestones set for the project with regards to incident statistics, incident recording, safety observation and conversations (SOC's) participation, safety initiatives, etc.

5.3.4 The Principal Contractor makes the Health and Safety specification available to its employees and Contractors in the language of this contract and other local languages as required.

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- 5.3.5 The Principal Contractor conducts a method statement, risk assessment and safe work procedures pack per activity prior to carrying out that activity on the Site to the approval of the Project Manager.
- 5.3.6 The lines of communication of the various personnel acting on behalf of the Project Manager, who communicates directly with the Principal Contractor, and his key persons with respect to the HAS specification, are contained within (Health and Safety Project Specification).
- 5.3.7 The Principal Contractor shall appoint a full time CHSO per shift, registered with SACPCMP for the duration of the works, the number of which depending on the scope, complexity, and high-risk activities involved, as required by the Construction regulations of 2014, regulation 8(5). The Health and Safety Officer(s) must be on site when work commences at the start of the day and must remain on site until all activities for that day (including the activities of Contractors) have been completed.
- 5.3.8 The CM is responsible, within the context of the HAS project Specification, for health and safety on the site and reports to the Project Manager. The CM specific tasks are detailed in the Health and Safety Project Specification
- 5.3.9 All items of plant, equipment and vehicles travelling within the site shall be equipped with fully operational amber rotating flashing lights. All vehicles shall be roadworthy and shall at all times adhere to all traffic signage and speed limits.
- 5.3.10 All employees of the Principal Contractor will undergo entry medicals before the commencement of the project and thereafter on an annual basis inclusive of exit medicals. Medicals to include drug testing. Medicals to be done by an Occupational Medical Practitioner (OMP).
- 5.3.11 Trainings as stipulated in the HS project specification will be completed by relevant Principal Contractor employees before the commencement of the project.
- 5.3.12 All will comply with PPE requirements as mentioned in this document as well as Health and Safety Project Specification taking note that only long sleeve pants and shirts are allowed to be worn on site in addition to the compulsory project PPE requirements.
- 5.3.13 Transportation of employees will not be allowed at the back of LDV's, even those fitted with a canopy.

5.3.14 All permit costs required for any activities relating to the project shall be for the Principal Contractors/Contractors account.

5.3.15 All employees and visitors to undergo daily alcohol testing by a trained person and calibration certificates to be available upon request.

5.3.16 The Principal Contractor shall further comply with all applicable legislative requirements and standards with respect to his own activities and others on the site. A health and safety file to be submitted by the Principal Contractor and all Contractors for acceptance by the Employer or Employers representative before site access can be granted. **In addition, sufficient time to be allowed for health and safety file to be approved by TNPA Health and Safety Department.**

5.4 Environmental constraints and management

5.4.1 The Contractor complies with the following:

- Construction Environmental Management Plan (CEMP)
- Ngura Operational Environment Plan (OEMP)

5.4.2 All work is to be conducted in accordance with the principles of the National Environmental Management Act, 1998 (Act no 107 of 1998) as well as all other applicable legislation, regulations and accepted environmental good practice.

5.4.3 A Construction Environmental Management Programme (CEMP_r) has been compiled for the Port of Ngqura which is applicable to this project and is included under Annexure D (Environmental Management Programme).

5.4.4 The CEMP_r provides an integrated approach to environmental management. This approach is designed to guide the appropriate allocation of human resources, assign responsibilities, develop procedures and ensure project compliance with regulatory and best practice requirements. The CEMP_r is the minimum acceptable standard for the Project that shall be complied with at all times. The CEMP_r requirements shall be applicable to the main Contractor and all its service providers.

5.4.5 The Contractor must sign the declaration of understanding as a commitment to abide with the Project CEMP_r and Transnet Environmental Governance Framework. Sufficient environmental budget must be allocated to meet all the project environmental requirements for the duration of the contract.

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- 5.4.6 The Contractor shall perform the Works and all construction activities within the Site and Working Areas having due regard for the environment and environmental management practices as more particularly described within the CEMPr.
- 5.4.7 The Contractor must appoint a suitably qualified Environmental Officer with a relevant environmental qualification and a minimum of 5 years relevant construction environmental management experience. The roles and responsibilities of the Contractor's EO are clearly outlined in the CEMPr. The appointed EO is required to be on site full time and may be shared with any other discipline on site such as Health and Safety.
- 5.4.8 The Contractor will be required to submit an environmental file to TNPA post award of tender. Particular requirements of the Employer will be made known on award of the contract. A Site access certificate shall not be granted until the environmental file has been approved by the Employer.
- 5.4.9 The overarching obligations of the Contractor in terms of the CEMPr before construction activities commence on the Site and/or Working Areas is to provide environmental method statements for all construction operations at the Site and/or Working Area and where requested by the Construction Manager. The Contractor shall comply with the following:
- The Contractor shall identify the kinds of environmental impacts that will occur as a result of their activities and accordingly prepare separate method statements describing how each of these impacts will be prevented or managed so that the standards set out in the CEMPr are achieved.
 - Environmental method statements will be prepared in accordance with the requirements set out in the CEMPr. These method statements shall form part of the environmental file.
 - The Contractor shall ensure that his management, foremen and the general workforce, as well as all suppliers and visitors to Site have attended the Environmental Induction Programme prior to commencing any work on Site.
 - If new personnel commence work on the Site during construction, the Contractor shall ensure that these personnel undergo the Environmental Induction Programme and are made aware of the environmental specifications on Site.
- 5.4.10 The Contractor must appoint a waste removal Service Providers as per the TNPA list of waste removal Service Providers (to be provided after contract award). During the construction period, the Contractor shall comply with the following:

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- Upon award the Contractor will receive all the environmental file templates and copies of the project's EA, permits and licences and CEMPr;
 - A copy of the project's EA, permits and licences where relevant, CEMPr and method statements shall be available on Site, and the Contractor shall ensure that all the personnel on Site (including subContractors and their staff) as well as suppliers are familiar with and understand the specifications contained in these documents;
 - The Contractor must sign a Declaration of understanding (T2.2.38) as part of a returnable acknowledging understanding of the environmental requirements for the Project. Furthermore, sufficient environmental budget must be allocated for the implementation of environmental management requirements.
 - Method statements that are required during construction must be submitted to the Project Manager for approval at least 10 days prior to the proposed commencement of the activity. Emergency construction activity method statements may also be required. The activities requiring method statements cannot commence if the method statements have not been approved by the Project Manager. The scope of the required method statements for completion by the Contractor shall, as a minimum, include all such items as are listed within the CEMPr;
 - Where applicable, the Contractor shall provide job-specific training on an ad hoc basis when workers are engaged in activities, which require method statements.

5.4.11 The Contractor shall ensure that anyone making deliveries to Site is properly informed of all procedures and restrictions, e.g., which access roads to use, no go areas, speed limits, noise and the like, as required by the relevant project Authorisations and the CEMPr, before they arrive at Site.

5.5 Quality assurance requirements

5.5.1 The Contractor shall ensure that all contractual deliverables required to be executed and completed are given due consideration to meet the client's Technical Specifications, Drawings and General Quality Requirements for Contractors and Suppliers (QAL-STD-0001).

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- 5.5.2 The Contractor shall have, maintain, and demonstrate to the Employer the documented Quality Management System to be used in the performance of the scope. The Contractor shall institute a quality management system, instruments and equipment required including providing adequate quality supervision and control for always works.
- 5.5.3 The Contractor's Quality Management System shall conform to International Standard ISO 9001:2015.
- 5.5.4 The Contractor submits his Quality Management System documents to the Employer as part of his programme under ECC Clause 31.2 to include details of:
- Project Quality Plan for the contract SHALL cover project scope and be aligned to ISO 9001:2015 QMS requirements.
 - Quality Manual that is aligned to ISO 9001:2015 QMS requirement.
 - Project Specific Quality Data Book Index
 - Quality Officer with ISO 9001:2015 (Quality Understanding and Implementation Certificate) with a minimum of 3 years' experience in similar projects.
 - Quality Control Plan MUST cover all Engineering disciplines and clearly identify all inspection, test, verification requirements to meet contractual obligations, specification and drawings as required by the project scope.
- 5.5.5 The Contractor develops and maintains a comprehensive register of documents that will be generated throughout the contract including all quality related documents as part of its Quality Plan.
- 5.5.6 The Employer indicates those documents required to be submitted for information, review or acceptance and the Contractor indicates such requirements within his register of documents. The register shall indicate the dates of issue of the documents with the Employer responding to documents submitted by the Contractor for review or acceptance within the period for reply prior to such documents being used by the Contractor.
- 5.5.7 The Quality Plan shall outline the quality strategy, methodology, quality resource allocation, Quality Assurance and Quality Control co-ordination activities to ensure that the scope meet the standards stated in the Scope Information.

5.5.8 The Contractor shall nominate a suitably experienced quality representative for all aspects of the Works, including general Site activities, with a staff complement that is adequate to perform the requirements of the PQP.

5.5.9 The Contractor shall submit the CV of his nominated quality representative for the Project Manager's review and approval.

5.5.10 The Contractor shall also ensure that all sub-Contractors are suitably qualified and experienced to carry out the work for which they have been sub-contracted.

5.5.11 The Employer may, at own discretion, require a Quality Audit of sub-Contractor(s) to ensure that the sub-Contractor(s) have the necessary management, facilities, skilled staff and quality control facilities to carry out the Works to ensure compliance with the Works Information.

5.5.12 The Contractor shall accept full responsibility for the quality of his sub-Contractor(s) work and of materials used, irrespective of any quality surveillance that may be carried out by the Employer or his representative.

5.6 Programming constraints

5.6.1 The Contractor presents their first programme and all subsequently revised programmes in hard copy format printed in full colour in A3 size and in soft copy 'Native' format. Note that PDF soft copy versions are not acceptable.

5.6.2 The Contractor submits his Level 3 programme to the Employer for acceptance in the period stated in the Contract Data.

5.6.3 The Contractor uses Primavera version 6 or Microsoft Project for his programme.

5.6.4 The Contractor shows on his programme submitted for Acceptance and all subsequently revised programmes schedules (including calendar) the critical path or paths and all necessary logic diagrams demonstrating the order and timing of the operations which the Contractor plans to do.

5.6.5 The Contractor's programme shows duration of operations in working days.

5.6.6 The Contractor's programme shows the following levels:

- Level 1 Master Schedule – defines the major operations.

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- Level 2 Project Schedule – Breakdown showing different packages and/or disciplines involved in the project; a summary schedules 'rolled up' from Level 3 Project Schedule described below.
 - Level 3 Project Schedule – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion. The Employer notifies any subsequent layouts and corresponding filters on revised programmes.
 - Level 4 Project Schedule – detailed discipline speciality level developed and maintained by the Contractor relating to all operations identified on the programme representing the daily activities by each discipline.

5.6.7 The Contractor shows on each revised programme he submits to the Employer a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the Contractor. The Contractor's weekly programme narrative report includes:

- Level 4 Project Schedule – showing two separate bars for each task i.e., the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
- 3-week Look ahead Schedule - showing two separate bars for each task i.e., the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
- Manpower Histogram – reflecting actual, forecasted and planned activities
- S-curves – reflecting the actual percentage complete versus the planned percentage for the overall contract utilising the earned values as calculated by the detailed progress report.

5.7 Contractor's management, supervision, and key people

5.7.1 The Contractor employs a CSHEO as a key person under ECC Clause 24.1

5.7.2 The CSHEO reports to the SHEC on the Site. The CSHEO ensures that the works (to include any part thereof) are subject to a prior environmental method statement(s)

approved by the Project Manager and ensures that the CEMP is implemented by the Contractor in a timely and proper manner. The SCHEO provides the Project Manager with all environmental method statements.

5.7.3 The CSHEO tasks are:

Daily, weekly and monthly inspections of the Site and Working Areas.

Monitor compliance with the CEMP (to include the SES and PES) and the environmental method statements submitted to the Project Manager

- Reporting of an environmental incident to the Project Manager
- Attendance at all SHE meetings, toolbox talks and induction programmes
- Litter control and ensuring the Contractor clears litter from the Site and Working Areas; and
- Ensuring that environmental signage and barriers are correctly placed

The CSHEO submits daily, weekly and monthly checklists to the SHEC.

5.7.4 The Contractor employs a CIRP as a key person under ECC Clause 24.1

5.7.5 The CIRP is based on the Site and ensures that all reports and IR requests are submitted accurately and in a timely manner to the Project Manager.

5.7.6 The CIRP tasks are:

- Dedicated to human resources, industrial relations and any other Contractor employee related function;
- Resolve all human resources and industrial relations matters arising from the Contractor's employees;
- Represent the Contractor at all industrial relations meetings
- Represent the Contractor on the IRCC

5.7.7 The Contractor provides an Organogram of all his key people (both as required by the Employer and as independently stated by the Contractor under Contract Data Part Two)

and how such key people communicate with the Project Manager and the Supervisor and their delegates all as stated in the C3.1 Employer's Works Information.

5.8 Training workshop and technology transfer

5.8.1 The Contractor facilitates the following requirements for training workshops:

- It is therefore essential that the Contractor provides comprehensive training (both theoretical and practical) to Employer's staff members in the operation and maintenance of works.

5.9 Insurance provided by the Employer

Insurance provided by the Employer is contained in the Contract Data – Part 1.

5.10 Contracts change management

5.10.1 For ease of communication, standard templates shall be used for contract change management. The Contractor shall forward all correspondence with respect to contract change management, i.e., early warnings and notifications of compensation events, on the standard templates provided.

5.10.2 Records of Claims, Payments & Assessments of Compensation Events must be kept by the Contractor. The Contractor shall keep at all times the following records for the Employer's Agent to inspect:

- Records of people and equipment within the working areas.

5.11 Provision of bonds and guarantees

5.11.1 The form in which a bond or guarantee required by the conditions of contract (if any) is to be provided by the Contractor is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

5.11.2 The Contractor provides a bond or guarantee as required by the conditions of contract concurrently with the execution by the Parties of the form of agreement for the ECC contract.

5.12 Records of Defined Cost, payments & assessments of compensation events kept by Contractor

The Contractor keeps the following records available for the Project Manager to inspect:

- Records of design employee's location of work, and
- Records of Equipment used, and people employed outside the working areas.

5.13 The Contractor's Invoices

5.13.1 When the Project Manager certifies payment (see ECC Clause 51.1) following an assessment date, the Contractor complies with the Employer's procedure for invoice submission.

5.13.2 The invoice must correspond to the Project Manager's assessment of the amount due to the Contractor as stated in the payment certificate.

5.13.3 The invoice states the following:

Invoice addressed to Transnet SOC Ltd;

Transnet SOC Limited's VAT No: 4720103177;

Invoice number;

The Contractor's VAT Number; and

Purchase Order Number and

The Contract number

:TNPA/2023/02/0002/22112/RFP The invoice

contains the supporting detail

- The invoice shall be accompanied by statement of invoices (to be signed off and approved by TNPA Supervisor)
- The amount paid to date
- Settlement account
- Any other information required by the Project Manager to enable him/her to approve the invoice.

5.13.4 The invoice is presented either by electronic mail or hand delivery.

5.13.5 Invoices submitted electronically are addressed to:

To be provided on award.



Transnet National Ports Authority

Tender Number: TNPA/2023/02/0002/22112/RFP

Description of the Works: APPOINTMENT OF THE CONTRACTOR FOR ENGINEERING DESIGN AND CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS (ATRIUMS)

5.13.6 Invoices submitted by hand are presented to:

Transnet National Ports Authority eMendi Administration Building

Port of Ngqura,

N2, Neptune Road,

Off Klub Road,

Gqeberha

Kindly notify the Project Manager if you intend to use this method and when each invoice is posted to prevent delays to payments. It will be the Supplier's responsibility to ensure that all documents have been received by the Project Manager to enable him/her to process the invoice for payment. TNPA will not be held liable for delayed payments through post.

Invoices submitted by hand are presented to:

Transnet National Ports Authority

1st Floor, East Wing, eMendi Admin Building, Port of Ngqura

Neptune Road, Coega, Port Elizabeth, 6001

For the attention of Project Manager and Finance Department

The invoice is presented as an original.

5.14 People

5.14.1 Minimum requirements of people employed on the Site

- Direct employment of labour is preferred
- Wherever possible, general labour shall be recruited from the communities that are local to the Port of Ngqura.
- Recruitment of labour in and around the site is not permitted.
- Recruitment of personnel already employed within the Port of Ngqura is expressly prohibited.
- All personnel shall provide proof of competency appropriate to their appointment.

-
- All personnel shall undergo medical examination prior to undergoing site induction and be certified fit to work on the site, with particular reference to working on heights.

5.15 Contractor liability

5.15.1 The Contractor warrants that it will be liable to Transnet for any loss or damage caused by strikes, riots, lockouts, or any labour disputes by and/or confined to the Contractor's employees, which loss will include any indirect or consequential damages.

5.15.2 The Contractor warrants that no negotiations or feedback meetings by the Contractor's employees shall take place on Transnet premises, whether owned or rented by Transnet.

5.15.3 The Contractor shall give notice to Transnet of any industrial action by the Contractor's employees immediately upon becoming aware of any actual or contemplated action that is or may be carried out on Transnet's premises, whether owned or rented, and shall notify Transnet of all matters associated with such action that may potentially affect Transnet.

5.15.4 The Contractor is responsible for educating its employees on relevant provisions of the Labour Relations Act which deal with industrial action processes, and the risks of non-compliance.

5.15.5 The Contractor is required to develop a Contingency Strike Handling Plan, which plan the Contractor is obliged to update on a three-monthly basis. The Contractor must provide Transnet with this plan and all updates to the Plan. The Contractor is responsible to communicate with its employees on site details of the plan.

5.16 Industrial action by contractor employees

5.16.1 In the event of any industrial action by the Contractor's employees, the Contractor is required to provide competent contingency resources permitted in law to carry out any of the duties that are or could potentially be interrupted by industrial action in delivering the Service.

5.16.2 The Contractor warrants that it will compensate Transnet for any costs Transnet incurs in providing additional security to deal with any industrial action by the Contractor's employees.

5.16.3 In the event of any industrial action by the Contractor's employees, the Contractor is obliged to prepare and deliver to Transnet, within two (2) hours of the commencement of industrial action an Industrial Action Report. If the industrial action persists the Contractor is required to deliver the report at 8h30 each day.

5.16.4 The Industrial Action Report must provide at least the following information:

- Industrial incident report,
- Attendance register,
- Productivity / progress to schedule reports,
- Operational contingency plan,
- Site security report,
- Industrial action intelligence gathered.

5.16.5 The final Industrial Action Report is to be delivered 24 hours after finalisation of the industrial action.

5.16.6 The management of the Contractor is required to hold a daily industrial action teleconference with personnel identified by Transnet to discuss the industrial action, settlement of the industrial action, security issues and the impact on delivery under the contract.

5.16.7 The resolution of any disputes or industrial action by the Contractor's employees is the sole responsibility of the Contractor.

5.16.8 Access to Transnet premises by the Contractor and its employees is only provided for purposes of the Contractor delivering its goods and services to Transnet. Should the Contractor and its employees not, for any reason, be capable of delivering its goods and services, Transnet is entitled to restrict or deny access onto its premises and unless otherwise authorized; such person will be deemed to be trespassing.

5.17 Plant, Equipment and Materials

5.17.1 The Contractor provides Plant, Equipment and/or Materials for inclusion in the works in accordance with SANS 1200A sub-paragraph 2.1, unless otherwise stated elsewhere in the Works Information provided by the Employer. All Plant, Equipment and/or Materials are new, unless the use of old or refurbished Plant, Equipment and/or Materials are

expressly permitted as stated elsewhere in this Works Information or as may be subsequently instructed by the Project Manager.

5.17.2 Where Plant, Equipment and/or Materials for inclusion in the works originate from outside the Republic of South Africa, all such Plant, Equipment and/or Materials are new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.

5.17.3 The Contractor replaces any Plant, Equipment and/or Materials subject to breakages (whether in the Working Areas or not) or any Plant, Equipment and/or Materials not conforming to standards or specifications stated and notifies the Project Manager and the Supervisor on each occasion where replacement is required.

ANNEXURES

Annexure A: Contractor Documentation Submittal Requirements standard DOC-STD-0001



TRANSNET NATIONAL PORTS AUTHORITY
ENQUIRY NUMBER: TNPA/2023/02/0002/22112/RFP
DESCRIPTION OF SERVICES: APPOINTMENT OF A CONTRACTOR FOR ENGINEERING DESIGN AND
CONSTRUCTION SERVICES FOR THE PORT OF NGQURA, EMENDI BUILDING FLOOR EXTENTIONS
(ATRIUMS) IN THE PORT OF NGQURA FOR A PERIOD EIGHT (08) MONTHS

PART 2: PRICING DATA

Document reference	Title	No of pages
	This cover page	1
C2.1	Pricing instructions: Option A	2
C2.2	Activity Schedule	5
	Total number of pages	8

C2.1 Pricing instructions: Option A

1. The conditions of contract

1.1. How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 (ECC) Option A states:

Identified and defined terms	11	
	11.2	(20) The Activity Schedule is the <i>activity schedule</i> unless later changed in accordance with this contract. (22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events. (27) The Price for Work Done to Date is the total of the Prices for • each group of completed activities and • each completed activity which is not in a group A completed activity is one which is without Defects which would either delay or be covered by immediately following work. (30) The Prices are the lump sums for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

1.2. Measurement and Payment

- 1.2.1 The Activity Schedule provides the basis of all valuations of the Price for Work Done to Date, payments in multiple currencies, price adjustments for inflation and general progress monitoring.
- 1.2.2 The amount due at each assessment date is based on **completed activities and/or milestones** as indicated on the Activity Schedule.
- 1.2.3 The Activity Schedule work breakdown structure provided by the *Contractor* is based on the Activity Schedule provided by the *Employer*. The activities listed by the *Employer* are the minimum activities acceptable and identify the specific activities which are required to achieve Completion. The activity schedule work breakdown structure is compiled to the satisfaction of the *Project Manager* with any additions and/or amendments deemed necessary.
- 1.2.4 The *Contractor's* detailed Activity Schedule summates back to the Activity Schedule provided by the *Employer* and is in sufficient detail to monitor completion of activities related to the Accepted Programme in order that payment of completed activities may be assessed.
- 1.2.5 The short descriptions in the Activity Schedule are for identification purposes only. All work described in the Works Information is deemed included in the activities.
- 1.2.6 The Activity Schedule is integrated with the Prices, Accepted Programme and where required the forecast rate of payment schedule.



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- 1.2.7 Activities in multiple currencies are separately identified on both the Activity Schedule and the Accepted Programme for each currency.
- 1.2.8 The tendered total of the prices as stated in the Contract Data is obtained from the Activity Schedule summary. The tendered total of the prices includes for all direct and indirect costs, overheads, profits, risks, liabilities and obligations relative to the Contract.



COMPULSORY RETURNABLE

C2.2 Activity Schedule

The *Employer* requires at least the following activities to be priced. Each activity must be priced individually.

The price reflected below must be **fixed and firm**. Failure to provide a fixed and firm price will declare the Contractor non responsive.

Both options must be priced by the *Contractor*. The *Employer's* proposed percentage payment split is reflected below. *Contractors* are to advise details of any alternative proposed payment split.

The proposed payment date **MUST** be completed.

It is Transnet's preference to enter into a Rand based contract, where the contractor will hedge the Foreign exchange (FX) risk exposure on their balance sheet at a cost acceptable to Transnet by verifying cost of hedging with Transnet Treasury before hedge execution by the contractor.

Should this not be possible and should it be required that the Employer hedge the FX risk, the Contractor will be required to re-imburse the Employer for any hedging related costs (losses that arise due to the moving of hedges), in the event that a payment cannot take place on the hedged date due to the Contractor.

Should the Rand price provided be linked to a foreign currency details thereof must be provided i.e the currency, the applicable portion and the rate assumed.

It is Transnet's preference to enter into a contract on a **DDP** (Incoterms 2010, Port of Ngqura) basis. However, a DAP (Incoterms 2010, Port of Ngqura) will be accepted, provided the contractor agrees to reimburse the Employer in respect of any additional costs to be incurred as a result of choosing the DAP Incoterms 2010, e.g. Customs VAT, cargo dues and other cargo clearance levies relating to this contract.

When providing a price for the main offer Option B, this to include the total cost per year in respect of the lease payments as well as the maintenance costs.



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Item	Activity Description	Price	Proposed Payment Date
1.	PACKAGES A - STRUCTURAL ASSESSMENT AND PRELIMINARY DESIGN		
1.1	Carry out structural condition assessment for the four work areas to confirm durability and produce the condition assessment report for the Atriums.		
1.2	Develop the multi-disciplinary preliminary designs, engineering reports, specifications, and conceptual drawings		
1.3	Review the existing engineering 3-D design model for the building (where available)		
1.4	Develop the multi-disciplinary engineering 3-D design model for the building		
1.5	Produce the preliminary engineering design criteria and design report		
1.6	TOTAL PRICE to be carried over to the Form of Offer and Acceptance (excluding VAT)		

Item	Activity Description	Price	Proposed Payment Date
2.	PACKAGES B – DETAILED DESIGN		
2.1	Develop detailed drawings to 100% engineering detail including all associated specification documents		
2.2	Produce detailed engineering design reports		
2.3	Develop and finalize project cost estimates and project schedule for the construction works		
2.4	Procurement for construction works		
2.5	Allowance for biweekly technical meetings, monthly progress meetings, reports, and presentations		
2.6	Finalize all multi-disciplinary engineering designs to 100% AFC with relevant supporting technical documentation and schedule of quantities		
2.7	Produce the complete functional engineering 3–D design model.		
2.8	Deliver the project execution plan with all relevant supporting management plans for construction (project execution)		
2.9	TOTAL PRICE to be carried over to the Form of Offer and Acceptance (excluding VAT)		



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Item	Activity Description	Price	Proposed Payment Date
3.	PACKAGES C – CONSTRUCTION		
3.1	Undertake construction works (building alterations) to the four floors		
3.2	Construction supervision and quality assurance for construction works		
3.3	Prepare and present constructability sequencing report including risks and assumptions associated with the phasing methodology		
3.4	Prepare procurement schedules required to achieve the Four Floors construction completion Date		
3.5	Allowance for biweekly technical meetings, monthly progress meetings, reports, and presentation		
3.6	Plan, prepare, co-ordinate cold commissioning activities and documentation required to for use during hot commissioning phase		
3.7	Construction management including project controls and construction schedule management, supervision, and co-ordination of all technical aspects during construction.		
3.8	Address all field engineering queries and provide solutions and resolve for the duration of construction and during the hot commissioning phase		
3.9	TOTAL PRICE to be carried over to the Form of Offer and Acceptance (excluding VAT)		



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Item	Activity Description				
4.	PACKAGE D - CONSTRUCTION MANAGEMENT AND COMMISSIONING STAGES (to achieve Four Floors construction completion date)	Proposed Resource	Unit	Notional Hours	Lump Sum Amount
4.1	Plan, prepare, co-ordinate cold commissioning activities and documentation required to for use during hot commissioning phase		hours		R
4.2	Construction management including project controls and construction schedule management, supervision, and co-ordination of all technical aspects during construction.		hours		R
4.3	Address all field engineering queries and provide solutions and resolve for the duration of construction and during the hot commissioning phase		hours		R
4.4	Prepare and provide all necessary close-out documentation as required		hours		R
4.5	Allowance for bi-weekly technical meetings, monthly progress meetings, reports, and presentation		hours		R
4.6	TOTAL PRICE to be carried over to the Form of Offer and Acceptance (excluding VAT)				R



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NO.	<u>ACTIVITY SCHEDULE SUMMARY</u>	<u>TOTAL</u>
1.	STRUCTURAL ASSESSMENT AND PRELIMINARY DESIGN	R
2.	ENGINEERING DETAILED DESIGNS	R
3.	CONSTRUCTION	R
4.	CONSTRUCTION MANAGEMENT AND COMMISSIONING STAGES	R
	TOTAL EXCLUDING VAT CARRIED TO FORM OF OFFER AND ACCPETANCE	R

Transnet Health and Safety Management

Health and Safety Specification:

Alterations to the eMendi Building, Port of Ngqura

Project Number: XHO.E.006

Prepared by:

S. Ahmed

Sharifa Ahmed

Health & Safety Manager

15/08/2022

Date

Reviewed by:

Sindiswa Tunzi

Sindiswa Tunzi

Project Manager

15.08.2022

Date

Approved by:

fwm

pp FW Magqabi

Thembakazi Ngxabani

Port Engineer

16.08.2022

Date

00	01/08/2022	Issued for Review
Rev No	Date	Revision Details

Table of Contents

Table of Contents	ii
1. Project Description	1
2. Scope and Purpose	1
3. Definitions	2
4. Abbreviations	9
5. Contractor Health and Safety Management Plan	9
6. Policy	11
7. Hazard Identification and Risk Assessment (OHS Act, Constr. Regulations 9)	12
7.1 Baseline Risk Assessments	13
7.2 Task-Based Risk Assessments	18
7.3 Pre-Task Hazard Assessments	19
8. Legal and Other Requirements	19
9. Health and Safety Objectives	20
10. Resources, Accountabilities and Responsibilities	21
10.1 Contractor Construction Manager.....	23
10.2 Contractor Health and Safety Officers	25
10.3 Contractor Supervisors	28
10.4 Health and Safety Representatives	29
10.5 First Aiders.....	30
10.6 Duties of Client	30
10.7 Duties of the Designer	32
10.8 Duties of Principal Contractor	34
10.9 Duties of Contractor	35
10.10 Management and supervision of Construction work.....	36
11. Competence, Training and Awareness	37
11.1 Health and Safety Induction Training	40
11.2 Specific Training and Competency Requirements	40
12. Communication, Participation and Consultation	41
12.1 Visible Felt Leadership (VFL) and Safety Observations and Coaching (SOC's).....	42
12.2 Toolbox Talks	42
12.3 Daily Safe Task Instructions (DSTI's)	43
12.4 Health and Safety Suggestions	43
12.5 Health and Safety Meetings	44
13.5.1 Contractor Health and Safety Meetings (OHS Act Section 19)	44
13.5.2 Site Health and Safety Meetings.....	44
12.6 Health and Safety Performance Boards.....	45
12.7 Health and Safety Management Information Notice Boards.....	45
12.8 Involvement (Other)	46
13. Documentation and Document Control	46
13.1 Contractor Health and Safety File Requirements	47
14. Notification of Construction Work	48
15. Operational Control	49

16. Safe Work Procedures	49
17. Planned Task Observations	50
18. General Rules of Conduct.....	50
19. Site Access.....	51
19.1 Access Control.....	51
19.2 Trespassing	52
19.3 Visitors	52
19.4 Alcohol, Drugs and Other Intoxicating Substances	53
19.5 Firearms, Ammunition and Offensive Weapons.....	53
19.6 Vehicles.....	53
20. Mobile Equipment and Light Vehicles	55
20.1 Light Vehicles	59
20.2 Mobile Equipment	62
20.3 Training and Licensing	65
20.4 Tyre and Rim Safety.....	66
21. Access Road to Project Site.....	66
22. Signs and Notices.....	66
23. Machinery	67
24. Barricading.....	67
25. Excavations.....	70
26. Cranes and Lifting Equipment	72
26.1 Design, Manufacturing and Safety Features	72
26.2 Planning and Risk Assessment.....	74
26.3 Operation.....	76
26.4 Inspection, Testing and Maintenance	81
26.5 Training and Competency.....	83
27. Working at Heights	84
27.1.1 Work Platforms.....	84
27.1.2 Floor openings, holes and edges	84
27.1.3 Fall Protection.....	85
27.1.4 Risk Assessment and Permitting	87
27.1.5 Elevating Work Platforms.....	88
27.1.6 Man Baskets, Suspended Scaffolds and Boatswain's Chairs.....	89
28. Scaffolding	90
28.1.1 Training, Competency and Supervision	90
28.1.2 Erection and Dismantling of Scaffolding	90
28.1.3 Safe Access	92
28.1.4 Scaffolding Platforms.....	93
28.1.5 Inspection of Scaffolding.....	94
28.1.6 Using Scaffolding	94
28.1.7 Identification and Inspection of Scaffolding Components	96
28.1.8 Storage of Scaffolding Components	96
29. Falling Objects	96
30. Ladders.....	97
31. Permit to Work	99

32. Isolation and Lockout.....	102
32.1 Personal Locks	105
33. Electrical Safety.....	106
33.1 Electrical Installations	106
33.2 Arc Flash Safety	109
33.3 High Voltage Power Lines.....	109
34. Portable Electrical Equipment	110
35. Arc Welding.....	114
36. Gas Welding and Burning.....	116
37. Compressed Gas Cylinders	117
38. Electrically Powered Tools and Equipment	119
38.1 Angle Grinders	119
39. Pneumatically Powered Tools and Equipment.....	121
40. Fuel Powered Tools and Equipment	122
41. Hydraulically Powered Tools and Equipment	123
42. Explosive Powered Tools.....	123
43. Hand Tools.....	123
43.1 Stanley Knives / Utility Knives.....	124
44. Inspection of Equipment and Tools.....	125
45. Manual Handling and Vibration.....	125
46. Personal Protective Equipment.....	127
46.1 Head Protection	129
46.2 Eye Protection.....	129
46.3 Hearing Protection.....	131
46.4 Respiratory Protection.....	132
46.5 Hand and Arm Protection	134
46.6 Foot Protection.....	134
46.7 Clothing.....	135
46.8 Body Protection.....	135
46.9 Electrical Protective Equipment.....	136
46.10 Jewellery.....	137
46.11 Hair	137
46.12 Task-Specific PPE.....	137
46.13 Sun Protection.....	138
47. Fuel / Flammable Liquid Storage and Refuelling.....	138
48. Fire Protection and Prevention	141
49. Smoking	144
50. Housekeeping	145
51. Waste Management	145
52. Stacking and Storage	146
53. Demarcation	146

54. Facilities	147
55. Occupational Hygiene	148
55.1 Lighting	149
55.2 Noise 150	
55.3 Particulate and Gas / Vapour Exposure	153
55.4 Respiratory Protection Devices	155
55.5 Hazardous Chemical Substances	157
55.6 Thermal Stress	161
55.7 Fitness for Work.....	162
55.8 Legionnaires Disease.....	166
55.9 HIV / Aids	167
55.10 Measuring and Monitoring.....	167
55.11 COVID 19.....	168
56. Emergency Preparedness and Response	168
56.1 Fire Fighting	170
56.2 First Aid.....	170
56.3 First Aid Kits	171
57. Management Review	172
58. Management of Change.....	173
59. Sub-contractor Alignment	174
60. Incident Reporting and Investigation	175
61. Non-conformance	178
62. Performance Assessment and Auditing.....	178
62.1 Reporting on Performance.....	178
63. Audits and Inspections	180
64. Reference Documents	181

List of Tables

Table 7-1: Hazard (Energy) Types.....	14
Table 7-2: Consequence Descriptors.....	15
Table 7-3: Likelihood Descriptors	16
Table 7-4: Risk Matrix	17
Table 12-1: Specific Training and Competency Requirements.....	41
Table 27-1 colour coding system for lifting equipment.....	83
Table 61-1 Minimum Requirements to be included when equipping first aid boxes	171
Table -1: Reference Documents.....	181

1. Project Description

Transnet National Port Authority's Head Office have recently relocated the Parktown, Johannesburg and Kingsmead, Durban offices to the eMendi Building at the Port of Ngqura. The eMendi building was commissioned in April 2017, however there was some outstanding scope that could not be done due to budget constraints. Parking bays were amongst the outstanding scope as well as alterations to the building itself which will include, but not limited to, a library and registry. The optimum occupation capacity of the building has been estimated at 371 occupants.

There has been limited parking bays since the relocation of the Head Office employees and the need for additional parking bays has become necessary. Currently the eMendi building has 135 parking bays including the basement parking.

Therefore approximately 215 additional parking bays are required.

With the relocation of the TNPA head office to the port of Ngqura (eMendi building), an opportunity presented itself to maximize the occupancy potential of the building through a reconfiguration of the office space. The building maximum capacity ranged between 300 to 380 people and measures 10 000m² in size. This allowed for spatial reconfiguration to maximize the building capacity to 372 occupants and those reconfigurations were implemented in August 2021 in preparation for the relocation which took place in September 2021.

2. Scope and Purpose

This health and safety specification outlines the working behaviours and safe work practices that must be implemented and complied with by all Transnet employees, Contractors, Consultants, Visitors and Suppliers, that will be undertaking activities associated with the eMendi Additional Parking Project at the Port of Ngqura. The specification has been developed in accordance with the requirements of the Construction Regulation of 2014, Regulation 5(1)(b) as well as any other applicable legislation.

This Health and Safety Specification will be reviewed and updated periodically as and when necessary to address and / or include:

- Changes in legislation;

- Client requirements;
- Leading practices; and
- Lessons learnt from incidents.

Appointed contractors must identify all requirements applicable to their scope of works and address these accordingly in their Contractor's Site Specific Health and Safety Management Plan. It is the contractor's responsibility to ensure that all sub-contractors comply fully with all legal requirements as well as the requirements of this Specification.

3. Definitions

Acceptable Risk

A risk that has been reduced to a level that can be tolerated having regard for the applicable legal requirements and the Health and Safety Policy adopted for the project.

ALARP (As Low As Reasonably Practicable)

The concept of weighing a risk against the sacrifice needed to implement the measures necessary to avoid the risk. With respect to health and safety, it is assumed that the measures should be implemented unless it can be shown that the sacrifice is grossly disproportionate to the benefit.

Applicant (Permit to Work)

A person requesting permission to perform work for which a Permit to Work is required. Applicants must be authorised (in writing) to receive (or accept) Permits to Work and must be competent to do so by virtue of their training, experience and knowledge of the area or plant in which the work is to be performed.

Authorised Person (Permit to Work)

A person (typically a Project employee or an employee of the client) who has been authorised (in writing) by the nominated project management representative to issue Permits to Work within the scope of his designation. A person may only be appointed to issue Permits to Work if he has undergone training and has been assessed and found competent in systems, plant and equipment operation within the scope of his designation.

Health and Safety Specification – Alterations to the eMendi Building, PoN

Barricade

A temporary structure that is erected as a physical barrier to prevent persons from inadvertently coming into contact with an identified hazard.

Battering

Sloping the sides of an excavation to a predetermined angle (usually less than the natural angle of repose) to ensure stability.

Benching

The creation of a series of steps in the sides of an excavation to prevent collapse.

Consequence

The outcome of an event expressed qualitatively or quantitatively.

Contractor

An employer performing construction work, or providing related or supporting services, on a project site.

Competent Person

A person who has in respect of the work or task to be performed the required knowledge, training, experience and as per OSHAct, 1993 (Act 85 of 1993) and CR 2014.

Construction Supervisor

A competent person responsible for supervising construction activities on a construction site

Clearance Certificate

A signed declaration by an Isolation Officer that a specified hazardous energy source associated with a particular system, plant or item of equipment has been isolated in accordance with an approved Isolation and Lockout Procedure.

Discipline Lock (many locks with a restricted number of identical keys)

Attached at a Lockout Station or at a Local Isolation Point in order to lock out a system, plant or equipment. A Discipline Lock (e.g. A Low Voltage Electricity Discipline Lock) is

owned by an Isolation Officer who has been authorised in writing to isolate and lockout a particular hazard (e.g. Low voltage electricity).

EPCM Consultant

An Engineering, Procurement, and Construction Management Contractor appointed by TRANSNET in order to involve an experienced associate in large projects to manage the entire, or parts of the, project on behalf of TRANSNET. This role will be performed by TRANSNET on this project.

Equipment Lock (many locks with one unique key)

Attached directly to pieces of equipment in order to lock them out. Equipment Locks may only be used by Isolation Officers who have been authorised in writing to perform isolation and lockout procedures. The key must have a solid key ring that fits over an Isolation Bar.

Excavation

Any man-made cut, cavity, pit, trench, or depression in the earth's surface formed by removing rock, sand, soil or other material using tools, machinery, and / or explosives. Tunnels, caissons and cofferdams are specifically excluded and are not addressed in this standard.

First-Aid Injury (FA)

A first-aid injury is any one time treatment and any follow up visit for observation of minor scratches, cuts, burns, splinters and the like which do not normally require medical care. Such treatment is considered to be first aid even if administered or supervised by a medical practitioner.

First aid includes any hands on treatment given by a first aider. (E.g. Band-Aid, washing, cleansing, pain, relief). The following procedures are generally considered first aid treatment:

- Application of Antiseptics.
- Application of Butterfly adhesive dressing or sterile strips for cuts and lacerations.
- Administration of tetanus shot(s) or booster(s). However, these shots are often given in conjunction with more serious injuries, consequently injuries requiring these shots may be recordable for other reasons.
- Application of bandages during any visit to medical personnel.
- Application of ointments to abrasions to prevent drying or cracking.

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Inhalation of toxic or corrosive gas, limited to the removal of the employee to fresh air or the one time administration of oxygen for several minutes.
- Negative X-Ray diagnosis.
- Removal of foreign bodies not embedded in the eye if only irrigation is required.
- Removal of foreign bodies from a wound if procedure is uncomplicated, for example by tweezers or other simple technique.
- Treatment for first degree burns.
- Use of non-prescription medications and administration of single dose of prescription medication on first visit for any minor injury or discomfort.

Hazard

A source of potential harm in terms of human injury or ill health, or a combination of these.

Hierarchy of Controls

A sequence of control measures, arranged in order of decreasing effectiveness, used to eliminate or minimise exposure to workplace health and safety hazards:

- Elimination – Completely removing a hazard or risk scenario from the workplace.
- Substitution – Replacing an activity, process or substance with a less hazardous alternative.
- Isolation (Engineering) Controls – Isolating a hazard from persons through the provision of mechanical aids, barriers, machine guarding, interlocks, extraction, ventilation or insulation.
- Administrative Controls – Establishing appropriate policies, procedures and work practices to reduce the exposure of persons to a hazard. This may include the provision of specific training and supervision.
- Personal Protective Equipment – Providing suitable and properly maintained PPE to cover and protect persons from a hazard (i.e. Prevent contact with the hazard).

Isolation and Lockout Procedure

A plant or equipment-specific procedure that describes the method, and sequence to be followed, for rendering equipment, plant and systems safe to work on.

Isolation Bar

A device used at a Lockout Station to which anyone is able to attach a Personal Lock making it impossible for an Isolation Officer to remove the key to the Equipment Locks, thus preventing the de-isolation of a system, plant or equipment while it is still being worked on. A Discipline Lock must always be the first lock attached to an Isolation Bar and last to be removed.

Isolation Officer

A person (typically a Project employee or an employee of the client) who has been authorised (in writing) by the nominated project management representative to perform isolation and lockout procedures. A person may only be appointed as an Isolation Officer if he has undergone training and has been assessed and found competent in the isolation and lockout of systems, plant and equipment within the scope of his designation.

Incident

An event (or a continuous or repetitive series of events) that results or has the potential to result in a negative impact on people (employees, contractors and visitors), the environment, operational integrity, assets, community, process, product, legal liability and / or reputation.

Likelihood

A description of probability or frequency, in relation to the chance that an event will occur.

Lost Time Injury (LTI)

Any occurrence that resulted in a permanent disability or time lost from work of one day/shift or more.

If an employee is injured and cannot return to work in the next shift (will ordinarily miss one whole shift), and the department brings the employee in to only receive treatment by the Supervisor/ Return to Work Coordinator in that shift, this is still considered an LTI.

Lost Time Injury Frequency Rate (LTIFR) - Number of LTI's multiplied by 1 million or 200,000 and divided by labour hours worked.

Light Vehicle

A vehicle that:

- Can be licensed and registered for use on a public road;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Has four or more wheels, and seats a maximum of 12 adults (including the driver);
- Requires the driver to hold only a standard civil driving licence; and
- Does not exceed 4.5 tonnes gross vehicle mass (GVM), which is the maximum loaded mass of the motor vehicle as specified by:
 - ♦ The vehicle's manufacturer; or
 - ♦ An approved and accredited automotive engineer, if the vehicle has been modified to the extent that the manufacturer's specification is no longer appropriate.

Examples of light vehicles include passenger cars, four-wheel drive vehicles, sports utility vehicles (suvs), pick-ups, minibuses, and light trucks.

Any vehicle falling outside of this definition must be considered mobile equipment.

Medical Treatment Injury (MTI)

A work injury requiring treatment by a Medical Practitioner and which is beyond the scope of normal first aid including initial treatment given for more serious injuries. The procedure is to be of an invasive nature (e.g. Stitches, removal of foreign body).

The following procedures are generally considered medical treatment:

- Application of sutures (stitches).
- Cutting away dead skin (surgical debridement).
- Loss of consciousness due to an injury or exposure in the work environment.
- Positive X-Ray diagnosis (fractures, broken bones etc.).
- Removal of foreign bodies embedded in the eye.
- Removal of foreign bodies from the wound by a physician due to the depth of embedment, size or shape of object or the location wound.
- Reaction to a preventative shot administered because of an occupational injury.
- Sprains and strains - series (more than one) of hot and cold soaks, use of whirlpools, diathermy treatment or other professional treatment.
- Treatment of infection.
- Treatment for second or third degree burns

- Use of prescription medications (except a single dose administered on first visit for minor injury or discomfort.)

Mobile Equipment

A vehicle (wheeled or tracked) that generally requires:

- The driver to hold a specific state or civil license; or
- The operator to hold a nationally recognized certificate of competency.

Examples of mobile equipment include, but are not limited to, dump trucks, water trucks, graders, dozers, loaders, excavators, forklifts, tractors, back-actors, bobcats, mobile cranes, tele-handlers, drill rigs, buses and road-going trucks.

Near-Miss

An incident that has occurred that did not result in any injuries, illnesses, environmental or property damage but had the potential to cause an injury, illness, environmental or property damage.

Personal Lock

A single lock with one unique key controlled by the owner. Used for personal protection.

Regulation

In the context of this guideline, 'Regulation(s)' refers to the Construction Regulations, 2014 required by Section 43 of the Occupational Health and Safety Act 85 of 1993, published under Government Notice R 84 in Government Gazette 37305 of February 2014.

Risk

A combination of the likelihood of an occurrence of a hazardous event or exposure and the severity of injury or ill health that can be caused by the event or exposure.

Risk Assessment

A process of evaluating the risk arising from a hazard, taking into account the adequacy of any existing control measures, and deciding on whether or not the risk is acceptable.

Risk Management

The systematic application of management policies, processes and procedures to identifying hazards, analysing and evaluating the associated risks, determining whether the risks are acceptable, and controlling and monitoring the risks on an ongoing basis.

4. Abbreviations

DSTI - Daily Safety Task Instruction

CR – Construction Regulations

HIRA - Hazard Identification and Risk Assessment

IMS - Integrated Management System

MS - Management System

OHS Act - Occupational Health and Safety Act

SOC - Safety Observation and Conversation

VFL - Visible Felt Leadership

OHS - Occupational Health and Safety

SACPCMP - The South African Council for Project and Construction Management Professions, here in refer to as the registrar of Health and Safety Professionals

5. Contractor Health and Safety Management Plan

The contractor must prepare, implement and maintain a project-specific Health and Safety Management Plan. The plan must be aligned with the requirements set out in this specification as well as all relevant/applicable legislation. It must cover all activities that will be undertaken as part of the Project from mobilisation and set-up to rehabilitation and decommissioning.

The plan must demonstrate the contractor's commitment to health and safety and must, as a minimum, include the following:

- A copy of the contractor's **Health and Safety Policy**; in terms of the OHS Act section 7
- Procedures concerning **Hazard Identification and Risk Assessment**, including both Baseline and Task-Based Risk Assessments;
- Arrangements concerning the identification of applicable **Legal and Other Requirements**, measures to ensure compliance with these requirements, and measures to ensure that this information is accessible to relevant personnel;

- Details concerning **Health and Safety Objectives** – a process must be in place for setting objectives (and developing associated action plans) to drive continual improvement;
- Details concerning **Resources, Accountabilities and Responsibilities** – this includes the assignment of specific health and safety responsibilities to individuals in accordance with legal or project requirements, including the appointment of a Project Manager, Health and Safety Officers, Supervisors, Health and Safety Representatives, and First Aiders;
- Details concerning **Competence, Training and Awareness** – a system must be in place to ensure that each employee is suitably trained and competent, and procedures must be in place for identifying training needs and providing the necessary training;
- **Communication, Participation and Consultation** arrangements concerning health and safety, including Safety Observations and Coaching, Toolbox Talks, Daily Safe Task Instructions, project health and safety meetings, and notice boards;
- **Documentation and Document Control** – project-specific documentation required for the effective management of health and safety on the project must be developed and maintained, and processes must be in place for the control of these documents;
- Processes and procedures for maintaining **Operational Control**, including rules and requirements (typically contained in Safe Work Procedures) for effectively managing health and safety risks, particularly critical risks associated with working at heights, confined spaces, mobile equipment and light vehicles, lifting operations, hazardous chemical substances, etc.;
- **Emergency Preparedness and Response** procedures;
- **Management of Change** – a process must be in place to ensure that health and safety risks are considered before changes are implemented;
- **Sub-contractor Alignment** procedures – a process must be in place for the assessment of sub-contractors and suppliers with regard to health and safety requirements and performance (before any contract or purchase order is awarded);
- **Measuring and Monitoring** plans, including a plan for the measuring and monitoring of employee exposure to hazardous substances or agents (e.g. Noise, dust, etc.) In order to determine the effectiveness of control measures;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- **Incident Reporting and Investigation** procedures describing the protocols to be followed with regard to incident reporting, recording, investigation and analysis;
- **Non-conformance and Action Management** procedures concerning the management of corrective actions;
- **Performance Assessment and Auditing** procedures concerning health and safety performance reporting, monthly internal audits to assess compliance with the project health and safety requirements, and daily site health and safety inspections; and
- Details concerning the **Management Review** process followed to assess the effectiveness of health and safety management efforts.

Prior to mobilisation, the Health and Safety Management Plan must be forwarded electronically, and as a hard copy, to the nominated TRANSNET project management representative for review. The plan will be audited for completeness and, if found to be adequate, will be accepted (typically “with comments”). Work may not commence until the plan has been accepted.

Once the plan has been accepted, the contractor must action and resolve any issues within 30 days from the start of work.

If the issues requiring corrective action are not resolved within this 30 day period, the contractor will be required to stop any work related to the outstanding actions until they have been resolved.

Any proposed amendments or revisions to the contractor’s Health and Safety Management Plan must be submitted to the nominated project management representative for acceptance.

Should it be identified that the contractor has overlooked a high risk activity, and as a result has omitted the activity and associated control measures from the Health and Safety Management Plan, the plan will not be approved.

6. Policy

The contractor must develop, display and communicate a Health and Safety Policy that clearly states the contractor’s values and objectives for the effective management of health and safety as required by OHS Act of 1993, 7(3). These values and objectives must be endorsed by the contractor’s management representatives and must be consistent with those adopted for the project.

The policy must be signed and dated, and must be reviewed annually.

The policy must commit to:

- Compliance with all applicable legal requirements in the Transnet regulatory universe;
- The effective management of health and safety risks;
- The establishment of measurable objectives for improving performance, and the provision of the necessary resources to meet these objectives;
- The prevention of incidents; and
- Achieving continual improvement with regard to health and safety performance.

All employees of the contractor as well as the employees of any sub-contractors that may be appointed by the contractor must be made aware of the policy. This must be done through Health and Safety Induction Training and Toolbox Talks (refer to Sections 10 and 11).

A copy of the policy must be displayed in each meeting room and on each notice board.

7. Hazard Identification and Risk Assessment (OHS Act, Constr. Regulations 9)

Detailed hazard identification and risk assessment processes must be followed for all work to be performed as well as for all associated equipment and facilities as required by the Construction Regulation of 2014, Regulation 9(1) – (7).

The Client will provide a baseline risk assessment informing the contractor on the hazards and risks on site. The Contractor must ensure that effective procedures and risk assessment systems are in place to control hazards and to mitigate risks to levels that are as low as is reasonably practicable.

The risk assessment processes must be applied to:

- The full life cycle of the project;
- Routine and non-routine activities;
- Planned or unplanned changes;
- All employees, sub-contractors, suppliers and visitors; and
- All infrastructure, equipment and materials.

The risk assessment processes and methodologies must be appropriate for the nature and scale of the risks, and must be implemented by competent persons.

Health and Safety Specification – Alterations to the eMendi Building, PoN

The process of analysing and managing risk must include the following:

- Establishing the context of the risk assessment;
- Identifying hazards and determining possible risk scenarios (unwanted events);
- Evaluating risks and assigning ratings (classification);
- Recording the risk analysis in a risk register;
- Managing risks according to their classification (prioritising for action);
- Identifying and implementing control measures (through the application of the Hierarchy of Controls) to ensure that risks are managed to levels that are as low as is reasonably practicable (ALARP);
- Developing action plans for reducing risk levels (where possible);
- Verifying the completion of actions;
- Re-evaluating the risks and classifications as appropriate; and
- Reviewing and updating the risk register.

7.1 Baseline Risk Assessments

Prior to site establishment, TRANSNET (the Client) will conduct a detailed Baseline Risk Assessment identifying foreseeable hazards and risk scenarios associated with the contractor's scope of work on the project site(s) as required by Construction Regulations of 2014, regulation 5(1)(a). Details concerning proposed control measures must be included. The risk assessment process must be facilitated by a competent person who has been appointed in writing and must involve the participation of the contractor's site management representatives, supervisory personnel and technical experts. An attendance register must be completed and retained for reference purpose. The Baseline Risk Assessment must be reviewed and approved by the Project Health and Safety Manager and Project Construction Manager.

When carrying out a Baseline Risk Assessment or a Task-Based Risk Assessment (refer to Section 7.2), Hazard (Energy) Types must be specified in accordance with the categorisation detailed in Table 7-1. Risk scenarios must be described indicating the manner in which a person may come into contact with, or be exposed to, a specific hazard.

An initial risk rating must be assigned to each risk scenario without taking any control measures into consideration. Control measures for managing the risks to levels that are as low as is reasonably practicable must then be identified for implementation on the

project, and a residual risk rating must be assigned to each risk scenario taking the identified control measures into consideration.

Ratings must be assigned qualitatively using TRANSNET consequence and likelihood scales and descriptors (i.e. TRANSNET 5x5 qualitative risk matrix). Refer to Tables 7-2, 7-3 and 7-4.

Table 7-1: Hazard (Energy) Types

Gravitational							
Falling or Rolling Object	Person Falling from Height	Slip, Trip or Fall (Same Level)	Collapsing Structure	Collapsing, Slumping or Flowing Material or Substance			
Mechanical							
Moving Component of Fixed Machinery	Moving Component of Powered Tool	Projectile	Moving Hand Tool	Sharp Object	Moving Mobile Equipment or Light Vehicle	Moving Person	Moving Object (Mechanically or Manually)
Elastic							
Object under Tension or Compression				Compressed Fluid (Gas or Liquid)			
Acoustic							
Noise							
Vibrational							
Hand / Arm Vibration				Whole Body Vibration			
Electrical							
Electricity				Electro-Magnetic Field			
Radiation							
Ionising Radiation				Non-Ionising Radiation			
Illumination							
Lighting							
Thermal							
Heat				Cold			

Fire								
Fire								
Explosion								
Explosion								
Particulates and Aerosols								
Dust	Fibres	Fume	Spray	Mist	Smoke			
Chemical								
Corrosive Substance	Irritant	Asphyxiate	Narcotic / Anaesthetic	Poison	Allergen / Sensitizer	Carcinogen	Teratogen / Mutagen	Venom
Microbiological								
Virus		Bacterium		Parasite		Fungus		
Weather								
Lightning		High Wind		Flooding		Hail		
Physiological								
Stress				Fatigue				
Ergonomic								
Exertion		Repetitive Movement		Awkward Posture		Awkward Movement		

Table 7-2: Consequence Descriptors

Consequence	Insignificant	Minor	Moderate	Major	Catastrophic
Health	Reversible health effects of little concern, requiring first aid treatment at most.	Reversible health effects of concern that would typically result in	Reversible health effects of concern that would typically result in a	Single fatality, or irreversible health effects or disabling illness.	Multiple fatalities or permanent disabling illness to multiple people.

Consequence	Insignificant	Minor	Moderate	Major	Catastrophic
		medical treatment.	lost time illness.		
Safety	Low-level, short-term subjective inconvenience or symptoms. Typically a first aid case requiring no medical treatment.	Reversible injury requiring treatment, but not leading to restricted duties. Typically a medical treatment case.	Reversible injury or moderate irreversible damage or impairment. Typically a lost time injury.	Single fatality, or considerable irreversible damage or impairment.	Multiple fatalities or permanent disabling injury to multiple people.

Table 7-3: Likelihood Descriptors

Likelihood	Likelihood Description	Frequency	Substance Exposure
Almost Certain	Recurring event during the life-time of the project.	Typically occurs more than twice per year.	Frequent (daily) exposure at > 10 x OEL.
Likely	Event that may occur frequently during the life-time of the project.	Typically occurs once or twice per year.	Frequent (daily) exposure at > OEL.
Possible	Event that may occur during the life-time of the project.	Typically occurs once in 5 years.	Frequent (daily) exposure at > 50% of OEL. Infrequent exposure at > OEL.

Likelihood	Likelihood Description	Frequency	Substance Exposure
Unlikely	Event that is unlikely to occur during the life-time of the project.	Typically occurs once in 10 years.	Frequent (daily) exposure at > 10% of OEL. Infrequent exposure at > 50% of OEL.
Conceivable but improbable	Event that is very unlikely to occur during the life-time of the project.	Typically occurs once in 100 years.	Frequent (daily) exposure at < 10% of OEL. Infrequent exposure at > 10% of OEL.

Table 7-4: Risk Matrix

Risk Calculator		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood		1	2	3	4	5
Almost Certain	5	Moderate (5)	High (10)	High (15)	Extreme (20)	Extreme (25)
Likely	4	Low (4)	Moderate (8)	High (12)	Extreme (16)	Extreme (20)
Possible	3	Low (3)	Moderate (6)	Moderate (9)	High (12)	High (15)
Unlikely	2	Low (2)	Low (4)	Moderate (6)	Moderate (8)	High (10)
Conceivable but improbable	1	Low (1)	Low (2)	Low (3)	Low (4)	Moderate (5)

A Risk Register comprised of all significant risks (i.e. Risks rated as major or catastrophic) identified for the project will be compiled using the information contained in the project Baseline Risk Assessment as well as the contractor's Baseline Risk Assessment. Key control measures for managing each of these risks will be specified in the register.

For the significant risks in particular, action plans will be developed for reducing the risk levels (where possible).

The project Risk Register will be reviewed and, if necessary, updated:

- On a quarterly basis during construction;
- When changes are made to a design and / or the construction scope, schedule, methods, etc. That result in a change to the risk profile; and
- Following an incident.

The contractor must ensure that the hazards, risk scenarios and control measures identified in the contractor's Baseline and Task-Based Risk Assessments are taken into consideration when developing, implementing and maintaining the various elements of the contractor's health and safety management system for the project (e.g. Competence, training and awareness requirements).

All persons potentially affected must be made aware of the hazards, risk scenarios and control measures identified in the contractor's risk assessments. This must be done through training, Toolbox Talks, and Daily Safe Task Instructions.

7.2 Task-Based Risk Assessments

The contractor must carry out detailed project-specific Task-Based Risk Assessments which must be reviewed and approved by the Client's Project Health and Safety Practitioner and Project Construction Manager prior to the commencement of any work.

The risk assessment process must be facilitated by a competent person who has been appointed in writing in terms CR 9 sub regulation (1). The contractor's site management representatives, supervisory personnel, technical experts (as required) and workforce personnel directly involved with the task being examined must participate in the risk assessment process. An attendance register must be completed and retained.

Please Note: Under no circumstances may a Contractor Health and Safety Officer perform a risk assessment in isolation. The active participation of all persons referred to above is mandatory.

A Task-Based Risk Assessment must at least:

- Be accompanied by a Work Method Statement (describing in sufficient detail how the specific job or task is to be performed in a logical and sequential manner);
- Provide a breakdown of the job or task into specific steps;
- Identify the hazards and potential risk scenarios associated with each step;
- Include consideration of possible exposure to noise, heat, dust, fumes, vapours, gases, chemicals, radiation, vibration, ergonomic stressors, or any other occupational health hazard or stressor;
- Describe the control measures that will be implemented to ensure that the risks are managed to levels that are as low as is reasonably practicable; and
- Assign an initial risk rating (without taking any control measures into consideration) and a residual risk rating (taking the identified control measures into consideration) to each risk scenario.

A Task-Based Risk Assessment must be reviewed and, if necessary, updated:

- On an annual basis (as a minimum);
- When changes are made to the associated Work Method Statement; and
- Following an incident.

7.3 Pre-Task Hazard Assessments

A pre-task hazard assessment must be completed whenever a change is identified while carrying out an activity. Any deviation from what was discussed during the Daily Safe Task Instruction (prior to the activity commencing), or anything that was not discussed, constitutes a change.

Before carrying out the particular task that involves the identified change, a few minutes must be spent identifying the hazards and risks associated with that task as well as suitable control measures.

8. Legal and Other Requirements

The Contractor must comply with the requirements of all applicable health and safety legislation as well as TRANSNET project-specific standards and procedures as amended from time to time.

The Contractor must compile and maintain a register of all legal and other requirements applicable to the work that will be carried out and / or services that will be provided. This register must be updated regularly to ensure that it remains relevant.

Applicable laws and standards must be appropriately communicated to all employees of the contractor (as well as the employees of any sub-contractors that may be appointed by the contractor) through training, Toolbox Talks, and Daily Safe Task Instructions.

9. Health and Safety Objectives

In order to drive continual improvement, the contractor must set project-specific health and safety objectives, and must develop improvement action plans to achieve these objectives. The contractor's objectives must be aligned with the objectives set for the project as a whole as required by the Construction Regulations of 2014.

Eliminating health and safety hazards, minimising health and safety risks, preventing incidents, injuries and illnesses, and ensuring legal compliance must be the primary considerations for setting objectives.

When setting objectives, consideration must be given to the following:

- Leading indicators such as inspection findings, audit findings, hazard reporting, and observations;
- Lagging indicators (i.e. Incidents including Near Hits);
- Leading practices and lessons learnt; and
- Injury frequency rates with due understanding that the goal is "no harm".

The objectives must be specific and measurable. The improvement action plans must specify the resources (both human and financial) required to achieve the objectives, the person's responsible, and realistic timeframes for completion. The contractor must ensure that adequate resources are allocated and that progress towards meeting the objectives is monitored regularly.

The objectives and associated improvement action plans must be documented and must be communicated to all contractor employees. Furthermore, to ensure that the objectives remain relevant, they must be reviewed on a quarterly basis and whenever significant change has taken place on the project (i.e. Changes to activities, scope of work, operating conditions, etc.).

10. Resources, Accountabilities and Responsibilities

The Contractor must adequately allocate resources, responsibility and accountability to ensure the effective implementation, maintenance and continual improvement of the contractor's health and safety management system on the projects required by Construction Regulation Of 2014, regulation 7(2)(c).

For each role that carries health and safety accountability and / or responsibilities (including legislative requirements), a role description detailing the accountability and / or responsibilities must be documented.

All health and safety appointments (i.e. the assignment of specific health and safety responsibilities to individuals in accordance with legal or project requirements) must be done in writing. Documented proof of each appointment (i.e. a signed appointment letter) must be retained.

Contractor should not discharge any legal responsibilities to employees who are not legally appointed.

The contractor must comply with the requirements of all applicable legislation concerning health and safety related appointments and delegations for the project.

A health and safety organisational chart specific to the project must be documented and maintained. All roles that carry health and safety accountability and / or responsibilities must be included, and all individuals that carry health and safety appointments must be clearly identified.

The provision of dedicated health and safety professionals on the project must be appropriate for the nature and scale of the work to be carried out.

The contractor is solely responsible for carrying out the work under the contract whilst having the highest regard for the health and safety of all persons on the project site(s).

Health and safety is the responsibility of each and every individual on the project site(s), but in particular, it is the responsibility of the contractor's management team who must set the tone.

Visible commitment is essential to providing and maintaining a safe workplace. The contractor's managers and supervisors at all levels must demonstrate their commitment and support by adopting a risk management approach to all health and safety issues. These individuals must consistently take immediate and firm action to address violations

of health and safety rules, and must actively participate in day to day activities with the objective of preventing harm.

The contractor's management representatives are responsible and accountable for health and safety performance on the project. Key responsibilities include the following:

- Preparing, implementing and maintaining a risk-based Health and Safety Management Plan specific to the work that will be carried out;
- Establishing, implementing and maintaining health and safety programmes and procedures to ensure that all work is carried out in compliance with the requirements of this specification, the contract, and all applicable legislation;
- Establishing, implementing and maintaining effective hazard identification and risk management processes and procedures to ensure that all reasonably foreseeable hazards are controlled in order to minimise risk;
- Providing the resources necessary to meet the requirements of this specification;
- Ensuring that all contractor employees have clearly defined responsibilities with regard to health and safety, and that these responsibilities are clearly communicated and understood;
- Establishing, implementing and maintaining a system for on-going training and assessment of skills and competence;
- Establishing, implementing and maintaining procedures to ensure that only qualified and competent personnel are permitted to work on the project site(s);
- Establishing, implementing and maintaining effective communication and consultative processes concerning health and safety for the duration of the contract;
- Maintaining operational control for the protection of all persons on the project site(s) as well as the public;
- Establishing, implementing and maintaining effective emergency preparedness and response procedures;
- Establishing, implementing and maintaining effective management of change processes and procedures;
- Establishing, implementing and maintaining effective incident reporting and investigation processes and procedures;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Establishing, implementing and maintaining effective auditing and inspection processes and procedures; and
- Formally reviewing the contractor's Health and Safety Management System annually to ensure that the system continues to be effective in managing health and safety performance and meeting project requirements.

All costs associated with meeting these responsibilities shall be borne by the contractor.

Any cost associated with any work stoppage due to non-compliance with a health and safety requirement shall be for the contractor's account.

10.1 Contractor Construction Manager

The Contractor must appoint a competent Construction Manager who is registered with SACPCMP (South African Council for Project and Construction Management) and who shall be responsible for the successful and safe completion of all work to be carried out by the contractor as required by the Construction regulations of 2014, regulation 8(1).

The contractor's Construction Manager shall be responsible for:

- Ensuring that a Health and Safety Policy that clearly states the contractor's values and objectives for the effective management of health and safety on the project is in place and is communicated to all contractor and sub-contractor employees;
- Ensuring that all applicable legal and project health and safety requirements are identified and complied with at all times;
- Ensuring that effective hazard identification and risk management processes are established and implemented for all work to be carried out by the contractor;
- Participating in the Baseline Risk Assessment for the contractor's scope of work (prior to site establishment);
- Participating in (and approving) all Task-Based Risk Assessments conducted for the work to be carried out by the contractor;
- Driving the achievement of agreed health and safety objectives;
- Ensuring that the necessary resources are made available for the effective implementation of the contractor's Health and Safety Management Plan;
- Ensuring that all work is adequately and competently supervised;

- Ensuring that all contractor employees have clearly defined responsibilities with regard to health and safety (assigned in writing), and that these responsibilities are clearly communicated and understood;
- Ensuring as far as is reasonably practicable that each contractor and sub-contractor employee is competent to perform his role, and has received appropriate workplace health and safety training and instruction;
- Managing all appointed sub-contractors with regard to health and safety performance;
- Establishing and maintaining effective communication and consultative processes to ensure that all contractor and sub-contractor employees are kept up to date with regard to health and safety information (e.g. Incidents and lessons learnt, leading practices, hazards, risks and control measures, etc.) And that feedback is provided promptly regarding issues and / or concerns raised;
- Participating in the project's Visible Felt Leadership (VFL) programme;
- Chairing monthly Contractor Health and Safety Meetings and attending monthly Site Health and Safety Meetings;
- Implementing programmes that encourage continual improvement and providing recognition for suggestions made by contractor and sub-contractor employees;
- Implementing the contractor's Health and Safety Management Plan and associated Safe Work Procedures;
- Acting consistently and strictly against any contractor or sub-contractor employee who transgresses a health and safety rule or requirement;
- Ensuring that an effective management of change process is in place;
- Implementing, testing and maintaining an effective Emergency Response Plan for all contractor and sub-contractor activities, and ensuring that the plan is adequately resourced;
- Ensuring that workplace exposure of contractor and sub-contractor employees to hazardous substances or agents is measured and monitored to determine the effectiveness of controls and compliance with legal (and project) requirements;
- Ensuring that all incidents are reported without delay and are investigated thoroughly;
- Participating in investigations into significant incidents;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Ensuring that accurate health and safety statistics are maintained, and that health and safety performance reports are compiled as required;
- Providing the necessary resources for regular health and safety audits and inspections to be conducted, and supporting the auditing process;
- Participating in health and safety audits, and carrying out workplace inspections;
- Ensuring that corrective actions (arising from incident investigations, audits, inspections, etc.) Are implemented, and that adequate resources are provided for this purpose; and
- Participating in an annual review of the contractor's Health and Safety Management System.

10.2 Contractor Health and Safety Officers

The contractor must appoint a full-time Health and Safety Officer for the duration of the contract who is registered with the SACPCMP (The South African Council for Project Construction Management Professions). The project site(s) (directly or through sub-contractors), must appoint full-time Health and Safety Officers, the number of which depending on the scope, complexity, budget and high risk activities involved, as required by the Construction regulations of 2014, regulation 8(5).

The Health and Safety Officer(s) must be on site when work commences at the start of the day and must remain on site until all activities for that day (including the activities of sub-contractors) have been completed. A Health and Safety Officer must be present during all shifts, so if work is carried out over more than one shift per day, the contractor must make provision for additional Health and Safety Officers.

Each Contractor Health and Safety Officer shall be responsible for:

- Reviewing all applicable legal and project health and safety requirements and providing guidance to contractor and sub-contractor personnel (particularly the contractor's Project Manager) to help ensure compliance at all times;
- Assisting with the implementation of effective hazard identification and risk management processes for all work to be carried out by the contractor;
- Participating in the Baseline Risk Assessment for the contractor's scope of work (prior to site establishment) and ensuring that identified control measures are implemented;

- Participating in all Task-Based Risk Assessments conducted for the work to be carried out by the contractor and ensuring that identified control measures are implemented;
- Conducting contractor health and safety induction training for all contractor and sub-contractor personnel;
- Compiling and maintaining all health and safety related documents and records required of the contractor;
- Communicating relevant health and safety information to contractor and sub-contractor personnel (e.g. Incidents and lessons learnt, leading practices, hazards, risks and control measures, etc.);
- Carrying out Safety Observations and Coaching (one per day);
- Evaluating (on a daily basis) the content of the Daily Safe Task Instructions (DSTI's) conducted by the contractor's appointed supervisors, and attending at least one DSTI each day;
- Attending monthly Contractor and Site Health and Safety Meetings;
- Assisting with the implementation of the contractor's Health and Safety Management Plan and associated Safe Work Procedures;
- Carrying out Planned Task Observations on an ad hoc basis;
- Assisting with the implementation, testing and maintenance of an effective Emergency Response Plan for all contractor and sub-contractor activities;
- Responding to workplace incidents (as appropriate);
- Participating in incident investigations;
- Maintaining accurate health and safety statistics (for the contractor and all sub-contractors), and compiling health and safety performance reports as required;
- Auditing the health and safety management system and workplace activities of the contractor and each sub-contractor on a monthly basis to assess compliance with the project health and safety requirements; and
- Tracking and reporting on the implementation of corrective actions (arising from incident investigations, audits, inspections, etc.).

The contractor must ensure that each Health and Safety Officer is adequately equipped to enable him to perform his duties effectively. Each Health and Safety Officer must be provided with the following:

Health and Safety Specification – Alterations to the eMendi Building, PoN

- A computer with access to all necessary systems, including access to e-mail and the internet;
- A mobile telephone on contract or with adequate pre-paid airtime; and
- A vehicle where required or instructed by a nominated project management representative (depending on the size and location of the project site(s)).

A Health and Safety Officer must over and above the SACPCMP registration as an Officer; be computer literate, fluent in English, and must have the following minimum qualifications, training and experience:

- At least 5 years' experience as a Health and Safety Officer on construction projects;
- SAMTRAC, NEBOSH or an equivalent training course with accredited health and safety service provider as a minimum qualification ;
- Experience and appropriate training with regard to implementing and maintaining a health and safety management system compliant with national legislation or an international standard;
- Experience and appropriate training with regard to construction related hazard identification and risk management processes;
- Competence, experience and relevant training with regard to incident investigation procedures and causation analysis;
- Health and safety auditing experience and training;
- A valid First Aid certificate of competency;
- Fire prevention and protection training; and
- A valid Driving Licence (light motor vehicle).
- Registered as a Health and Safety Officer or Health and Safety Manager with SACPCMP. The Client will stipulate which is required depending on the size of the project and on the risk.

The Client will stipulate whether a CHSO or CHSM is required depending on the size of the project and on the risks. Before placing a Health and Safety Officer on the project site(s), the contractor must forward a copy of the person's CV to the nominated TRANSNET Project Management Representative or to the Lead Health and Safety Manager for review and acceptance. A proposed candidate may be rejected should he/she not meet

the experience and/or qualification requirements, or due to poor work performance on previous projects.

10.3 Contractor Supervisors

The contractor must ensure that all project and/or construction works are supervised at all times by an adequate number of qualified, competent and appointed supervisors who have experience in the type of work being carried out as required by Construction regulations of 2014, regulation 8(7) and 8(8).

No work may be carried out without an appointed supervisor being physically present in the work area(s) and without a daily safety task instruction having been completed.

Each Contractor Supervisor shall be responsible for:

- Ensuring that all work carried out under his supervision is done so in accordance with the requirements of all applicable legislation, rules, standards, specifications, plans and procedures;
- Participating in Baseline and Task-Based Risk Assessments;
- Ensuring that all employees under his supervision are made aware of the hazards, risk scenarios and control measures identified in relevant risk assessments;
- Ensuring that the control measures stipulated in all relevant risk assessments are in place and are implemented fully for all work carried out under his supervision;
- Ensuring that all employees under his supervision conduct pre-task hazard assessments when necessary;
- Driving the achievement of health and safety objectives set for his team;
- Ensuring that the necessary written appointments are in place for each employee under his supervision (e.g. First aider, mobile crane operator, etc.);
- Ensuring that all employees under his supervision attend all required training;
- Ensuring that no employee carries out any work that he is not competent to perform or has not been appointed to perform;
- Identifying training needs within his team;
- Carrying out Safety Observations and Coaching (one per day);
- Conducting a weekly Toolbox Talk with his team;
- Leading a Daily Safe Task Instruction discussion with his team;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Attending Health and Safety Meetings as required;
- Maintaining a Health and Safety Management Information Notice Board in the work area for which he is responsible;
- Recording, on a daily basis, a description of the day's activities as well as a breakdown (by occupation) of the personnel on site under his supervision (e.g. 5 bricklayers, 2 carpenters, 3 welders, 22 general workers, and 1 supervisor);
- Ensuring that all Safe Work Procedures applicable to the work carried out under his supervision are adhered to and are fully implemented;
- Maintaining discipline and taking the necessary action whenever an employee under his supervision does not adhere to a rule or requirement;
- Carrying out Planned Task Observations (one per day);
- Ensuring that emergency response procedures are understood by all employees under his supervision and that these procedures are followed in the event of an emergency;
- Reporting all incidents immediately, participating in incident investigations, communicating the lessons learnt to all employees under his supervision, and implementing corrective actions where required; and
- Carrying out workplace health and safety inspections.

Each supervisor must accept these responsibilities in writing as part of his appointment.

Each supervisor must be equipped with a mobile telephone to ensure that effective communication can be maintained for the duration of the contract.

10.4 Health and Safety Representatives

The team of employees on site must have a health and safety representative deployed on the project site(s). A Health and Safety Representative must be elected and appointed. Taking into consideration the number of employees deployed, the geographical area in which the work is taking place, the different work disciplines, and the shift pattern (if applicable), the contractor must ensure that an adequate number of Health and Safety Representatives (at a minimum ratio of one Health and Safety Representative per 50 employees) are elected and appointed to effectively represent all site personnel as required by the OHS Act 85 of 1993, section 17 - 18.

Each Health and Safety Representative must attend an accredited training course for health and safety representatives. The cost of this training shall be for the contractor's account.

The contractor must make the necessary allowances for the Health and Safety Representatives to carry out their duties as specified in the applicable legislation.

The contractor must ensure that an appropriate sticker is affixed to the safety helmet of each Health and Safety Representative for identification purposes.

10.5 First Aiders

At least one trained and competent First Aider must be in place and must be appointed for the project site(s). Taking into consideration the number of employees deployed, the geographical area in which the work is taking place, the different work disciplines, and the shift pattern (if applicable), the contractor must ensure that an adequate number of First Aiders (at a minimum ratio of one First Aider per 50 employees) are in place and have been appointed to administer first aid treatment should this be required.

First Aid training must be done through an accredited training institution. The cost of this training shall be for the contractor's account.

The contractor must ensure that an appropriate sticker is affixed to the safety helmet of each First Aider for identification purposes.

10.6 Duties of Client

As per the Construction regulations of 2014, regulation 5(1) – (8) a client will—

- Prepare a baseline risk assessment for an intended construction work project;
- Prepare a suitable, sufficiently documented and coherent site specific health and safety specification for the intended construction work based on the baseline risk assessment contemplated in paragraph
- Provide the designer with the health and safety specification contemplated in paragraph (b);
- Ensure that the designer takes the prepared health and safety specification into consideration during the design stage;
- Ensure that the designer carries out all responsibilities contemplated in CR regulation 6;
- Include the health and safety specification in the tender documents;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Ensure that potential principal contractors submitting tenders have made adequate provision for the cost of health and safety measures;
- Ensure that the principal contractor to be appointed has the necessary competencies and resources to carry out the construction work safely;
- Take reasonable steps to ensure co-operation between all contractors appointed by the client to enable each of those contractors to comply with these Regulations;
- Ensure before any work commences on a site that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993);
- Appoint every principal contractor in writing for the project or part thereof on the construction site;
- Discuss and negotiate with the principal contractor the contents of the principal contractor's health and safety plan contemplated in CR regulation 7(1), and must thereafter finally approve that plan for implementation;
- Ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor;
- Take reasonable steps to ensure that each contractor's health and safety plan contemplated in
- CR Regulation 7(1)(a) is implemented and maintained;
- Ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;
- Ensure that a copy of the health and safety audit report contemplated in paragraph (o) is provided to the principal contractor within seven days after the audit;
- Stop any contractor from executing a construction activity which poses a threat to the ensure that a copy of the health and safety audit report contemplated in paragraph (o) is provided to the principal contractor within seven days after the audit;
- Stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site;

- Where changes are brought about to the design or construction work, make sufficient health and safety information and appropriate resources available to the principal contractor to execute the work safely; and
- Ensure that the health and safety file contemplated in CR regulation 7(1) (b) is kept and maintained by the Principal contractor.

Where a client requires additional work to be performed as a result of a design change or an error in Construction due to the actions of the client, the client must ensure that sufficient safety information and appropriate additional resources are available to execute the required work safely.

Where a fatality or permanent disabling injury occurs on a construction site, the client must ensure that the contractor provides the provincial director with a report contemplated in section 24 of the Act, in accordance with regulations 8 and 9 of the General Administrative Regulations, 2013, and that the report includes the measures that the contractor intends to implement to ensure a safe construction site as far as is reasonably practicable.

Where more than one principal contractor is appointed as contemplated in sub-regulation CR 5(1) (k), the client must take reasonable steps to ensure co-operation between all principal contractors and Contractors in order to ensure compliance with these Regulations. Notification of construction work to DOL is required for this project as contemplated in CR regulation 4(1).

10.7 Duties of the Designer

As per the Construction regulations of 2014, regulation 6(1) – (2) a designer must –

- Ensure that the applicable safety standards incorporated into these Regulations under section 44 of the Act are compiled within the design;
- Take into consideration the health and safety specification submitted by the client;
- Before the contract is put out to tender, make available in a report to the client—
- All relevant health and safety information about the design of the relevant structure that may affect the pricing of the construction work;
- The geotechnical-science aspects, where appropriate; and
- The loading that the structure is designed to withstand;
- Inform the client in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the

Health and Safety Specification – Alterations to the eMendi Building, PoN

safe execution of the work upon being designed or when the design is subsequently altered;

- When modifying the design or substituting materials; take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimize the risk;
- When mandated by the client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design: Provided that if the designer is not so mandated, the client's appointed agent in this regard is responsible to carry out such inspections;
- When mandated stop any contractor from executing any construction work which is not in accordance with the relevant design's health and safety aspects: Provided that if the designer is not so mandated, the client's appointed agent in that regard must stop that contractor from executing that construction work;
- When mandated in his or her final inspection of the completed structure in accordance with the National Building Regulations, include the health and safety aspects of the structure as far as reasonably practicable, declare the structure safe for use, and issue a completion certificate to the client and a copy thereof to the contractor; and
- During the design stage, take cognisance of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.

The designer of temporary works must ensure that -

- All temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- The designs of temporary works are done with close reference to the structural;
- The designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
- All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- The loads caused by the temporary works and any imposed loads are clearly indicated in the design.

10.8 Duties of Principal Contractor

As per the Construction regulations of 2014, regulation 7(1) – (8) a Principal Contractor and Contractor must

- Provide and demonstrate to the client a suitable, sufficiently documented and coherent site specific health and safety plan, based on the client's documented health and safety specifications contemplated in CR 5(1)(b), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;
- Open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the client, the client's agent or a contractor; and
- On appointing any other contractor, in order to ensure compliance with the provisions of the Act:

Provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications contemplated in CR regulation 5(1)(b) pertaining to the construction work which has to be performed;

- Ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;
- Ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;
- Ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;
- Appoint each contractor in writing for the part of the project on the construction site;
- Ensure that a copy of his or her health and safety plan contemplated in paragraph (a),
- As well as the contractor's health and safety plan contemplated in CR 7 sub-regulation (2)(a), is available on request to an employee, an inspector, a contractor, the client or the client's agent;
- Hand over a consolidated health and safety file to the client upon completion of the construction work and must, in addition to the documentation referred to in CR 7 sub-

Health and Safety Specification – Alterations to the eMendi Building, PoN

regulation (2)(b), include a record of all drawings, designs, materials used and other similar information concerning the completed structure;

- In addition to the documentation required in the health and safety file in terms of paragraph (c)(v) and CR 7 sub-regulation (2)(b), include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being principal contractor, the agreements between the parties and the type of work being done; and
- Ensure that all his or her employees have a valid medical certificate of fitness, inclusive of a drug test and specific to the Construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

10.9 Duties of Contractor

A contractor must -

- Prior to performing any construction work, provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the client's health and safety specification and provided by the principal contractor, which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the contractor as work progresses;
- Open and keep on site a health and safety file, which must include all documentation required and must be made available on request to an inspector, the client, the client's agent or the principal contractor;
- Before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;
- Co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act; and
- As far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, any person who might be affected by the work of such a person at work, or which might justify a review of the health and safety plan.

Where a contractor appoints another contractor to perform construction work, the duties that apply to the principal contractor apply to the contractor as if he or she were the principal contractor.

A contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.

A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor.

A contractor must ensure that all his or her employees have a valid medical certificate of fitness, inclusive of a drug test specific to the construction work to be performed and issued by a registered occupational health practitioner, in the form of Annexure 3.

10.10 Management and supervision of Construction work

A principal contractor must in writing appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate must be appointed by the principal contractor.

A principal contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal accountability for failing in his or her management duties in terms of this regulation.

Where the construction manager has not appointed assistant construction managers as in the opinion of an inspector, a sufficient number of such assistant construction managers, that inspector must direct the construction manager in writing to appoint the number of assistant construction managers indicated by the inspector.

No construction manager appointed may manage any construction work on or in any construction site other than the site in respect of which he or she has been appointed.

A contractor must, after consultation with the client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards

Health and Safety Specification – Alterations to the eMendi Building, PoN

or risks on the site, appoint a full-time or part-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: Provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of the Department of Employment and Labour is decisive.

No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor

A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site.

A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties in terms of this regulation.

No construction supervisor appointed under may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that if a sufficient number of competent assistant construction supervisors have been appropriately designated on all the relevant construction sites, the appointed construction supervisor may supervise more than one site.

11. Competence, Training and Awareness

Each employee (including sub-contractor employees) must be suitably trained and competent, and must understand the health and safety hazards, risks and control measures associated with his work as required by the OHS Act 85 of 1993.

The contractor must implement systems and procedures to ensure that:

- The necessary competencies required by employees are identified (by occupation), along with selection, placement and any training requirements;

Please Note: Specific competency profiles and selection criteria (fitness for work) must be developed for all roles where significant health or safety risk exists.

Please Note: A formal training needs analysis must be carried out based on the competency profiles and a training matrix must be developed for the project.

Roles requiring technical certification, registration or licensing are identified and documented, and these roles are filled only by suitably qualified personnel;

- Minimum core health and safety skills required by employees in leadership and supervisory roles are identified and suitable training is provided including hazard identification and risk assessment, incident investigation, and health and safety interactions (i.e. Observation and coaching techniques);
- Competency-based training is provided and it includes operational controls (procedures and work instructions), management of change, and emergency response;
- All employees hold and maintain the required competencies (including appropriate qualifications, certificates and licences) and are under competent supervision;
- A site-specific induction and orientation programme that highlights health and safety requirements, procedures, and significant hazards, risks and associated control measures is in place for all new employees and visitors (understanding must be assessed);
- Personnel are trained and / or briefed on new or amended standards, rules, safe work procedures, risk assessments, etc.;
- Refresher training is carried out as required (e.g. Re-induction following an absence from site);
- Records of education, qualifications, training, experience and competency assessments are maintained on site for all employees; and
- The effectiveness of training is reviewed and evaluated.

Prior to the commencement of any work, including mobilisation and site set-up activities, the contractor must provide, to the satisfaction of the nominated project management representative, current documentation verifying that the contractor's employees, as well as the employees of any appointed sub-contractors, are competent and have the necessary qualifications, certificates, licences, job skills, training and experience (as

Health and Safety Specification – Alterations to the eMendi Building, PoN

required by this specification and applicable legislation) to safely carry out the work that is to be performed.

The Contractor and sub-contractor must ensure that the following training takes place:

- health and safety induction training pertaining to the hazards prevalent on the site at the time of entry
- training for all persons required to erect, move or dismantle temporary works structures and instruction to perform those operations safely
- training of employees working from a fall risk position
- training to work or to be suspended on a platform which includes at least:
 - how to access and egress the suspended platform safely;
 - how to correctly operate the controls and safety devices of the equipment;
 - information on the dangers related to the misuse of safety devices; and
 - information on the procedures to be followed in the case of-
 - o an emergency;
 - o the malfunctioning of equipment; and
 - o the discovery of a suspected defect in the equipment;
 - o an instructions on the proper use of body harnesses.
- Training for all operators of construction vehicles and mobile plant.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor.

Please Note: Only certified copies of certificates, licences, etc. will be accepted.

An Employee Profile (dossier) must be completed for each employee who will be performing work on site. All documentation pertaining to an employee's competence (i.e. certified copies of qualifications, certificates and licences as well as proof of job skills, training and experience) must be maintained in this dossier.

If it is determined through observation that an employee is not yet competent to carry out a particular task in a safe and capable manner, the employee will be required to cease

work immediately and must either be reassigned or be retrained at the contractor's expense.

The contractor must provide proof that the training institutions and trainers that are used are appropriately registered with a governing authority (a trainer's registration certificate or registration number alone will not be adequate). The following must be made available for verification purposes:

- Proof of registration of the training institution including the training programmes that the institution is accredited to provide; and
- For each trainer, proof of competency and registration for the specific training programmes presented.

Foreign qualifications held by employees in health and safety critical roles must be verified against the requirements of local legislation.

11.1 Health and Safety Induction Training

Each employee must attend all mandatory Health and Safety Induction Training applicable to the project. No employee will be permitted to enter any project work site until he has attended this training. Each employee must carry proof that he has completed the induction training and may be removed from a site if such proof cannot be produced on request, this as required by the Construction regulations of 2014, Regulation 7(5).

Furthermore, employees must attend (where applicable) Area-Specific Health and Safety Induction Training pertaining to the particular hazards identified in the area(s) where the employees will be working. No employee will be permitted to enter a work area until he has attended the relevant area-specific training.

All visitors must receive a visitor induction briefing before entering any project work site. However, this induction does not permit a visitor to enter a site unescorted. Visitors must be accompanied at all times by an appropriately senior employee who has been fully inducted.

11.2 Specific Training and Competency Requirements

The following specific training and competency requirements must be complied with, where applicable to the project.

Please Note: An employee must be trained, assessed and found competent before he will be given authorisation to perform certain tasks or fill certain roles.

Table 12-1: Specific Training and Competency Requirements

Training	Applicable To
Health and Safety Induction	All employees
Safety Observations and Coaching (Safety Interactions)	All employees
Risk Assessment*	All managers and supervisors
Incident Investigation*	All managers and supervisors
Safety Leadership	All managers and supervisors
Legal Liability*	All managers and supervisors
Health and Safety Rep*	All elected Health and Safety Representatives
First Aid Levels 1, 2 and 3*	All nominated First Aiders
Fire Fighting (Fire Extinguisher Use)*	All employees
Permit to Work	All Authorised Persons (i.e. Permit issuers) and all Applicants (i.e. Employees who will be applying for permits)
Isolation and Lockout	All Authorised Persons (i.e. Persons who authorise work that requires Isolation and Lockout), all Isolation Officers, and all Applicants (i.e. Persons who request permission to work on systems or equipment requiring Isolation and Lockout)
Mobile Equipment Site Licence*	All mobile equipment operators

Training requirements marked with an * must be arranged by the contractor through accredited external training institutions.

12. Communication, Participation and Consultation

The contractor must establish and maintain effective communication and consultative processes (allowing for a two-way dialogue) for the duration of the project to ensure that:

- All personnel are kept up to date with regard to health and safety matters (e.g. Hazards and risks, incidents and lessons learnt, leading practices, performance against objectives, etc.);

- General health and safety awareness levels are kept high;
- Prompt feedback is given to personnel with regard to health and safety issues or concerns that they raise; and
- Relevant, and often critical, health and safety related information (e.g. Design changes, instructions, reporting of hazardous conditions or situations, etc.) is effectively disseminated.

This must be achieved as follows:

12.1 Visible Felt Leadership (VFL) and Safety Observations and Coaching (SOC's)

The contractor's supervisory personnel (i.e. Managers and supervisors) must participate in the project's Visible Felt Leadership (VFL) programme. Each manager and each supervisor must, as part of his normal duties, perform Safety Observations and Coaching (SOC's). The intention of this programme is to encourage interaction between supervisors and workers concerning health and safety matters in order to:

- Reinforce behaviours consistent with standards, procedures and management system requirements;
- Correct behaviours inconsistent with standards, procedures and management system requirements; and
- Verify whether employees have the necessary training, certification, equipment, etc. To perform the work that they are carrying out.

Each manager, supervisor, safety personnel has a required number of SOCS to be completed per week. All SOC's that are recorded must be submitted to the nominated project management representative on a weekly basis.

The information that is gathered must be analysed and any trends that are identified must be acted on to correct unsafe behaviour or conditions.

12.2 Toolbox Talks

The contractor must prepare a Toolbox Talk on a weekly basis and must share it with all personnel for which the contractor is responsible (including all sub-contractors). Toolbox Talks must address health and safety issues that are relevant to the work performed on the project site(s) and must include information and / or knowledge sharing, lessons learnt from incidents that have occurred, information concerning specific hazards and / or risks and control measures to prevent injury, etc.

Attendance records must be kept and maintained in the contractor's health and safety file.

12.3 Daily Safe Task Instructions (DSTI's)

A Daily Safe Task Instruction (DSTI) is a pre-start discussion amongst the members of a work team, led by the appointed supervisor, aimed at anticipating hazards and potential risks associated with the activities planned for the day or shift, and ensuring that the necessary control measures are in place to prevent incidents.

At the start of each day or shift, prior to the start of any work, each appointed supervisor must inspect the work area for which he is responsible and ensure that it is safe. He must then conduct a DSTI with his work team specifically concerning the tasks that they will be performing during the course of the day or shift. The relevant Task-Based Risk Assessment for the activity must be used as the basis for the discussion. The correct work method must be reiterated and the identified hazards, risks and control measures must be discussed with the team (each team member must be given the opportunity to contribute and participate in the discussion).

Any team member arriving late must first be taken through the information that was discussed (work method, hazards, risks and control measures) before being permitted to start working. If the work method changes after activities have already begun, the DSTI must be revisited, updated and re-communicated with the team, and the changes must be signed off by the relevant Contractor Health and Safety Officer.

Every member of the work team must sign the DSTI attendance register. The attendance records must be kept and maintained in the contractor's health and safety file.

The contractor's Health and Safety Officer must evaluate the content of the DSTI's daily to ensure that they are task-specific. Furthermore, the Health and Safety Officer must attend the DSTI discussion but must not lead the DSTI discussions, as this is the responsibility of the appointed supervisor.

12.4 Health and Safety Suggestions

All employees must be encouraged to submit suggestions to enhance health and safety management on the project site(s). A process must be in place for documenting, evaluating, implementing (as appropriate), archiving and recognising the improvement ideas.

12.5 Health and Safety Meetings

13.5.1 Contractor Health and Safety Meetings (OHS Act Section 19)

The contractor must schedule and consistently hold monthly health and safety meetings. These meetings must be chaired by the contractor's Project Manager and the following persons must be in attendance:

- Contractor and sub-contractor management representatives;
- Contractor and sub-contractor supervisors;
- Contractor and sub-contractor appointed Health and Safety (Employee) Representatives;
- Contractor and sub-contractor Health and Safety Officers; and

The meeting must address the following as a minimum:

- New incidents for the period and corrective actions taken or to be taken;
- Implementation status of outstanding actions associated with previous incidents;
- SOC's, PTO's and DSTI's carried out for the period and action required to correct trends identified;
- Results of any audits, inspections (including H&S Rep inspections) or site visits carried out;
- A look ahead to ensure that appropriate health and safety planning and preparation is done for upcoming work;
- Risk Assessments, Safe Work Procedures, etc. That are outstanding or due for review (as well as the quality of these documents); and
- Any other health and safety related matter.

The contractor must compile minutes of each meeting and such minutes must be signed off by the Chairperson as a true reflection and attendance records must be kept. These records must be maintained in the contractor's health and safety file.

13.5.2 Site Health and Safety Meetings

In addition to the Contractor Health and Safety Meetings, the Project will schedule monthly Site Health and Safety Meetings that the contractor must attend. These meetings will be chaired by the Project Construction Manager and the following persons must be in attendance:

- Contractor management representatives;
- Contractor Health and Safety Officers;
- The Project Health and Safety Manager;
- Project Health and Safety Advisors; and

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Client representatives (ad hoc).

The meeting will address the following as a minimum:

- Feedback from the contractor concerning health and safety performance for the period;
- New incidents for the period and corrective actions taken or to be taken;
- Implementation status of outstanding actions associated with previous incidents;
- SOC's, PTO's and DSTI's carried out for the period and action required to correct trends identified;
- Results of any audits, inspections or site visits carried out;
- A look ahead to ensure that appropriate health and safety planning and preparation

Is done for upcoming work;

- Risk Assessments, Safe Work Procedures, etc. That are outstanding or due for review (as well as the quality of these documents); and
- Any other health and safety related matter.

12.6 Health and Safety Performance Boards

The contractor must provide and maintain a Health and Safety Performance Board to be approved by the nominated project management representative and to be positioned at the entrance to the contractor's site office area. This board must display the following information as a minimum:

- The contractor's logo;
- Current manpower (heads) on site;
- Man-hours worked for the current month and project to date;
- Lost Time Injury Frequency Rate (LTIFR);
- Dates of last injuries (FAI, MTI and LTI);
- Number of hours worked since the last recorded LTI; and
- Names and contact telephone numbers for the appointed Project Manager and the Health and Safety Officers.

12.7 Health and Safety Management Information Notice Boards

The contractor must provide, for each construction site, a portable Health and Safety Management Information Notice Board to be placed in the work area. The following information and documentation, as a minimum, must be posted on these boards:

- The relevant Method Statements, Risk Assessments and Safe Work Procedures for the work that is being performed that day;

- The DSTI for the day;
- The most recent Toolbox Talk;
- Where applicable, all required permits and permissions for the work that is being performed;
- Material Safety Data Sheets (MSDS's) for any chemical substances being used;
- The health and safety objectives for the work team;
- Details of the last incident involving the work team;
- The most recent weekly health and safety report;
- Emergency procedures;
- A site plan indicating evacuation routes and emergency assembly point locations;
- First Aider and Health and Safety Representatives names, contact telephone numbers as well as recent photo; and
- The appointed supervisor's contact details.

12.8 Involvement (Other)

The participation of all contractor (and sub-contractor) employees in activities that promote improvements in health and safety performance must be encouraged. In particular, this must include their appropriate involvement in:

- Hazard identification, risk analysis and determining control measures;
- Incident investigation; and
- Reviewing policy and objectives.

All regulations, instructions, signage, etc. Must be communicated in a language understood by all employees.

Health and safety personnel must be actively involved in planning activities so that they have the opportunity to highlight hazards and risks associated with upcoming work well in advance to ensure sufficient time to arrange and / or implement the necessary control measures.

13. Documentation and Document Control

The contractor must develop and maintain project-specific documentation required for the effective management of health and safety on the project.

All documents related to the contractor's health and safety management system must be effectively controlled.

The document control process must:

- Provide for the review, revision and version control of documents;
- Uniquely identify documents (as appropriate) to control their use and function;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Require approval of the documents for adequacy prior to issue;
- Clearly identify changes and record the status of any revisions to documents;
and
- Provide for the effective distribution of documents to, and where necessary the timely removal of obsolete documents from, all points of issue and use.

The contractor must establish a process for the systematic control of health and safety records and related data. Controls must be in place for the creation, receipt, secure storage, maintenance, accessing, use and disposal of such records and data.

Each record must be legible, identifiable and traceable, and must contain adequate information and data for its purpose.

The confidentiality and security of records and data must be maintained in a manner that is appropriate for the nature of the records and data, and in accordance with any applicable data or privacy protection legislation.

Personal information originating from medical surveillance and occupational hygiene monitoring must be reported in a form that respects the privacy of the individual, but enables management to fulfil their duty of care obligations to employees. The names of individuals must not be disclosed without their written authorisation.

Retention periods for all records (based on legal requirements and / or knowledge preservation considerations) must be established and documented in accordance with applicable legislation.

13.1 Contractor Health and Safety File Requirements

The contractor must compile and maintain a file containing all necessary health and safety related documentation. The contents of the file will be audited by a Project Health and Safety Practitioner on a monthly basis.

Required documentation includes, but is not limited to, the following:

- Valid Letter of Good Standing from the Workman's Compensation Commissioner;
- Proof of Public Liability Insurance;
- Scope of Work under the contract;
- List of Contacts and their Telephone Numbers;
- Health and Safety Policy;
- Health and Safety Management Plan;

- Legal Register;
- Organisational Chart for the project;
- Appointment Letters (appointment of the contracting company, and appointments for all persons with health and safety related responsibilities);
- 37.2 Agreements
- Notifications to the relevant authorities that construction work is in progress;
- Baseline and Task-Based Risk Assessments;
- Safe Work Procedures, Work Instructions and Work Method Statements;
- Planned Task Observations;
- Fall Protection Plan (where applicable);
- A dossier (Equipment Profile) for each fuel-driven vehicle or machine;
- Inspection Registers, Forms and Checklists (e.g. For portable electrical tools, ladders, safety harnesses, light vehicles, mobile equipment, lifting equipment and lifting tackle, first aid boxes, fire extinguishers, etc.);
- PPE Issue Registers;
- Material Safety Data Sheets;
- Emergency Response Procedures;
- Incident Procedures and Records;
- A dossier (Employee Profile) for each employee containing:
- A copy of the employee's Identity Document or Passport;
- Certificate of Fitness (Pre-Employment Medical Examination);
- Proof of Induction Training;
- Other Training Records;
- Copies of Qualification Certificates and / or Certificates of Competency; and
- Copies of Licences;
- Health and Safety Meeting Minutes;
- Health and Safety Performance Reports;
- Copies of Inspection and Audit Reports; and
- Daily Safe Task Instructions (DSTI's) and Toolbox Talks.

The contractor must ensure that an equivalent file is compiled and maintained by each appointed sub-contractor.

14. Notification of Construction Work

A contractor who intends to carry out any construction work other than work contemplated in CR regulation 3(1), must at least 7 days before that work is to be

Health and Safety Specification – Alterations to the eMendi Building, PoN

carried out notify the provincial director in writing in a form similar to Annexure 2 if the intended construction work will—

- include excavation work;
 - include working at a height where there is risk of falling;
 - include the demolition of a structure; or
- include the use of explosives to perform construction work.

15. Operational Control

Refer to Transnet Health and Safety Management Guidelines for Managing Common Hazardous Activities and Tasks: HAS-GN-0001. For project operations and activities, the contractor shall implement and maintain:

- Operational controls, as applicable to the organization and its activities;
- The organization shall integrate those operational controls into its overall OH&S Management System;
- Controls related to purchased goods, equipment and services;
- Controls related to contractors and other visitors to the workplace;
- Documented procedures, to cover situations where their absence could lead to deviations from the OH&S policy and the objectives;
- Stipulated operating criteria where their absence could lead to deviations from the OH&S policy and objectives.

16. Safe Work Procedures

The contractor must develop, document and implement Safe Work Procedures for all activities involving significant health or safety risk. These procedures must detail the control measures required to effectively manage the health and safety risks associated with the work activities.

Each Safe Work Procedure must be consistent with the Task-Based Risk Assessment completed for the activity.

Every person engaged in an activity for which a Safe Work Procedure has been developed must receive suitable training on the procedure.

Furthermore, the contractor must develop, document, communicate and implement formal procedures, work instructions and / or programmes for the operation, maintenance, inspection and testing of all plant and equipment (including protective systems and devices) brought onto the project site(s).

17. Planned Task Observations

All contractor, management supervisors must perform Planned Task Observations (PTO's) to verify that the control measures that have been identified in Safe Work Procedures (and associated Risk Assessments) are being adhered to and are being properly implemented, and to provide guidance where deviations are noted.

Each supervisor must complete at least two PTO per week involving one or more employees in his work team. This number of PTO's is at the discretion of TRANSNET's Project Manager or appointed Representative.

When an unsafe act or condition is identified, the supervisor must coach the work team to correct the act or condition in line with the Safe Work Procedure.

Where valid changes to the work method are identified, the supervisor must ensure that the Safe Work Procedure and Risk Assessment are updated to reflect the current practice.

Project representatives will carry out PTO's on contractor employees on an ad hoc basis. Should deviations from the contractor's Safe Work Procedures be observed, the work may be stopped until these deviations are rectified.

18. General Rules of Conduct

All persons are required to conform to the following rules of conduct while on the site.

The following acts are prohibited:

- Engaging in practical jokes, horseplay, scuffling, wrestling, fighting, or gambling;
- Assault, intimidation, or abuse of any person;
- Insubordination towards any supervisor or manager;
- Refusing to carry out a reasonable and lawful instruction concerning health and safety;
- Entry into any restricted area (including barricaded areas), unless authorised to do so by the responsible person;
- Unauthorised use / operation of any equipment or machinery;
- Negligently, carelessly or wilfully causing damage to any property;
- Destroying or tampering with safety devices, signs, or signals;
- The use of water from fire hydrants or hose reels for any purpose other than extinguishing a fire;
- The wilful and unnecessary discharging of fire extinguishers;
- Refusing to give evidence or deliberately making false statements during incident investigations;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Bringing alcohol, drugs, or any other intoxicating substance onto site;
- Bringing a firearm, ammunition, or any other offensive weapon onto site;
- Bringing animals onto site;
- Running, except in an emergency;
- The use of cell-phones (or similar devices) whilst working on site;
- Sleeping on the job;
- Building fires on site, unless in a suitably constructed barbequing facility; and
- Pouring / pumping / flushing any substance (chemical / hydrocarbon / waste water) into a storm water drain, onto bare soil, or into any area where the substance is not effectively contained.

Any of the above actions may result in the temporary or permanent removal of the offending person(s) from site, as well as possible prosecution. The decision of the nominated project management representative shall be final and binding in respect of any dispute that may arise from the interpretation of these requirements.

TRANSNET will not get involved in contractor disciplinary rules and procedures. The contractor will simply be informed (with reasons) that the offending employee(s) will be denied access to the project site. Once the contractor has been informed, the employee(s) must be removed from the site immediately.

19. Site Access

The Principal Contractor will only have access to the site once the health and safety file has been accepted by the Client. A health and safety site access certificate will then be issued to the Principal Contractor so that site establishment can commence.

A Contractors health and safety file will also be issued to the Client for acceptance before work can commence.

19.1 Access Control

The contractor may not hire any security services for the project site unless authorisation has been obtained in writing from a nominated project management representative.

The contractor must comply with all access control, procedures and systems applicable to the project site.

Failure to comply with these requirements will be viewed as a serious safety breach and may result in the permanent removal of the individual(s) / contracting company from site or suspension without payment.

Access will be controlled as follows:

Contract period access – an access card valid for the full contract period will be issued to an individual once the following requirements have been met:

- Completion of a pre-employment medical examination which states that the employee is fit for duty;
- Completion of all required project induction training;
- Completion of special training / licensing if applicable (e.g. Driving/operating Licence).

Note: No access card will be issued unless proof of identification is provided (i.e. an identity document or a valid passport). For foreign labour, an access card will only be issued if a valid work visa is produced.

Note: A driving licence will not be accepted as proof of identification.

19.2 Trespassing

The contractor must ensure that no employee (including sub-contractor employees) trespasses on any land lying beyond the boundaries of the project site.

If instructed by a nominated project management representative to do so, the contractor must remove any employee who fails to comply with this requirement from the project.

The contractor's activities must be confined to the specified construction areas, and access to these areas may only be by means of specified routes.

All required barricading (fencing) must be erected and maintained by the contractor.

19.3 Visitors

Visitors (including reps and suppliers) must be advised in advance of the mandatory Personal Protective Equipment (PPE) requirements for the site, and must arrive with all of this PPE.

Upon arrival, all visitors must report to the Contractors designated Site Office where they must sign in.

All visitors must undergo a visitor induction briefing before entering the site.

Whilst on site, visitors must be accompanied at all times by an appropriately senior employee who has been inducted fully. The visitor(s) must be met at the designated Site Office, and when the visit is over, must be escorted back to the Site Office.

Note: Visitors are not permitted to perform any work on site.

Health and Safety Specification – Alterations to the eMendi Building, PoN

Note: Any request (typically made by a government official) to carry out a site inspection must be referred to the nominated project management representative. The contractor must not arrange any such inspection without prior approval from the nominated project management representative.

19.4 Alcohol, Drugs and Other Intoxicating Substances

The contractor must ensure that all personnel under his authority do not at any time enter the site or perform any work whilst under the influence of alcohol, a drug, or any other intoxicating substance.

Selling or possessing drugs, alcoholic beverages or any other intoxicating substance on the site is strictly prohibited.

A drugs and alcohol testing program will be implemented. Persons entering the site will be daily tested. Any person who tests positive for alcohol or drug consumption will be subject to disciplinary action and shall be permanently removed from the site.

Any person have the opportunity to rather report that he/she is under the influence before accessing the project site – in these case the employee may only be send home for the day by the responsible project manager representative but will then be tested for the following five days (each day) on his return to the project site. If it is found that the same person is frequently reporting that he/she is under the influence before even accessing the project site, It shall be the responsibility of the nominated project management representative to take disciplinary action and remove such a person from the project site.

Should the actions and / or demeanour of an employee suggest possible narcosis or drunkenness, the employee must be removed from the site. This may be done without testing.

Note: All personnel involved in an incident / accident must immediately be subjected to an alcohol test and a drug test as part of the investigation.

19.5 Firearms, Ammunition and Offensive Weapons

Firearms, ammunition, and offensive weapons of any kind are strictly prohibited. No person may enter /shall not be permitted to enter the site carrying any such item.

19.6 Vehicles

All vehicles brought onto site must meet safety requirements. Each vehicle to be used on site must be inspected and approved by the nominated project management representative before a site access permit will be issued for the vehicle / equipment. No

vehicle shall be permitted to enter the site unless it is duly authorised. Access permits are vehicle-specific and may not be transferred between vehicles.

The contractor must allow any vehicle that is brought onto site (including privately owned vehicles) to be searched at any time while on the premises, or when entering or leaving the premises.

The contractor is solely responsible for the safety and security of all vehicles (including private vehicles) that is brought onto the site. All road-going vehicles used by the contractor on the site must be roadworthy and registered with the relevant traffic authority.

A vehicle will not be permitted to enter the site in an un-roadworthy condition. Access will be denied if, for example, but not limited to:

- The vehicle has a defective exhaust system;
- A serious oil or fuel leak is evident;
- The vehicle has unsafe bodywork or is carrying an unsafe load;
- The vehicle is fitted with extraneous or non-standard equipment;
- Passengers are not seated properly;
- The vehicle is not fitted with a seat belt for each occupant; or
- The vehicle has any obvious mechanical defect;
- Pre-inspection requirements are not met.

Overloaded vehicles will not be permitted to enter the site. The driver / operator of any vehicle / mobile equipment must carry a copy of his appointment with him at all times. Each driver / operator must:

- Comply with all site / project rules and regulations pertaining to traffic and the safe operation of vehicles / mobile equipment;
- Obey all road signs;
- Obey all instructions given by security or emergency services personnel;
- Remain within the boundaries of the site; and
- Ensure that the vehicle that he is operating is never overloaded, and that loads are always properly secured.

In the interest of safety, only the minimum number of vehicles required by the contractor to complete the work under the contract will be permitted to enter the site. When not in operation, the contractor's vehicles / mobile equipment must be parked within the boundaries of his lay-down area or yard.

Parking is only permitted in designated parking areas. All cars are parked on site at the owner's risk.

In the event of a vehicle accident on site, the driver(s) must report the incident immediately and must remain at the scene until a nominated project management representative arrives, or until a nominated project management representative authorises him to leave (unless, of course, the driver requires medical attention).

20. Mobile Equipment and Light Vehicles

All Contractors must ensure that mobile equipment and light vehicles comply with relevant/applicable legislation.

Each contractor must provide evidence to the nominated project management representative that all light vehicles and mobile equipment to be used on the project (including, but not limited to, lift and carry cranes (or mobi-lifts), mobile cranes, forklifts, mobile elevating work platforms (e.g. Cherry pickers), tractors, dozers, dump trucks, haul trucks, graders, excavators, loaders, back-actors, drill rigs, and road-going cars, light delivery vehicles, and trucks) comply with the requirements of relevant/applicable legislation. This evidence must be provided prior to the equipment being brought onto the project site. The contractor remains responsible for meeting this requirement even if the equipment to be used is leased or provided by a sub-contractor (i.e. not owned directly by the contractor).

An Equipment Profile (dossier) must be compiled for each light vehicle and each item of mobile equipment to be used on the project site. All mobile equipment and light vehicles (used for work purposes) must be subject to a risk assessment. The assessment must:

- Involve operators and maintenance personnel who will use and work on the equipment; and
- Address all aspects of safe operation including but not limited to handling, driver vision, brake failure, tyre blow out, and access and egress for operators and maintenance personnel.

Each light vehicle and each item of mobile equipment must be serviced and maintained as prescribed by the manufacturer of the vehicle or equipment. No major repairs or services may be carried out on site. No repairs may be carried out by a driver or operator. Only suitably qualified and competent persons may carry out repair work.

An appropriate pre-operation safety check based on a risk assessment must be carried out for each light vehicle or item of mobile equipment driven or operated for work purposes. For each vehicle or equipment type, an approved checklist must be in place (and must be used). The pre-operation check must include, but not be limited to, inspection and / or testing of the following safety critical features:

- Brakes (testing method must be provided);
- Wheels and tyres (including the spare);
- Lights and indicators;
- Steering;
- Seats and seat belts; and
- Windscreen and windows, including windscreen wipers and washers.

Should any critical feature be defective or damaged, the vehicle or equipment may not be operated until it has been fully repaired.

Supervisors must review the completed checklists on a daily basis to satisfy themselves that there are no major deficiencies that could place a driver or operator at risk. No person may drive or operate any light vehicle or item of mobile equipment without authorisation. All drivers and operators must be appointed in writing by the contractor's Project Manager.

No driver or operator may be appointed without proof that the individual has been trained, tested and found competent, or is currently licensed. The appointment letter must specify the type of vehicle or equipment for which authorisation is being given and must clearly confirm that the driver or operator:

- Is 18 (eighteen) years of age or older;
- Has undergone a medical examination and has been declared fit for work by an occupational medical practitioner; and
- Has received suitable training and has been found competent, or is in possession of a valid driving licence issued by a state, provincial or civil authority that is applicable to the class of vehicle or equipment that is to be driven or operated.

The principal accountability for preventing accidents and incidents lies with the driver or operator of a light vehicle or item of mobile equipment, as he is in full control of any given situation at any given time. It must be stressed to each driver and each operator that safety is his prime responsibility – this must be clearly instructed and understood.

Drivers and operators must be empowered to stop driving or operating immediately should an unsafe condition arise, and refuse to drive or operate any light vehicle or item of mobile equipment that is defective and / or has any inoperative safety features. Similarly, a supervisor must never force a driver or operator to drive or operate a defective vehicle or item of equipment.

If a driver or operator does not adhere to the site rules and regulations, his appointment must be withdrawn and he must not be permitted to continue with his duties. If necessary, site access will be denied (either temporarily or permanently) to any driver or operator who is deemed to not be adhering to site requirements.

No person may drive or operate a light vehicle or item of mobile equipment if he suffers from a medical condition that places both him and those around him at risk of injury. A fit-for-work policy must be in place. Daily alcohol testing and random drug testing must be carried out.

Supervisors must regularly check on the physical condition of drivers and operators during the course of a shift. A system must be in place to manage driver fatigue. No eating or drinking is permitted while driving or operating a light vehicle or item of mobile equipment.

A mobile phone, whether hands-free or not, may not be used by the driver or operator of a light vehicle or item of mobile equipment unless the vehicle/equipment is parked in a safe location and not operational. Behaviour-based observations and coaching must include the operation of light vehicles and mobile equipment.

A site-specific traffic management plan must be compiled and submitted to the nominated project management representative for approval. The plan must include, but not be limited to, (where relevant to the scope of work) the following:

- Segregation of pedestrians, light vehicles, and mobile equipment where possible (using barriers where feasible);
- Systems to control the movement of mobile equipment in areas accessible to pedestrians, the movement of mobile equipment into and out of workshops, and pedestrian and light vehicle movement around mobile equipment;
- Setting of appropriate speed limits for vehicle types, road surfaces and environmental conditions;
- Installation and maintenance of road traffic control signs;

- Right-of-way rules (including overtaking restrictions);
- Overtaking protocols;
- Clear communication protocols for interactions between all vehicles and equipment;
- Procedures for light vehicles and / or mobile equipment entering hazardous or restricted areas;
- Standards for safe following distances based on operational circumstances, environmental conditions and near sight (blind spot) limitations of mobile equipment;
- The minimum safe distance to be maintained between light vehicles and mobile equipment (i.e. 50 metres unless positive contact is made);
- Designated parking areas for mobile equipment and light vehicles, including parking associated with maintenance areas;
- Parking procedures (e.g. Safe parking distances, safe parking locations, requirements for reverse parking, etc.);
- Systems to control approaching, refuelling, parking, boarding and disembarking mobile equipment (a driver or operator must exit the cabin and must disembark the vehicle or equipment entirely when his direct involvement with maintenance or servicing is not required);
- Guidelines for abnormal road conditions (e.g. Heavy rain, fog, or high winds) providing “go / no go” criteria and contact details for the person(s) responsible for making the “go / no go” decisions;
- Truck loading and unloading procedures to avoid material or objects falling from the vehicle;
- Guidelines for wide or abnormal loads including offsite transport; and
- Systems to control mobile equipment use in the vicinity of overhead power lines.

The Traffic management Plan must be reviewed/revised where changes to the works areas require. A risk assessment must be carried out prior to any changes being made to traffic movements or road systems.

Designated walkways (both indoors and outdoors) must be provided for pedestrians, and pedestrians must make use of these walkways. Good lighting must be provided along all walkways, particularly at road junctions. Wherever possible, rigid barricading must be used to separate pedestrians from moving light vehicles and / or mobile equipment.

Health and Safety Specification – Alterations to the eMendi Building, PoN

All personnel must be transported to site and must be dropped off at a designated area. Controls must be in place to ensure the safety of people working on roads, including those working on broken-down vehicles.

High visibility clothing must be worn at all times whilst on the project site. Speed limits and traffic rules must be reviewed regularly and must be rigorously enforced. Local traffic rules must be complied with at all times.

Pedestrians must give way to light vehicles and / or mobile equipment except at pedestrian crossings. All light vehicles and mobile equipment must give way to emergency vehicles. Pedestrians and light vehicle drivers must be made aware of the blind spots associated with mobile equipment.

The driver or operator of a light vehicle or item of mobile equipment must stop the vehicle or equipment and sound the horn before proceeding at blind corners, where his view of the path or intended path is obstructed, and when entering or leaving a building. Whenever a light vehicle or item of mobile equipment is stopped or parked, the handbrake (if applicable) must be applied.

No light vehicle or item of mobile equipment may be left unattended with the engine running or with a key in the ignition. No light vehicle or item of mobile equipment may be parked so as to cause an obstruction to any roadway, passage or access way. No light vehicle or item of mobile equipment may be parked within 50 metres of a loading or off-loading point.

All loads must be secure and must be within the load limit of the vehicle or equipment. A load must be properly secured before the vehicle or equipment is set in motion. Adequate precautions must be taken for any overhanging load. No unauthorised light vehicle or item of mobile equipment may enter a restricted area or building.

20.1 Light Vehicles

All Contractors must ensure that Light vehicles have the following minimum safety features:

- Fixed seats and suitable seat(safety) belts for all occupants (i.e. Driver and all passengers);
- Roll-over protection for all vehicles intended to be driven on dirt or steep roads;

- Cargo barriers and load restraints for all vehicles designed for carrying loads (other than passengers), or that are unable to have cargo separated from the occupant-carrying space of the vehicle; and
- An air bag on the driver's side, and where available as a manufacturer fitted item, a passenger's air bag;
- A Reverse Alarm.

All Contractors must ensure that Light vehicles that interact with mobile equipment are equipped or fitted with:

- Systems that enable positive communication with the equipment operators (e.g. A two-way radio);
- A high visibility flag (e.g. A whip flag or buggy whip);
- An amber flashing light (revolving or strobe);
- Reflective taping; and
- High visibility signage (i.e. Vehicle call numbers) facilitating easy and positive identification from a reasonable distance.

All Contractors must ensure that Light vehicles carry:

- Emergency roadside triangles or beacons (three of either);
- Chock blocks for preventing uncontrolled movement of the vehicle when parked;
- A flashlight;
- A fire extinguisher (2.5kg DCP);
- A first aid kit; and
- Survival or emergency equipment (e.g. a vehicle recovery kit) suitable for the operating environment.

A change management process must accompany all vehicle modifications, including the attachment of any equipment. Examples of changes or modifications include, but are not limited to, any change or modification:

- Made to the overall structure or design of the vehicle body;
- Made to the original manufacturer-fitted type of tyres or wheels;
- Made to the suspension system of the vehicle;
- Made to the mechanical system of the vehicle;
- That may adversely alter the centre of gravity of the vehicle;
- That alters the load carrying capacity of the vehicle; and

Health and Safety Specification – Alterations to the eMendi Building, PoN

- That may affect the ability of the vehicle to withstand a crash (e.g. the fitment of a “bull bar”).

Vehicle selection must be based on a risk assessment where consideration is given to the tasks, the application, the environment, roll-over protection and the rating of sturdiness in the event of a crash.

All Contractors must have a formal inspection and preventative maintenance system in place to ensure that vehicles are maintained in a safe and roadworthy condition at all times and, as a minimum, are serviced in line with the vehicle manufacturer’s service schedule.

Should any safety critical feature be defective or damaged, the vehicle must be withdrawn from service until it has been fully repaired. Inspection and maintenance must be undertaken on critical features such as:

- Wheels and tyres (including the spare);
- Steering, suspension and braking systems;
- Seats and seat belts;
- Lights, indicators and reflectors;
- Windscreen and windows, including windscreen wipers and washers;
- The vehicle structure itself; and
- Other safety-related items on the vehicle body, chassis or engine, including instrumentation.

Persons may only be transported in vehicles equipped with manufacturer fitted or approved seats and seat belts. Seat belts must be worn by all occupants of a light vehicle (i.e. the driver and all passengers) at all times.

Only the driver and one passenger are permitted in the cab (front) of a light delivery vehicle. No personnel may be transported in the load-bin of a light delivery vehicle, even if the vehicle is fitted with a canopy. Only tools and equipment may be transported in the load-bin. Furthermore, no persons may be transported in a trailer behind a vehicle.

A pre-operation vehicle safety check and familiarisation system must be in place and must be used by the driver. An approved checklist must be used. All vehicle faults that are recorded must be attended to immediately.

Light vehicle running lights (low-beam headlights) must be switched on at all times when the vehicle is in operation.

All Contractors must have a system in place to ensure that drivers receive adequate training to ensure that the vehicle intended to be operated or driven can be operated or driven safely. As a minimum, training must include:

- Behaviour-based defensive driving principles;
- Vehicle familiarisation, taking into account the handling dynamics of the vehicle, maximum number of passengers, load limits and various features;
- Loading and restraining principles where the vehicle to be operated is designed for carrying cargo loads;
- Education and awareness concerning driving and travel risks that may be encountered within the environment where the vehicle may be operated or driven, and the requirements pertaining to traffic rules and speed limits;
- Securing (locking) equipment to prevent unauthorised use;
- Emergency crash and breakdown procedures; and
- Basic mechanical principles, including how to change a tyre and perform an adequate pre-operation check.

20.2 Mobile Equipment

All Contractors must ensure that Mobile equipment have the following minimum safety specifications:

- Fixed seats and seat belts for all occupants;
- Adequate lighting, including headlights, tail, turn and brake lights, and an amber flashing light (revolving or strobe);
- An identified isolation and lockout point;
- Adequate walkways, railings, steps and grab handle combinations, and boarding facilities including an alternative path of disembarking in the event of an emergency;
- Collision-avoidance technology and / or procedures;
- A reversing alarm or warning device;
- Chock blocks for preventing uncontrolled movement of rubber-tyred equipment when parked;
- A horn;
- Effective windscreen wipers;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Effective guarding on accessible moving parts;
- A speedometer (if the mobile equipment is capable of exceeding the lowest applicable speed limit);
- High visibility signage (i.e. Mobile equipment call numbers) facilitating easy and positive identification from a reasonable distance; and
- A security system to prevent unauthorised operation.

Mobile equipment must have the following minimum safety specifications, unless a risk assessment stipulates otherwise:

- Approved or certified roll-over protection;
- Fail-to-safe brakes;
- A fire detection and suppression system capable of being activated from both ground level and cabin level (for certain types of mobile equipment, a suitably sized fire extinguisher may be adequate);
- A non-handheld two-way radio or another form of communication;
- Falling object protection (a protective structure over the operator cabin);
- An enclosed and tight-sealing air-conditioned cabin with suitable protective glass; and
- A means of moving supplies and personal items into and out of the operator cabin that enables an operator to continuously maintain three points of contact while boarding and disembarking the equipment (e.g. A backpack or shoulder strap bag).

When purchasing or hiring equipment, the ergonomics of the cabin must be considered, specifically with regard to the seating, operator controls and retrofitted devices.

Fleet and control consistency must be considered in order to minimise the possibility of operator error when changing machines.

For all new (to site) and modified mobile equipment, a formal risk-based selection and acceptance process must be followed prior to the equipment being used on site. Selection of equipment, and any modification, must be subject to a rigorous change management process.

An inspection and maintenance programme must be in place for all mobile equipment. The pre-operation inspection must include a brake functionality test. Registers must be maintained and audited, and must be kept on the machine.

Procedures must be in place to ensure that mobile equipment is only operated on sufficiently stable surfaces and on gradients that are within the limits of safe operation.

Seat belts must be used in all cases, by all occupants. Apart from the driver or operator, only an appointed flagman may be transported in mobile equipment (with the exception of buses) and **only if** the equipment is fitted with a passenger seat. No passengers are permitted on a lift and carry crane (or mobi-lift), mobile crane, forklift, mobile elevating work platform (e.g. A cherry picker), tractor, dozer, dump truck, grader, excavator, loader, back-actor, drill rig, or similar.

Risk assessments must be carried out as part of the planning process for mobile equipment operations and associated activities, and must consider the following:

- Maintenance activities;
- Risks associated with loading, unloading, towing and recovering mobile equipment; and
- The risk of fire.

Procedures must be in place for the safe isolation and lockout of mobile equipment.

Where two or more items of mobile equipment must be operated in proximity to each other, or where an item of mobile equipment must be operated in proximity to persons on foot, a risk assessment involving all persons who will be working in the area must be conducted prior to the work commencing. The risk assessment must be approved by the nominated project management representative. In such a work area:

- No item of mobile equipment may be driven to within 5 metres of another item of mobile equipment without the operator first making eye contact with, and signalling his intentions to, the other operator who must acknowledge that he understands and that it is safe to proceed.
- No person on foot may work or be positioned within 5 metres of an item of mobile equipment that is in operation. Before approaching mobile equipment on foot, a person must make eye contact with, and clearly signal his intentions to, the operator of the equipment. The operator must cease to operate the equipment, and must indicate that he understands and that it is safe to approach.

In certain circumstances (determined through risk assessment), mobile equipment may only move and operate with dedicated flagmen in place:

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Where flagmen are used, it must be ensured that the flagmen, mobile equipment operators, and all other personnel working in the vicinity of the mobile equipment, receive suitable training with regard to signals and signalling to ensure effective communication. The training must be formal and recorded, and competency must be tested.
- A flagman and the mobile equipment operator that he is directing must maintain eye contact. The flagman must never position himself where the equipment operator cannot see him.
- Should a mobile equipment operator lose sight of his flagman, he must stop his activities immediately until contact has been re-established.

A tyre management system must be in place to address issues including fire, heating, explosion, electrical contact, separations, maintenance, tyre changes, etc.

Operators must report conditions and practices that do not conform to procedure.

20.3 Training and Licensing

No person may drive a light vehicle or operate an item of mobile equipment unless he has been trained, tested and found competent, or is currently licensed to drive or operate that specific vehicle or item of equipment. The training must address hazards and risks assessed for that specific vehicle; and the tasks for which it is to be used.

No person may be appointed to drive a light vehicle or operate an item of mobile equipment unless he is in possession of a valid medical certificate of fitness (issued by an occupational medical practitioner).

Each person required to drive a light vehicle or operate an item of mobile equipment on the project site must have a project-specific site licence or appointment to drive or operate that vehicle or item of equipment.

The Contractor must ensure that Licenses and Operators' competency certificates are valid for the duration of their activities on site. No training of drivers or operators may be carried out on site unless authorised by a nominated project management representative.

20.4 Tyre and Rim Safety

These requirements apply to tyres and rims with a rim diameter of 60cm (24 inches) or greater. Safe Work Procedures must be in place for all tyre maintenance and servicing activities and for tyre fire emergency response.

In the event of a tyre fire, an exclusion zone of 300 metres must be established and may only be accessed by emergency services personnel who are shielded while fighting the fire.

Restricted Work Zones must be established for tyre installation, removal and handling processes.

All tyre and rim handling equipment must have fall back prevention in place prior to anyone entering the Restricted Work Zone.

No hot work (e.g. Welding or cutting) may be carried out on a rim (wheel) while the rim is fitted with a tyre – whether inflated or deflated. A periodic testing and / or inspection regime must be in place for tyres, rims (wheels), and assemblies.

All tyres and rims (wheels) must be made unserviceable when deemed unfit for service or before being sent off site for disposal. A tracking system must be in place to track the lifecycle of tyres and rims (wheels).

21. Access Road to Project Site

The contractor shall ensure that trained flagman are placed at strategic positions that may be identified along the access roads where high risk activities are being undertaken and/or at points of traffic interface.

The project access roads may not be closed without permission from a nominated project management representative.

22. Signs and Notices

The contractor must ensure that all required safety signs and notices are prominently displayed in accordance with the applicable legislation and good safety practice. Signs and notices must be in English as well as any other language(s) commonly spoken on the project site.

All symbolic signs must comply with the applicable national standards. No person may deface or damage any safety sign or notice. No person may remove or alter any safety sign or notice unless authorised to do so.

Health and Safety Specification – Alterations to the eMendi Building, PoN

23. Machinery

The contractor must ensure that all plant and equipment brought onto the site is:

- Appropriate for the type of work to be performed.
- Approved, inspected, tested, numbered and tagged (if appropriate) before being brought onto site.
- Properly maintained in accordance with the manufacturer's recommendations; and
- Placed on a register and checked at least once per month or as required by the applicable legislation.

Items of plant or equipment brought onto site by the contractor or his sub-contractors may be inspected by a nominated project management representative. Should the nominated project management representative determine that any item is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, the contractor must, on instruction from the nominated project management representative, immediately remove the item from the site and replace it with a safe and adequate substitute.

24. Barricading

All applicable legislation concerning barricading must be complied with at all times.

Each contractor required to erect barricading on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

Barricading must be erected to:

- Prevent persons from making contact with an identified hazard;
- Provide warning of the existence of a hazard;
- Prevent unauthorised access (by people, vehicles and mobile equipment) into an area where a hazard exists or where a hazardous activity is being carried out;
- Define the boundaries of a hazardous location and / or restricted area; and
- Allow a work team to perform hazardous tasks without persons unfamiliar with the hazard(s) accessing the area.

Although not limited to these situations, barricading must be erected or installed:

- Around excavations (trenches, pits, etc.);
- To protect openings and edges (to prevent persons from falling, all openings and edges associated with floors, stairs, and the open sides of buildings and structures

during the course of construction must be protected by sturdy, rigid barriers capable of withstanding a force of at least 110 kilograms applied in any direction at any point);

- To prevent access into areas where overhead work is in progress;
- To route vehicles safely through (or around) construction areas; and
- To protect members of the public who may be in the vicinity of a work or construction site (by preventing access).

In all cases, the erection of barricading must be a temporary measure. It must only remain in place until the hazard is eliminated or the potentially dangerous situation is rectified.

A barricade must present a sturdy physical barrier to entering an area. Therefore, plastic cones, post and chain systems, "danger tape" and "snow netting" will not be accepted as barricading and may only be used for the purposes of low risk demarcation.

For example, snow netting may be used for the demarcation of lay down areas.

Acceptable forms of barricading include:

- Hoarding panels (no less than one metre in height) that can be securely fastened together to form a fence line may be used. Hoarding panels may be constructed from a variety of materials (e.g. wooden board, steel sheeting, wire mesh on a steel frame, etc.)
- Wire mesh fencing (no less than one metre in height with sturdy posts spaced at intervals of no more than 3 metres) may be used in certain circumstances, e.g. Around excavations.
- Sturdy, rigid, and securely fixed (i.e. bolted, welded, clamped, etc.) metal guard rails may be used, particularly for protecting openings, holes and edges associated with floors, platforms, walkways, etc. The top rail must be positioned at a height of one metre above the working surface, and a mid-rail must be provided.
- Concrete Jersey barriers must be used for the routing of traffic and when work is being conducted in or alongside a roadway.

Regardless of the type of barricade used, the following requirements must be met:

- The installation, alteration and removal of barricades must be supervised by a competent person;
- The barricading must be uniformly and intelligently configured;
- The barricading must be stable, conspicuous and effective;
- The barricading must completely surround the work or hazardous area;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- General access requirements around the work or hazardous area (such as pedestrian walkways, operational access, or general thoroughfares) must be taken into consideration when erecting a barricade;
- The extent of the area that is barricaded must be kept to a minimum so as not to unnecessarily restrict access to other areas. If access routes to other areas are blocked by the barricade, alternative routes must be identified and signposted.
- All barricaded areas must have properly designated points of entry and exit for persons and / or vehicles. Each pedestrian access point must be fitted with a self-closing gate. A sign indicating, "DESIGNATED ACCESS POINT – AUTHORISED PERSONNEL ONLY", must be fitted to each gate;
- Additional signage providing warning of specific hazards (e.g. falling objects, electricity, etc.) Including, "NO UNAUTHORISED ENTRY", must be attached to all gates and, where required, to the barricading itself. The signage must be visible from all angles and must be large enough to be read from a distance of 10 metres;
- Barricading must be clearly visible at all times (day and night). If necessary, flashing warning lights must be used;
- Tags must be attached to the barricading displaying the name and cell phone number of the person responsible for the barricade, and specifying the reason for the barricading and the date on which it is scheduled to be removed;
- Should a person require access to a barricaded area, authorisation must be obtained from the person responsible for the erection of the barricade. The hazards that are present and the Personal Protective Equipment that must be worn within the barricaded area must be communicated to the person seeking access;
- Each barricade must be listed in a register, and each must be inspected daily to ensure that it is still intact and that its positioning is still effective;
- All barricades must be properly maintained and repaired as required;
- When the work has been completed and the hazard has been eliminated, all barricading must be removed without delay. A barricade may not be left in place if no hazard exists;
- Before a barricade is removed (allowing general access), the area must be inspected by the person responsible for the work that was carried out, to ensure that the area is once again safe. If applicable, the person accepting the area back for general use shall do so on completion of his own safety inspection;
- Authorisation to remove (or modify) a barricade may only be granted by the person responsible for the erection of the barricade.

25. Excavations

Excavation work or activities which are required as part of the scope shall be undertaken in accordance with the requirements of this Specification as well as all applicable legislation concerning excavation work.

The contractor will be required to develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard. All excavation work must be properly planned. Site-specific conditions and hazards must be considered, including traffic, overhead and buried utilities, proximity to nearby structures, soil properties, presence of surface and / or ground water, position of the water table, and weather conditions.

Excavation work may only be carried out under the personal supervision of a competent Excavation Supervisor who has been appointed in writing.

Before any excavation work is carried out, a Permit to Work authorising the activities will be issued. Similarly, no person may enter an excavation unless a Permit to Work has been issued providing authorisation for specific tasks to be carried out within the excavation.

Before issuing a Permit to Work for excavation works, the Authorised Person (i.e. Permit issuer) must verify that:

- A detailed Risk Assessment has been conducted for the work to be performed;
- A Safe Work Procedure is in place; and
- No buried services are present in the area where the excavation works are to be carried out.

As a minimum, the Risk Assessment must consider hazards and risks associated with:

- A person being trapped or buried as a result of an excavation collapsing;
- A person being struck by an object falling into an excavation;
- A person falling into an excavation;
- A person being exposed to a hazardous atmosphere within an excavation (i.e. An oxygen deficiency, explosive or flammable gases, and / or harmful concentrations of a contaminant);
- Contact with belowground services; and
- Mobile equipment and / or light vehicle movement in proximity to an excavation.

Health and Safety Specification – Alterations to the eMendi Building, PoN

If buried services are identified (or are suspected to be present) then the safe work procedure must be altered if necessary to avoid these services. Machinery may not be used to excavate material lying within one metre of any belowground service (i.e. Cable or pipe).

Excavation work that is carried out must be limited to what is described in the Permit to Work. All controls, precautions and restrictions identified in the Permit to Work (and Risk Assessment) must be strictly observed and fully implemented. The Excavation Supervisor must discuss these controls, precautions and restrictions with all persons who will be carrying out the work. All excavation work must be carried out by persons who have been trained and are competent to perform the work.

All material removed from an excavation (spoil) must be placed no closer than three times the depth of the excavation away from the edges of the excavation. The profile of this spoil must be flattened out to prevent the material from being washed back into the excavation by rain water.

Scaling must be carried out on the sides of all excavations to remove loose material.

Tools, equipment and materials may not be placed within two metres of the edges of an excavation. Alternatively, a suitable retaining device may be used to prevent tools, equipment and materials from falling, rolling or sliding into an excavation.

To prevent persons and / or mobile equipment from accidentally falling into an excavation and to prevent unauthorised entry into an excavation, rigid barricading must be erected around every excavation that is deeper than 500mm. Warning signage must be prominently displayed and, if necessary, flashing warning lights must be used at night.

The barricading must remain in place for as long as the hazard (i.e. the excavation) exists. Sections of barricading around an excavation may only be removed (and then only temporarily) to enable excavation work to continue.

If equipment is used to prevent water from entering an excavation or to prevent water accumulation within an excavation, then the equipment must be monitored by a competent person to ensure that it remains operational and effective.

A high standard of housekeeping must be maintained in and around all excavations. Tools that are not in use, and materials that are no longer required, must be removed from an

excavation to prevent these items from causing injury or being lost (buried). A register of all excavations must be compiled and maintained.

An excavation must be inspected for collapses, signs of instability, failures or signs of overloading of protective systems and equipment, hazardous atmospheres, water accumulation, and any other hazardous condition that may arise.

If a hazardous condition is identified, no person may enter the excavation until suitable corrective actions have been taken and / or suitable controls have been put in place to either eliminate the hazard or reduce the risks to acceptable levels. If a hazardous condition is identified while work is being carried out in an excavation, then all persons in the excavation must be evacuated to safety without delay.

A record of each inspection (including date, time, findings, and signature of the Excavation Supervisor who carried out the inspection) must be captured in the excavations register. Each inspection record must include a declaration as to whether the excavation is safe to work in or not. All excavations must be monitored closely throughout each work day (or shift) by the Excavation Supervisor.

Excavations must be backfilled as soon as possible, and the material used (usually the original material) must be properly compacted.

26. Cranes and Lifting Equipment

All applicable legislation concerning cranes and lifting equipment must be complied with at all times. Each contractor carrying out lifting operations on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this Specification.

26.1 Design, Manufacturing and Safety Features

Before any crane or hoist is operated on the project premises (i.e. New to site), it must be formally accepted (authorised) by the nominated project management representative. The acceptance process must be based on an inspection and risk assessment, and must take the crane's or hoist's safety features and cabin ergonomics (if applicable) into account. The same process must be followed before any crane or hoist is returned to service following any modification or repair.

Note: An Equipment Profile (dossier) must be compiled for each crane.

Health and Safety Specification – Alterations to the eMendi Building, PoN

As a minimum, the design and manufacturing of each crane or hoist used on the project premises must comply with the requirements of the relevant ISO standard. The Safe Working Load (SWL) must be clearly indicated on each crane, hoist, and item of lifting equipment.

If the safe working load (rated capacity) of a crane varies with the conditions of use (i.e. varies with the angle of the boom and the boom length) then the manufacturer's load chart(s) indicating the crane's rated capacity at various boom lengths and angles must be available in the crane cabin. If the crane has a single load chart, it must be displayed in a position visible to the crane operator. If the crane has numerous load charts, they must be easily accessible to the operator.

For each crane or hoist, the manufacturer's operating manual must be available to the operator.

The load chart(s) and operating manual for a crane or hoist must be in a language understood by the operator.

All lifting hooks must be fitted with a safety latch to prevent the load from accidentally detaching.

Each crane or hoist must be fitted with a load cell (with the mass of the load displayed in the visual range of the operator) and a load limiting device to prevent the crane or hoist from being operated outside of its safe working limits.

Where practicable, each crane must be equipped with an upper hoist limit switch (or anti two-block device) to prevent the hook block from colliding with the drum, and a lower hoist limit switch to prevent the rope on the drum from unwinding completely. These systems must provide both a visual and an audible alarm to the operator.

Under no circumstances may any limit switch or warning device be bypassed, disconnected, or adjusted in order to lift a load higher (or to lower a load lower) than the respective switches allow. Limit switches MAY NOT be adjusted to stop the hoist at a particular height under normal operating conditions – these are safety devices, and as such, should not be used as operating tools.

Under no circumstances may a load limiting device be bypassed or disconnected in order to lift a load that exceeds the rated capacity of the crane. Load limiting devices MAY NOT be used to “measure” or “test” the mass of a load.

For a vehicle-mounted crane, the operator control station must be located in a position protected from swinging loads and from the crane jib.

A fall protection system must be provided for the assembly, dismantling, operation, maintenance and inspection of any crane where falling from height is identified as a hazard.

Each crane should be fitted with a stability monitoring device to prevent it from toppling over.

Only items of lifting equipment (tackle) that have been designed and manufactured with adequate factors of safety may be used on site. The following minimum factors of safety (with respect to the Safe Working Load) must be met:

- Ten (10) for natural-fibre ropes;
- Six (6) for synthetic-fibre ropes or woven webbing;
- Six (6) for steel-wire ropes;
- Five (5) for steel chains; and
- Four (4) for high-tensile or alloy steel chains.

26.2 Planning and Risk Assessment

For each critical lift that must be carried out on site, a documented and detailed lift plan and risk assessment must be prepared to address all associated hazards.

Only suitably qualified, competent and experienced persons (lift planners) may evaluate critical lifts and prepare lift plans.

The lifting supervisor, crane operators, riggers and spotters responsible for carrying out a critical lift must have input into the lift plan and risk assessment and must be consulted before these documents are finalised.

All lift planners, lifting supervisors, crane operators, riggers and spotters (safety observers) must be appointed in writing. No critical lift may commence until the lift plan and risk assessment have been authorised by the nominated project management representative and a Permit to Work has been issued.

Health and Safety Specification – Alterations to the eMendi Building, PoN

Critical lifts include, but not limited to:

- All multiple (including dual) crane lifts;
- Lifts where the operational arcs of two or more cranes can overlap;
- Lifts over operating facilities where this may endanger personnel;
- Lifts over or adjacent to power lines;
- Any lift carried out in close proximity to equipment or a vessel containing a flammable or toxic substance;
- Lifts where the centre of gravity of the load could change;
- Any lift where the total weight on the hook exceeds 20 tonnes;
- Lifts near the rated capacity of the crane (i.e. Exceeding 85% of the rated capacity at the working radius);
- Any lift when the wind speed (including gusting) exceeds 30 kilometres per hour;
- Lifts involving a man basket (safety cage);
- Lifts to and from water;
- Lifts requiring specialised equipment or involving complicated lifting or rigging configurations;
- Lifts requiring non-standard rigging or slinging techniques;
- Lifts involving the simultaneous use of more than one hoist on the same crane; and
- Any other lift deemed to be critical by the nominated project management representative, or assessed as critical during a risk assessment.

The lift plan for a critical lift must include as a minimum:

- General Information – crane manufacturer, crane model, items to be lifted, and reason for lift;
- Lift Data – load weight, lifting block and hook weight, hoist rope weight, rigging weight, total weight, height of lift, radius of lift, surface area of load, and centre of gravity of load;
- Rigging Data – sling material (chain, wire rope, or synthetic), sling diameter, sling length, sling configuration, sling capacity, hook type, shackle size and capacity;
- Lift Computation – boom length, jib length, radius of lift, crane capacity as configured, size of outrigger footplates, and wind speed;

- Proximity to Power Lines and Process Areas – mobile cranes working in proximity to energised power lines must operate under a Permit to Work, which must define exclusion zones and spotter duties;
- Local Hazards and Controls – including the route for the crane, ground stability, proximity of people or equipment, and agreed communication method; and
- Diagrams (sketches) – a rigging diagram, and a crane set-up diagram illustrating the positioning of the crane(s) in relation to surrounding structures and the initial and final positions of the load (including crane boom movement).

Lifts that are not subject to detailed lift plans (i.e. Lifts that are not considered critical) must nevertheless be subject to a risk assessment, and be properly planned and executed.

The use of a crane-suspended man basket (safety cage) may only be considered when all other avenues to safely perform the work (e.g. Scaffolding, mobile elevating work platform, etc.) have been exhausted.

Cranes used to lift or suspend personnel must be approved as suitable for this purpose. If a crane must be operated in proximity to energised overhead power lines (or any other exposed electrical conductors) then minimum clearance distances (specified by the electrical power utility or the nominated project management representative) must be observed. Whenever possible, power lines must be de-energised and isolated while lifting operations are carried out.

26.3 Operation

At the start of every day or shift, the operator of a crane or hoist must carry out a pre-operation safety check using a prescribed checklist.

As a minimum, the pre-operation safety check must include:

- A thorough visual inspection of all wire ropes, chains, hooks and safety latches, hook blocks, sheaves, hydraulic hoses, electrical cables, and the general condition of the crane or hoist;
- Checks to confirm the serviceability of the operating controls;
- Tests to confirm the correct operation of all limit switches, emergency shutdowns, load indicators, alarms and other safety devices; and
- A thorough visual inspection of all lifting equipment (tackle) to be used.

Health and Safety Specification – Alterations to the eMendi Building, PoN

The operator must:

- Check for any loose or missing parts;
- Make sure that the wire rope (or chain) of the hoist is properly seated in its drum and sheave grooves without any slack or overlapping;
- Operate each control to make sure it functions properly, releases immediately, and does not stick. Each control must be labelled to indicate its function;
- Listen for any unusual mechanical noises and look for any jerky movements while operating the crane and / or hoist several feet in each direction that it travels;
- Check the functionality of the upper and lower hoist limit switches (if applicable) by slowly raising and then lowering the block to trip the respective switches;
- Check all hooks. Hooks must not be cracked, stretched, bent or twisted. Each hook must have a safety latch that automatically closes the throat of the hook. If the latch is bent, has a broken spring, or is otherwise damaged, it must be repaired before use. Hooks must rotate freely in the block assembly without any “grinding” felt or heard;
- Check the wire rope by lowering the block to its lowest level and looking for the following signs of damage:
 - Reduced rope diameter. This may indicate that the rope has been stretched, has lost its inner core support, or has worn outside wires;
 - Broken wire strands (any number);
 - Kinked, crushed, cut, or “bird caged” wiring, or wiring with heat damage.
- Check all chains for damage including wear at contact points, cracks, or distorted links (bent, twisted or stretched). All mechanical coupling links must be inspected to ensure that the linking pins are secure and in good condition. The capacity rating of each chain must be adequate for the load and the attachment method;
- Check the condition and capacity of wire rope and synthetic web slings. Capacity ratings must be legible on the manufacturer’s label. The capacity of the sling being used must be adequate for the load and the attachment method. A sling must be replaced immediately if it is excessively worn.

The operator must report any fault, defect or damage to his supervisor immediately. A crane or hoist must not be operated if any safety device is out of order or defective, or if any rope, chain, hook or other component is worn or damaged.

Completed checklists must be made available (on request) for inspection by the nominated project management representative. Wherever possible, these checklists must be kept with the crane or hoist.

All lifting operations must be supervised by suitably qualified, competent and experienced supervisors.

An effective method of communication between the crane operator and those assisting with the lift must be in place. This must be documented and approved by the nominated project management representative.

Documented Safe Work Procedures must be in place to ensure the following:

- Access into an area where lifting operations are being carried out must be restricted. Such an area (i.e. where there is a risk of a load falling and striking a person) must be barricaded and only authorised persons may enter (i.e. those directly involved with the lifting operations). Warning signage must be conspicuously displayed;
- Where a load is being moved from one location to another (i.e. The lifting operations are not being carried out in a discrete area that can be barricaded), measures must be taken to ensure that all persons in the path of the suspended load are made aware of the approaching hazard and that they move, and remain, well clear of it. All persons potentially affected must be given warning before the load is lifted;
- A lift must be directed and controlled by a single person (a suitably qualified, competent and experienced rigger);
- Dedicated spotters must be in place during lifting operations to observe and provide warning (if necessary) to prevent incidents and ensure that safety protocols are adhered to;
- Before commencing with a lift, it must be verified that the load being lifted is both within the rated capacity of the crane (or hoist) and lifting equipment and within the limits set out in the lift plan and / or risk assessment. The rated load capacities of the crane, hoist, rope, chains, slings or other components may never be exceeded;
- Only certified lifting equipment (tackle) may be used to lift a load;
- No equipment (tackle) that has been used for towing may be used for lifting operations;
- Only an approved material box (skip box) may be used for lifting loose items or materials;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Before commencing with a lift, it must be verified that no safety devices (including load limiting devices) have been bypassed, overridden or disconnected;
- To prevent the load from swinging as it is lifted, the hoist must be centred over the load (when using slings or chains) or positioned directly above the lifting point of the load;
- Hoisting ropes must be kept vertical. No side loading of a crane boom is permitted (i.e. A crane may not be used to make a side pull);
- Two full wraps of rope must remain on the hoisting drum at all times. If a lower hoist limit switch has been fitted, and it is working correctly, it should not be possible to lower the block below the point where less than two full wraps of rope are on the drum;
- Before commencing with a lift, it must be verified that all rigging connections are correct and secure. Slings, chains, or other lifting devices must be fully and securely seated in the saddle of the hook;
- Slack must be removed from the slings, chains and / or hoisting ropes before lifting the load. It must be ensured that multiple lines are not twisted around each other and that the hoist rope is not wrapped around the load;
- To ensure that the load is properly secured and balanced, it must initially only be lifted a few centimetres. Slings must be repositioned if required;
- Before moving a suspended load, it must be lifted high enough to clear all obstructions. The load must only be lifted to the height necessary to clear obstructions, and no higher;
- Directional movement must be made smoothly and deliberately (there must be no sudden acceleration or deceleration of the moving load). Abrupt, jerky movements of the load in any direction must be avoided;
- Tag lines must be used in situations where a load needs to be steadied or guided while suspended;
- When using tag lines to steady or guide a suspended load that is being moved using a mobile crane, personnel on foot must remain in sight of and in communication with the crane operator at all times, must never walk between the crane and the load, and must remain clear of the load and the crane at all times (at least 5 metres). The load must be moved at a slow walking speed;
- A suspended load must be monitored closely at all times;

- If a crane operator's view of a suspended load is unavoidably obscured (completely or partially), or if a suspended load is unavoidably obscuring (completely or partially) a crane operator's view, then suitably positioned spotters must be in place to provide guidance to the crane operator;
- A load MAY NOT be moved over, or be suspended above, any person or any occupied building. No person may walk beneath, or position himself below, a suspended load;
- No person may pass or work beneath the boom of a crane;
- No person may be positioned between a suspended load and a solid object where there is a risk of being crushed should the load swing;
- No person may be positioned within the radius of the boom of a crane unless directly involved with the lift;
- Under no circumstances may any person ride on a crane's hook or on a load;
- No load may be left suspended unless the operator is at the controls and is monitoring the load. In such a situation, the load must be kept as close as possible to the ground or floor to minimise the possibility of injury should the load drop;
- The controls of a crane or hoist may never be left unattended while a load is suspended. If it becomes necessary to leave the controls, the operator must lower the load to the ground or floor;
- With the exception of pick-up and carry operations, no lifting may be carried out using a mobile crane unless the outriggers have been deployed and are locked in position;
- Load spreaders or packing under the outriggers must be used irrespective of the underfoot conditions;
- Before a mobile crane is moved into position to carry out a lift, the area must be inspected by a suitably qualified person who must verify that the underfoot conditions are satisfactory;
- When using a mobile crane, slewing to test the effectiveness of the outriggers must be carried out prior to commencing with a lift;
- Slew pins must be securely in place while a mobile crane is travelling;
- Unauthorised use of a crane or hoist must be prevented by removing the keys, locking the cabin, isolating the controls, etc. When lifting operations have been completed;
- When not in use, lifting equipment must be stored off the ground and must be protected from the elements (rain, harsh sunlight, etc.) And contamination (dust, solvents and other chemicals) in order to prevent damage and / or deterioration.

A crane or hoist or an item of lifting equipment may only be used for the purposes for which it was designed.

26.4 Inspection, Testing and Maintenance

Any crane or hoist brought onto the project premises must have a current test certificate and record of inspection as well as a suitable checklist (derived from the crane or hoist manufacturer's inspection recommendations) for use by the operator(s) when carrying out pre-operation safety checks.

An Equipment Profile (dossier) must be compiled for each crane. A register of all cranes, hoists and lifting equipment (tackle) brought onto the project premises must be compiled and maintained.

Each crane, hoist and item of lifting equipment must have a unique identification code or number, which must be referenced in the register.

For each crane, hoist and item of lifting equipment, the following documentation must be kept on site and must be made available (on request) to the nominated project management representative for inspection:

- Test records and certificates;
- Inspection records;
- Maintenance records; and
- Details of any modifications or repairs made.

All cranes, hoists and lifting equipment must be inspected, tested and confirmed fit for purpose (i.e. Safe for use):

- Before being operated or put into service;
- Before being returned to service following any repair or modification; and
- Periodically as follows (unless local regulations require examination more frequently):
 - Each crane or hoist (including all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices that form an integral part of the crane or hoist) must be thoroughly examined by a competent, experienced and appointed person every 6 months;
 - Each crane or hoist must be subjected to an annual performance test (i.e. A load test) by a competent, experienced and appointed person; and
 - All lifting equipment (tackle) must be thoroughly inspected by a competent, experienced and appointed person every 3 months.

- The system of inspection and testing must provide verification that each crane or hoist is able to function to its design specifications, and must verify the integrity of:
 - Mechanical and electrical components;
 - Controls;
 - Cables and all lifting attachments;
 - Structural components including boom, hoist, brakes, wheels, hooks, baskets, out-riggers, hook-blocks and rails; and
 - Load limiting devices, hoist limit switches, alarms or warning devices, and other safety devices and control systems (including independent fail-safe braking systems, devices to stop the crane or hoist such as a dead man's switch, and emergency shut-off switches).

A preventative maintenance system must be in place to ensure that all cranes and hoists are maintained in a safe and serviceable condition.

For any crane or hoist, all inspections, testing, maintenance and repairs must, as a minimum, be carried out in compliance with the requirements and specifications of the manufacturer as well as all applicable regulatory requirements (in terms of both the frequency of inspection, testing and maintenance, and the physical condition of the crane or hoist).

Repairs to a crane or hoist may only be carried out by competent persons. After repairs have been made, the crane or hoist must be tested and recertified fit for purpose (unless the repairs did not affect the integrity of the lifting mechanism).

Any modification to a crane or hoist must be subject to the approval of the original equipment manufacturer and a rigorous change management process. Each item of lifting equipment (tackle) must be tagged following each quarterly (3-monthly) inspection. Details of these inspections must be recorded in the lifting equipment register which must be made available to the nominated project management representative on request.

Health and Safety Specification – Alterations to the eMendi Building, PoN

The following colour coding system must be used for the tagging of all lifting equipment:

Table 27-1 colour coding system for lifting equipment

Quarter	Tag colour
January – march	Blue
April – June	Red
July – September	Green
October – December	Yellow

The tag placed on an item of lifting equipment must be traceable to an entry in the lifting equipment register where the following information concerning the inspection of that item of equipment must be recorded:

- Item description;
- Unique item identification code or number;
- Item owner;
- Item location;
- Date of inspection;
- Name and signature of competent person who carried out the inspection; and
- Any comments concerning the inspection.

Any item of lifting equipment that is found to be damaged or defective must be removed from service (and tagged, “out of service”) immediately and must then either be repaired and recertified (if possible) or destroyed to prevent further use. Similarly, any lifting equipment that is known (or is suspected) to have been overloaded must be removed from service immediately and destroyed to prevent further use.

If an item of lifting equipment is removed from service or destroyed (scrapped), this must be indicated in the lifting equipment register. Any item of lifting equipment without a tag or with an out-of-date inspection may not be used.

26.5 Training and Competency

Only suitably trained, competent and experienced persons who have been authorised in writing by the contractor’s project manager are permitted to:

- Evaluate and plan critical lifts;
- Supervise lifting operations;

- Operate cranes and hoists;
- Use lifting equipment, and rig (sling) loads;
- Provide signals for controlling lifts; and
- Inspect, maintain or test cranes, hoists and lifting equipment.

Each operator must meet the competency requirements for the particular class or type of crane or hoist to be operated. Depending on the project location and applicable legislation, operators may need to hold a certificate of competency issued by a recognised training institution.

27. Working at Heights

All applicable legislation concerning work performed from an elevated position must be complied with at all times. Fall prevention or fall protection measures must be in place whenever the potential exists for a person to fall.

27.1.1 Work Platforms

Wherever practical, a safe working area must be provided in the form of a work platform with fixed edge protection. This may include:

- a permanent work platform or walkway (i.e. A fixed steel structure);
- a fixed or mobile scaffold; or
- an elevating work platform such as a scissor lift, man lift, boom lift or cherry picker.

All work platforms and walkways elevated one metre or more must have complete floors, and edge protection must be in place in the form of toe boards and sturdy guard rails properly secured (i.e. bolted, welded, clamped, etc.) to prevent accidental displacement. Safe means of access and egress must be provided.

Guard rails must be capable of withstanding a force of at least 100 kilograms applied in any direction at any point. The top rail must be positioned at a height of one metre above the working surface, and a mid-rail must be provided.

27.1.2 Floor openings, holes and edges

Any opening or hole (temporary or permanent) in a floor, platform or walkway must be protected by sturdy guard rails (removable if required) or a cover to prevent a person from stepping into or falling through the gap. Covers must be strong enough to support the loads that will be imposed on them and must be secured to prevent accidental displacement.

Ladder way floor openings and platforms must be protected by guard rails of standard construction and toe boards must be fitted along all edges, except at the entrance to an opening where a gate must be installed and so arranged that a person cannot walk directly into the opening.

When open, hatchways and floor openings must be protected by removable guard rails and toe boards of standard construction. When these openings are not in use, covers of adequate strength must be put in place and must be secured to prevent accidental displacement.

Where doors or gates open directly onto a stairway, a platform must be provided and the swing of the door or gate must not reduce the effective width of the platform to less than 500mm.

27.1.3 Fall Protection

Whenever there is a risk of falling onto dangerous equipment or machinery, or whenever work must be carried out near an opening through which (or an edge over which) a person could fall, no work may commence unless:

- A fall protection (and rescue) plan is in place (prepared by a competent person, approved by the nominated project management representative, and implemented by the contractor);
- A detailed task-specific risk assessment has been carried out;
- A safe work procedure is in place for the task to be performed;
- A permit to work has been obtained; and
- Each person has been provided with suitable fall protection equipment.

Fall protection equipment (either fall restraint or fall arrest equipment) must be used at all times whilst the work is being carried out. To prevent persons from falling, fall restraint equipment must be used whenever work must be carried out within an opening through which (or an edge over which) a person could fall.

Fall arrest equipment must be used whenever the potential exists for a person to fall. A person has been provided with suitable fall protection equipment if he is secured by means of an approved full body harness (well fitted) with two shock absorbing lanyards or an inertia reel (when fall arrest equipment is required) or two short restraining lanyards (when fall restraint equipment is required), double or triple action snap hooks (or karabiner type rings), and secure anchorage points (a person's lanyard may be attached either directly to an anchorage point or indirectly through the use of a variety of systems that incorporate a lifeline).

A dual lanyard system must be used to ensure that at least one connection point is maintained at all times.

Note: When selecting fall arrest equipment, care must be taken to ensure that the potential fall distance is greater than the height of the person plus the length of the lanyard with its shock absorber deployed (taking the height of attachment into account).

Anchorage points must, where practical, be above the head of the person, and must ensure that in the event of a fall the person will neither swing nor touch the ground. All permanent anchorage points must be designed and approved by a professional structural engineer.

All anchorage points must be periodically inspected and tested by a competent person to ensure that they are secure and can support the required load. A system must be in place to identify anchorage points as authorised for use. Temporary anchorage points (and lifeline systems) may only be used if a competent person has certified them safe to use.

If an elevating work platform is used, such equipment must be fitted with a fixed anchorage point for the attachment of fall protection equipment.

The use of fall protection (fall restraint or fall arrest) systems must be avoided wherever and whenever possible through design, the installation of physical barriers that protect persons from falling, and employing alternative methods of working. Only if physical barriers protecting against free falls cannot be installed must fall protection equipment be used.

Fall protection (fall restraint or fall arrest) systems are items of personal protective equipment and, if required, must be purchased, installed and provided to employees. Prior to commencing with any work at height, an assessment must be conducted to determine if the work requires the use of fall protection equipment, and if so, which fall protection system is the most appropriate for the work.

There must be a system for ensuring that fall protection equipment is:

- Tested and certified for use;
- Inspected by the user before use; and
- Destroyed following a fall or where inspection has shown evidence of excessive wear or mechanical malfunction.

All persons that are required to work at height (in order to carry out routine or non-routine tasks) must first be trained and certified competent to do so. Furthermore, each person must be in possession of a valid medical certificate of fitness specifically indicating that the person is fit to work at height.

All persons required to use personal fall protection equipment must be trained and certified competent in the correct selection, use, maintenance and inspection of such equipment.

All fall protection equipment must be thoroughly inspected visually prior to use and on a monthly basis thereafter by competent persons appointed in writing and each item of equipment must be tagged to show when it was last inspected. All inspections must be recorded in a register. On finding defective or damaged equipment, appropriate action must be taken by the competent person (i.e. the destruction of the equipment to prevent further use).

Persons making use of personal fall protection equipment must do so in strict accordance with the instructions or requirements specified by the manufacturer or supplier of the equipment or system. Specific pre-use inspection, maintenance and fitting protocols must

be established in accordance with the manufacturer's requirements or guidelines and these protocols must be followed by all users of the fall protection equipment.

Solvents may not be used to clean fall protection equipment. Only manufacturer-approved cleaning solutions may be used.

No person required to use personal fall protection equipment may work in isolation (a minimum of two persons working together is required). Competent supervision must be in place at all times for all work carried out at height. Supervisors must be appointed in writing.

Emergency response (rescue) procedures for the rapid retrieval of suspended persons in the event of a fall from height must be prepared and tested.

Note: Even though there is no risk of free fall, fall protection equipment may be required in situations where there is a risk of falling, slipping or sliding down a slope of more than 45 degrees.

Note: The maximum service life of fall protection equipment manufactured of synthetic fibre shall be 5 years from the date of first use and / or manufacture unless otherwise specified by the manufacturer.

A person may climb or descend a ladder without fall protection provided that he is able to use both hands and legs to do so, faces the ladder, and uses one step at a time. The ladder must be tied off or supported at its base.

Prior to any roof work being performed, or prior to persons accessing a roof, a structural engineer must verify that the roof is of sound construction and that it is capable of supporting the weight of the persons as well as any equipment that may be required. Should the engineer's findings be to the contrary, alternative methods of performing the work must be found. Particular care must be taken when work is carried out on an asbestos cement roof or a fibreglass roof.

27.1.4 Risk Assessment and Permitting

The following documentation is required for any work where fall protection is required (i.e. where a risk of falling exists):

- A Fall Protection (and Rescue) Plan;
- A Risk Assessment for the task to be performed;
- A Safe Work Procedure for the task to be performed; and
- A Permit to Work.

As part of the Risk Assessment and planning processes, the following must be considered, but not limited to:

- Hazards relating to accessing the location at height;
- The nature of the work location;
- The nature of the work activities to be undertaken at height;
- Environmental and weather conditions;

- The presence of nearby persons who may be at risk due to falling objects (potentially) or who's activities may be affected by the work being performed at height;
- The selection of fall protection equipment (considering fall clearances) and / or access equipment;
- The selection of anchorage points;
- The load ratings of access platforms, work areas, anchorage points, etc.;
- The condition of supporting structures such as roofs;
- The need for the work to be carried out by multiple persons and the means of communication;
- A rescue plan that addresses retrieval or rescue contingencies;
- Working above open furnaces or molten metal;
- Exposure to heat sources;
- The use of a mobile elevating work platform, man basket, suspended scaffold or boatswain's chair; and
- Any other conditions that may affect the safe execution of the task.

27.1.5 Elevating Work Platforms

Before hiring or purchasing an elevating work platform (e.g. a scissor lift, man lift, boom lift, cherry picker or similar equipment), the certification of the equipment (with regard to suitability of design and construction) must be verified.

Before using an elevating work platform, it must be verified that the equipment is in good working order and has been serviced regularly. The service record and instruction manual must be kept on site. A system must be in place to ensure that the equipment is maintained and inspected as required by the manufacturer and / or local regulations.

Persons (operators) must be formally trained through an accredited training provider and certified competent in the operation of the equipment. Once a person has been issued with the necessary licence or qualification as required under local regulations, he must be appointed in writing to operate the equipment.

Before using an elevating work platform, the operator must inspect the equipment and a pre-use checklist must be completed. The operator of an elevating work platform must be in the "basket" unless it can be demonstrated to the satisfaction of the nominated project management representative that this is not possible or practical.

Every person in the "basket" must keep his feet on the floor at all times. Every person in the "basket" must be secured at all times by means of personal fall protection equipment attached to an approved anchorage point, and systems must be in place to prevent tools and equipment from falling.

A mobile elevating work platform must not be driven unless the "basket" has been lowered and secured in a stable position. Every elevating work platform that is used must be equipped with a dead man's switch or foot pedal at the operator controls. An elevating work platform must only be operated on a firm surface with the outriggers extended (where fitted).

Health and Safety Specification – Alterations to the eMendi Building, PoN

An elevating work platform must not be operated on a grade or slope beyond the capability of the machine (every mobile elevating work platform that is used must be fitted with an inclinometer which sounds an audible alarm before the maximum safe incline has been reached).

The area beneath the “basket” and the boom must be barricaded. A second competent operator of the mobile elevated work platform to be in place on the ground level – to ensure that the elevated work platform could be lowered in case of an emergency. A spotter must be used at all times when moving a mobile elevating work platform and when the “basket” is in an elevated position.

27.1.6 Man Baskets, Suspended Scaffolds and Boatswain’s Chairs

The use of a man basket, suspended scaffold or a boatswain's chair may only be considered when all other avenues to safely perform the work (e.g. ladder, scaffolding, mobile elevating work platform, etc.) have been exhausted. Authorisation to use a man basket, suspended scaffold or a boatswain’s chair must be obtained from the nominated project management representative. If permission is granted, the use of such equipment must be in strict compliance with all applicable legislation.

Each person working from a man basket, suspended scaffold or a boatswain’s chair must be in possession of a valid medical certificate of fitness and must be trained (and assessed competent) in the Safe Work Procedures pertaining to the use of the equipment, as well as the Fall Protection Plan.

Each person working from within a man basket or suspended scaffold or from a boatswain’s chair must wear personal fall protection equipment at all times (i.e. an approved full body harness connected by means of a shock absorbing lanyard to an anchorage point or lifeline that does not form part of the basket or chair).

If suspended using a crane, the man basket, suspended scaffold or boatswain’s chair must be visible to the crane operator at all times. A suitable means of communication must be in place to ensure that the suspended person(s) are able to communicate with the crane operator and personnel on the ground.

The crane operator must remain at the controls at all times while the man basket, suspended scaffold or boatswain’s chair is occupied. Where feasible (and if it is safe to do so), tag lines must be used to stabilise the man basket, suspended scaffold or boatswain’s chair.

A man basket or suspended scaffold (including the suspension system) must be designed by a qualified engineer. Only an approved and certified man basket or suspended scaffold from a Regulatory Body can be used. Regulations require approval by an authority or certification to a national or international standard. The manufacturer’s procedures and conditions for use must be strictly complied with at all times.

Each man basket or suspended scaffold must be fitted with an information plate indicating the maximum weight and number of persons that may be lifted. Copies of the welding x-rays and engineering drawings must be kept on site.

Any work involving the use of a man basket, suspended scaffold or boatswain's chair must be carried out under the supervision of a competent person who has been appointed in writing.

A man basket, suspended scaffold or boatswain's chair must be thoroughly inspected (examined for damage) by a competent person prior to use (every time the equipment is used) and the results of each inspection must be recorded in a register. The crane or hoist as well as all lifting equipment (tackle) that is used to suspend the man basket, suspended scaffold or boatswain's chair must be tested and inspected as stipulated according to applicable Legislation.

All suspended scaffold erectors, operators and inspectors must be appointed in writing and proof of competency must be provided.

Persons carrying out welding or flame cutting work from within a man basket or suspended scaffold or from a boatswain's chair must take precautions to ensure that they do not accidentally cut or burn through the cables or wire ropes that are suspending them.

28. Scaffolding

28.1.1 Training, Competency and Supervision

Scaffolding may only be erected, maintained, altered or dismantled under the strict personal supervision of a competent Scaffolding Supervisor (or Scaffolding Inspector) who has been appointed in writing.

It is the Scaffolding Supervisor's responsibility to ensure that all persons carrying out such work are suitably trained and experienced. A certificate of competency issued by a reputable (i.e. accredited and approved) training provider must be produced for each Scaffolding Supervisor and each Scaffolding Erector and Inspector.

28.1.2 Erection and Dismantling of Scaffolding

Only approved scaffolding components may be used to erect a scaffold. Scaffolding must be erected, modified and used in accordance with the manufacturer's guidelines or recommendations, and in strict compliance with all applicable legislation and standards.

A free-standing scaffold must not exceed a height of three times the smallest dimension of its base. Scaffolds with a height to base width ratio of more than 3:1 must be restrained from tipping over by guying, tying, or bracing. Guy wires and ties prevent scaffolding from tipping away from the building or structure, and braces are rigid supports that prevent the scaffolding from tipping into the building or structure.

Scaffolding must be secured to the structure every 6 metres vertically and every 9 metres horizontally (as a minimum). Adequate underpinning, sills or footplates must be provided for scaffolds erected on filled or otherwise soft ground (including sand or gravel).

If the scaffolding is to be load bearing (i.e. other than normal access and workplace storage) then full calculations and a design must be prepared and authorised in writing by a structural engineer. The load limits specified by the scaffolding manufacturer may not be exceeded under any circumstances.

Scaffolds must be plumb and level at all times. All scaffolding components must be in good condition (i.e. undamaged and free of corrosion). All scaffolding components must be properly connected or secured and scaffolding must be effectively braced (diagonal bracing).

Each person erecting, maintaining, altering or dismantling scaffolding must use fall protection at all times (i.e. a full body safety harness with two shock absorbing lanyards fitted with scaffold hooks). The work must be planned to enable every Scaffolding Erector to be securely anchored at all times. A suitable lanyard length (not exceeding 2 metres) must be selected taking the potential fall distance and height of attachment (height of anchorage point) into account. If the lanyard is too long or the anchorage point is too low, the person may hit the ground, a platform, or objects below him before the lanyard is able to break his fall.

The area around the base of a scaffold must be barricaded to prevent unauthorised access into the work area. When scaffolding is erected or dismantled on a level, platform, or floor lying above ground level and the potential exists for components to fall to levels below the level on which the scaffolding is positioned, then the area directly below the scaffolding on each of those levels must also be barricaded. Appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

Hoists, lifts and approved material baskets must be used (where available) to lift scaffolding components to elevated positions.

No scaffolding components, tools, or any other material may be dropped from height or thrown from one level to another. Components, tools and materials must be lowered or lifted in a controlled manner. Chutes may be considered for use.

Each tool must be secured to the wrist, harness or structure by means of a lanyard. A tool bag (around the waist or over the shoulder) may be used for carrying tools up and down a scaffold structure. Tools or equipment may not be carried by hand up or down a structure, as both hands must be used for climbing. If necessary, a rope must be used for lifting or lowering tools or equipment.

While a scaffold is being erected or dismantled, no scaffolding components may be stacked on the scaffold structure unless it has been designed for that purpose. Any loading of a scaffold structure must be authorised in writing by a structural engineer.

For special scaffolding, a design must be prepared by the appointed Scaffolding Supervisor and this design must be authorised in writing by a structural engineer before the scaffolding is erected. Scaffolding may not stand on steel grating unless the grating is adequately supported from below. Scaffolding must rather stand on the structure that supports the grating.

Empty drums, crates or bricks may not be used to prop up, support or anchor scaffolding. Before scaffolding is erected in close proximity to an electrical installation or live conductors, an electrical engineer (employed by Project or the client) must inspect the area and determine whether or not the scaffolding must be earthed. Should the scaffolding require earthing, this must be done as soon as possible while the scaffolding is being erected.

Scaffolding may not be erected if it is raining or in winds stronger than 32 km/h.

A green tag (displaying the words, "Scaffold Safe for Use") or a red tag (displaying the words, "Danger: Do Not Use Scaffold") must be prominently displayed on each scaffold at all times. The tag must be positioned close to the base of the ladder or staircase provided for safe access. The wording on the tags must be in English and any other language commonly used on site.

As a minimum, a green tag must display the Scaffolding Supervisor's name, the date that the scaffold was erected, and the date that the scaffold was last inspected.

Only an appointed Scaffolding Supervisor may attach, change, update the information on, or remove these tags.

Scaffolding must not be:

- Left partially erected or partially dismantled except for normal work stoppages (for example, over weekends);
- Left in an unsafe condition (if scaffolding is unavoidably in an unsafe condition, barricading must be in place to prevent unauthorised access and the required red tags must be prominently displayed on the scaffold structure); or
- Moved or altered while work is in progress.

Mobile scaffolding must be equipped with brakes, which must be engaged at all times when the scaffolding is in use. A scaffold may not be moved if any person is on the structure.

28.1.3 Safe Access

Safe and convenient access must be provided to every scaffold platform by means of properly installed ladders or approved stairways, which must remain unobstructed at all times. Climbing up or down a scaffold on the braces or ledgers is forbidden.

All ladders used to access scaffolding must be securely attached to the scaffold structure. Hook-on and attachable ladders must be specifically designed for use with the type of scaffolding being used.

If a ladder is used to access a scaffold platform at a height greater than 1.5 metres above the ground, then the ladder must be secured internally (i.e. within the scaffold structure) and there must be an opening (closed with a trap-door) in the platform at the top of the ladder.

If the scaffold platform is at a height of less than 1.5 metres above the ground, then the ladder may be attached externally provided the guard rails around the platform are modified to allow access (the opening in the guard rails must be kept closed using a self-closing gate). No person may climb over or through the guard rails to gain access to a platform.

If a vertical ladder used on scaffolding is more than 5 metres in length it must be equipped with a ladder cage extending from a point 2 metres from the base of the ladder to a height of 1 metre above the platform (or the uppermost platform) that the ladder is providing access to.

The requirement for a ladder cage may be waived if platforms are provided at height intervals not exceeding 4 metres, with the vertical ladder secured on the inside of the scaffolding framework and an opening (closed with a trap-door) in each platform. Vertical ladders must be braced at three metre intervals (as a minimum) to prevent undue movement.

All vertical ladders providing access to a platform must be left in place for as long as the scaffold remains in place and must be inspected as part of the scaffold structure. Any deviation from the requirements stipulated above must be subjected to a risk assessment and the nominated project management representative must authorise the deviation in writing.

28.1.4 Scaffolding Platforms

Safe work platforms must be provided. Every work platform must be complete (i.e. from ledger to ledger and from transom to transom without any gaps) in order to prevent personnel, materials, tools, etc. from falling through the platform.

Every work platform must be constructed from manufactured steel scaffold boards (planks) of equal thickness (height). Timber boards are not permitted under any circumstances.

Each steel scaffold board must be securely hooked (fastened) onto the ledgers or transoms that support it.

On all sides except the one facing the structure, every scaffold platform must be provided with:

- Sturdy guard rails positioned 500mm above the platform floor (the mid rail) and 1000mm above the platform floor (the top rail); and
- Steel toe boards that are at least 150mm high and securely attached such that no gap exists between the toe boards and the platform floor.

Note: Wire mesh infill panels incorporating a toe board may be used instead of a mid-rail.

Scaffold platforms must be as close to the structure as is practicable (but not closer than 75mm) except where personnel need to sit on the edge of the platform while they work in which case the distance may be increased to no more than 300mm.

Scaffold platforms must, at all times, be kept free of waste, protruding objects, and any other obstructions. Platforms must be cleaned if necessary to ensure that they are maintained in a non-slip state.

28.1.5 Inspection of Scaffolding

Every scaffold structure must be inspected by a competent Scaffolding Inspector/Supervisor who is appointed in writing:

- Prior to use after erection, and at least weekly thereafter;
- After inclement weather (heavy rain, strong winds, etc.);
- After any incident resulting in jarring, tilting or overloading;
- After any alteration is made; and
- Before being dismantled.

On completion of an inspection, the Scaffolding Inspector/Supervisor must update the information on the scaffold tag.

A record of each inspection (date and time of inspection, location of scaffolding, findings, etc.) must be captured in a register. The register(s) must be maintained by the Scaffolding Inspector/ Supervisor(s) carrying out the inspections.

28.1.6 Using Scaffolding

The user of a scaffold (i.e. the responsible supervisor) must inspect the erected structure prior to acceptance and must ensure, as far as is reasonably possible, that the scaffold is safe and fit for purpose before allowing his team to make use of the scaffold.

In particular, the user must ensure that:

- The scaffold and the platforms have been constructed to meet the loading requirements of the work that is to be carried out (the Scaffolding Inspector/Supervisor must be consulted in this regard);
- The Scaffolding Inspector/Supervisor has checked that adequate ties and braces are in place;
- The work platforms are in the correct positions and are complete with toe boards and guard rails;
- Safe and convenient access has been provided (ladders and / or stairways); and

- A green ("Scaffold Safe for Use") tag has been attached to the scaffold by the Scaffolding Inspector/Supervisor.

Use of an incomplete or unsafe scaffold is prohibited. Unsteady or non-rigid scaffolds must not be used and inadequacies must be reported to, and rectified by the responsible Scaffolding Supervisor.

The user of a scaffold must ensure that every person in his team is aware that no alterations to the scaffold may be made by the team during the course of their work, and that if any alterations are required, they must be made by competent Scaffolding Erectors under the supervision of an appointed Scaffolding Supervisor.

A scaffold may not be used:

- If a red tag is displayed indicating that the scaffold is not safe to use; or
- During inclement weather, defined as wind speeds greater than 40km/h, thunderstorms, or heavy rain (in excess of 40mm/h).

Note: With due consideration of possible educational limitations, the contractor must ensure that all persons understand what green and red tags mean.

The area around the base of a scaffold must be appropriately barricaded to prevent unauthorised access into the work area. Appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

Loose tools and / or materials on scaffold platforms must be secured using lanyards, wire or fibre rope, or must be placed in secured containers. Where appropriate, "catch nets" may be installed as an additional safety measure to prevent materials or tools from falling to the ground.

The storage or placement of materials on scaffolding platforms must be kept to a minimum. Debris as well as tools and materials that are no longer required must be removed from all working platforms at least once per day.

Scaffolding platforms must be cleaned regularly. A heavy load may not be placed on a scaffolding platform unless the scaffold has been designed and constructed specifically for that purpose. Any loading of a scaffold structure must be authorised in writing by a structural engineer.

Scaffolds may not be used as hoisting towers or to support piping or equipment. Each person working from scaffolding must wear fall protection (i.e. a full body safety harness with two shock absorbing lanyards fitted with scaffold hooks) and must be securely anchored at all times.

All work must be carried out from properly constructed work platforms. Standing on railings or braces in order to perform work is forbidden. Drums, boxes and other makeshift substitutes for scaffolding may not be used under any circumstances.

Where work on an electrical system is to be undertaken from a scaffold, an electrical engineer (employed by Project or the client) must determine whether or not the scaffolding structure requires bonding and earthing. The scaffolding may not be used until this has been determined, and if required, until the structure has been bonded and earthed.

28.1.7 Identification and Inspection of Scaffolding Components

All scaffolding components belonging to a contractor must be properly marked or uniquely coloured to enable positive identification.

Prior to erecting a scaffold, all scaffolding components must be carefully inspected by a competent Scaffolding Inspector/Supervisor.

Components found to be defective during an inspection must be conspicuously marked and removed to a suitably demarcated quarantine area for destruction, repair, refurbishment or removal from site. Deformed and bent wedges must be straightened and inspected for cracks before being put back into service.

28.1.8 Storage of Scaffolding Components

All scaffolding components must be stored in a demarcated storage area in such a manner that they are not exposed to environmental extremes and will not cause injury to persons. Suitable barricading or fencing must be erected and warning signage must be posted (e.g. No Unauthorised Entry).

Within a storage area, scaffolding components must be stacked such that pathways (750mm in width) are maintained between the stacks. Each stack must be stable and components must be neatly placed to ensure that no ends protrude into any pathway. The various components must be stacked separately.

The weight of scaffolding components must be considered when stacking them in elevated positions.

Any storage area for scaffolding components must be positioned such that it will not interfere with any onsite activity (including the operation of any plant or equipment), block any access way, or obstruct access to any plant or equipment. Before establishing a storage area, the location must be agreed with the nominated project management representative.

29. Falling Objects

In the process of planning work activities, the risks associated with falling objects (i.e. materials, tools or equipment) must be assessed and appropriate control measures must be identified, implemented, and monitored taking the following hierarchy of controls into consideration:

- Preventing objects from falling – by using containment sheeting, toe boards, lanyards to secure tools (to a person or to the structure), ropes or chains to secure equipment

Health and Safety Specification – Alterations to the eMendi Building, PoN

(to the structure), lift boxes, brick cages, etc. and by properly securing loads when lifted by crane or hoist;

- Protecting people from falling objects – by establishing barricaded exclusion zones, installing catch platforms or catch nets, displaying warning signage, and posting safety watchers and / or traffic controllers; and
- Personal Protective Equipment (particularly safety helmets and safety boots) – protective equipment is a last line of defence and must be worn.

Where overhead work is being carried out, barricading must be erected around the work area (at the level at which the work is taking place and at every level below including ground level) to prevent persons from entering such an area and potentially being struck by falling objects. Wherever hazards related to falling objects exist, appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

No items are permitted to lie loose in elevated positions (e.g. nuts and bolts must be securely stored) and good housekeeping standards must be maintained at all times. No tools, equipment, material, debris, waste, etc. may be dropped from height. Objects must be lowered or chuted to ground level in a safe and controlled manner.

30. Ladders

All ladders used on site must be of sound construction and adequate strength. Only non-conductive ladders made of wood or fibreglass may be used for electrical work or work being performed in proximity to energised electrical equipment. Metal ladders and ladders with metal reinforcing may not be used.

The use of makeshift ladders is forbidden. All ladders must be numbered, listed in a register, and inspected by a competent person on a monthly basis (the results of each inspection must be recorded in the register). Before using a ladder, the user must inspect it for damage.

Ladders with missing, broken, cracked or loose rungs, split stiles, missing or broken spreaders (stepladders) or any other form of damage or defect may not be used. A damaged ladder must be removed from service (and tagged, "Out of Service") without delay and must then either be repaired (if possible) or destroyed to prevent further use. Persons must receive instruction in the correct use and proper care of ladders.

Ladders may only be used as a means of access and egress. The use of ladders as working platforms is prohibited, except for inspection and carrying out minor tasks (i.e. light work and short duration) such as changing a light bulb.

Ladders may not be positioned horizontally and used as walkways or runways or as scaffolding.

All portable ladders must be fitted with non-skid safety feet (or some other means to prevent the base of the ladder from slipping) and the feet must always be placed (stand) on a firm level surface. The use of bricks, stones, wood or any other material to level the stiles of a ladder is prohibited. Ladders may not be placed on movable bases such as boxes, tables, trucks, etc.

The base or foot of a ladder must always be secured to prevent it from slipping. The ladder must be held by an assistant if the base cannot be secured in any other way (e.g. tied off). A straight ladder must extend at least one metre above its support (or above the working platform that it is providing access to). The top of the ladder must be tied off (or otherwise secured to its support) to prevent accidental movement.

A straight ladder must be placed at a safe angle, i.e. tilted at a ratio of approximately 4:1, meaning that the base of the ladder must be one metre away from the wall (or other vertical surface) for every four metres of height to the point of support.

A stepladder may never be used as a straight ladder. A stepladder must be opened fully and the spreaders must be locked securely. When using an extension ladder, at least four rungs must always overlap at the centre of the ladder. Ladders may not be joined together unless they have been specifically designed and manufactured for that purpose.

A suspended ladder (i.e. not standing on a base) must be attached in a secure manner to prevent undue swinging or swaying, and to ensure that it cannot be displaced.

A ladder may not be placed against a window, glass or any other material which is unlikely to withstand the force exerted on it by the top of the ladder. A ladder may not be placed in front of a door or window that opens towards the ladder unless the door or window has been locked or barricaded.

When a ladder is used near an entrance or exit, the base of the ladder must be barricaded. Materials and / or equipment may not be placed in close proximity to the base or landing of any ladder.

Health and Safety Specification – Alterations to the eMendi Building, PoN

When ascending or descending a ladder, a person must always face the ladder and use both hands (i.e. maintain three points of contact).

Nothing may be carried up or down a ladder if it prevents the person from holding on to the ladder with both hands. Tools must always be properly secured. This can be achieved by attaching them to the wrist using lanyards or placing them in a tool belt around the waist. Tools and materials may also be carried in a bag over the shoulder or hoisted to the landing using a tool bag and rope. Only one person at a time may use (i.e. be positioned on) a ladder.

No person may stand or step above the third rung from the top of a straight ladder or above the second highest step of a stepladder.

Overreaching from a ladder is prohibited. If the target is not within comfortable reach, the person must climb down and reposition the ladder. No person may run up or down a ladder, or jump from the lower rungs or steps to the ground. All ladders must be properly maintained and cared for. Ladders must be stored under cover and should be hung in a horizontal position from several brackets.

No ladder may be left lying on the ground or be left exposed to the weather. A ladder left lying on the ground presents a tripping hazard and it may be damaged by vehicles running over it. No ladder may be left in such a position where it may fall over, be accidentally knocked over, or be blown over by the wind.

Ladders may not be painted, as the paint may conceal damage, defects, labels or other markings. Instead of paint, clear varnish or wood oil may be used to preserve wooden ladders. Ladders must be kept clean, as dirt may conceal damage or defects. Oil or grease accumulation on the rungs of a ladder may cause a person to slip.

Before making use of a ladder, each person must make an effort to remove mud, oil, grease, etc. from his boots.

31. Permit to Work

All personnel must comply with the Permit to Work system applicable to the project. A Permit to Work must be obtained before carrying out any work that involves, but not limited to:

- A hazardous energy source or system, including electricity, compressed fluids (e.g. hydraulics and pneumatics), chemical substances (e.g. toxic, corrosive, flammable or explosive gases and liquids), heat (e.g. steam), radiation, and machinery or

materials with potential energy (gravitational and elastic) – isolation and lockout may be required;

- Confined space entry;
- Working at heights;
- A critical lift;
- Hot work outside of designated workshops;
- Excavation; or
- A service (e.g. water supply, fire suppression systems, etc.).

Note: A Permit to Work may only be issued by an Authorised Person, and may only be received (or accepted) by an appointed Applicant.

All costs associated with the Compliance to Permits section is for the Contractors account.

Each Permit to Work that is issued must make reference to an approved Task-Based Risk Assessment for the work that is to be carried out.

The Permit to Work system that is employed must incorporate the following basic procedures:

- Prior to meeting with the Authorised Person, the Applicant must familiarise himself with all of the hazards associated with the system, plant, equipment, structure or area on or in which the work must be performed. He must also consider the risks that may arise as a result of the tasks that will be carried out. A Task-Based Risk Assessment must be in place;
- The Applicant must then request permission to carry out the work and must meet with the Authorised Person to discuss and document the scope of the work as well as the hazards, risks and associated control measures. Isolation and lockout requirements must be identified (if applicable). The isolation and lockout process must be initiated by the Authorised Person who must contact the necessary Isolation Officers.

Note: The Applicant must ensure his own safety and that of his team, and has the right to accompany the Isolation Officers to verify that all of the necessary locks have been fitted to all of the isolation and lockout points in accordance with the applicable plant or equipment-specific Isolation and Lockout Procedure.

- Once all of the necessary isolations have been completed and the necessary Clearance Certificates have been issued by the Isolation Officer(s) (if applicable), and the Authorised Person is satisfied that the system, plant, equipment, structure or area is safe to work on or in provided all identified precautions are observed by the Applicant, then he must issue (sign) the Permit to Work to the Applicant;
- The Applicant must accept (sign) the Permit to Work. If equipment has been isolated, the Applicant must attach his Personal Lock to the relevant Isolation Bar (or Local Isolation Point) and must ensure that every other person working on the isolated equipment also attaches his or her Personal Lock to the Isolation Bar (or Local Isolation Point) before starting any work;
- Before commencing with any work, the Applicant must discuss the hazards, risks, control measures, precautions and limitations as stated in the Permit to Work (and associated Task-Based Risk Assessment) with all personnel who will be carrying out the work. A register must be kept and all persons must sign the register once they have been briefed by the Applicant;
- The work performed must be limited to what is described in the Permit to Work;
- When a particular employee has completed his work, he must sign the personnel register to this effect and (if applicable) must remove his Personal Lock from the Isolation Bar (or Local Isolation Point);
- Once all work is complete, the Applicant must:
 - Ensure that all machine guards have been replaced;
 - Ensure that all tools and materials have been removed from the work area;
 - Ensure that the work area is clean and tidy;
 - Ensure that all Personal Locks (including his) have been removed from the Isolation Bar or Local Isolation Point (if applicable);
 - Inform the Authorised Person that the work has been completed; and
 - Sign off the Permit to Work.
- Once the work is complete and the Applicant has signed off the Permit to Work, the Authorised Person must:
 - Ensure that the relevant Isolation Officers perform all of the necessary de-isolations (if applicable);
 - On completion of the de-isolations, sign off the Permit to Work accepting the system, plant, equipment, structure or area back for service; and
 - Inform all relevant personnel that the system, plant, equipment, structure or

area is ready to use.

- Where the work must continue over more than one shift, the Permit to Work must be reviewed at every shift change by an Authorised Person. If the scope of work has changed, the permit must be cancelled and a new permit must be issued.

If any of the original conditions or precautions pertaining to the work is not being complied with, is no longer adequate or is no longer applicable, the Authorised Person must cancel the Permit to Work and must ensure that all work stops until full compliance with either the original or amended (as required) conditions and precautions is achieved and a new permit has been issued.

The Applicant must ensure that the Permit to Work (including the personnel register) is kept where the work is being carried out (i.e. posted on a portable Health and Safety Management Information Notice Board) and that the work is monitored against the permit conditions.

All Permit to Work records must be retained and must be made available for inspection when required.

The implementation of the Permit to Work system applicable to the project must be audited on a regular basis by a nominated project management representative. Furthermore, planned task observations must be carried out periodically.

32. Isolation and Lockout

Isolation and lockout procedures that make it impossible to inadvertently energise any system, plant or equipment so isolated, must be in place for all work where hazardous energy sources exist, including electricity, compressed fluids (e.g. hydraulics and pneumatics), chemical substances (e.g. toxic, corrosive, flammable or explosive gases and liquids), heat (e.g. steam), radiation, and machinery or materials with potential energy (gravitational and elastic). These procedures must be strictly enforced. All personnel must comply with the isolation and lockout system and procedures applicable to the project.

All Isolation and Lockout Procedures must incorporate the following basic requirements:

- The issuing of a formal Permit to Work for any work that requires the isolation of any system, plant or equipment;

- The use of defined Equipment, Discipline and Personal Locks (see Definitions), and multiple lockout systems (i.e. Isolation Bars and lockout hasps);
- Clear identification of all isolation and lockout points ensuring there is no duplication;
- Isolation of the main energy source;
- The use of slip plates or the blanking off of pipelines or ducting, in addition to the chaining and locking of valves, as determined by a risk assessment;
- Suitable methods of preventing the movement of equipment; and
- Methods to test the effectiveness or completeness of the isolation.

Note: No work may commence on a system, plant or equipment until a Permit to Work has been issued by an Authorised Person.

Note: A Permit to Work may only be issued by an Authorised Person once all required Clearance Certificates have been issued by appointed Isolation Officers.

The isolation and lockout system that is employed must incorporate the following basic procedures:

- In accordance with a system, plant or equipment-specific Isolation and Lockout Procedure, an appointed Isolation Officer(s) must isolate all points that need to be isolated in order to render the system, plant or equipment safe to work on. An Equipment Lock (and a suitable, highly visible warning tag) must be attached to each isolation point;
- On completion of an isolation (and lockout), the Isolation Officer must clear the area of all persons and must then carry out tests to ensure that the isolation is effective. This may be done by pressing a start button or by asking a control room operator to try to start the equipment. Special care must be taken to ensure that the attempted starting of the equipment has not been deactivated by another interlock forming part of the system, or by a different up-stream isolation. Alternatively, appropriate equipment may be used to test for energy (e.g. voltage verification or continuity tests).

Note: In the case of electrical isolation, a test for voltage must be carried out, after the switching device, to ensure the absence of voltage.

- The Isolation Officer must place the key to the Equipment Locks on an Isolation Bar (at a Lockout Station) and must then attach a Discipline Lock (to prevent the key from being removed) before issuing a Clearance Certificate;

The Discipline Lock must remain in place when handing over to subsequent shifts. All Discipline Locks for a particular discipline (e.g. low voltage electricity) must be keyed-alike so that any Isolation Officer appointed for that discipline (and issued with a key) can open any of the Discipline Locks used for that discipline. This enables an Isolation Officer to de-isolate equipment that may have been isolated by another Isolation Officer during an earlier shift. Appointed Isolation Officers for a particular discipline are the only persons permitted to hold keys to the Discipline Locks used for that discipline.

Note: Local isolations do not require the use of Equipment Locks (a Discipline Lock may be attached to the Local Isolation Point by the Isolation Officer, followed by the necessary Personal Locks).

Note: For local isolations, if the Isolation Officer is the only person who will be working on the isolated equipment, then he must attach his Personal Lock to the Local Isolation Point.

- Once all required Discipline Locks are in place (i.e. attached to the Isolation Bar) and all Clearance Certificates have been issued, the Permit to Work may be issued by the Authorised Person;
- Each person who will be working on the isolated system, plant or equipment must then attach his or her Personal Lock to the Isolation Bar before starting any work (including the Isolation Officer, if he intends to work on the isolated unit);
- The attachment of a Personal Lock to the Isolation Bar prevents the removal of the key to the Equipment Locks even if the Discipline Lock is removed;
- When called (by an Authorised Person) to de-isolate the system, plant or equipment (on completion of the work under the Permit to Work), the Isolation Officer must ensure that all Personal Locks have been removed from the Isolation Bar before removing the Discipline Lock and the key to the Equipment Locks;
- Before removing the Equipment Locks and de-isolating the energy source, the Isolation Officer must inspect the system, plant or equipment that was worked on to ensure that it is safe to perform the de-isolation. This includes guard inspections,

housekeeping, ensuring that all doors and covers are in place, and most importantly, ensuring that no persons are present;

- Once all Equipment Locks have been removed and the system, plant or equipment is safe for use, the Isolation Officer must cancel the Clearance Certificate and inform the Authorised Person that the unit has been de-isolated.

Where a system, plant or equipment is sequence interlocked and a hazard could be created through the inadvertent start up or shut down of a system, plant or equipment lying before or after the unit to be worked on, then that system, plant or equipment must also be isolated and locked out. Redundant or out of service equipment must, in addition to being isolated and locked out using the relevant Discipline Lock, be fitted with a tag indicating why it is out of service, who performed the lockout, and the hazards associated with that equipment.

Where it is necessary to work on live equipment for the purposes of commissioning, testing, adjusting and sampling, such work must be carried out in accordance with a written Safe Work Procedure and controls must be in place to prevent unauthorised access into the work area. The implementation of the isolation and lockout system and procedures applicable to the project must be audited on a regular basis by a nominated project management representative. Furthermore, planned task observations must be carried out periodically.

32.1 Personal Locks

A Personal Lock must be such that it can only be unlocked by the person to whom it belongs. Combination locks may not be used. A Personal Lock, as well as the key(s) to the lock, must be kept under the exclusive control of the person to whom the lock belongs.

A Personal Lock must be issued to each person who requires one, and the person's details must be clearly and permanently engraved directly onto his Personal Lock. Alternatively, a thick durable plastic identification tag may be used that clearly displays the company's name, the employee's name, the employee's company number, and a contact telephone number (the tag must be securely fastened to the Personal Lock). Where the above is hand written, it must be done using a permanent marker pen and it must be legible.

Each person issued with a Personal Lock must be trained and certified competent in the correct use of such a lock.

A Personal Lock may NEVER be removed by anyone other than the person to whom it belongs, except if the removal (cutting) of the lock is authorised by the nominated project management representative (in the absence of this person, authorisation can only escalate upwards). Furthermore, the removal of the lock must be done under the personal supervision of the nominated project management representative, and in accordance with a written procedure. The removal (cutting) of a Personal Lock may be required if the person who applied the lock is unable or unavailable to remove it on completion of the work (e.g. lost his key, failed to remove his lock before going home, etc.).

33. Electrical Safety

All electrical work must be carried out by competent personnel in accordance with all legal requirements, codes, design criteria and safety standards applicable to the project. Each contractor carrying out electrical work on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

All persons who will be carrying out electrical work must be certified against the requirements of job and equipment-specific electrical competency standards for the project, which must address job and equipment-specific Safe Work Procedures.

33.1 Electrical Installations

Each electrical installation (temporary or permanent) installed or worked on by a contractor must be inspected by a nominated project management representative to ensure that the installation complies with all statutory requirements, codes, design criteria and safety standards applicable to the project.

A nominated project management representative must approve all electrical work before the installation is energised. Any installation deemed unsatisfactory by a nominated project management representative must be removed, repaired or modified by the contractor at his expense.

For every permanent or temporary electrical installation, a certificate of compliance must be issued by a competent and appropriately qualified electrician. These certificates must be available for inspection.

Work on electrical installations (new installations, and modifications or repairs to existing installations) may only be carried out by qualified and authorised personnel (i.e. electricians).

Electrical safety devices (specifically, earth leakage protection and overcurrent protection) must be installed on all distribution circuits and the settings must be established by suitably qualified personnel.

To ensure the safety of the user, each distribution panel must be completely enclosed, must be of the dead-front type, and must be properly constructed and earthed.

All electrical cabling must be covered (e.g. in cable trenches) or elevated (in cable trays) to protect it from damage and to eliminate tripping hazards.

All permanent and temporary electrical installations (cabling, sockets, distribution panels, transformers, switchgear, etc.) must be inspected and tested by a competent and suitably qualified electrician on a monthly basis. The testing must include a grounding (earthing) continuity test and testing of the electrical safety devices. Details of these inspections and tests must be recorded in a register which must be made available to the nominated project management representative for inspection.

A rigorous Isolation, Lockout and Permit to Work system must be applied to all electrical work (i.e. work on electrical installations, machinery or equipment). All personnel must comply with the system and procedures applicable to the project.

Before any work on an electrical installation or equipment is carried out, the installation or equipment must be de-energised.

No electrical work may be performed live, regardless of the voltage, unless written approval is obtained from the nominated project management representative (a justification as to why it is necessary for the work to be carried out with the equipment in an energised state must be provided).

For all energised electrical work, a Safe Work Procedure must be in place and, with the exception of voltage testing and where no tools are used, a Permit to Work (specifically authorising energised electrical work) must be issued. When carrying out any energised electrical work, approved electrically insulated gloves, blankets, mats and other protective equipment must be used.

Control centres, switchgear rooms, substations, generators, transformers, capacitor banks, and other similar electrical plant and equipment must be appropriately guarded and labelled and, with the exception of emergency shut-off mechanisms, must be made inaccessible to unauthorised personnel (i.e. plant or equipment of this nature must be positioned within rooms or fenced enclosures which must be kept locked).

Appropriate warning signage must be prominently displayed within, and at all entrances to, these rooms or enclosures. The signage must indicate that unauthorised persons are prohibited from entering, that unauthorised persons are prohibited from handling or interfering with any electrical plant or equipment, the procedure to be followed in the event of a fire, and the first aid procedure to be followed should a person suffer electric shock. Suitable fire-fighting equipment must be provided in all such rooms or enclosures.

All electrical panels must be kept locked (using keyed-alike padlocks). Keys may only be issued to authorised personnel.

All un-insulated (bare) or partially insulated conductors must be enclosed and protected to prevent accidental contact therewith. Measures must be taken to prevent unauthorised access and appropriate warning signage must be conspicuously displayed.

Only authorised persons may enter rooms or enclosures housing electrical plant or equipment, and only authorised persons may access electrical panels or cabinets, and cable ducts or trenches. If any work must be carried out in such an area or on such equipment, a Permit to Work must first be obtained from the nominated project management representative.

No connection to any electrical system may be made without prior approval and a valid Permit to Work from the nominated project management representative.

No electrical equipment or apparatus may be modified without written authorisation from the nominated project management representative.

Conductive ladders may not be used in proximity to non-insulated electrically energised lines or equipment.

All permanent and temporary electrical cables, whether energised or not, must at all times be handled as if they are energised.

Only appropriately certified intrinsically safe electrical equipment may be used in flammable or potentially explosive atmospheres such as in confined spaces. Any

equipment or structure on which electric charges may accumulate (such as storage tanks) must be grounded (earthed).

Grounding (earthing) and lightning protection systems and devices must be designed, engineered, selected and installed based on site-specific requirements where required.

33.2 Arc Flash Safety

Depending on the scope and nature of the work, a documented arc flash protection programme must be in place. The PPE required (specific to a task and the equipment on which the task is performed) and associated procedures to mitigate the hazard must be included.

An Arc Flash Hazard Assessment must be carried out based on accurate and current data. All electrical cabinets where the potential for an arc flash hazard exists must be labelled in accordance with the hazard assessment and the potential incident energies calculated. A process must be in place for updating the Arc Flash Hazard Assessment and labelling as changes and electrical upgrades occur that might affect the available short circuit current on the system.

In order to mitigate the hazard, Safe Work Procedures must be in place and all persons potentially exposed to arc flash hazards must be trained in these Safe Work Procedures and must be supplied with appropriate arc flash PPE.

33.3 High Voltage Power Lines

Before any mobile equipment (such as a crane, bulldozer, back-actor, boom truck or drill rig) is mobilised to a work site, an assessment must be carried out (including a thorough inspection of the work site and the access route) in order to clearly identify any overhead or underground power lines.

A system must be in place to mitigate the risks associated with working in close proximity to power lines and suitable measures must be taken to prevent personnel or equipment from coming into contact with power lines. Extreme caution must be exercised.

A procedure must be in place for the evacuation of mobile equipment or a vehicle in the event of accidental contact with power lines. All operators must be trained in this procedure and must follow it implicitly.

Scaffolding may not be erected within 5 metres of power lines or overhead track equipment.

34. Portable Electrical Equipment

Prior to site establishment, each contractor must provide a complete inventory of all portable electrical equipment that he and his sub-contractors intend to use on the site (including plant, machines, appliances, generators, hand tools, lighting, extension cords, etc.). The nameplate data for each item of equipment must be included.

All portable electrical equipment to be used on the site must be supplied and maintained in a serviceable condition. Any electrical equipment that is in poor condition or is not in proper operating order may not be used. Any electrical equipment that a nominated project management representative deems to be unsafe or unsuitable must be removed from site.

Electrical repair work or diagnostic work on electrical equipment may only be performed by personnel who are competent and authorised to perform this work (i.e. qualified electricians). With the exception of double-insulated equipment, all electrical equipment must have an equipment grounding (earthing) conductor that connects the frame of the equipment being utilised to the grounding (earthing) conductor of the electricity supply system.

All electrical equipment and all electricity supply systems used (including generators) must be inspected and tested by a registered and competent electrician to ensure that all equipment is properly grounded (earthed).

All electrical equipment used on site must be supplied electricity through (i.e. must be protected by) an approved and tested residual current device (or earth leakage device or unit). If a socket outlet does not have a residual current device in the circuit, a portable residual current device must be used. Outlets without residual current device protection must be labelled as such.

Any electrical equipment that causes an earth leakage device to trip or deactivate the circuit may not be used again until an electrician has inspected and tested the equipment and has recorded in a register that the equipment is safe to use.

All generators must be fitted with suitable overcurrent protective devices (i.e. circuit breakers or fuses). All generators must be used in compliance with the manufacturer's

Health and Safety Specification – Alterations to the eMendi Building, PoN

requirements. Any proposed modification to a generator must be authorised in writing by the manufacturer prior to the modification being made.

Each welding machine used on site must be fitted with a Voltage Reduction Device (VRD). If this is not practical (i.e. for arc welding processes other than stick welding), a dead man's (isolation) switch in the electrode circuit (operated by a trained observer) may be used as an alternative. All welding machines must be properly grounded (earthed).

All portable electrical hand tools used on the site must be double-insulated. Electrical equipment must be disconnected or unplugged when not in use. Portable lights must be stable and each light bulb must be protected by a substantial guard.

No person may wear a watch or any jewellery, or carry any metal objects such as a lighter or keys, while working on any electrical system or equipment. No person may work on or use electrical equipment if his clothing is wet or any part of his body is in contact with water.

No person may handle electrical equipment, equipment cords or extension cords with wet hands or if the floor or ground surface is wet.

Fire extinguishers filled with carbon dioxide must be used to fight electrical equipment fires (water may never be used). If possible, the electrical equipment should be de-energised before fire-fighting activities commence (refer to the Fire Protection and Prevention Standard).

When cleaning or performing maintenance work on an item of electrical equipment, the equipment must be unplugged.

Equipment may not be unplugged while that equipment is switched on. Nor may equipment be plugged into a receptacle (socket) with the equipment's switch turned on. Electrical equipment that has a defective plug or wiring may not be used. Repair work to defective or damaged electrical equipment may only be carried out by a qualified electrician. Extension cords may be used for temporary applications only. Permanent cabling must be installed for long-term needs.

Extension cords may not be run through doors, windows, ceilings or holes in walls. An extension cord must be uncoiled completely before it is used. An extension cord must be of sufficient current-carrying capacity to power the equipment that it is supplying

electricity to. Cords must not be overloaded. Extension cords must be unbroken and continuous (i.e. no joins or splices in the cord are permitted). Extension cords may not be daisy-chained (i.e. one extension cord plugged into another extension cord).

Extension cords and equipment cords may not be modified to fit a receptacle (socket). Two-conductor extension cords may not be used. A three-conductor extension cord (i.e. a grounded or earthed cord) must be used even if the equipment that it is supplying electricity to uses a two-prong plug.

Extension cords that are frayed, have insulation tears, cracks or abrasions, have exposed conductors, or have bent, broken or "spread" plug prongs may not be used. Extension cords that will be used outdoors must have heavy duty insulation and must be weather and UV resistant.

All electrical equipment cords and extension cords must be covered or elevated to protect them from damage and to eliminate tripping hazards. Each contractor is responsible for protecting his electrical equipment from the weather and from possible mechanical damage.

All portable electrical equipment (including generators) must be inspected, tested and tagged by a competent and appropriately qualified electrician on a monthly basis. Details of these inspections and tests must be recorded in a register which must be made available to the nominated project management representative for inspection.

The inspection and testing must include a continuity test of the grounding (earthing) conductor (as applicable) and a complete examination of the equipment or system to assure safe use. The following colour coding system must be used for the tagging of all electrical equipment:

Table 35-1 Colour Coding System for Electrical Equipment

Month		Tag Colour	Month	Tag Colour
January		Red	July	Red
February		Blue	August	Blue
March		Orange	September	Orange
April		Green	October	Green
May		White	November	White
June		Yellow	December	Yellow

Health and Safety Specification – Alterations to the eMendi Building, PoN

The tag placed on a piece of equipment must be traceable to an entry in a register where the following information concerning the inspection and testing of that piece of equipment must be recorded:

- Date of inspection and testing;
- Equipment description;
- Equipment owner;
- Equipment location;
- Name, signature and licence number of the electrician who carried out the inspection and testing; and
- Comments concerning the inspection and testing, and details of any repair work carried out or required.

Any item of electrical equipment that does not pass an inspection or test must be removed from service (and tagged, "Out of Service") immediately and must then either be repaired (if possible) or removed from site. Any item of electrical equipment without a tag or with an out-of-date inspection or test may not be used.

Any item of electrical equipment found without a tag or with an out-of-date inspection or test must be removed from service until it has been inspected and tested. If it is found that more than one item of equipment being used by a contractor has not been inspected and tested as required, all work with electrical equipment must be stopped until it can be demonstrated to the satisfaction of the nominated project management representative that the contractor's systems and controls are adequate and fully implemented.

In addition to the formal monthly inspections and testing carried out by an electrician, electrical equipment (particularly extension cords, portable hand tools, welding machines, compressors and pumps) must be visually inspected by the user on a daily basis prior to use. Users must be trained to look for cracks in casings, loose casings, outer cord sheathing that is not being held firmly in position at the equipment, cuts or cracks in cord or cable insulation, exposed conductors, damaged plugs or sockets, and missing covers. Damage and / or defects must be reported immediately.

Personnel must immediately stop using and report any electrical equipment or machinery that is shocking, sparking, overheating or smoking. Corroded outlets, switches and junction boxes must also be reported.

35. Arc Welding

All welding machines must be fitted with voltage reducers. The supply cable to every welding machine must be correctly rated and fitted with an approved plug to be used only with an approved matching plug socket. The electrical circuit to every plug socket must be protected by a correctly rated circuit breaker and a supply voltage rated earth leakage unit. Welding cables must be properly insulated and correctly rated for the welding machines on which they are to be used.

Welding cable terminals must either be covered with a properly designed, constructed and installed cover so that inadvertent human contact with the terminals is impossible, whether the cables are connected or not, or the welding cables must be fitted with insulated plugs so that inadvertent human contact with any live part is impossible when the cables are plugged into the machine. Also the plug socket should be such that when the cables are not plugged in, inadvertent contact with a live part of the socket is impossible.

Earth cable clamps and electrode holders must be of an approved type. Earth clamps and electrode holders must be fixed to welding cables with eye terminals and bolts. All welding machines and safety devices must be subjected to regular planned maintenance and a monthly electrical inspection. The inspection must include a test to ensure that the voltage reducer is functioning properly, by measuring and confirming that the open circuit output voltage is reduced.

Before using a welding machine, the welder must ensure that he is wearing all the required and approved protective clothing and equipment:

- Persons assisting the welder must also wear all of the required personal protective
Welding hood;
- Leather welding gloves;
- Safety boots with steel toe protection;
- Flame resistant overalls; and
- Any other clothing or equipment necessary to perform his work safely and efficiently.

When changing electrodes or moving the earth clamp, the welder or his helpers must wear gloves to avoid possible skin contact with live electrical parts and to prevent burns. When attaching welding cables to the terminals of the welding machine, the welder or his

Health and Safety Specification – Alterations to the eMendi Building, PoN

helpers must wear gloves, or preferably, the machine should be switched off to avoid possible electric shock.

Helpers who may be holding the work piece being welded must wear gloves and protective goggles. Where practicable the welder should place protective screens around the area where he is welding, to prevent injury to the eyes of passers-by.

The welder must ensure that the earth cable follows the shortest practical route between the welding machine and the work piece. The earth connection must be directly between the welding machine and the work piece and no building or other structure must form part of the earth return path.

As far as is practicable, the welder should avoid welding under wet or damp conditions. If this is unavoidable, the following precautions should be taken:

- Use only oil filled or other watertight type welding machine;
- Keep the electrode holder as dry as is practical;
- Keep as dry as possible. Stand on an elevated surface out of the water and wear watertight boots and a rain suit. Also ensure that the gloves are in good condition, free of holes.

Under conditions that result in high perspiration levels, the following measures should be implemented:

- Use an insulated electrode holder;
- Change clothing regularly (if possible);
- Use insulated material like rubber mats and/or timber tuck board to separate yourself from the work piece;
- Wear dry gloves on both hands during welding;
- Use fans and air-conditioning to reduce humidity and temperature; and
- Use an observer capable of responding in an emergency.

When working inside metal vessels or under other conditions where parts of his body may come into contact with conducting surfaces, the welder must take precautions to insulate himself from such surfaces.

When working in confined spaces, the welder must take steps to ventilate the area to prevent inhalation of fumes, which may endanger his health and the health of any assistants. Engine powered welding machines must not be used in any place that is not very well ventilated since the welder and his helpers may be overcome by carbon monoxide fumes.

The welder should take the necessary precautions when welding objects that may catch alight, explode or release poisonous fumes or gases.

36. Gas Welding and Burning

Welding or cutting torches and hoses shall not be connected to cylinders when stored. When work is stopped and equipment is unattended, all valves at the gas and oxygen cylinders shall be closed. The hoses shall be bled and a check shall be made later for possible pressure build-up. Torches shall be removed from the hoses prior to putting them into the toolbox. Smoking SHALL NOT be permitted during this stopping procedure.

Special care shall be taken during overhead cutting and welding operations to safeguard and prevent falling sparks from starting a fire. Warning signs shall be posted around and at each level below the area of each overhead welding or burning operation. Fire extinguishers shall be available and fire blankets shall be used for protection.

When welding or cutting, adequate ventilation must be ensured / provided. Hoses shall be kept clear from passageways, ladders and stairs. When hoses are subject to damage, they shall be properly protected. Hoses shall be inspected daily. Fire extinguishers shall be ready for instant use in locations where cutting is performed.

Flash-back arrestors must be fitted to all cutting torches at the torch and at the bottle (a total of four arrestors).

Lighting of the cutting and welding torches must only be done using a striker and not an open flame. Soap Leak tests must be performed on all flash-back arrestors.

Hoses may only be secured using approved hose clips, and not by wire, cable ties or any other means. Special care shall be taken when welding with respect to piping that has been painted, as toxic fumes may be emitted in some cases. The supervisor's advice should be sought prior to the above welding operations being carried out.

37. Compressed Gas Cylinders

The contractor must establish a suitable storage area for oxygen, acetylene, LPG and argon cylinders in compliance with the following requirements:

- The storage area must be located at least 10 metres away from any building, and must be well ventilated;
- The storage area must have a concrete floor;
- The storage area must be enclosed using wire mesh fencing (as this will ensure adequate ventilation). This enclosure must be kept locked. Access into the storage area must be limited and controlled;
- A protective covering or roof must be fitted to the enclosure to provide shade;
- The enclosure may not be used for the storage of any other materials / equipment, and must be kept completely free of all combustible materials at all times;
- Appropriate warning signage (i.e. "No Smoking" and "No Naked Flames") must be prominently displayed on the enclosure;
- A 9kg dry chemical powder fire extinguisher must be mounted near the entrance to the enclosure;
- If electrical lighting is required, it must be of an approved intrinsically safe type;
- Oxygen, acetylene, argon and LPG cylinders must be stored separately in the enclosure. Furthermore, full and empty cylinders must be separated. Separate storage sections must be clearly designated within the enclosure for the different gas types, and for full and empty cylinders, i.e. oxygen – full, oxygen – empty, acetylene – full, acetylene – empty, etc.;
- When a cylinder is empty, the cylinder cap must be replaced to protect the valve. Empty cylinders must be clearly marked (there must be no need to open valves to check if cylinders are full or empty);
- All cylinders must be stored in an upright position and must be secured in this position by chaining, strapping or clamping them individually to a wall, a cylinder trolley, rack or carrier, or some other rigid structure;
- Cylinders must be stored in rows (when necessary due to the number of cylinders) with aisles between the rows to facilitate easy and rapid removal in the event of a fire;
- Oxygen cylinders may never be stored near highly combustible materials, particularly oil and grease, or near fuel gas cylinders. When in storage, oxygen cylinders must be separated from fuel gas (LPG and acetylene) cylinders by a distance of 6 metres or by a 2 metre high wall made of fire-resistant material;

- The total quantity of gases stored on site must be limited to a 2 week supply.

Compressed gas cylinders must always stand upright (i.e. when being used, stored or transported) and must be properly and individually secured to prevent them from falling over. Cylinders must be protected from flame, heat and from being struck by moving equipment and falling objects.

When handling gas cylinders (whether full or empty), care must be taken to prevent sudden impacts. Whenever a cylinder is not in use, the protective cap must be in place to prevent the valve from being damaged. Gas cylinders may not be carried, dragged, rolled or slid across a floor or surface. When gas cylinders are to be moved / used, they must be placed in a proper cylinder trolley fitted with a 1.5kg dry chemical powder fire extinguisher.

Gas cylinders may not, under any circumstances, be used as rollers or work supports. If transported by crane, hoist or derrick, compressed gas cylinders must be placed in a suitable cradle, net or skip box. Cylinders may NEVER be lifted using wire rope, fibre rope, a web sling or a chain sling. Before moving / transporting a gas cylinder, the regulator must be removed and the protective valve cap must be replaced.

Gas cylinders may not be taken into a confined space. Gas hoses that are run into a confined space must be removed during breaks. Gas cylinders may not be placed on scaffolding.

Cylinder valve keys must be in place. If no suitable valve key is available then the cylinder may not be used. Nothing but the manufacturer-supplied key may be used to open the valve. A flashback arrestor and a check valve (non-return valve) must be installed between the regulator and the hose and between the hose and the torch on the oxygen line and on the fuel (acetylene) line.

Connection fittings may not be forced and safety devices associated with cylinder valves or regulators may not be altered / tampered with. Gas hoses may not be joined. Only approved hose connectors of the crimp type are permitted. Wire and jubilee clamps are prohibited. Only high quality ancillary equipment may be used. This includes flashback arrestors, hoses, clamps, spindle keys, nozzles and torches. Only trained and competent personnel may operate gas welding / cutting equipment and appliances.

Health and Safety Specification – Alterations to the eMendi Building, PoN

When an employee opens the valve to a cylinder, he must stand to one side and open it slowly. Valves may never be left partly open – they must either be closed or be opened fully. Leaking cylinders must immediately be removed from service and the workplace (if it is safe to do so).

Suitable firefighting equipment must be at hand wherever gas cylinders containing oxygen and / or fuel gas are being used. Gas cylinders must be prevented from coming into contact with electrical circuits, e.g. welding leads. Never strike an arc on a cylinder.

Oxygen may only be used for the purpose for which it is provided. Do not use oxygen in pneumatic tools or tyres, as an explosion may occur. Empty cylinders must immediately be marked as such and must be removed to the cylinder storage area at the end of each day / shift.

38. Electrically Powered Tools and Equipment

All powered hand tools, such as circular saws, drills, chainsaws, percussion tools, jigsaws etc., must be equipped with a constant pressure switch that will shut off the power when the pressure is released. (Exception: this requirement does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, and similar hand operated power tools).

Electrical power tools must be of the approved double-insulated type. The electric cord, pneumatic or hydraulic supply line of powered tools must not be used for hoisting or lowering of the tool. Loose clothing, jewellery or gloves that could get caught in the tool must not be worn when operating powered tools. Operators of powered tools who have long hair must keep their hair tied up.

The power source must be disconnected from the tool before making any repairs, servicing, adjustments, or replacing attachments such as drill bits.

38.1 Angle Grinders

The following personal protective equipment must be worn when using angle grinders:

- Safety helmet;
- Gloves;
- Safety glasses (or safety goggles) and a full face shield (i.e. double eye protection);
- Overalls with long sleeves and long pants, avoid any form of loose clothing;
- Safety boots with steel toe protection;

- Hearing protection;
- Breathing apparatus where dust or fumes may be generated;
- Where grinding machines are used, a face shield is to be worn as extra protection to the safety glasses; and
- Certain tasks may require the use of a leather apron as determined by a risk assessment.

A 230mm angle grinder may not be used for free cutting purposes. Exceptions may be approved only if alternative methods evaluated proved more hazardous or no alternative exists. The risk assessment for the task must then specifically include mitigating measures to ensure the safest possible way of performing the task.

The use of 230mm angle grinders for grinding purposes is acceptable, however should this form of grinding be required, the 115mm or 125mm grinders would be preferable. All angle grinders must have a dead man switch incorporated, with a pressure switch in the handle. A 230mm electrical angle grinder unit must incorporate a soft start to reduce the starting strain and a braking system to reduce run on after the unit has been switched off.

All angle grinders must have a spindle lock to assist with changing the disc or grinding wheel. Anti-vibration handles are recommended to further reduce the stress if used for extended periods. Angle grinders must be equipped and operated with disc guarding at all times. Angle grinder must not be stored with fitted discs, as this will lead to damaging of the discs.

Before use and mounting of discs it is essential to check the safety codes and specifications printed on the upper side of the disc. Such specifications include the following:

- Revolutions per minute (RPM). The allowable speed of the disc must be equal to or greater than the maximum achievable speed of the grinder;
- Physical dimensions of the disc must meet grinder specification; and
- The disc must be suitable for the material type to be cut / ground as indicated on the disk. Cutting discs must never be used for grinding and vice versa.

It is critical that the correct disc mounting procedure is followed:

- Check that the machine is plugged out;
- Check the machine spindle, backup washer and thread;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Check the condition of spindle nut - ensure spanner drive holes are not elongated;
- Ensure spindle nut spanner is the tool recommended by machine manufacturers;
- Do not use a hammer, pipe or chisel to tighten the nut, or apply additional mechanical advantage to nut torque. A firm "nip" is sufficient to retain the disc;
- Ensure the spindle diameter is suited to disc bore. Excessive clearance will cause the machine to vibrate due to eccentricity;
- Check to see that the nut and backup washer do not "bottom out". This will result in the disc not being correctly clamped on the spindle;
- Ensure the spindle speed is marked on the grinder and that it is less than the allowable disc speed; and
- Fit the disc, with the metal ring or writing to the nut side.

39. Pneumatically Powered Tools and Equipment

Pneumatic powered tools must only be driven by filtered compressed air with an in-line lubrication system, or be lubricated prior to use if there is no in-line lubrication system. When using pneumatic powered tools the designated tool pressure must be attained by the use of a regulator.

Pneumatic powered tools must be disconnected when not in use. They must not be disconnected from the air supply until all the residual pressure has been released or contained by a shut-off device. Hoses must not be kinked as a means of containment.

Employees operating pneumatic powered tools, and any potentially affected employee in the vicinity of use, must wear suitable personal protective equipment. All rotary compressed air tools (e.g. drills) must have the rated revolution per minute (RPM) permanently marked on the casing. Only attachments of compatible RPM must be used with these machines.

The actual RPM of the tool must be checked every three months to ensure that the speed is as rated to manufacture specifications.

Pneumatic powered tools must be secured to the air supply hose by an approved positive means to prevent the tool from becoming accidentally disconnected. Safety clips or retainers must be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 kPa pressure at the tool, must have a safety device on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.

Compressed air must not be used for cleaning purposes except where reduced to less than 30kPa, and then only with effective chip guarding and personal protective equipment in place. The 30kPa requirement does not apply to concrete form, mill scale and similar cleaning purposes.

The use of compressed air for cleaning purposes must be approved by the nominated project management representative. Compressed air must not be pointed at any part of the body or used for cleaning clothing.

Airless spray guns of the type which atomize paints and fluids at high pressures must be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released. A diffuser nut which will prevent high pressure, high velocity release while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator, or other equivalent protection must be provided in lieu of the above. Abrasive cleaning nozzles must be equipped with an operating valve, which must be held open manually to enable operation. A support must be provided on which the nozzle may be mounted when it is not in use.

40. Fuel Powered Tools and Equipment

Fuel powered tools must be shut down and allowed to cool before being refuelled, serviced, or maintained. Fuel must be transported, handled, and stored in approved fuel containers. Where possible, diesel driven engines must be used in preference to petrol driven engines. All fuel powered tools must be included on the contractor's Equipment Register and the register must be submitted to the nominated project management representative prior to the relevant work commencing.

When fuel powered tools are used in enclosed spaces, the space must be ventilated and the atmosphere monitored to measure toxic gas concentrations. Persons in the space must wear the necessary personal protective equipment. Confined Space Entry clearance may apply. This type of activity must only be undertaken in exceptional circumstances and requires the approval of the nominated project management representative.

Health and Safety Specification – Alterations to the eMendi Building, PoN

41. Hydraulically Powered Tools and Equipment

Hydraulic powered tools must use only approved fluid that retains its operating characteristics at the most extreme temperatures to which it will be exposed. The manufacturer's stated safe operating pressures for hoses, valves, pipes, filters and fittings must not be exceeded. Only manufacturer approved hoses, valves, pipes, filters and fittings must be used.

42. Explosive Powered Tools

All operators shall be trained by the contractor. The contractor shall ascertain that the explosive charges to be used are of the correct strength for the purpose.

Projectiles from explosive powered tools shall NOT be driven into:

- Tile, terracotta, glazed brick, glass, marble, granite, thin slate or other brittle substances;
- High tensile steel, cast iron or steel hardened by heat treatment; or
- Concrete that contains aggregate that will not pass wholly through 25mm mesh screens.

Under no circumstances shall a tool be fired in such a manner as to cause the projectile to fly free. Suitable safety glasses and hearing protection shall be worn by operators when firing an explosive powered tool.

At all times when a tool is being used, the operator shall display clearly legible signs at or near the place where the tool is in use. Sign should read: WARNING: EXPLOSIVE POWERED TOOL IN USE – KEEP CLEAR. The operator shall warn all other employees in the vicinity of the area in which the tool is about to be used.

Tools shall never be stored in a loaded state. Cartridges and tools shall be stored separately in lockable containers. A logbook must be kept of the number of cartridges used and returned.

43. Hand Tools

Employees required to use hand tools must receive training relevant to the tool and have their competency assessed in the operation, inspection and maintenance of the tool. Where necessary, additional applicable personal protective equipment must be worn when using hand tools.

Wrenches, including adjustable, pipe, end, and socket wrenches, must not be used when the jaws are sprung to a point where slippage occurs. Impact tools such as drift pins,

wedges and chisels, must be kept free of mushroomed heads. The wooden handles of tools must be kept free of splinters or cracks.

Adjustable wrenches must not be used in lieu of ring or open-end type spanners, unless a risk assessment has been conducted and the use of the adjustable wrench is approved by the nominated project management representative. Wherever possible, ring spanners must be used in preference to open end spanners.

Correct hand tools for the job must be used, e.g. screwdrivers must not be used as chisels, and pliers must not be used as hammers. All wedges and drifts that may spring, fly or fall to lower levels upon impact must be fitted with an attachment which attaches a safety "lanyard" to a solid structure to restrain the impact tool from becoming a projectile.

All hand tools used in elevated areas, that may be dropped or fall to lower levels must be fitted with safety lanyards and attached to solid structures or in the case of podges, scaffold keys etc., attached by wrist lanyard to the user.

43.1 Stanley Knives / Utility Knives

A utility knife must be used as a last resort, when it is the safest tool to use. Always consider alternatives that pose less of a risk to the operator.

Whenever a utility knife is used, ensure that a complete risk assessment is done and that all possible hazards have been addressed. Only utility knives with retractable blades are to be used. The blade is to be retracted at all times when the knife is not in use or is being stored.

Before using the utility knife, ensure that the tool is in a good condition and the blade is secure in the holder (seated correctly and that there is no play). Ensure that the blade is always sharp and in good condition. This will prevent the use of excessive force.

Always wear cut resistant gloves and safety glasses when using a utility knife. There is always a risk of the blade breaking under tension and becoming a projectile. Always ensure that you cut away from your body, and that no part of your body is in the firing line. Always ensure cleanliness of all equipment in use during the cutting operations.

44. Inspection of Equipment and Tools

All tools must be inspected by the user before, during and after use. If any faults are identified, the tool must be taken out of service and not used until repaired. Faulty tools that are not able to be repaired must be tagged “out of service” and removed from site.

45. Manual Handling and Vibration

Any handling or lifting task that can only be done manually must be planned and rehearsed before the task is done. If more than one person is involved in a task a communication procedure must be agreed in advance. Lowering the load must be done in a controlled manner. Dropping a load is dangerous and must be avoided.

As a guideline 25 kg is considered to be the limit of what a person can safely handle. Where there are loads exceeding 25 kg the risk of handling the load must be mitigated to assure minimal potential for any injury. When mechanical lifting aids are provided, they should be used.

Extra care should be taken when lifting awkwardly shaped objects. Correct lifting techniques must be used at all times when lifting a load manually.

The following, but not limited to, should be considered with conducting the Risk Assessment with regards Manual Handling and also take into consideration the task factors, physical demands and tools involved in the task:

- Load weight/frequency;
- Hand distance from lower back;
- Asymmetrical trunk/load;
- Postural constraints;
- Grip on the load;
- Floor surface;
- Environmental factors;
- Carry distance; and
- Obstacles en route.

Team Manual Handling:

- Load weight;
- Hand distance from lower back;
- Vertical lift region;

- Trunk twisting/sideways bending;
- Postural constraints;
- Grip on the load;
- Floor surface;
- Environmental factors; and
- Communication, co-ordination and control.

As far as possible, exposure to vibration must be eliminated. However, if this is not possible, short-term solutions to decrease exposure include:

- Reducing the vibration levels;
- Removing the person from the vibrating equipment / tools;
- Reducing the period of time that the person works with the vibrating equipment / tools (at least 40 minutes break after 20 minutes working with a machine that vibrates excessively).

In order to reduce exposure to vibration:

- Consider buying equipment that operates effectively at lower speeds;
- Buy equipment with built-in damping materials;
- Buy lighter tools if they are available - they require less of a grip;
- Maintain the equipment;
- Make sure equipment is balanced and there are no worn parts;
- Use remote controls when they are available;
- Reduce your grip on the equipment when it is safe. The less time you actually have your hands on the equipment the better. Relax your hands during these brief breaks;
- Take scheduled breaks; and
- Do other tasks that allow you to move away from vibrating tools and equipment.

The workplace must be assessed by a competent person for compliance with good design, layout and practice, to avoid or minimise adverse health consequences due to manual handling and vibration issues.

Quantitative evaluations of vibration produced by specific equipment must include the following measurement parameters: direction of movement, frequency, intensity, and variation with time and duration, as per documented methods.

Health and Safety Specification – Alterations to the eMendi Building, PoN

Employees and contractors must be informed of the results of assessments and instructed in appropriate manual handling techniques, where the risk assessment indicates a need. Workplace vibration sources that could contribute to the exceedance of an Occupational Exposure Limit (hence potential for impact on worker musculo-skeletal fitness) must be identified and adequately characterised.

Manual handling tasks assessed as having the potential to cause a Lost Time Injury (i.e. with potential for impact on worker musculo-skeletal fitness) must be identified and adequately characterised. Workplace manual / materials handling tasks risk rated as “significant” must be assessed and recorded to include biomechanical factors (e.g. posture, bending, twisting, repetitive motions, working overhead, and exerting force away from the body).

46. Personal Protective Equipment

All applicable legislation concerning Personal Protective Equipment (PPE) must be complied with at all times. As a minimum, the following PPE must be worn by all persons (including visitors) at all times whilst on the project site:

- Safety footwear with steel toe protection;
- Safety glasses (individuals who wear prescription spectacles must be provided with either over-spec safety glasses or prescription safety glasses);
- Safety helmet (hard hat); and
- High visibility protective clothing with reflective taping (long trousers and long-sleeved shirts with collars and cuffs).
- Additional PPE requirements must be determined through hazard identification and risk assessment. This hazard-specific PPE (such as hand protection, hearing protection and respiratory protection) must be worn as required (e.g. when in a certain area, when performing a certain task, or when working with a certain substance);
- The correct PPE must always be worn:
 - In accordance with site requirements (as indicated at the entrances to a project site and at the entrances to buildings and / or designated areas on the premises);
 - In zoned areas (e.g. noise zones and respirator zones); or
 - As required by a Safe Work Procedure, a risk assessment, safety information boards or a Material Safety Data Sheet (MSDS).

Each contractor must provide each of his employees with all required PPE (at no cost to the employee). The specific PPE that is provided to a particular employee must be based on the nature of that employee's work and the location in which the work is performed (i.e. must be based on the hazards to which the employee is exposed). PPE requirements for a particular job or for a particular area must be determined through a risk assessment for that job or area.

Any employee who does not have all of the PPE that is required for him to perform his duties safely will not be permitted to work. Each employee must care for his PPE, maintain it in good condition, and inspect it on a daily basis. If an item of PPE has worn out, has become damaged, or is found to be defective in any way, it must be replaced by the contractor.

PPE must be stored in accordance with the manufacturer's requirements and / or recommendations.

Each employee must receive training in the use, maintenance and limitations of the PPE that is provided to him, and must be made aware of why the PPE is necessary as well as the consequences of not wearing it as instructed (i.e. the potential for injury and / or disciplinary action). Training records must be retained.

Any person who refuses to wear PPE as required must be removed from the site. Symbolic signs indicating mandatory PPE requirements must be prominently displayed at the entrances to a project site and at the entrances to buildings and / or designated areas on the premises where additional PPE is required. These signs must comply with the applicable national standard (if one exists).

Contractors must appoint an employee to:

- Control the issuing and replacement of PPE;
- Keep an up-to-date register as proof that items of PPE have been issued to individuals (an employee must sign for the items that he receives);
- Ensure that there is an adequate supply of all required PPE (i.e. maintain PPE stock levels on site); and
- Carry out regular inspections to ensure that PPE is being used correctly, is being maintained in a good, serviceable and hygienic state, and is not being shared between employees.

46.1 Head Protection

A safety helmet (or hard hat) worn correctly will help protect the head in the event of:

- An employee being struck on the head by a falling or flying object;
- An employee striking his head against a fixed or protruding object; or
- Accidental head contact being made with an electrical hazard.

A safety helmet must be worn at all times on a project site, with the following exceptions:

- Vehicle and equipment operators inside enclosed cabs;
- In offices and in office or administration buildings; and
- At designated lunch and break areas (provided that no work is in progress in the immediate break area).

A safety helmet must be worn in accordance with the manufacturer's requirements. A safety helmet must be worn directly on the head. The wearing of a cap or other headgear beneath a safety helmet is prohibited unless the items have been specifically designed to be used in combination (i.e. the arrangement is approved by the safety helmet manufacturer).

The suspension system inside a safety helmet (that acts as a shock absorber) may not be removed. The painting of safety helmets is prohibited. Safety helmets may only be cleaned using a mild detergent and water. No solvents may be used.

46.2 Eye Protection

If an employee is carrying out, assisting with, or working adjacent to any activity where sparks or projectile particles are being generated, where chemical mists or fumes are being generated, where liquids may splash or spray, where harmful electromagnetic radiation (heat or light) is being generated, or where there is a risk of wind-blown particles entering the eyes, then suitable protective eyewear must be worn at all times (i.e. safety glasses, safety goggles, a face shield, a welding helmet, or a combination of these).

Such activities include:

- Working with rotating equipment (e.g. grinders, drills, mills, lathes, and saws);
- Welding and cutting;
- Chipping, chiselling or caulking;
- Using explosive powered tools;

- Abrasive blasting;
- Sanding; and
- Working with chemical substances (e.g. drilling fluids, acids, solvents, paints, pesticides, etc.).

For certain activities, special eye protection is required (e.g. a heat-resistant face shield is required when working near molten metal). Double eye protection is required for activities such as:

- Grinding, cutting, chipping, chasing and reaming (employees must wear both a full face shield and safety glasses or goggles); and
- Arc welding (welders must wear both safety glasses and a welding helmet).

Screens must be erected to protect passers-by, where practical.

Safety glasses must be worn at all times on a project site, with the following exceptions:

- Vehicle and equipment operators inside enclosed cabs with the windows fully closed;
- In offices and in office or administration buildings;
- At designated lunch and break areas (provided that no work is in progress in the immediate break area); and
- When another form of eye protection is required (e.g. safety goggles).

All safety glasses used on site must have suitable permanent side protection.

In strong sunlight, dark safety glasses should be worn to reduce eyestrain and fatigue. However, caution must be exercised when employees are required to frequently move between outdoor and indoor environments. Dark safety glasses may not be worn indoors or in poor daylight conditions. Prescription spectacles with tinted lenses are prohibited inside buildings or other structures with limited illumination unless the lenses are light-sensing and adjust to changing illumination levels.

Employees who wear prescription spectacles (i.e. require corrective lenses) must make use of either:

- Prescription safety glasses (with permanent fixed side shields) that conform to the requirements of a recognised national or international standard (e.g. CSA, ANSI, or equivalent); or
- Over-spec safety glasses or goggles.

The use of contact lenses in certain areas may not be suitable because of increased risk to the eye due to dust or heat.

46.3 Hearing Protection

Local regulations concerning occupational exposure to noise and the use of hearing protection must be complied with as a minimum. "Low noise" tools and machinery must be used wherever possible to reduce noise levels. Where noise cannot be reduced to an acceptable level through engineering and work practice controls, measures must be put in place to minimise the exposure of employees to the noise (i.e. administrative controls and personal hearing protection).

Areas where it is likely that the 95% upper confidence limit of an eight hour L_{eq} mean exceeds 85dB(A), or areas where impulse noise exceeds 140dB(C), must be designated as noise zones. These noise zones must be clearly demarcated and mapped, signs must be posted, and all employees must be made aware of the requirements for working in such an area.

Suitable hearing protection must be worn in all designated noise zones and when carrying out (or working in the vicinity of) any activity where the noise level exceeds 85dB(A).

Where hearing protection is required, a hearing conservation programme (applicable to all personnel and visitors) must be implemented. The programme must include training in the correct use and proper storage of hearing protection devices as well as replacement requirements. Training must be provided when hearing protection is first issued to an employee and refresher training must be carried out at least annually thereafter. Training records must be retained.

At least two types of personal hearing protection must be made available to employees. The hearing protection devices provided must have adequate noise reduction ratings (i.e. must be able to attenuate the noise level to below 85dB(A)).

Personal hearing protection must be issued on an individual basis and must not be shared. In addition to personally issued hearing protection, suitable disposable hearing protection must be made available at the entrances to all noise zones. All Hearing Protection Devices

(except for disposable hearing protection) must be properly inspected and cleaned on a regular basis.

46.4 Respiratory Protection

Designated areas (respirator zones) must be established where:

- It is likely that the 95% upper confidence limit of a Similar Exposure Group's mean exposure concentration exceeds the relevant Occupational Exposure Limit (OEL) for agents resulting in chronic effects, such as total inhalable dust, respirable dust, respirable crystalline silica, PAH, fluorides, lead, mercury, asbestos or non-asbestos fibrous materials; or
- The concentration of an agent (particulate, vapour or gas) with an acute effect exceeds 50% of the relevant OEL.

Note: For a particular hazardous agent, the OEL to be adopted must be either the client's OEL or the OEL specified in local legislation, whichever is the most stringent.

Respirator zones identified must be clearly demarcated and mapped, signs must be posted, and all employees must be made aware of the requirements for working in such an area.

Suitable Respiratory Protection Devices (RPDs) must be worn in all designated respirator zones and when carrying out (or working in the vicinity of) any activity where the risk assessment has identified the need for respiratory protection.

RPD's must be selected based on:

- The type(s) of airborne contaminants that are present (gases, vapours, and particulates and aerosols including dusts, fumes, sprays, mists, and smoke);
- The potential particulate size distribution;
- Substance toxicity; and
- The likely concentrations.

Compatibility with the work tasks and other PPE, comfort (as it affects wear-time), and the ability to communicate adequately, must also be considered.

The risk assessment and method statement for the work to be performed, the information contained in the relevant Material Safety Data Sheets (MSDSs), and the results of any air

monitoring associated with the substances to be worked with or activities to be carried out, must be used to ensure that the most suitable RPD is selected.

Only RPDs certified to a recognised standard and approved by the nominated project management representative may be used.

Where respiratory protection is required, a respiratory protection programme (applicable to all personnel and visitors) must be implemented.

The respiratory protection programme must include:

- Periodic inspection of RPDs, including before each use;
- Periodic evaluation (by competent persons) of cleaning, sanitising, maintenance and storage practices;
- Performance of positive pressure and negative pressure fit checks by RPD wearers before each use to ensure that the respirator is functioning properly; and
- Training at first issue of a RPD and regular refresher training thereafter in accordance with regulatory requirements or at least once every two years (the training must cover fit testing, use, cleaning, maintenance, filter cartridge replacement, and storage). Training records must be retained.

RPDs must be used, maintained, and stored in compliance with the manufacturer's requirements as well as the respiratory protection programme. Suitable facilities must be provided for the cleaning and sanitary storage of RPD's.

As a minimum, qualitative and documented fit testing must be carried out (although quantitative fit testing is preferred) to ensure that the use of negative pressure RPDs (including disposable RPDs) is effective. Fit testing must be performed by a competent person when an RPD is first issued and must be repeated periodically in accordance with legal requirements or every two years as a minimum. A policy must be in place requiring a clean shaven face when using a negative or neutral pressure RPD for routine tasks (otherwise a positive pressure RPD must be used). A medical evaluation including a pulmonary function test may be required to determine whether or not an individual is medically fit to wear a respirator.

For air-supplied RPDs, breathing air must be effectively filtered and / or isolated from plant and instrument air, and isolated from sources of potential contaminants. The

supplied air must be tested to determine if the air quality complies with the requirements of applicable standards for breathing air.

For nuisance dust, dust masks with a protection level of at least FFP2 must be worn.

46.5 Hand and Arm Protection

Gloves must be worn when handling or working with equipment, materials or substances with the potential to cause injury or illness. Suitable gloves must be selected based on the task to be performed and the specific hazard against which the employee requires protection, such as:

- Sharp edges;
- Sharp points and splinters;
- Abrasive surfaces;
- Hazardous chemical substances (toxic, corrosive, sensitising, etc.);
- Extreme temperatures; and
- Viruses, bacteria and parasites.

46.6 Foot Protection

Safety boots must be worn at all times whilst on a project site, with the exception of offices and office or administration buildings in which closed athletic, business or similar shoes may be worn.

Sandals, slops, slippers, open-toed and high-heeled shoes are not permitted on any project premises.

Safety boots must provide the following protection:

- Steel toe cap to protect against crushing (impact and compression forces);
- Leather uppers that provide resistance against water penetration and water absorption;
- Slip resistant soles;

And where a risk assessment identifies the need:

- Puncture resistant soles (i.e. steel midsoles) for protection against sharp objects;
- Chemical resistant soles for protection against spilt chemical substances (such as solvents, hydrocarbons, acids, and alkalis);
- Heat resistant soles for protection against hot surfaces or molten metal; or
- Electrical shock resistant soles for protection (insulation) against live electrical conductors.
- Gumboots with steel toe caps must be worn when working in water or very wet conditions.

46.7 Clothing

All employees working on a project site must wear high visibility protective clothing with reflective taping. Trousers must be long and shirts must be long-sleeved. Shirts must be buttoned at the neck and wrists.

Protective clothing must preferably be made of natural fibres. Short pants, short-sleeved shirts, sleeveless shirts, and vests are prohibited as outer garments (with the exception of a high visibility vest worn over a long-sleeved shirt).

Loose clothing may not be worn where it may become caught in moving machinery or equipment. For hot work (e.g. welding, cutting, etc.), work in the vicinity of molten metal, and any work carried out in the vicinity of an open flame, the protective clothing worn (shirt and trousers) must be made of a suitable fire retardant fabric. Underwear and socks must be made of natural fibres (preferably wool) or fire retardant fabric.

46.8 Body Protection

Suitable body protection must be provided as required to protect employees against specific hazards. A range of work activities require body protection in one form or another, including but not limited to:

- Working in extremes of temperature, such as fire-fighting, attending to a heating furnace, working with molten metal, working in refrigerated environments, etc.;
- Hot work (e.g. welding, burning, cutting and grinding);
- Working with hazardous chemical substances (e.g. acids, solvents, pesticides, etc.); and
- Clean up and disposal of hazardous materials and wastes (e.g. asbestos, hydrocarbons, etc.).

A wide variety of protective garments are available, such as fire-fighting suits, furnace suits, freezer jackets, leather aprons, leather spats, laboratory coats, chemical resistant aprons, chemical resistant (or hazmat) suits, and disposable coveralls. Suitable items must be selected to provide protection against the specific hazard(s) to which an employee is exposed. Hazards must be carefully identified and characterised to ensure that the correct protection is used.

Body protection must be sized properly to prevent tearing, the parting of seams, tripping, or restriction of movement.

46.9 Electrical Protective Equipment

To reduce the risk of electric shock, electrical insulating equipment appropriate for the voltage that may be encountered must be worn when working on energised electrical installations and when working within two metres of exposed energised conductors.

All rubber electrical insulating equipment (including gloves, sleeves, matting, covers, blankets, and line hoses) must be inspected for damage prior to and after each use, and immediately following any incident that can reasonably be suspected of having caused damage.

Rubber insulating equipment with any of the following defects and / or damage may not be used:

- A cut, rip, tear, hole, or puncture;
- Ozone cutting or ozone checking (i.e. the cutting action of ozone on rubber under mechanical stress causing a series of interlacing cracks);
- An embedded foreign object;
- Chemical deterioration (texture changes) such as swelling, softening, hardening, or becoming sticky or inelastic; or
- Any other defect that damages the insulating properties.

Rubber insulating gloves must be electrically tested before first issue and every 12 months thereafter as a minimum. Insulating gloves must also be given an air test along with the daily inspection. Essentially, this involves filling a glove with air and checking for any holes or leakage.

Insulating equipment that fails an inspection or electrical test may be repaired only as follows:

- Rubber insulating line hose may be used in shorter lengths with the defective portion(s) cut off;
- A rubber insulating blanket may be repaired using a compatible patch that results in the patched area having electrical and physical properties equal to those of the blanket;
- A rubber insulating blanket may be salvaged by cutting the defective area off the undamaged portion of the blanket;
- Rubber insulating gloves and sleeves with minor physical defects, such as small cuts, tears, or punctures, may be repaired by applying compatible patches. The patched areas must have electrical and physical properties equal to those of the surrounding material.

Repairs to gloves are permitted only in the area between the wrist and the reinforced edge of the opening.

Repaired insulating equipment must be retested before it is put back into use. Insulating equipment must be cleaned as required to remove foreign substances (using a mild detergent). Insulating equipment must be stored in such a location and in such a manner so as to protect it from light, temperature extremes, excessive humidity, ozone, and other damaging substances and conditions.

Leather protective gloves must be worn over rubber insulating gloves to provide mechanical protection against cuts, abrasions, and punctures.

Suitable arc flash PPE (e.g. voltage rated gloves, fire retardant clothing, arc rated face shield, arc flash hood, arc flash suit, etc.) must be worn whenever an employee is potentially exposed to an arc flash hazard. The appropriate level of PPE must be worn depending on the task and the potential energy exposure. These PPE requirements must be clearly specified as part of a project-specific arc flash protection programme.

46.10 Jewellery

Necklaces, dangling earrings, and bracelets may not be worn on a project site. No ring or watch may be worn where there is a risk that it may become caught in machinery or equipment. No jewellery or other conductive apparel (such as a key chain or watch) may be worn when carrying out energised electrical work.

46.11 Hair

Scalp hair that is longer than the top of the shoulders must be tied up and restrained within the person's safety helmet or within the collar of his or her overalls, shirt or jacket.

For negative or neutral pressure Respiratory Protection Devices, facial hair must not cause the seal between the respirator and facial skin to be broken (or prevent a seal from being formed in the first place).

46.12 Task-Specific PPE

In addition to the standard PPE required for a project site (including a safety helmet, safety glasses, safety boots, and high visibility protective clothing), the following task-

specific PPE must be used as a minimum by any person carrying out or assisting with such a task:

- Arc Welding – safety glasses and welding helmet (i.e. double eye protection), respiratory protection against the specific airborne contaminants being generated (fumes, gases, dusts, etc.), leather welding gloves, leather apron, leather spats, leather yoke (for work above shoulder height), and knee pads for welders in kneeling positions;
- Gas Welding, Cutting or Brazing – gas cutting or welding goggles with shade 4 filter lenses and full face shield (i.e. double eye protection), respiratory protection against the specific airborne contaminants being generated (fumes, gases, dusts, etc.), leather gloves (long cuff for welding and cutting, short cuff may be used for brazing), leather apron, leather spats, and leather yoke (for work above shoulder height);
- Grinding – safety glasses or goggles and full face shield (i.e. double eye protection), hearing protection, respiratory protection where dust or fumes may be generated, leather gloves, leather apron, and leather spats;
- Abrasive Blasting – respiratory protection (air-supplied hood), hearing protection, leather gloves, and leather apron;
- Spray Painting – respiratory protection (air-supplied hood for confined spaces), safety goggles (if the respirator design does not provide this protection), hearing protection where air compressors are used), chemical resistant gloves, and chemical resistant disposable coveralls.

46.13 Sun Protection

The contractor must ensure that all personnel are protected in sunlight through the use of long sleeve shirts, long trousers, brims to safety helmets and UV factored sunscreen. Shade structures must also be made available to all employees.

The contractor must conduct training and awareness sessions with his employees, advising on the risks associated with working in the heat (including dehydration) and the precautions to be taken (e.g. ensuring adequate fluid intake).

47. Fuel / Flammable Liquid Storage and Refuelling

No fuel (diesel, petrol, paraffin, etc.) or any other flammable liquid (paints, solvents, etc.) may be stored on site unless approved in writing by the nominated project management representative.

If the on-site storage of a fuel or a flammable liquid is approved, the contractor must ensure the following:

- The quantity of fuel / flammable liquid to be stored on site must be kept to the minimum that is required;
- The storage area must be located in a well-ventilated area at least 10 metres away from any building, drain, boundary or any combustible material;
- If more than 200 litres of fuel / flammable liquid is to be stored, the tank must be installed / the containers must be positioned within a bund;
- If the fuel / flammable liquid are to be stored in bulk tanks / vessels, then the minimum capacity of the bund must be 110% of the volume of the largest tank / vessel. If many small containers (e.g. 210 litre drums) are to be stored, the bund must be able to contain 25% of the total volume of the stored products;
- The bund must be impermeable. It must have a solid concrete floor and the walls must be constructed out of brick and must be plastered on the inside;
- The bund must be fitted with a lockable drain valve (for draining away rainwater), which must remain locked in the closed position. The valve may only be opened under supervision and in accordance with a written procedure;
- The fuel / flammable liquid storage area may not be used for the storage of any other materials / equipment, and must be kept completely free of all combustible materials (including rubbish, brush and long grass) at all times;
- Access to the storage area must be controlled (wire mesh fencing and gate);
- Appropriate warning signage (i.e. "Flammable Liquid", "No Smoking" and "No Naked Flames") must be prominently displayed at the storage area. The contents and volume of each tank must be indicated;
- In order to contain spillages, the offloading / refuelling bay at the fuel / flammable liquid storage area must have a solid concrete base surrounded by bund walls, ramps or humps and / or spill trenches (covered with steel grating) that lead into a sump;
- Fuel dispensing pumps must be protected against impact damage;
- All fuel / flammable liquid storage tanks and dispensing equipment must be electrically bonded and properly earthed;
- All electrical installations and fittings must be of an approved intrinsically safe type;
- Two 9kg dry chemical powder fire extinguishers must be mounted in an easily accessible position near the entrance gate to the fuel / flammable liquid storage area. Depending on the size of the storage area, additional fire extinguishers may be

required to ensure that an extinguisher is no further than 15 metres away from any point on the perimeter of the storage area;

- A fire extinguisher must be at hand wherever refuelling is carried out;
- Smoking or open flames within 10 metres of a fuel / flammable liquid storage / refuelling area is strictly prohibited;
- No petrol or diesel powered vehicle or equipment may be refuelled while the engine / motor is running;
- Cellular phones must be switched off in fuel / flammable liquid storage / refuelling areas;
- Spill clean-up kits (containing a suitable absorbent fibre product) must be provided;
- Any spillages must be cleaned up immediately and all contaminated cleaning materials must be disposed of in accordance with the applicable legislation;
- If a flammable liquid is spilt or is leaking from a container / vessel, the area must be cordoned off and appropriate warning signage must be displayed to keep unauthorised personnel away from the affected area. Every effort must be made to contain the spillage. All hot work in the vicinity must be stopped immediately. If the spilt product is volatile and the possibility exists that a vapour cloud may form, or if the leak or spillage cannot be contained or stopped, then appropriate emergency response procedures must be activated, including the evacuation of all persons in the vicinity. Suitable fire fighting equipment must be positioned ready for use should the spilt product ignite;
- The manual decanting of fuel or a flammable liquid from a large container should only be done using a stirrup pump (or similar) or a purpose-made frame which allows the container / drum to tilt for decanting and then return to the upright position;
- Drip trays must be used wherever required;
- All tanks, drums, cans, etc. containing flammable liquids must be tightly closed and properly sealed except for when a container is being filled or when a product is being decanted;
- The transport or storage of corrosive or flammable liquids in open containers is strictly prohibited;
- Daily-use quantities of fuel (up to a maximum of 20 litres) must be handled in an approved safety can with a flash arresting screen, spring closing lid and spout cover that will safely relieve internal pressure if the can is exposed to fire;
- Where safety cans may be impracticable, only approved metal containers with screw caps may be used. Each container must be clearly labelled to indicate its contents;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Only small quantities of flammable liquids (paints, solvents, etc.) may be stored within a building. Each product must be kept either in its original container or in an approved container which must be properly sealed. Each container must be clearly labelled to indicate its contents. When not in use, all such containers must be stored in a well-ventilated steel cabinet which must be kept locked to prevent unauthorised access;
- Not even small quantities of flammable liquids may be stored or dispensed in buildings or places of public assembly, in general warehouses, or in buildings containing sources of ignition such as space heaters, cooking devices, open electric motors, motor vehicles, or where welding, cutting, or grinding activities are being carried out;
- Safe Work Procedures must be compiled for the transportation (including delivery), offloading, storage, handling and use of any fuel / flammable liquid on site;
- All personnel that will be required to work with or may come into contact with a flammable liquid must be made aware of the hazards associated with the product and must be thoroughly trained in the safe transportation, use, handling and storage thereof.

48. Fire Protection and Prevention

The contractor must compile a Fire Protection and Prevention Plan for the work that will be carried out on site.

The contractor must assess / survey his area of responsibility and identify locations where the risk of fire is high. Cognisance must be taken of the fact that certain locations may need to be designated as high risk due to the presence of large quantities of flammable or combustible materials / substances. For all high risk areas, the contractor must ensure that additional precautions are taken to prevent fires and strict control is exercised over any hot work (i.e. welding, cutting, grinding, etc.) that is carried out.

The contractor must supply and maintain all required fire-fighting equipment. The type, capacity, positioning, and number of fire-fighting appliances must be to the satisfaction of the nominated project management representative and must meet the requirements of the applicable legislation. Fire mains, hydrants and hose reels will rarely be available on site, so use must primarily be made of portable fire extinguishers.

Fire-fighting equipment, fixed and portable, must be strategically located with a view to being able to rapidly deploy the equipment in order to bring potentially dangerous and destructive fires under control while still in their infancy.

All fire extinguishers (and any other fire-fighting equipment) placed on site must be:

- Conspicuously numbered;
- Recorded in a register;
- Visually inspected by a competent person on a monthly basis (the results of each inspection must be recorded in the register and the competent person must sign off on the entries made); and
- Inspected and serviced by an accredited service provider every six months (the nominated project management representative may require that this frequency be increased depending on the environmental conditions (e.g. high dust levels, water, heat, etc.) to which the fire extinguishers are exposed).

Any fire extinguisher that has a broken seal, has depressurised, or shows any sign of damage must be sent to an accredited service provider for repair and / or recharging. Details must be recorded in the register.

Fire-fighting equipment may not be used for any purpose other than fighting fires. Disciplinary action must be taken against any person who misuses or wilfully damages any fire-fighting equipment.

Access to fire-fighting equipment, fixed or portable, must be kept unobstructed at all times. Approved signage must be in place to clearly indicate the location of each permanently mounted fire extinguisher, fire hose reel, etc.

The contractor must ensure that all persons working in / entering his area of responsibility are made aware of where all fire-fighting appliances and alarm points are located. The contractor must ensure that his employees (and those of any appointed sub-contractors) are trained in fire-fighting procedures and the use of fire-fighting equipment.

The contractor must compile an emergency response procedure detailing the actions that must be taken in the event of a fire or a fire / evacuation alarm. All personnel working within the contractor's area of responsibility must be trained, and all visitors must be instructed, on this procedure. Copies of the procedure must be prominently displayed in the workplace in all languages commonly used on the site.

Health and Safety Specification – Alterations to the eMendi Building, PoN

Used fire extinguishers must be replaced by the contractor without delay.

No hot work (i.e. welding, cutting, grinding, etc.) or any other activity that could give rise to a fire may be performed outside of a designated workshop without a Permit to Work having been issued.

Wherever hot work is being carried out, a fire extinguisher must be at hand. Where the risk assessment determines that it is necessary, a fire watch must be stationed. Supervisors must carry out workplace inspections regularly to ensure adherence to fire prevention measures and procedures.

At the end of every working period (i.e. before each tea / lunch break and at the end of every shift / day), the workplace must be thoroughly inspected to ensure that no material is left smouldering and no condition / situation exists that could give rise to a fire.

The contractor must ensure that all supervisors and all employees carrying out or assisting with any hot work or any other activity that could give rise to a fire have been trained in fire-fighting procedures and the use of fire-fighting equipment. The training must be conducted by an accredited training provider.

When using electrical equipment, all cables must be in good condition and the nearest convenient socket must be used. No power socket may be loaded beyond its rated capacity through the use of adaptors, etc. Makeshift electrical connections are not permitted under any circumstances. Water-based fire-fighting equipment must not be used on electrical equipment or burning liquids.

Each vehicle used on site for work purposes and each item of mobile equipment with a diesel or petrol engine must be fitted with a permanently mounted fire extinguisher. Smoking is only permitted in designated smoking areas. Cigarette ends / butts must be properly stubbed out in the ashtrays provided and never thrown into waste bins.

The contractor must ensure that good housekeeping practices are enforced, as this is crucial to the prevention of fires.

All combustible waste materials must be removed from the workplace on a daily basis (at the end of each shift) and placed in waste receptacles located at least 5 metres away from any structure.

The accumulation of waste materials in out-of-the-way places is prohibited. Offices, desks, cabinets, etc. must always be kept tidy and uncluttered. Waste paper bins must be emptied regularly.

The storage of combustible materials under stairways or in attics is prohibited. The storage of any materials against the exterior of a building or any other structure is prohibited. All walkways, passages and stairways must be kept clear (i.e. must be unobstructed) at all times, as they may need to be used as a means of escape.

The areas around and the routes to all exits, fire escape doors, fire hydrants, fire hose reels and fire extinguishers must be kept clear (i.e. must be unobstructed) at all times. "No Smoking" signs must be conspicuously displayed in and around all storage areas / rooms. Waste may not be burned under any circumstances.

No flammable liquid (such as petrol, acetone, alcohol, benzene, etc.) may be used for starting fires or as a solvent for cleaning clothes, tools, equipment, etc. Only solvents approved by the nominated project management representative may be used for cleaning purposes.

Whenever any work is carried out involving the use of a flammable substance / material, the area must be cordoned off and appropriate warning signage (i.e. "No Unauthorised Entry", "No Smoking" and "No Naked Flames") must be displayed.

49. Smoking

The contractor must not permit smoking on site except within designated smoking areas selected in accordance with the applicable legislation. Such an area must be clearly demarcated and the required signage must be displayed.

Any person found smoking or discarding a cigarette butt outside of a designated smoking area may be removed (temporarily or permanently) from site. In all designated smoking areas, adequate non-combustible commercial ashtrays and / or cigarette butt receptacles (butt cans) must be provided.

Ashtrays and other receptacles provided for the disposal of smoking materials must not be emptied into rubbish bins or any other container holding combustible materials. "No Smoking" signs must be strictly observed.

50. Housekeeping

The contractor must maintain all work areas in a tidy state, free of debris and rubbish. Unless directed otherwise, the contractor must dispose of all debris, rubbish, spoil and hazardous waste off site in a designated and authorised area or facility. The contractor must familiarise himself with the waste management plan for the site including collection and disposal arrangements, and must align his waste management activities accordingly.

In cases where an inadequate standard of housekeeping has developed and compromised safety and cleanliness, a nominated project management representative may instruct the contractor to cease work until the area has been tidied up and made safe. Neither additional costs nor contract deadline extensions will be allowed as a result of such a stoppage. Failure to comply will result in a clean-up being arranged through another service provider at the cost of the non-complying contractor.

The contractor must carry out housekeeping inspections on a weekly basis to ensure maintenance of satisfactory standards. The contractor must document the results of each inspection. These records must be maintained and must be made available to the nominated project management representative on request.

The contractor must implement a housekeeping plan for the duration of the contract ensuring that the site housekeeping is maintained. Furthermore, at the end of every shift, the contractor must ensure that all work areas are cleaned, all tools and equipment are properly stored, and construction rubble is removed.

Where the contractor fails to maintain housekeeping standards, the nominated project management representative may instruct the contractor to appoint a dedicated housekeeping team for the duration of the project at the contractor's expense. Littering is prohibited.

51. Waste Management

Waste may not be disposed of unless the disposal of that waste is authorised by law. The contractor must therefore ensure that all waste that is generated is handled, stored, transported and disposed of in accordance with the requirements of the applicable legislation / local authority.

52. Stacking and Storage

All irregular shaped items will be stacked at floor / ground level in designated stacking areas on a level, firm base capable of withstanding the weight of the commodities being stacked and stacked in such a manner that the items do not topple over or change position due to subsidence or weight transfer when being moved.

Where these commodities are stacked on shelves or racks, the shelves or racks must be designed to carry the weight of the commodity being stacked. All racks or shelves where heavy material or commodities are stacked will have a weight carrying limitation clearly marked on the structure and have a safety factor of at least +10% of maximum total carrying capacity.

All materials, commodities or articles, which could be damaged due to inclement weather, must be stored under cover. Waste material that is combustible must not be allowed to accumulate in sufficient quantities to create a hazard.

No commodities or equipment may be stacked or stored within 500mm of rolling stock tracks or where mobile equipment travels. The storage of material, small equipment, tools, files and general items in cupboards and on shelves must be neat and controlled at all times. Incompatible substances must not be stored in or on the same cupboard or shelf.

No equipment, tools, files or documents may be stored or stacked on top of cupboards which are higher than 1.5 metres in height.

53. Demarcation

No demarcation of floors is required inside offices.

Temporary demarcation may be used to demarcate areas where there is, for relatively simple reasons, restricted access. Where hazards exist and entry must be specifically excluded for safety or health reasons, hazard tape in any form must not be used in isolation. A robust and substantial barrier of timber, rope or other material must be used in conjunction with barrier tape, to prevent entry to unauthorised persons.

Health and Safety Specification – Alterations to the eMendi Building, PoN

Outside storage areas where it is impractical to use floor demarcation, demarcation may take the form of creosote poles and wire rope or similar. Spans between uprights should be painted yellow.

54. Facilities

Sanitary conveniences must be provided and maintained at a rate of at least one shower facility for every 20 workers, at least one toilet facility for every 10 workers, separate male and female changing facilities and sheltered eating areas.

Where chemical toilets are provided, one toilet for every 10 employees must be allocated. All toilets must be cleaned daily, disinfected and provided with toilet paper. All employees making use of these facilities have the responsibility to help keep the facilities neat, clean and hygienic.

Washing facilities, including soap and towels, must be made available for use by the contractor's employees.

Drainage from all washing / toilet facilities must be properly designed and constructed to prevent employee exposure to waste water (and the associated biological hazards). Waste water may not accumulate or stand in pools at any location on the project site.

Change rooms must be provided and must be kept clean and free from odours at all times. No chemicals, except those normally used for domestic cleaning of these facilities, may be stored in the facilities.

No equipment or items (other than those normally associated with hygiene facilities) may be stored in the facilities. All entrances must be constructed in a way to afford privacy to users.

Drinking water must be provided from an approved source. A sheltered (covered) area must be set aside on site to be used as a dining facility (eating area). Adequate seating must be provided for the maximum number of employees. The facility must be kept clean and tidy.

A suitably sized, impervious receptacle (bin) must be provided for the disposal of waste food and other refuse generated at the dining facility. This bin must be emptied and cleaned regularly (i.e. promptly after meal times).

Food may only be consumed in authorised sheltered areas. Adequate refrigerated storage must be provided to the contractor's employees for the storage of food and drinks. Fridges must not be overstocked and must maintain sufficiently low temperatures.

55. Occupational Hygiene

The contractor must ensure that the exposure or potential exposure of his employees to any of the following stressors is assessed and measured:

- Noise;
- Thermal stress (heat and cold);
- Particulates (dust);
- Silica (free crystalline silica);
- Asbestos;
- Gases or vapours;
- Lead;
- Chemicals;
- Ionising radiation;
- Non-ionising radiation;
- Vibration (hand / arm vibration and whole body vibration);
- Ergonomics; and
- Illumination.

If it is determined that exposure levels for a particular stressor are unacceptable, then a monitoring and control plan must be implemented to manage any risk of overexposure.

Note: Where chemical substances are to be used as part of the refurbishment process, the contractor must ensure that the chemical composition of each substance is known.

Carcinogenic (cancer-causing) ingredients must be specifically identified with due understanding that no chemical known to cause cancer will be permitted for use on site (an alternative will need to be sourced).

The contractor must conduct an Occupational Health Risk Assessment in respect of their project activities. The contractor will be required to appoint an Approved Inspection Authority (AIA) for Occupational Hygiene to conduct Occupational hygiene Surveys should such a need arise.

Health and Safety Specification – Alterations to the eMendi Building, PoN

55.1 Lighting

For all work areas and access ways, if the natural lighting available is inadequate it must be supplemented by artificial lighting to meet the minimum levels required.

A lighting survey to determine luminance must be conducted for all work areas, at least once prior to work commencing for the first time in any area.

Emergency lighting must be provided in all indoor workplaces that do not have adequate natural lighting or in which persons work at night. The emergency sources of lighting that are provided must be such that, when activated, an illuminance of not less than 0.3 lux is obtained at floor level, to enable employees to evacuate safely.

Where it is necessary to stop machinery or shut down plant or processes before evacuating the workplace, or where dangerous materials are present or dangerous processes are carried out, the illuminance must not be less than 20 lux.

Windows and translucent sheeting must be kept adequately clean and clear of obstructions as far as reasonably practicable. Light fittings, i.e. lenses and reflectors must be kept clean. If a light intensity meter is used, a valid calibration certificate must be available.

Neon lights must not be installed in areas where moving parts of machinery or equipment cannot be fully guarded, i.e. lathes, bench grinders, etc. in order to eliminate the stroboscopic effect. No person may use a portable electrical light where the operating voltage exceeds 50 volts, unless:

- It is fitted with a non-hydroscopic, non-conducting handle;
- All metal parts which may become live are protected against accidental contact;
- The lamp is protected by means of a guard firmly attached to the handle; and
- The cable can withstand rough use.

No person may use a portable electric light in damp or wet conditions or in closely confined spaces, inside metal vessels or when in contact with large masses of metal, unless:

- The lamp is connected to a source incorporating an earth leakage; and
- The operating voltage of the lamp does not exceed 50 volts.

All lighting on site must comply with the requirements of the Environmental Regulations for Work Places GNR2281 of 16 October, 1987.

55.2 Noise

A hearing conservation program must be implemented and protection against the effects of noise exposure must be provided when the noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 decibels measured on the A-weighted scale of a standard sound level meter at slow response.

For the hearing conservation program to be effective it must include as a minimum:

- Monitoring of the workplace to determine the representative exposure of employees to excessive noise levels;
- An audiometric testing program for employees, which must include:
 - A baseline audiogram for all employees exposed to noise levels equal to or in excess of the standard;
 - Audiograms for each overexposed employee at a frequency determined by the OMP;
 - Analysis of audiogram results with retesting and/or referral to an otolaryngologist or qualified physician when a significant threshold shift (STS) occurs; and
 - Written employee notification of the STS.
- A training program for all employees exposed to noise;
- Provision of personal protective equipment to all affected employees when administrative or engineering controls fail to reduce sound levels to within the levels of the standards.

Monitoring of employee exposures to noise shall be conducted by an Approved Inspection Authority (AIA).

The monitoring requirement may be met by either area monitoring or personal monitoring that is representative of employee exposures. Personal monitoring is preferred, and may be required based on the type(s) of noise sources.

For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with local legislation. A person-task specification shall be available for every job category and shall be submitted with an employee for audiometric testing.

Audiometric test results obtained from the pre-employment medical examination for a new employee shall be used as the baseline audiogram. Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise.

Hearing protectors shall not be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise. Employees shall be notified of the need to avoid high levels of non-occupational noise exposure during this 14-hour period.

Record-keeping for the audiogram shall include, as a minimum:

- Name and job classification of the employee;
- Date of the audiogram;
- The examiner's name;
- Date of the last acoustic or exhaustive calibration of the audiometer;
- Employee's most recent noise exposure assessment.

Audiometric test results shall be maintained in the employee's medical file. To control noise exposure, its three basic elements shall be examined, i.e. source of the sound, travel path, and effect on receiver or listener. Solution of a given noise problem might require alteration or modification of any or all of these three basic elements.

Controlling noise at the noise source can be achieved by the following:

- Select quiet equipment initially. In selecting quiet equipment the following features shall be considered:
 - Low-noise certification;
 - Advertisement of "quiet" operation, evidence of noise control design;
 - Evidence of "lower" and "slower" operating characteristics;
 - Side-by-side noise testing of equipment; and
 - "On-site" or "in operation" inspection of mechanical equipment before purchase.
- Reduce operating noise by considering the following control measures:
 - Reduce impact or impulse noise by reducing weight, size, or height of fall of impacting mass;
 - Reduce speed in machines and flow velocities and pressure in fluid systems;
 - Balance rotating parts – to control machinery noise and vibration of fans, fly wheels, pulleys, cams, etc.
 - Reduce frictional resistance between rotating, sliding or moving parts in mechanical systems: frequent lubrication, proper alignment of moving parts; static

and dynamic balancing of rotating parts; correction of eccentricity or "out-of-roundness" of wheels, gears, rollers, pulley, etc.;

- Reduce resistance in air or fluid systems: use of low flow velocities, smooth boundary surfaces of duct or pipe systems, and long-radius turns and flared actions in pipes, etc., to reduce turbulence noise;
- Isolate vibration elements in machinery; install motors, pumps, etc. on most massive part of machine; use belt or roller drives in place of gear trains; use flexible hoses and wiring instead of rigid piping and stiff wiring, etc.
- Apply vibration damping materials such as liquid mastic; pads of rubber, felt, foam or fibrous blankets; or sheet metal visco-elastic laminates or composites to vibrating machine surfaces; and;
- Reduce noise leakage from the interior of machines such as compressors by sealing or covering all openings or applying acoustical materials to machine interiors.

Controlling noise in the transmission path can be achieved by the following:

- Separate the noise source and receiver as much as possible;
- Use sound-absorbing materials on ceiling, floor or wall surfaces as close to the machine as possible;
- Use sound barriers and deflectors in the noise path;
- Use acoustical lining on inside surfaces of such passageways as ducts, pipe chases, or electrical channels;
- Use mufflers, silencers or snubbers on all gasoline or diesel engines, regardless of size; and particularly on equipment when large quantities of high-pressure, high-velocity gases, liquids, steam or air are discharged into the open air; and
- Use vibration isolators and flexible couplers where the noise transmission path is structure borne in character.

Protection for the receiver – when engineering controls fail to reduce the levels to within the levels specified in local legislation, the following measures shall be implemented:

- Personal protective equipment shall be provided and replaced as necessary at no cost to employees;
- Supervisors shall ensure that hearing protective devices are worn by all employees who are exposed to a time-weighted average of 85 decibels or greater and who have experienced a significant threshold shift;
- Employees shall be given the opportunity to select their hearing protectors from a variety of suitable protectors.

Noise zones shall be indicated by means of signs at every entrance to such zones. When noise levels exceed 100 dB(A), a combination of earplugs and earmuffs may be required to achieve protection of the worker. It is important to note that using double protection will add only 5 to 10 dB of extra attenuation above that of a single Hearing Protection Device. Where an earmuff and earplugs are used together, OSHA recommends using this simple calculation: Take the higher rating of the two devices, and add five. Hearing Protection Devices should be worn for the full noise exposure period.

Where an audiometry programme is required, it must meet the following standards:

- All testing must be by pure tone audiometry in an approved audiometry booth or quiet room, with measured noise levels less than 40 dB(A);
- The initial audiogram must be taken prior (minimum of 24 hours) to exposure to significant noise. Further audiograms must be taken periodically; annually where exposures are over 85 dB(A) Leq or where continued deterioration to hearing is occurring;
- Testing must be performed by trained and competent personnel;
- Audiometers must be calibrated according to the manufacturer's guidelines. As a minimum these will be a weekly biological calibration using an employee unexposed to noise, or a bio-acoustic simulator, and an annual quantitative check. All results must be documented; and
- Audiograms must be read by trained persons who will identify any increasing hearing loss and then determine if this is noise induced. Any employee with a significant downward shift in one or both ears (measured as an average non age-adjusted loss from baseline of 10 dB at 2, 3 or 4 kHz) must be retested following removal from noise for a minimum of 24 hours, usually after a days-off period. If the downward shift persists the employee must be reviewed by a physician and improved hearing protection considered.

55.3 Particulate and Gas / Vapour Exposure

Designated areas must be created where:

- It is likely that the 95 per cent upper confidence limit of a Specific Exposure Group's (SEG) mean exposure concentration for agents resulting in chronic effects (such as total inhalable dust, respirable dust, respirable crystalline silica, PAH, fluorides, lead, mercury, asbestos or non-asbestos fibrous materials) exceeds the relevant OEL; and

- Agents with an acute effect, such as particulate hazards, or gases (e.g. CO, SO₂, NH₃, HF, etc.), or vapours exceed 50 per cent of the relevant OEL.

Designated areas must:

- Be identified and mapped, signposted or otherwise clearly communicated to employees working in the area. Signposting, where necessary, must use appropriate wording or symbols on signs to identify the hazard;
- Have a documented respiratory protection programme based on suitable risk assessment and standards, which is applied to employees, contractors and visitors;
- Have regular monitoring of SEGs working in the area; and
- Have a formal review of the practicality of engineering controls at least every two years, or less where it is a critical control for a significant risk.

Particulate and gas / vapour monitoring must be appropriate to the exposure conditions and toxicants, and based on the use of equipment approved by local regulatory authorities, as per documented methods.

Where risk assessment indicates the possible presence of levels of gas or vapour sufficient to cause health effects in less than one shift (e.g. confined space entry), continuous monitoring is required as long as the potential for harm exists.

Employees and contractors must be covered by a medical surveillance programme when:

- Their Specific Exposure Group TWA mean exposure to respirable crystalline silica, total inhalable dust, respirable dust, lead or asbestos is greater than 50 per cent of the relevant OEL;
- The medical adviser considers that it is advisable; or
- There is a legal requirement for medical monitoring.

Where risk assessment indicates a risk of a respiratory condition, assessment programmes must include chest x-rays and / or lung function tests. The test or tests chosen must enable the earliest detection of adverse effects from the exposure of concern. Where indicated, they must meet the following standards:

- High quality chest x-rays will be taken every five years, unless local legislation requires these to be more frequent;
- All chest x-rays for pneumoconiosis surveillance will be read to International Labour Organisation (ILO) standards by an ILO B reader, wherever possible, and if not, by a competent radiologist using verifiable quality criteria;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Any progression of more than one step on the ILO extended scheme to a reading above 1/0 will be reviewed by a physician;
- Any reading suggesting active lung disease will be reviewed by a physician; and
- All spirometry will be performed by trained staff following the American Thoracic Society guidelines or equivalent and be offered at a frequency determined by the likely rate of detectable change in lung function.

Controls must be of an adequate standard such that surfaces are adequately cleaned to avoid:

- Dust generation due to material dislodgment (e.g. windblown), where practicable; or
- Fume generation from accumulated dust during welding / heating or cutting operations.

Where risk assessment indicates the need to reduce exposures to toxic substances for employees or their families, good personal hygiene must be enforced. The programme must include:

- No smoking, eating or drinking in designated hazard areas;
- Washing of hands and face prior to drinking, eating or smoking;
- Showering at work post shift or after exposure to 'dirty' conditions; and
- Laundering of contaminated clothing by the contractor.

Abrasive blast cleaning must be conducted so as to protect worker health and minimise dust emissions. Substitutes must be used whenever practicable for abrasives containing crystalline silica. However, if such abrasives are used, workers must be aware of the hazards and exposure monitoring conducted. The hazardous properties of alternative materials must be considered before use.

Where required, training in the recognition of signs and symptoms of hazardous particulate and gas / vapour exposure, emergency procedures and preventative measures must be provided.

55.4 Respiratory Protection Devices

The selection of Respiratory Protection Devices (RPD's) must be based on:

- The potential particulate size distribution, gas / vapour types, substance toxicity and likely concentrations;
- Compatibility with the work tasks and other PPE; and

- Comfort (as it affects wear-time) and allowance for adequate communication.

Only RPD's approved by the nominated project management representative may be used. Suitable facilities must be available for cleaning and sanitary storage of RPD's.

Half-mask and full-face air-purifying respirators must NOT be used where:

- The atmosphere is oxygen deficient (< 19.5 per cent);
- The atmosphere is immediately dangerous to life or health (e.g. in areas where CO concentrations are > 1500 ppm, HF > 30 ppm or NH₄ > 300 ppm);
- Gases and vapours are more than ten times their OEL or greater than 1000 ppm for half-mask respirators, or more than 100 times their OEL for full-face respirators; or
- Particulates are more than five times their OEL for half-mask respirators, or more than 50 times their OEL for full-face respirators.

For atmospheres that are oxygen deficient, or contain unknown hazards, or have concentrations of gases and vapours that are unknown, or could potentially exceed levels that are immediately dangerous to life or health, an air-supplied type respirator must be worn.

For effective use of negative pressure RPD's (including disposable RPD's), fit testing must be qualitative and documented as a minimum, although quantitative fit testing is preferred. Fit testing must be performed by a competent person when RPD's are first issued and must be repeated periodically according to legal requirements or two-yearly as a minimum frequency. There must be a policy requiring a clean shaven face when using a negative or neutral pressure RPD for routine tasks, or the use of a positive pressure RPD will be required. A pulmonary function test and medical evaluation may be required to determine whether or not an individual is medically fit to wear a respirator.

For air-supplied RPD's, breathing air must be effectively filtered and / or isolated from plant and instrument air, and isolated from sources of potential contaminants. The quality of the breathing air must be checked for conformance with applicable standards.

The respiratory protection programme must include:

- Periodic inspection of RPD's, including before each use;
- Periodic evaluation of cleaning, sanitising, maintenance and storage practices by competent persons;

Health and Safety Specification – Alterations to the eMendi Building, PoN

- Performance of positive and negative fit checks before each use by RPD wearers to ensure that the respirator is functioning properly; and
- Training at first issue of a RPD and regular refresher training thereafter in accordance with regulatory requirements or at least once every two years.

55.5 Hazardous Chemical Substances

No chemical substance may be brought onto site unless it has been approved for use by the nominated project management representative. The contractor must develop and maintain a hazardous chemical substance register specifying as a minimum the type and volumes of substances on site.

If the contractor wishes to make use of a chemical substance that does not appear on the register, then the contractor must provide the following minimum information to the nominated project management representative for review PRIOR to bringing the substance onto site:

- A detailed 16-point Material Safety Data Sheet (MSDS) issued by the manufacturer / supplier of the substance;
- The reason for wanting to bring the substance onto site (i.e. the intended use of the substance);
- The proposed method of transportation;
- The proposed arrangements for the safe storage of the substance;
- The quantity to be stored on site;
- The proposed methods for handling / using the substance (including PPE);
- The proposed method of disposal of the waste;
- Proof that the contractor is able to readily provide the necessary first aid measures as specified in the MSDS; and
- A risk assessment covering the transportation, use, handling, storage and disposal of the substance with specific reference to the substance's compatibility with other chemicals.

This information must be provided at least five (5) working days prior to the date on which the contractor intends to bring the substance onto site for use. Any chemical substance brought onto site without adherence to the requirements stipulated above shall be removed from site immediately.

If the nominated project management representative approves the substance for use, the contractor must ensure that all necessary precautions are taken concerning the transportation, use, handling, storage and disposal of the substance, and that all required PPE and first aid materials / equipment (as stipulated in the MSDS) are readily available on site.

The contractor must ensure that a Material Safety Data Sheet (MSDS) is obtained for each chemical substance brought onto site. A file, or files, containing all of the MSDS's must be maintained and must be readily available to all personnel on site (particularly first aiders) as well as other potentially affected parties (e.g. emergency services personnel, persons from the local community, etc.). The MSDS's must be in the language(s) commonly used on site.

The contractor must appoint a trained and competent Hazardous Chemical Substances Coordinator who understands and is able to evaluate the risks associated with a wide variety of substances. This person shall be responsible for:

- Assessing the hazardous properties and risks associated with all chemical substances brought onto site by the contractor and appointed sub-contractors (using the MSDS's);
- Determining precautions and safe practices for transportation, use, handling, storage and disposal (including PPE requirements) (using the MSDS's);
- Determining first aid and emergency response requirements / procedures (using the MSDS's);
- Maintaining the MSDS file;
- Managing and monitoring the consumption of inventory; and
- Providing an "as needed" service to site personnel and suppliers.

The risks associated with the transportation, use, handling, storage and disposal of all hazardous chemical substances brought onto site must be assessed and managed by the contractor through a process that incorporates risk reduction using the hierarchy of controls as described as described by this Specification. Whenever a task-based risk assessment is carried out, consideration must be given to the use of chemical substances (e.g. greases, solvents, etc.).

The contractor must provide Safe Work Procedures for the transportation, use, handling, storage and disposal of all hazardous chemical substances to be used on site.

The contractor must provide his employees with all of the Personal Protective Equipment that is necessary to prevent exposure / injury while handling / using the hazardous chemical substances that they will be required to work with. Appropriate PPE must be selected with consideration given to the potential hazards, permeability, penetration, resistance to damage and compatibility with the work tasks.

The contractor's employees must be trained in the safe transportation, use, handling, storage and disposal of the hazardous chemical substances that they will be required to work with or may come into contact with. The training must specifically address PPE requirements (including the correct selection, fitment and use thereof).

All personnel must be trained to understand the potential health effects associated with exposure to hazardous chemical substances and therefore the importance of Safe Work Procedures and PPE. All personnel must be trained on emergency response procedures and first aid measures. Behaviour-based observations and coaching must include the use / handling of hazardous chemical substances.

An appropriate occupational exposure monitoring and medical surveillance programme must be in place for all personnel potentially exposed to hazardous chemical substances which have the potential to cause immediate or long-term harm.

Emergency showers and eyewash stations must be provided where required by law, or where a risk assessment indicates a need. The emergency showers and eyewash stations must be appropriately located, signposted, and regularly tested and maintained. Employees must receive training on the location and use of the showers / eyewash stations.

An emergency response plan for incidents involving hazardous chemical substances must be in place. Regular and appropriately staged emergency drills (possibly involving external spill response and ambulance support services) must be held and lessons learnt must be incorporated into the emergency response plan.

The contractor must provide appropriate storage facilities for all hazardous chemical substances to be used on site. The storage facilities must be secure and protected from damage. They must also be designed for easy access for firefighting purposes. Where

applicable, the storage facility must protect chemical containers from physical damage due to temperature extremes, moisture, corrosive mists or vapours, and vehicles.

The inventory of hazardous chemical substances stored on site must be kept to a minimum. The quantity of each chemical stored must be justifiable.

Storage and segregation requirements for all hazardous chemical substances to be used on site must be based on:

- The quantities of the substances stored;
- The physical state of the substances (solid, liquid or gas);
- The degree of incompatibility; and
- The known behaviour of the substances.

Access to areas where hazardous chemical substances are stored and handled must be limited and controlled.

Every chemical substance container must be adequately and clearly labelled to identify its contents, to indicate precautionary requirements for the substance, and to indicate the date of expiry (if applicable). Pipes used to transfer / convey / distribute chemical substances must be clearly identified (e.g. colour coding). Directional flow must be indicated where practical.

Before any item, equipment or empty container containing a chemical residue is disposed of as general waste, it must be properly decontaminated (where applicable). Before being disposed of, empty chemical containers must also be rendered unusable for carrying water (by puncturing, cutting or crushing them).

Hazardous chemical substance waste (i.e. redundant / expired hazardous chemical substances, containers containing residues, contaminated items / materials, etc.) must be disposed of in accordance with the applicable legislation.

Maintenance, inspection and testing schedules and procedures must be in place for critical equipment associated with hazardous chemical substances. A system must be in place to ensure that the risks are assessed before any changes are made to equipment and / or processes for the transportation, storage, handling, use or disposal of a hazardous chemical substance.

A programme must be in place to continually investigate possibilities / opportunities for replacing hazardous substances with safer alternatives.

55.6 Thermal Stress

Hot areas or activities where employees have experienced or could experience excessive fatigue, muscle cramp, dehydration, dizziness and other symptoms of heat stress must be identified and described.

Where a risk of thermal stress is determined, a competent person must conduct monitoring surveys on site, in consultation with workers.

For defined extreme thermal conditions and job activities, medical examinations must include information about the operator's physiological and biomedical aspects, and an assessment of fitness for the working conditions.

Cold areas or activities where employees have experienced or could experience pain or loss of feeling in extremities, frostbite, severe shivering, excessive fatigue and other symptoms of cold stress must be identified and described.

Workplace thermal stress levels (temperature, air movement, humidity, etc.), activities (work level, etc.) and conditions (clothing, health, etc.) that have the potential to exacerbate thermal stress effects must be adequately characterised and described. Workplace exposure assessment must be repeated according to regulatory requirements or whenever there is a change in production, work organisation, process or equipment which may impact thermal stress levels.

Detailed heat stress assessment of identified tasks or jobs must be tiered to:

- Commence with the use of a simple heat stress index as a screening tool; then, if necessary;
- Use rational heat stress indices in an iterative manner to determine the 'best' control methods for alleviating potential heat stress; and
- Undertake physiological monitoring when exposure times are calculated to be less than 30 minutes, or where high level PPE that limits heat loss must be worn.

Detailed cold stress assessment of identified tasks or jobs must be conducted according to current appropriate guidelines that incorporate a cold stress index, to determine the 'best' control methods for alleviating potential cold stress.

When a risk of thermal stress is identified, the following exposure controls must be implemented:

- An acclimatisation period for new workers and those returning from extended leave or sickness;
- Training in the recognition of signs and symptoms of heat or cold stress, emergency procedures and preventative measures;
- Protective observation (buddy system or supervision); and
- A requirement for self-paced working.

The following exposure controls must be considered by a competent person:

- Work / rest regimes and job rotation based on measurements conducted;
- Suitable rest areas with a provision of cool drinking water and cool conditions for high temperatures, or provision of warm drinks and warm conditions for cold temperatures;
- Selection of appropriate clothing or other PPE for extreme temperature conditions;
- The use of engineering controls; and
- Undertake hot / cold tasks during a cooler / warmer time of the day.

Where thermal stress is assessed to be a risk, the operation must develop a suitable emergency response plan.

55.7 Fitness for Work

The contractor must develop and implement a programme to manage employee fitness for work. All employees working on site for whom the contractor is responsible (i.e. direct employees of the contractor as well as the employees of any appointed sub-contractors) must be subject to this programme.

All safety critical jobs (i.e. roles where fatigue or other causes of reduced fitness for work could lead to serious injury, illness or death to employees, significant equipment / plant damage, or significant environmental impact) must be identified and the risks associated with reduced fitness for work in these roles must be assessed.

A programme to manage these risks must be implemented, and it must include:

- Mechanisms for managing fatigue, stress and lack of fitness;
- An alcohol and other (including prescription, pharmaceutical or illicit) drugs policy that includes testing;
- An Employee Assistance Programme providing confidential access to resources and counsellors; and
- Training and awareness programmes.

Each employee has an obligation to present himself fit for work at the start of the day / shift, and to remain fit for work throughout the work period. Reporting for work under the influence of alcohol or any other intoxicating substance will not be tolerated. Any transgression concerning the alcohol and other drugs policy applicable to the project may result in the offending employee's access to the project premises being temporarily or permanently withdrawn.

Alcohol and drug testing on the project premises will be carried out randomly (as employees report for duty and during the course of the day / shift), following any incidents (all persons involved), and whenever there is reasonable suspicion. Alcohol and drug testing must also be carried out as part of a Pre-Employment Medical Examination.

Sleep deprivation during shift work or from excessive working hours is a known cause of fatigue. Fatigued employees are at increased risk of accidents. Shift system design must consider:

- The effect on worker fatigue;
- The effects of activities carried out during scheduled and overtime hours;
- The impact on sleep cycles of activities such as commuting to and from site; and
- The monitoring and control of working hours.

The contractor is responsible for the administration of the working hours of his employees as well as the employees of any appointed sub-contractors. The maximum working hours per day and the minimum rest times between shifts must be specified in the contractor's Health and Safety Management Plan and must comply with all applicable legislation.

All employees are required to undergo fitness assessments (medical examinations) which must be carried out prior to the commencement of employment on the project, prior to a change in role, periodically based on an employee's individual risk profile, and on termination of employment on the project:

- Pre-Employment Medical Examination – to assess the physical suitability of the person for the role and environment in which he will work (carried out prior to the commencement of employment on the project and prior to induction). The contractor must take note that employee medicals for this project must include a drug test;

- Periodic (Surveillance) Medical Examination – to assess the ongoing physical condition of an employee to determine if his role is impacting on his health and whether the employee's fitness level is still adequate for the role he holds (these medical examinations are "risk driven" – the specific protocol followed and the frequency of the examinations will depend on the applicable legal requirements and the employee's individual risk profile as determined by his personal fitness, the nature of his role / duties, and the environment in which he works / occupational health hazards to which he is exposed).
- The periodic medical assessment programme must include:
 - ♦ The identification of modifiable risk factors that may impact fitness for work;
 - ♦ Education and support to maintain health or address identified risk factors; and
 - ♦ Education and support to help employees regain their fitness for work.
- Role Change Medical Examination – to assess an employee's physical suitability for a different role and work environment (carried out prior to a change in role / duties);
- Exit (Post-Employment) Medical Examination – to determine the total physical impact of the work the employee performed (carried out on termination of employment on the project).

Note: The results of an Exit Medical Examination from previous employment will not be accepted as a Pre-Employment Medical Examination.

Note: The medical examinations described above may only be carried out by an Occupational Medical Practitioner employed by the Coega Development Corporation (CDC) within the Coega Industrial Development Zone (CIDZ) (i.e. a medical doctor who holds a qualification in occupational medicine).

A detailed job (role) description and an exposure profile (noise, dust, heat, fumes, vapours, etc.) must be provided for each employee or group of employees. The medical examinations that an employee undergoes must be based on (i.e. the employee's fitness must be assessed against) the information contained in these documents as well as the baseline risk assessment for the work. This information must be made available to the occupational medical practitioner performing the medical examination.

For each role, the medical criteria for fitness must be documented and these must be based on an evaluation of the physical and medical requirements for the role. Depending on the circumstances, certain vaccinations may need to be provided to employees.

Health and Safety Specification – Alterations to the eMendi Building, PoN

The medical examinations carried out for all drivers and operators must include testing / assessment for medical conditions that could affect the safe operation of vehicles or equipment.

Specific testing / questioning must be carried out to determine if an individual:

- Suffers from epilepsy or any other medical condition deemed to be a risk by the occupational medical practitioner;
- Makes use of chronic medication that could affect performance;
- Is colour-blind; or
- Has poor day or night vision.

The medical examinations carried out for employees that are required to work at height must include testing / questioning to determine if an individual suffers from epilepsy, hypertension (high blood pressure) or any other medical condition deemed to be a risk (with regard to working at height) by the occupational medical practitioner. Electricians must be tested for colour-blindness.

With regard to the placement of new employees:

- Prospective employees must be referred to a suitable occupational medical practitioner (doctor) for a "Pre-Employment Medical Examination";
- If an individual is found to be medically "unfit for placement", the doctor will indicate which work activities cannot be performed by the person;
- The individual may still be employed on the project if his medical restrictions can be accommodated and provided that no legislation is transgressed.

A process must be established to manage medical restrictions that may be placed on an employee. For every employee with a medical restriction, regular follow up visits with the occupational medical practitioner must be arranged to ensure that each case is proactively managed.

An employee in a safety critical job must report (to his supervisor) any condition that might impair his ability to safely perform the duties associated with his role. A mechanism must be in place for such reports to be referred to an occupational medical practitioner to determine if the employee is fit to continue with his work.

Proof of all medical examinations (i.e. certificates of fitness signed by an occupational medical practitioner) must be kept on site and these records must be readily available for

inspection by the nominated project management representative.

An employee's certificates of fitness must be included in his Personal Profile (dossier). If an Employee Personal Profile (dossier) hasn't already been compiled for a particular employee, then this must be done without delay following the employee's Pre-Employment Medical Examination.

No employee may commence work on site without proof that he has undergone a Pre-Employment Medical Examination.

Occupational medical examinations and data interpretation may only be carried out by medical practitioners that are appropriately qualified and certified to do so. Occupational medical data contained in reports to management must be grouped and summarised to ensure that the confidentiality rights of each individual employee are maintained. All occupational medical data and records must be retained for at least 40 years.

55.8 Legionnaires Disease

All equipment with the potential for generating Legionella (such as cooling towers and associated equipment, air-handling systems, hot water services and showers) must be identified and the risks of contamination and aerosol generation assessed.

Where there is an assessed risk that Legionella could grow in the system and cause harm, a programme must be in place such that:

- All such equipment is identified on a register. The register must contain details of the regular maintenance, cleaning and checking programmes;
- Control measures are in place to minimise aerosol emissions;
- There must be a documented water treatment programme, including procedures for inspection, assessment and maintenance of the controls; and
- New or retrofitted equipment is designed and constructed to minimise the risk of Legionella growth.

Where available, the Legionella plate count test should be used if more effective methods are not available.

Good maintenance procedures must be followed to minimise the risk of significant contamination of equipment with other bacteria and microbial organisms.

Adequate procedures must be available for disinfecting systems if significant concentrations of Legionella bacteria are present. Once disinfected, systems must be retested to confirm effectiveness of treatment.

Health and Safety Specification – Alterations to the eMendi Building, PoN

55.9 HIV / Aids

The contractor must assess the risks posed by HIV. Appropriate mitigation strategies must be implemented as required. Discrimination towards employees on the basis of actual or perceived HIV status is forbidden. All information on the HIV status and condition of employees including that relating to counselling, care and treatment and receipt of benefits, must be maintained in medical confidence.

HIV / AIDS screening may not be a requirement for recruitment or a condition of employment.

55.10 Measuring and Monitoring

The workplace exposure (or potential exposure) of persons to hazardous substances or agents must be measured and monitored to determine the effectiveness of control measures as well as compliance with legal and other requirements, particularly Occupational Exposure Limits. All such measuring and monitoring must be carried out by an Approved Inspection Authority (i.e. a specialist service provider that is appropriately registered with a governing authority).

A plan for measuring and monitoring occupational exposure must be developed and it must include, as a minimum:

- Detail of what must be measured and monitored, based on a risk assessment and / or identified legal or other requirements;
- The frequency of measurement and monitoring;
- A description of the necessary equipment;
- Data quality requirements and controls (including details on the sample size for statistical validation and any rejection criteria);
- The sampling and analysis method(s) including any laboratory certification requirements; and
- The competency requirements for persons carrying out workplace monitoring.

Each instrument and item of equipment used for occupational exposure measurement and / or monitoring must be:

- Properly maintained to ensure compliance with legislative requirements;
- Controlled and safeguarded from unintentional adjustments;
- Suitably stored and protected from damage; and

- Calibrated or verified against a traceable standard at specific intervals (calibration records must be retained).

Each analytical laboratory service that is used must have implemented a credible quality assurance or quality control programme.

All monitoring results obtained must be analysed on a regular basis to:

- Identify trends and potential exceedances of legal or other requirements (such as Occupational Exposure Limits);
- Identify inconsistent or unusual results;
- Evaluate the effectiveness of existing control measures;
- Measure performance against stated objectives; and
- Identify continual improvement opportunities.

Each exceedance of a specified requirement or limit must be recorded, investigated and reported. Appropriate corrective actions must be identified and implemented.

55.11 COVID 19

The Principal Contractor to ensure that the latest and most updated legislated COVID 19 requirements, processes and procedures are complied with by all on site.

56. Emergency Preparedness and Response

The contractor must develop, implement, test and maintain an Emergency Response Plan (incorporating emergency evacuation procedures) that focuses specifically on the contractor's team and work activities. The plan must be risk-based and must detail the procedures that must be followed when responding to all potential emergency scenarios such as a medical emergency (including first aid response), a fire, an explosion, a hazardous substance spill, flooding, rescue from height, rescue from a confined space, etc.

Potential off-site emergency scenarios must be included (e.g. emergency scenarios related to the transport of personnel, the transport of hazardous materials, and personnel performing work in remote locations).

Health and Safety Specification – Alterations to the eMendi Building, PoN

Consideration must be given to surrounding Port users and tenants, and to the availability and capability of local emergency services. Details of any arrangements with external emergency response service providers must be included.

The Emergency Response Plan must satisfy and comply with all applicable legal requirements. The plan must be adequately resourced to ensure effective implementation. These resources must include appropriate personnel, external emergency response service providers, emergency response equipment, and warning devices. All equipment and warning devices must be identified, maintained and tested to ensure availability at all times.

Accountability for the Emergency Response Plan must be clearly defined. An Emergency Response Team (ERT) responsible for the implementation, management and execution of the Emergency Response Plan must be established. The roles and responsibilities of each team member must be clearly defined in the plan. Each team member must receive appropriate training to ensure that each role is performed competently.

The process for managing incident communication, notification, and reporting must be incorporated into the Emergency Response Plan. The responsible person(s) must be clearly identified, and the protocols for communicating with internal and external stakeholders must be defined.

Emergency evacuation procedures must be developed and included in the Emergency Response Plan. A copy of the plan must be provided to the nominated project management representative for approval prior to site establishment. The Emergency Response Plan must be formally reviewed (and amended if necessary) when project needs require, and following any emergency situation, to ensure that it remains appropriate and effective.

At each project work site, as a minimum:

- A suitable evacuation alarm (siren) must be provided. All persons working in an area where an evacuation alarm is sounded must respond to it immediately.
- Suitable fire-fighting equipment must be provided and maintained, and personnel must be trained in fire-fighting procedures and the use of fire-fighting equipment.
- Suitable first aid equipment and supplies must be provided and maintained, and an adequate number of appropriately trained First Aiders must be in place.

- Emergency assembly points positioned in safe locations away from buildings, plant and equipment must be designated (and conspicuously signposted). In the event of an evacuation, all persons (i.e. personnel and visitors) must assemble and be accounted for at these emergency assembly points.
- All personnel must receive awareness training on the applicable emergency response procedures, and all visitors entering the site must be properly instructed in these procedures.
- The emergency response procedures must be displayed on each notice board.
- A diagram (site plan) indicating evacuation routes, emergency assembly point locations, and the positioning of emergency equipment (fire extinguishers, first aid boxes, etc.) must be prominently displayed in all buildings and plants, in all offices, on all notice boards, and in other locations on the site as may be required.
- An up-to-date list of emergency telephone numbers must be compiled and maintained. A copy of this list must be posted at each site entrance, in each office, near each telephone, and on every notice board.
- Emergency response drills must be conducted to test the effectiveness of the emergency procedures and equipment, as well as the knowledge and proficiency of the response personnel. Where appropriate, drills must include liaison with and the involvement of external emergency response service providers. A variety of emergency scenarios must be tested including, but not limited to, medical emergencies, fires, rescues, and hazardous substance spills. A drill must be carried out one month after site establishment and then again six months thereafter.

Each drill must be monitored and the outcomes (highlights and shortcomings) must be documented. Corrective actions must be identified and implemented to address the shortcomings, and the Emergency Response Plan and associated procedures must be amended as required.

Refer to the Transnet Health and Safety Management Site Emergency Managements HAS- P-0001.

56.1 Fire Fighting

The contractor must ensure that Fire Fighting requirements are complied with.

56.2 First Aid

The contractor must ensure that First Aiders are trained and appointed as described in this Specification and in accordance with relevant legislative requirements.

56.3 First Aid Kits

A suitable first aid kit (i.e. appropriate to the level of training) must be readily available to each First Aider. All kits must be provided and maintained by the contractor.

Taking into account the type of injuries that are likely to occur in the workplace, each first aid kit must contain suitable equipment and supplies. First aid equipment and supplies required by applicable legislation must be provided as a minimum.

The contents of each first aid kit must be kept clean and dry. Each kit must be contained in either a portable weather-proof case / bag or a steel box mounted to a fixed structure. Access to first aid equipment / supplies must be limited to train First Aiders only. Access to portable kit bags must be controlled and steel first aid boxes mounted in the workplace must be kept locked. Approved signage must be in place to indicate the locations of the first aid boxes / bags. A record of each treatment administered must be kept in a suitable register.

No tablets or medication not stipulated within table 61-1 are to be stored in the first aid box.

No tablets or medication to be administered by first aiders or other personnel to employees who are not feeling well or have been injured.

The first aid kits must, as a minimum, contain the following equipment and supplies:

Table 61-1 Minimum Requirements to be included when equipping first aid boxes

Item 1:	Wound cleaner/ antiseptic – 100ml;
Item 2:	Swabs for cleaning wounds;
Item 3:	Cotton wool for padding – 100g;
Item 4:	Sterile gauze – minimum quantity 10;
Item 5:	1 x Pair of forceps – for splinters;
Item 6:	1 x Pair of scissors – minimum size 100mm
Item 7:	1 x Set of safety pins;
Item 8:	4 x Triangular bandages;
Item 9:	4 x Roller bandages – 75mm x 5m;
Item 10:	4 x Roller bandages – 100mm x 5m;

Item 11:	1 x Roll of elastic adhesive – 25mm x 3m;
Item 12:	1 x Non-allergenic adhesive strip – 25mm x 3m;
Item 13:	1 x Packet of adhesive dressing strips – minimum quantity 10 assorted sizes;
Item 14:	4 x First aid dressings – 75mm x 100mm;
Item 15:	4 x First aid dressings – 150mm x 200mm;
Item 16:	2 x Straight splints;
Item 17:	2 x Pairs large and 2 x pairs medium disposable latex gloves;
Item 18:	2 x CPR mouth pieces or similar devices.

Additional items / supplies may need to be provided depending on the nature of the workplace (specific hazards) and the level of training of the first aider in position of the kit.

57. Management Review

A review of the contractor's Health and Safety Management System must be undertaken as required within the project timeframe to ensure that the system continues to be effective in managing health and safety performance and meeting project requirements. The review must evaluate if there is any need for change and must identify actions to improve the system.

The review must be led by senior management and the following must be considered:

- The suitability of the policy adopted for the project;
- The impact of changing legislation;
- The management of risk;
- Health and safety objectives and performance indicators;
- Changing expectations and requirements of relevant stakeholders;
- Changes to the contractor's scope, schedule, designs, etc.;
- Changes to the contractor's organisational structure;

- Communication and feedback (particularly from employees, Project representatives, and client representatives);
- The effectiveness of the management of change process;
- Workplace exposure monitoring and medical surveillance;
- The status of corrective actions;
- Performance statistics, including an annual summary of safety statistics, and occupational hygiene monitoring and medical surveillance results;
- Non-conformances (findings) from completed audits;
- Follow up on actions from previous management reviews; and
- Recommendations and opportunities for improving the effectiveness of the management system.

A record of each completed management review must be retained and it must include all decisions and identified actions concerning alterations, modifications or improvements to the management system that demonstrate a commitment to continual improvement.

58. Management of Change

To ensure that proposed changes do not give rise to unacceptable health or safety risk, the contractor must develop and implement a process for identifying and managing change in the workplace (e.g. changes to scope, schedule, procedures, work methods, site conditions, designs, plans, plant and equipment, materials, processes, etc.) that may impact on health or safety performance.

The management of change process must take into consideration that changes may be planned or unplanned, sudden or gradual, temporary or permanent.

The process must aim to ensure that:

- Changes are identified and assessed before they are implemented;
- Careful consideration is given to managing the risks associated with any change;
- Due diligence can be shown to have taken place;
- The number of unsatisfactory or unnecessary changes is minimised;
- The right people are involved in the change process; and
- All statutory requirements are met.

All risks associated with a proposed change must be evaluated and ranked. The risks that are ranked as moderate or higher must be managed to prevent serious injury or illness.

It must not simply be assumed that a change will not result in significant risks. All proposed changes must be formally evaluated. The evaluation or review must include:

- An appropriate level of technical expertise;
- The involvement of the workforce potentially affected by the proposed change; and
- Approval of the change by a person with at least the same level of authority as those who control the existing process or item being changed.

59. Sub-contractor Alignment

Processes must be in place to ensure that the health and safety risks associated with the procurement of materials, equipment, services and labour are identified, evaluated and effectively managed.

A process for evaluating a sub-contractor's (or supplier's) ability to provide materials, equipment, services and labour that meet defined specifications must be in place. A prospective sub-contractor's health and safety management expertise, experience and capability (including previous health and safety performance) must be formally assessed prior to any contract or purchase order being awarded.

Each appointed sub-contractor must develop and implement a detailed Health and Safety Management Plan based on the requirements of the contractor's Health and Safety Management Plan and the Health and Safety Specification for the project. This plan must be reviewed and approved by the contractor prior to the commencement of any work.

The properties of all materials provided to the project must be adequately understood, documented and integrated into operating procedures where exposure to these materials presents a significant health or safety risk.

Procedures, commensurate with the evaluated risk, must be in place for the receiving, storing, dispatching and transporting of all equipment and materials.

Before work commences on any contract, all sub-contractor personnel must receive comprehensive orientation and induction training as required by this Specification. All work carried out by a sub-contractor must be managed (activity supervised) throughout the contract period and performance must be reviewed (audited) on a regular basis.

60. Incident Reporting and Investigation

The contractor must establish a procedure for the management of all health and safety incidents. This procedure must define the responsibilities, methodologies and processes that must be followed for:

- Reporting an incident;
- Investigating an incident;
- Analysing an incident to determine the root cause;
- Identifying and implementing corrective actions to prevent a recurrence; and
- Communicating information concerning an incident to relevant persons and / or groups.

Please Note: Arrangements must be in place to ensure that proper medical care is provided to any contractor (or sub-contractor) employee that suffers an occupational injury or illness. These arrangements must be described briefly in the contractor's Health and Safety Management Plan and in detail in the Incident Management Procedure.

An incident may have multiple impacts. For each impact, the Actual Consequence and the Maximum Reasonable Outcome must be evaluated. Each impact must be evaluated independently, with the most significant classification forming the primary rating of the incident.

A near-miss is an incident. All near-miss incidents must be reported.

Using the defined consequence scales contained in TRANSNET 5x5 qualitative risk matrix, the Actual Consequence of each impact must be categorised as:

- A Near-miss;
- Insignificant (Level 4; as per TRANSNET incident level classification guidance);
- Minor (Level 3; as per TRANSNET incident level classification guidance);
- Moderate (Level 2; as per TRANSNET incident level classification guidance);
- Major (Level 1; as per TRANSNET incident level classification guidance); or
- Catastrophic (Level 1; as per TRANSNET incident level classification guidance).

The Maximum Reasonable Outcome (MRO) is based on a risk evaluation of the maximum reasonable consequence of an impact and the likelihood of the event occurring again given a reasonable failure of existing controls. Using the matrix referred to above, each impact must be evaluated and classified as:

- Low;
- Moderate;
- High; or
- Extreme.

An incident must be reported on the same work day or shift on which it occurs and preliminary details must be recorded and a TRANSNET Incident Flash Report must be completed and submitted within 24 hours to the relevant Project Construction Manager or representative. Depending on the Actual Consequence and Maximum Reasonable Potential Outcome of the impact(s), the relevant internal and external parties must be notified in accordance with specified protocols and timeframes, and legislative requirements.

In the event of a significant incident (i.e. an incident with an Actual Consequence of Moderate, Major or Catastrophic, or a Maximum Reasonable Potential Outcome of High or Extreme), work must cease and must only resume once the necessary actions (including the re-evaluation of any relevant risk assessments) have been taken to eliminate or reduce the risk of recurrence. Work must only be permitted to recommence once formal authorisation has been granted by the Project Construction Manager. In the case of incidents with an Actual Consequence of Major or Catastrophic, work must not be permitted to recommence until authorisation has been granted by the relevant government authorities (i.e. the South African Police, the Department of Labour or the Department of Mineral Resources).

The Project Construction Manager must ensure that an investigation is completed for each incident that occurs, and that appropriately senior personnel participate in, and authorise the outcomes of, each investigation. Incident investigations must be facilitated by competent and experienced persons who have been trained in the appropriate methodology. (e.g TCAM – Transnet Causal Analysis Methodology).

All significant incidents (i.e. incidents with an Actual Consequence of Moderate, Major or Catastrophic, or a Maximum Reasonable Outcome of High or Extreme) must be investigated using the approved Transnet investigation methodology. Such an investigation must be facilitated by a trained project representative within 7 calendar days.

Health and Safety Specification – Alterations to the eMendi Building, PoN

For all other incidents (i.e. incidents with an Actual Consequence of Insignificant or Minor, or a Maximum Reasonable Outcome of Low or Moderate) other methodologies approved by the Project Health and Safety Manager may be used.

Each incident (including near-miss incidents) must be investigated to a level of detail that is appropriate for the Maximum Reasonable Potential Outcome of the incident.

Each incident must be analysed to determine the root cause, and corrective actions must be identified and prioritised for implementation to eliminate or reduce the risk(s) in order to prevent recurrence of the incident.

For each corrective action, a responsible person must be designated and an appropriate timeframe (target date) for completion of the corrective action must be specified. Progress on implementing corrective actions (i.e. closing incidents) must be monitored and reported on. The implementation of corrective actions must be verified during monthly audits by the TRANSNET Project Health and Safety Practitioners but also no later than 30 calendar days after the conclusion of the incident investigation. The contractor must document the results of each investigation and a report must be submitted to the nominated project management representative within a stipulated time frame as determined by the nominated project management representative.

As a minimum, each incident report must include:

- The date, time and location of the incident;
- A detailed description of the incident, including photographs;
- The names of any injured persons;
- Injury details (if applicable);
- A summary of the first aid and / or medical treatment provided (if applicable);
- The current status of any injured persons;
- The root causes of the incident; and
- Detailed corrective actions, including responsible persons and target dates for implementation.

Each significant incident must be summarised for its lessons learnt following the investigation. This information must be reviewed by the contractor's Project Manager to assure completeness, accuracy and relevance before it is shared with (communicated to) all project personnel. Refer to the Transnet Health and Safety Management Occurrence Reporting and Investigation HAS-P-0002.

61. Non-conformance

Non-conformance Reports (NCR) will be issued to Contractors upon the identification of non-compliances to this specification. NCR's will be issued to Contractors for their response and implementation of corrective actions. NCR's must be closed out within a 48hour period depending on the severity of the non-conformance.

The contractor must establish a process for identifying and recording corrective actions arising from:

- Non-compliances;
- Incident investigations;
- Hazard identification and risk assessment;
- Measurement and monitoring;
- Improvement plans and suggestions;
- Managing change;
- Audits and inspections; and
- Safety observations and coaching (safety interactions).

The contractor must establish a procedure for managing actions that addresses:

- Identification, categorisation and prioritisation of actions;
- Formal evaluation and approval of actions (management of change process);
- Assignment of responsibilities, resources and schedules for implementation;
- Implementation of actions;
- Tracking and reporting on implementation status; and
- Monitoring and verifying the effectiveness of the actions.

62. Performance Assessment and Auditing

The contractor must establish and maintain programmes for measuring and monitoring health and safety performance on a regular basis. Metrics must include leading and lagging indicators, and be based on qualitative and quantitative data.

62.1 Reporting on Performance

Reports summarising the contractor's health and safety performance on the project must be compiled on a weekly and a monthly basis.

The contractor must be prepared to discuss the content of these reports at scheduled health and safety meetings.

Health and Safety Specification – Alterations to the eMendi Building, PoN

The reports must contain the following minimum information:

- Number of contractor and sub-contractor employees on site;
- Total hours worked on site by contractor and sub-contractor employees (by company);
- Number of incidents by category (i.e. Near-miss, FAI, MTI and LTI);
- Lost Time Injury Frequency Rate (LTIFR) (project to date and 12-month rolling);
- Details of all new incidents for the reporting period and the corrective actions taken or to be taken;
- Feedback (progress updates) on all open incidents and outstanding corrective actions;
- Status and feedback on any employee that may have been injured and has not yet returned to work;
- Details of all health and safety training carried out during the reporting period;
- Number of SOC's (Safety Observations and Coaching) carried out during the reporting period;
- SOC trends identified and proposed action for the coming week or month to maintain positive trends and / or address negative trends;
- Details of all audits, inspections and site visits carried out during the reporting period, and the corrective actions taken (or to be taken) to address all non-conformances;
- Feedback (progress updates) on all open non-conformances and outstanding corrective actions;
- Number of Toolbox Talks conducted during the reporting period (monthly);
- Number of Planned Task Observations (PTO's) carried out during the reporting period (monthly);
- Details of all active risk assessments and Safe Work Procedures highlighting those that are due for review in the coming month (monthly);
- A look ahead (to the coming week, month or quarter) to ensure that appropriate health and safety planning and preparation is done for upcoming work;
- Challenges faced with regard to health and safety; and
- Any other health and safety related information specific to the project that may be required.

Leading indicators (e.g. audit findings, observations, etc.) must be analysed, and any negative trends identified with regard to unsafe behaviour or conditions must be appropriately addressed to prevent incidents.

Lagging indicators (e.g. injuries, illnesses, near-miss, etc.) must be investigated in detail to determine the root causes. Corrective actions must be identified, implemented and integrated into Safe Work Procedures to prevent recurrences.

63. Audits and Inspections

On a monthly basis, the health and safety management system and workplace activities of the contractor will be audited by a Project Health and Safety Practitioner to assess compliance with the project health and safety requirements. Any deviation from these requirements (i.e. non-conformance) that places the health or safety of any person in immediate danger will result in the specific activity being stopped until the non-conformance is corrected.

For each non-conformance determined during any audit, the contractor must identify and implement appropriate corrective actions.

For each corrective action, a responsible person must be designated and an appropriate timeframe (target date) for completion of the corrective action must be specified. Progress on implementing corrective actions (i.e. closing non-conformances) must be monitored and reported on. The implementation of corrective actions will be verified during the monthly audits.

Should it be determined that the contractor's level of compliance is unsatisfactory, all work being performed by the contractor on the project site may be stopped (at the contractor's expense) until an investigation into the reasons for the poor performance has been carried out, a corrective action plan has been developed, and corrective actions have been implemented.

In addition to the audit carried out by the Project Health and Safety Practitioner, the contractor must carry out an internal audit on a monthly basis to assess compliance with the project health and safety requirements (including the requirements of this specification and the contractor's Health and Safety Management Plan). Furthermore, the contractor must ensure that each appointed sub-contractor is audited and measured to the same standard. Copies of these audit reports must be submitted to the Project Health and Safety Practitioner on a monthly basis.

The contractor must carry out internal health and safety inspections as follows:

- General site health and safety inspections on a daily basis; and
Inspections of plant, tools and equipment prior to establishment or use on site, and at least monthly thereafter.

Health and Safety Specification – Alterations to the eMendi Building, PoN

All audits and inspections must be carried out by competent persons who have been appointed in writing.

A schedule of planned audits and inspections must be compiled and maintained ensuring that:

- All work areas and all activities are covered at regular intervals;
- All applicable legal requirements are complied with; and
- Areas or activities with significant associated hazards or risks receive greater attention.

64. Reference Documents

Table -1: Reference Documents

Document Identification
Occupational health and safety act, 85 of 1993 and Regulations
TIMS Contractor Management Procedure, TNPA



TRANSNET

GENERAL QUALITY REQUIREMENTS FOR CONTRACTORS AND SUPPLIERS

QAL-STD-0001

Document Number	QAL-STD-0001
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SUMMARY VERSION CONTROL

[illegible]

Note: Only the latest amendments and/or additions are reflected in italics in the body of the document.

Table of Contents

1. Purpose	5
2. Definitions / Abbreviations	5
3. Applicable Documents	7
3.1 General	7
3.2 Statutory Regulations	7
3.3 Codes and Standards	7
4. Quality System	8
4.1 General	8
4.2 Contractor Quality System Requirements	8
4.3 Contractor / Supplier Documentation Submittal Requirements	8
4.4 Project Quality Plan	9
4.5 Procedures	10
4.5.1 Document Control	10
4.5.2 Design Control	10
4.5.3 Procurement	11
4.6 Contractor Audits	11
4.7 TRANSNET Audit	11
5. Inspection and Testing	11
5.1 General	11
5.2 Quality Control Plans	12
5.3 Inspection Points	12
5.4 Revision to Quality Control Plans	13
5.5 Kick Off Meeting	13
5.6 Schedule of Inspection	13
5.7 Field Inspection Checklists	13
5.8 Inspection Notification	14
5.9 Inspection and Testing	14
5.10 Inspection Release	14
5.11 Special Processes	15
5.12 Welding Procedures	15

5.13 Material Traceability	16
5.14 Material Certification.....	16
6. Non-Conforming Products.....	17
6.1 General	17
6.2 Corrective and Preventative Action.....	17
7. Concession Requests and Technical Queries	18
7.1 Concession Requests	18
7.2 Technical Queries.....	18
8. Inspection, Measuring and Test Equipment	18
8.1 Calibration	18
8.2 Use of Inspection, Measuring and Test Equipment	18
8.3 Verification of Previous Test Results.....	19
9. Quality Personnel Qualifications	19
10. Quality Records	19
Annexure 1 – Sample Project Quality Plan	21
Annexure 2 – Concession Request (QAL-FAT-0003).....	22

1. Purpose

This Specification outlines the minimum requirements to ensure that products and services supplied to TRANSNET are manufactured, provided, constructed or installed in accordance with all specified requirements as defined in the Contract, all associated specifications, drawings, codes and standards.

2. Definitions / Abbreviations

Term, Abbreviation	Meaning
Contract:	Formal document evidencing agreement between Employer and Contractor for supply of on site or off site services (generic term used for Purchase Orders, Contracts and Service Orders in this Standard).
Contractor:	The party to a contract that provides services to the Employer (generic term used for Vendors, Suppliers, Contractors, Consultants, etc.).
Contractor Documentation Schedule (CDS)	A schedule specifying the Employer's requirements for the document types to be submitted by the Contractor at various stages of the Contract and the timing of the submissions.
Data:	All drawings/documents/data/information/DPs and IOMs required to be supplied under the Contract.
Data Pack (DP):	A compilation of manufacturing data, certification, inspection and testing records prepared by the Contractor to verify compliance with the Contractual requirements.
Employer:	The party to a Contract or Purchase Order to whom the goods are supplied or for whom the work or services are performed. In the context of this document, Transnet Capital Projects is the Employer.

Term, Abbreviation	Meaning
Field Inspection Checklist (FIC):	A document that details the checks, requirements and test parameters for each type of equipment to permit field installation and pre-commissioning of the equipment
Inspection Release Report (IRR):	A document issued to the Contractor by TRANSNET advising release of materials for shipment. This does not relieve the Contractor of its obligations in accordance with the Terms and Conditions of the Contract.
Inspection Waiver Report (IWR):	A document issued to the Contractor by TRANSNET advising that TRANSNET has waived final inspection for the materials listed in this document. The issue of this report does not preclude further inspections by TRANSNET. It is issued without prejudice and does not relieve the Contractor from the guarantees and obligations included in the Contract.
Installation and Operating Manual (IOM):	A document prepared by the Contractor providing relevant information applicable to the installation and maintenance of the specific equipment, including data relating to consumables (eg. Oils, etc.)
Non Conformance (NC)	Material, product or workmanship which is not in accordance with the requirements of the Contract.
Non-Conformance Report (NCR):	A document initiated by either TRANSNET or the Contractor advising that certain materials/products/workmanship provided by the Contractor do not conform to the required standards and specifications.
Project Quality Plan (PQP):	A document that outlines the Contractor's strategy, methodology, resources allocation, Quality Assurance and Quality Control coordination activities to ensure that Goods and Services supplied meet or exceed the

Term, Abbreviation	Meaning
	requirements defined in the Contract drawings, codes and standards.
Quality Assurance (QA):	A formal methodology designed to assess the quality of products or services provided.
Quality Control (QC):	A set of activities intended to ensure that quality requirements are actually being met.
Quality Control Plan (QCP):	A document outlining specific manufacturing/construction inspection and testing requirements, including responsibilities, test acceptance criteria, nomination of witness and hold points.
Technical Query Note (TQN):	A document used by the Contractor to formally clarify a Technical Query related to the scope of supply. This should not be used where a Non-Conformance Report has already been initiated.
TRANSNET:	Transnet SOE Limited
Works Information:	Refers to the Works Information as defined in the Contract

3. Applicable Documents

3.1 General

All work performed shall comply with the requirements of this Specification, the documentation referenced in the Contract and the latest revision/edition of the relevant Codes and Standards referenced herein.

3.2 Statutory Regulations

Occupational Health & Safety Act, Act No 85, of 1993 and Regulations as amended.

3.3 Codes and Standards

Document No.	Title
ISO 9001:2008/2015	International Standard Series Quality Systems

4. Quality System

4.1 General

The Contractor is responsible for all quality activities necessary to ensure the Work meets the requirements specified in the Contract, and shall manage and coordinate all Quality aspects of the Work in accordance with the requirements of this Specification, together with the Contractor's PQP and QCPs once reviewed and accepted by TRANSNET.

4.2 Contractor Quality System Requirements

The Contractor shall have and maintain a documented Quality Management System. The Contractor may be required to demonstrate its use to TRANSNET. The Contractor's Quality Management System should be in accordance with the requirements of International Standard ISO 9001.

The Contractor submits the following Quality System documentation to TRANSNET at the time of tender:

- Project Quality Plan
- Quality Policy
- Index of Procedures to be used
- Programme of internal and external audits

4.3 Contractor / Supplier Documentation Submittal Requirements

The Contractor will make formal submission of this Quality Documentation on award of the Contract and at the times defined in the Contractor's Documentation Schedule, included in the Works Information for the Contract.

The Contractor's responsibilities are defined in terms of DOC-STD-0001 which outlines the standard requirements for preparation, submission, receipt, review, and collection of Technical and (or) Deliverable Documentation, as detailed in the Contractor Documentation Schedule (CDS).

TRANSNET uses the Contractor's Documentation Schedule (CDS), included in the Works Information for the Contract, to indicate those documents required to be submitted for information/review and/or acceptance.

The Contractor develops and maintains a comprehensive register of documents (Contractor's Documentation Register – CDR) that will be generated throughout the project.

The CDR includes all quality related documents. The CDR is a 'live' document and is submitted to TRANSNET for review following each revision by the Contractor. The CDR indicates the dates of issue of the documents taking into account sufficient time to allow for the TRANSNET review/acceptance cycle prior to the document being required for use.

TRANSNET includes a standard template for the CDR (DOC-FAT-0002) in the Starter Pack issued to the Contractor at the start of every contract.

4.4 Project Quality Plan

Where specified, the Contractor submits a PQP to TRANSNET within the period stated in the CDS and in any event not later than 28 days after the Contract start date. The PQP details how the Contractor's Quality System will be applied to the Scope of Work specified in the Contract, and shall address the following:

- Satisfying the technical and quality requirements of the Contractor's Scope of Work, and relevant elements of the applicable ISO 9001 standard
- Include all quality activities relevant to the Scope of Work, identifying all procedures, reviews, audits, controls and records used to control and verify compliance with the specified Contractual requirements.
- Include a listing of all special processes (e.g. welding and non-destructive testing, cube testing etc.) envisaged for use, including confirmation of personnel certification as required.
- Include all proposed method statements (for site based work activities).
- Include a description of the Contractor's project organisation, with key positions and responsibilities identified and individuals named. The organisation structure shall also indicate the resources committed to the management and coordination of QA / QC activities.
- Include a listing of all Quality Control Plans (QCPs), and associated Field Inspection Checklists (FICs), as applicable.
- Identify in the PQP any Sub-Contractor/Sub-Supplier work. Sub-Contractor/Sub-Supplier plans are approved by the Contractor, and a copy forwarded to TRANSNET for information.
- Include the proposed Authorised Inspection Authority (where applicable - for pressurised equipment and systems).
- Include a schedule of proposed quality records.

The PQP shall be controlled and re-submitted for approval when required to incorporate any change necessary during the Contract duration to ensure that the document is maintained as an effective control, change management and records. The change management will be done to an agreed policy or procedure.

Note: Where the Contractor is required to provide a PQP, no work shall commence until the PQP is accepted by TRANSNET.

4.5 Procedures

The Contractor's PQP and procedures shall address the system elements and activities appropriate to the Scope of Work, in compliance with the specified Quality Standard.

Where specified, the Contractor submits copies of Quality Procedures for review. In addition, the Contractor ensures that copies of all Procedures relevant to the Scope of Work are available for reference by TRANSNET at each work location.

These will include, as applicable, the following:

4.5.1 Document Control

The Contractor's PQP shall provide a description of how documents provided by TRANSNET to the Contractor are to be managed. The description shall address as a minimum:

- Management tools and databases
- Receipt, registration and maintenance
- Internal and external distribution to Employer, third parties and Sub-Contractors
- Management of Codes, Standards and Specifications
- Internal review and approval routines and authorities
- How it is ensured that the correct revisions of documents are available at the point of use including retention periods for all documentation

4.5.2 Design Control

Where the Contractor is responsible for any aspect of design related to the Scope of Work, the Quality Plan shall describe the Contractor's methods and procedures for the control of these design activities.

4.5.3 Procurement

Where the Contractor is responsible for any aspect of procurement related to the Scope of Work, the Quality Plan shall describe the Contractor's methods and procedures for the control of these activities.

4.6 Contractor Audits

The Contractor shall:

- Carry out audits in accordance with its Quality System at its own and Sub-Contractor's facilities to ensure project quality requirements are being achieved.
- Include a QA Audit Schedule in the Contractor PQP submitted to TRANSNET prior to commencement of the Scope of Work. The Audit Schedule shall include all audits to be implemented by the Contractor and Sub-Contractor during the execution of the Contract.
- Where stipulated in the Contract, perform an audit within three months after the Contract start date and thereafter at a minimum frequency of three months. Audit reports are submitted to TRANSNET at the completion of each Audit. Where unsatisfactory performance is evident, TRANSNET will direct the Contractor to perform additional audits.

4.7 Transnet Audit

TRANSNET reserves the right to perform quality audits or participate as an observer in Contractor audits to verify compliance with the Contractual requirements. The Contractor shall within a time frame as agreed upon, correct any adverse audit finding advised by TRANSNET.

5. Inspection and Testing

5.1 General

TRANSNET may, at its discretion, perform surveillance inspection at the Contractor's premises, the premises of any Sub-Contractor or at the location of the Scope of Work.

Dependent on the nature of the Scope of Work and the frequency of inspections, TRANSNET may elect to have inspection personnel resident at the place of manufacture, fabrication, or assembly.

The Contractor ensures free entry and access is given to TRANSNET, certifying authorities and statutory authorities to inspect the Scope of Work and review procedures and quality

records at all parts of the Contractor's and Sub-Contractor's premises, or at the location of the Scope of Work while any work or test is in progress.

The Contractor provides TRANSNET with all necessary tools, calibrated measuring equipment, safety equipment and workspace to verify or witness tests in progress.

While TRANSNET is at the Contractor's premises, the Contractor provides, free of charge, reasonable facilities including office facilities and reasonable access to a telephone, facsimile machine and computer connection point.

The Contractor provides written notice within a time frame as agreed upon, to allow the attendance of TRANSNET and other representatives at nominated witness and hold points.

5.2 Quality Control Plans

The Contractor prepares and submits QCPs to TRANSNET for review in accordance with the requirements of the Contract and PQP.

QCPs must clearly identify all inspection, test and verification requirements to meet the Contractual obligations, specifications, drawings and related details including destructive and non-destructive testing, witness and hold points.

The Contractor shall not commence fabrication or manufacture prior to review and approval of the applicable QCP by TRANSNET.

QCPs shall include reference to all tests specified in the Works Information.

A typical format for a QCP is shown in Appendix 1. The Contractor may use its own format providing all information shown in the sample in Appendix 1 is included.

5.3 Inspection Points

The QCP identifies points in the fabrication, manufacturing and/or installation process that are selected for inspection. These points are denoted by the following inspection codes:

- Hold Point (H) Inspection points in the manufacturing cycle, beyond which work shall not proceed without the specified activity, work or function being witnessed. Hold points require written notification to TRANSNET.
- Witness Point (W) An inspection point in the manufacturing cycle that will be witnessed or verified. If TRANSNET confirms it is unable to attend after being provided with the written

notification then manufacture may proceed. Witness points require written notification to TRANSNET.

- **Review Point (R)** A point at which products and quality records are verified and endorsed. Review points are not points that require notification to TRANSNET.
- **Surveillance (S)** An inspection point in the manufacturing cycle during which any activity, work or function is observed. No formal notification is required.

The Contractor maintains the status of testing and inspection by progressively having the QCPs signed off.

5.4 Revision to Quality Control Plans

Revision of the QCP is subject to the same submission, review and acceptance routines as described for the original QCP issue.

5.5 Kick Off Meeting

After the Contract start date, and prior to manufacture, TRANSNET will require a Kick-Off Meeting with the Contractor to discuss fully the implications of meeting TRANSNET's quality requirements. This meeting may be held as part of the Contract kick-off meeting for each package or may be a separate meeting, subject to the critical or complex nature of the work. This requirement for a pre-inspection meeting may be repeated when Sub-Contractors of key equipment are engaged.

5.6 Schedule of Inspection

The Contractor shall submit a Schedule showing the proposed dates for inspections and tests nominated in the QCP where witness and hold points are required. The Schedule shall be regularly updated with progress and issued to TRANSNET to show the current inspection and test status.

5.7 Field Inspection Checklists

For site installation and construction activities, the Contractor prepares Field Inspection Checklists (FICs) to permit inspection and testing of installed equipment and constructed facilities in accordance with the respective QCPs.

FICs are submitted to TRANSNET for initial review. FICs are used to record the results of inspection and testing (where applicable). On completion, FICs are submitted to TRANSNET

to confirm satisfactory completion of the tests and inspections at nominated QCP witness and hold points.

5.8 Inspection Notification

The Contractor notifies TRANSNET in writing at least two calendar weeks prior to the advent of inspections or tests that require witnessing.

For inspections or tests within the country, arrangements are confirmed at least two working days before the event. For inspection and tests outside of the country, arrangements are confirmed at least seven working days before the event.

Inspection notifications include the following essential information:

- Contract Number
- Location of Inspection or Test
- Nature of Inspection or Test
- Date and Time of Inspection or Test
- Name and telephone number of the Contractor's Representative.

5.9 Inspection and Testing

The Contractor is responsible for the conduct of all Contractor inspections and tests. This responsibility includes:

- Documenting inspection and test results in the QCPs and relevant FICs.
- Progressively inspecting the quality of the Scope of Work performed, including that of all Sub-Contractors.
- Inspecting to meet all Contractual requirements, in number, type and form
- Inspecting day to day activities, material receipts, issue of material for installation, in-process inspections, and final inspections.

Completed original QCPs and FICs are included in the DP that the Contractor submits to TRANSNET.

5.10 Inspection Release

At completion of the Scope of Work, either in total or in phases, TRANSNET may issue an Inspection Release Report (IRR) or an Inspection Waiver Report (IWR).

The issue of either an inspection release or waiver of inspection does not relieve the Contractor of its obligations under the Contract. The Contractor ensures that a copy of the release note and final expediting release note for transport, where appropriate, is attached

to the delivery docket and accompanies the Work to the designated destination indicated in the Contract. Items delivered to TRANSNET without a copy of these documents may not be accepted.

A copy of the inspection release or waiver of inspection is included in the DP.

5.11 Special Processes

It is the Contractor's responsibility to ensure that all processes which require prequalified procedures and/or work methods are tested and qualified before work begins. This typically covers such activities as welding, non-destructive testing, special fabrication techniques and painting. Unless specified such procedures are the Contractor's responsibility and do not require submission to TRANSNET before work begins. When such procedures are requested, no work shall commence until procedures are approved by TRANSNET.

It is the Contractor's responsibility to ensure all operators are qualified for the processes in accordance with the procedure and/or applicable standards. Records of qualification of operators shall be maintained by the Contractor and made available to TRANSNET when requested.

Records of qualification of procedures and processes shall be maintained by the Contractor in accordance with the applicable procedure or code.

5.12 Welding Procedures

Where the Contractor's Scope of Work includes fabricated weldments, Welding Procedure Specifications (WPS) defining the method, preparation and sequences to be adopted to achieve a satisfactory welded joint shall be provided for all weld types required in the execution of the Contractor's Scope of Work. The procedure shall only be submitted to TRANSNET when requested in the Contract.

WPS include all welding essential and non-essential variables for each process used, including appropriate test results. WPS comply fully with the standard or code pertaining to welding required in the execution of the Contractor's Scope of Work.

When requested in the Contract, a suitably marked "weld map" is completed by the Contractor for all items to be fabricated. A summary of WPS is prepared and, when used, is identified on the weld map.

Where TRANSNET approval is required, fabrication is not to commence until written approval of WPS and Welding Procedure Qualification Records (WPQR) is received by the

Contractor. No welding fabrication will be accepted that is not covered by a TRANSNET approved WPS/WPQR.

Welding Procedure Qualification (WPQ) tests may be witnessed by TRANSNET and/or an independent inspection authority. Testing of the specimens prepared during the WPQ Tests is carried out by an approved testing laboratory, independent of both TRANSNET and the Contractor. In certain instances, a certificate to EN 10204 3.1 B may be required which will be clarified at Tender review and clarification stage.

Where actual weld deposit analysis and weld metal physical properties are required for procedure qualification, the information is taken from the procedure qualification tests. Data listed in the catalogues of the manufacturer of welding consumables is not acceptable.

Welders/welding operators are qualified in accordance with the relevant welding code prior to commencing production fabrication. Specific Welder Qualification (WQ) records will be reviewed by TRANSNET in the Contractor's works and should NOT be submitted for review.

A register of welders qualified to work shall be maintained by the Contractor.

5.13 Material Traceability

Where, and to the extent that material traceability is required, the Contractor shall provide its procedures for the maintenance of material identification throughout all phases of manufacture. Methods of identification, routines for re-stamping or stencilling as appropriate shall be defined and agreed with the Employer.

Adequate records shall be maintained throughout construction enabling traceability of key materials from final product back to original material certificates. The material traceability records shall form part of the DP

The Contractor shall prepare a schedule of materials and equipment that are subject to traceability requirements.

5.14 Material Certification

Where specified in the Contract the following certificates shall be provided to TRANSNET and included in the DP.

Type A: A Contractor's certificate of compliance with the Contract. This certifiesthat the goods or services are supplied in compliance with the Contract without mention of any test results (EN10204 certificate 2.1).

Type B: A certificate issued by a laboratory or test facility independent of the Contractor's works. It shall quote test results carried out on the product supplied and state whether compliance with the relevant technical standard, code, etc., has been complied with. (EN10204 certificate 3.1B).

Type C: The same as Type B, the tests are to be witnessed by a third party (EN10204 certificate 3.1C).

6. Non-Conforming Products

6.1 General

The Contractor shall establish and maintain procedures to control material or products that do not meet the specified requirements.

All Contractor product and/or materials identified as not conforming to requirements shall be dealt with promptly as follows:

- If the Contractor discovers material or product which is not in accordance with the requirements of the Contract, i.e. a non-conformance, the Contractor shall immediately initiate the non-conformance procedure in terms of the Contractor's Quality Management System, advise TRANSNET promptly, and provide a copy of the non-conformance report (NCR) to TRANSNET
- If TRANSNET or its agent identifies a non-conformance, a TRANSNET NCR may be raised.

Originals of all closed out NCRs shall be included in the DP.

6.2 Corrective and Preventative Action

If the Contractor proposes a disposition of any non-conforming materials or product which varies from the requirements of the Specification or Contract, such a proposal shall be submitted in writing to TRANSNET whose decision on the proposal shall be obtained in writing before the non-conforming material or product is covered up or incorporated into the Works, or is the subject of any other disposition.

The disposition of non-conformances which do not vary the requirements of the Contract, specification or drawings may be approved by the Contractor following discussion and agreement with TRANSNET.

7. Concession Requests and Technical Queries

7.1 Concession Requests

Where a Contractor requests a Concession to deviate from the requirements of the Contract or specified requirements, the Contractor raises the request with TRANSNET using the format as shown in Appendix 2.

The Concession Requests shall clearly identify all elements of the proposed deviation together with any resulting technical, commercial and/or schedule impacts.

Completed original Concession Requests shall be included in the DP.

7.2 Technical Queries

For clarification of technical issues (only), the Contractor may submit a Field Engineering Query (FEQ) to TRANSNET in accordance with the Contract.

The FEQ shall clearly identify all elements of the query, and all supporting documentation and/or drawings shall be attached where appropriate.

Completed original FEQ's shall be included in the DP.

8. Inspection, Measuring and Test Equipment

8.1 Calibration

The Contractor, including its Sub-Contractors/Sub-Suppliers, shall ensure the calibration of test and measuring equipment is performed and maintained in accordance with the relevant Contractor procedures and/or the equipment manufacturer's specifications.

Where calibration is required by an external laboratory, the Contractor shall ensure that the facility selected for calibration possesses current certification. Calibration certificates shall contain a statement that the test equipment is accurate to within specified tolerances.

The Contractor should establish the frequency of calibration for each item of equipment (including jigs, fixtures or templates) and record the details in a 'Measuring and Test Equipment Register' (or similar).

8.2 Use of Inspection, Measuring and Test Equipment

The Contractor shall ensure that authorised equipment users:

- Use the equipment in accordance with manufacturer's instructions, and accepted industry practices
- Ensure the equipment is covered by a current calibration certificate

- Conduct the measurements or tests in accordance with the equipment manufacturer's specifications or other relevant specification
- Prior to commencement of each inspection or test activities:
 - Identify the measurements to be made
 - Determine the accuracy required
 - Select the appropriate inspection, measuring or test equipment for the scope of work.

8.3 Verification of Previous Test Results

Where the calibration status of the equipment is unknown, expired or has doubtful accuracy, the equipment shall immediately be quarantined, and tagged according to Contractor's Quality System procedures. The Contractor shall then arrange for either in-house or external calibration, and:

- review all previous test results associated with the suspect equipment;
- identify the inspections, measurements or tests required to re-validate the results;
- ensure that suitable re-testing is performed with calibrated equipment;
- record the results of the re-testing on the respective inspection and test documentation.

9. Quality Personnel Qualifications

It is preferable that Contractor's personnel engaged in Quality Assurance and Quality Control are members of one or more of the following organisations:

South African Quality Institute

Southern African Society for Quality

It is mandatory that personnel undertaking testing of rail-associated infrastructure are qualified as follows:

10. Quality Records

Contractors shall maintain Quality Records necessary to provide objective evidence that demonstrates and verifies achievement of the QA / QC requirements associated with the Scope of Work. All Quality Records, including original source material test certificates and

non-destructive test reports, shall be retained by the Contractor during the project, and be provided to TRANSNET at the times, and in the quantities specified in the Contract.

The Contractor shall collate all quality records in the DP and submit the DP to TRANSNET in accordance with the Contract and all referenced standards and specifications. This DP shall be compiled progressively, and shall be available for review at all phases of manufacture or construction activities.

The Scope of Work shall not be complete until the Contractor's DP, including the quality records from Sub-Contractors/Sub-Suppliers, has been reviewed and accepted by TRANSNET.

The Contractor compiles the DP progressively during the execution of the Scope of Work and makes the DP available for review by TRANSNET as required.

The Contractor shall retain a copy of all Quality documentation generated during the contract, including a copy of the complete DP, for his own records for a minimum period of five years after the completion of the work.

Annexure 1 – Sample Quality Control Plan

Quality Control Plan No. _____				Revision: _____				Date Issued: _____			
Contract No. _____				Description: _____				Item No. _____			
Contractor _____				Location: _____							

Activity No.	Activity Description	Procedure Reference / Code Specification	Specification Acceptance Criteria	Verifying Document / Report / Certificate	Verification/Witness						
					Contractor		AIA		TRANSNET		
					Action	Sign	Action	Sign	Action	Sign	

Rev	Date	Reason for Revision	Drawn	Checked

ACTION

H – Hold. Mandatory Hold Point R – Review (Verify) only

W - Witness S - Surveillance

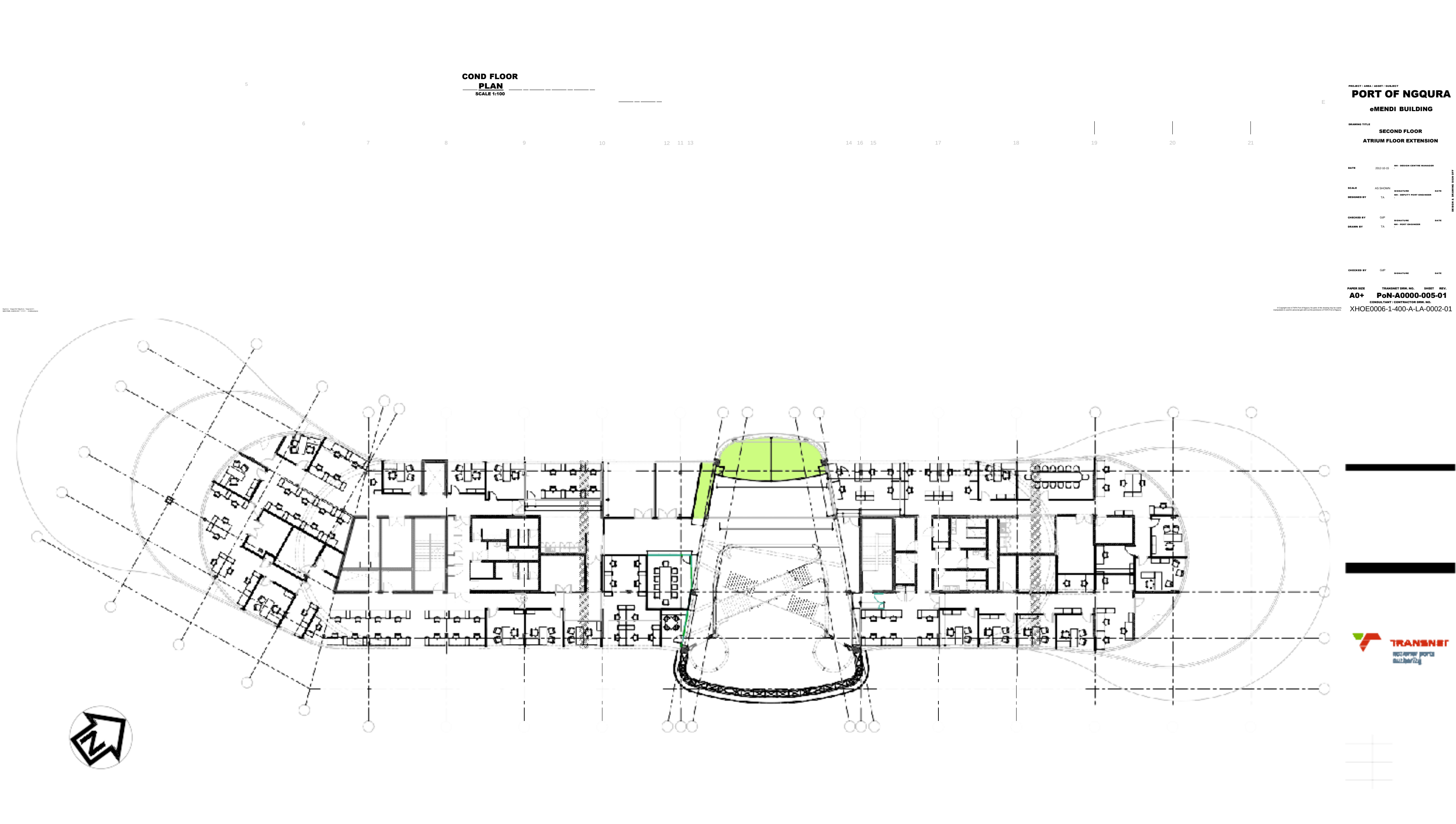
NOTE: H & W points require formal notification to TRANSNET

Annexure 2 – Concession Request (QAL-FAT-0003)

Request for Concession No:															
Project Name:						Project Number:									
A. SUPPLIER/CONTRACTOR SUPPLIED INFORMATION															
SUPPLIER/CONTRACTOR NAME:						P/O /CONTRACT NO.:									
SUPPLIER/CONTRACTOR CONCESSION NO:						DATE:									
Required concession applicable to: (Item/Material/Equipment/Area)															
Quantity Affected:															
Original Requirements:															
Description of Concession – Revised Requirements:															
Justification:															
Cause :															
Consequence :															
References:															
Original Requirements reference:															
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Attached applicable documentation:															

♦ A. SUPPLIER/CONTRACTOR SUPPLIED INFORMATION continued						
(NOTE: This concession will be rejected if the following information is not provided):						
(i) VALUE OF BENEFIT TO CLIENT \$/R.....	(ii) AGREE TO AN EXTENSION OF THE WARRANTY	YES ☐	NO ☐	(iii) ANY IMPACT ON SCHEDULE?	NO ☐	YES ☐
	IF "YES" WHAT PERIOD?			IF "YES" WHAT PERIOD?		

Requested by: (Supplier/Contractor)							
Name:		Title:		Signature:		Date:	
B. SITE ADMINISTERED CONTRACT?			☐ Yes	☐ No			
Possible QC implications:							
Recommended	☐	Rejected	☐				
♦ Recommendations with the following Conditions:							
Area Manager:			Signature:		Date:		
Site Engineer:			Signature:		Date:		
C. RECOMMENDATION BY CONTRACT ADMINISTRATOR:							
Name:		Signature:		Date:			
D. RECOMMENDATION BY ENGINEERING:							
Recommended	☐	Rejected	☐	Conditional	☐		
Recommendations:							
PR Engineer:			Signature		Date		
Lead Discipline Engineer:			Signature		Date		
Engineering Manager:			Signature		Date		
Comments:							
E. AREA MANAGER:			Accepted	☐	Rejected	☐	
Name:		Signature		Date			
F. Transnet Capital Projects :			Accepted	☐	Rejected	☐	
Name:		Signature		Date			



COND FLOOR
PLAN
SCALE 1:100

PROJECT / AREA / ASSET / SURFACE
PORT OF NGQURA
eMENDI BUILDING

DRAWING TITLE
SECOND FLOOR
ATRIUM FLOOR EXTENSION

DATE 2012-10-15 NM - DESIGN CENTRE MANAGER

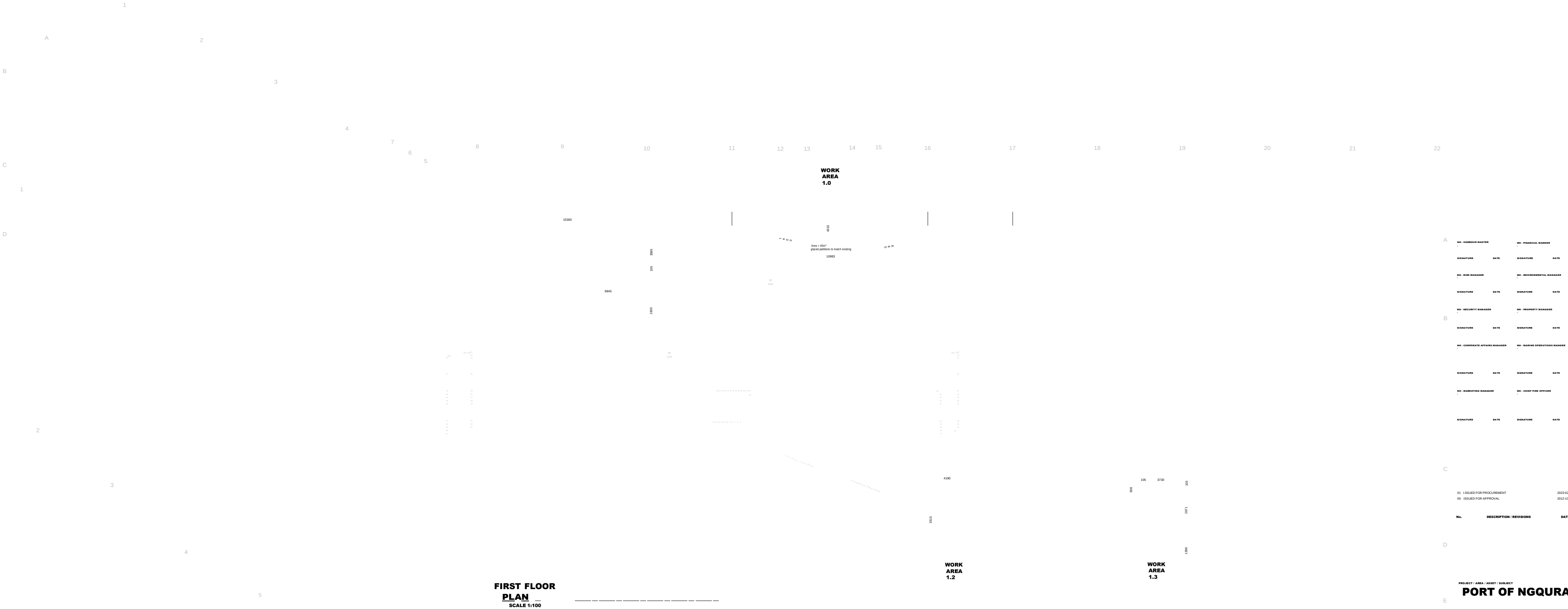
SCALE AS SHOWN NM - DEPUTY PORT ENGINEER
DESIGNED BY TA

CHECKED BY GSP NM - PORT ENGINEER
DRAWN BY TA

CHECKED BY GSP SIGNATURE DATE

PAPER SIZE A0+ TRANSNET DRW. NO. PoN-A0000-005-01
CONSULTANT / CONTRACTOR DRW. NO. XHOE0006-1-400-A-LA-0002-01

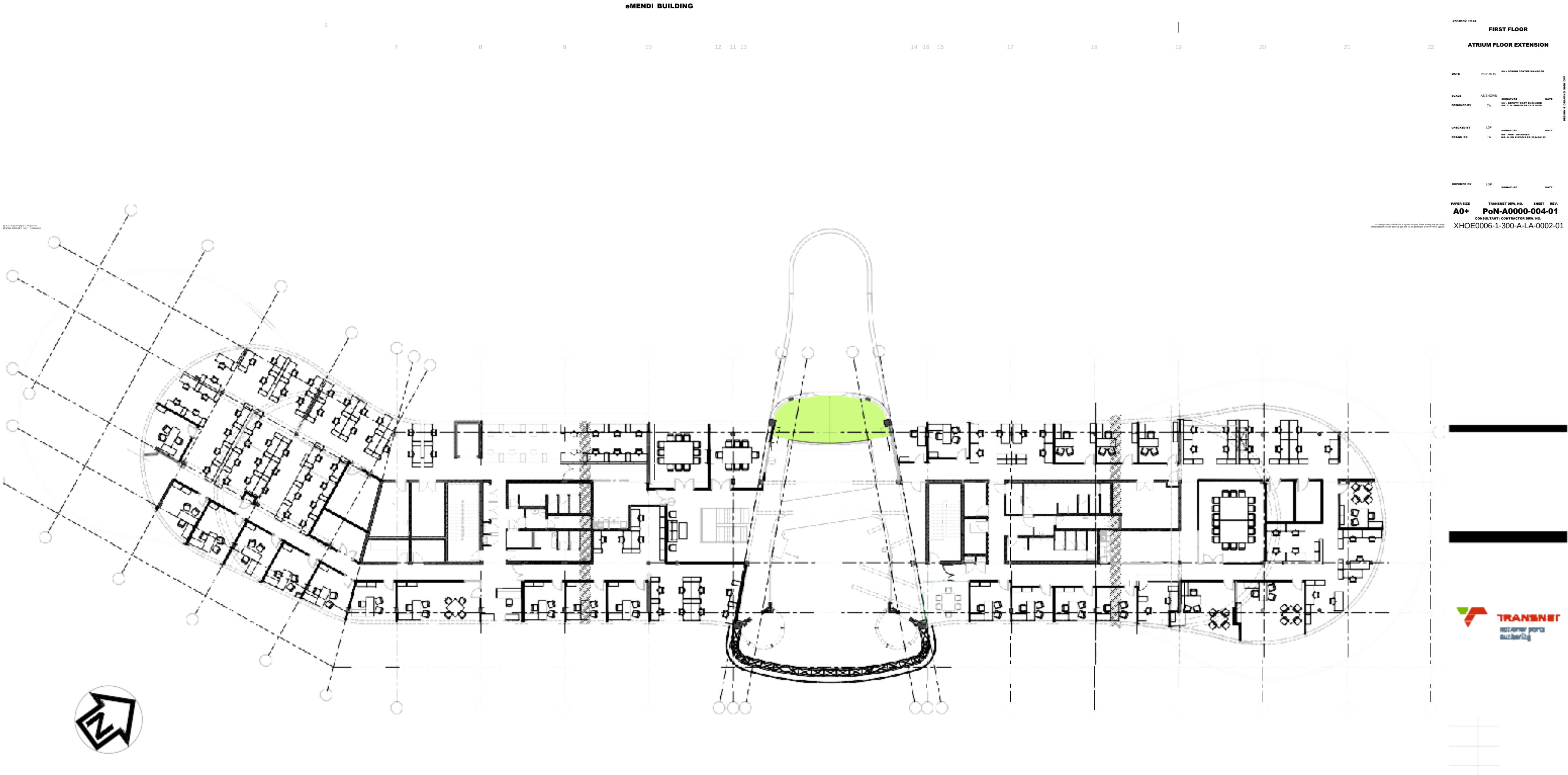




A	NM - HARBOUR MASTER	NM - FINANCIAL MANAGER
	SIGNATURE	DATE
B	NM - RISK MANAGER	NM - ENVIRONMENTAL MANAGER
	SIGNATURE	DATE
C	NM - SECURITY MANAGER	NM - PROPERTY MANAGER
	SIGNATURE	DATE
D	NM - CORPORATE AFFAIRS MANAGER	NM - MARINE OPERATIONS MANAGER
	SIGNATURE	DATE
E	NM - MARKETING MANAGER	NM - CHIEF FIRE OFFICER
	SIGNATURE	DATE

01 ISSUED FOR PROCUREMENT 2023-02-02
02 ISSUED FOR APPROVAL 2023-10-15

No.	DESCRIPTION / REVISIONS	DATE



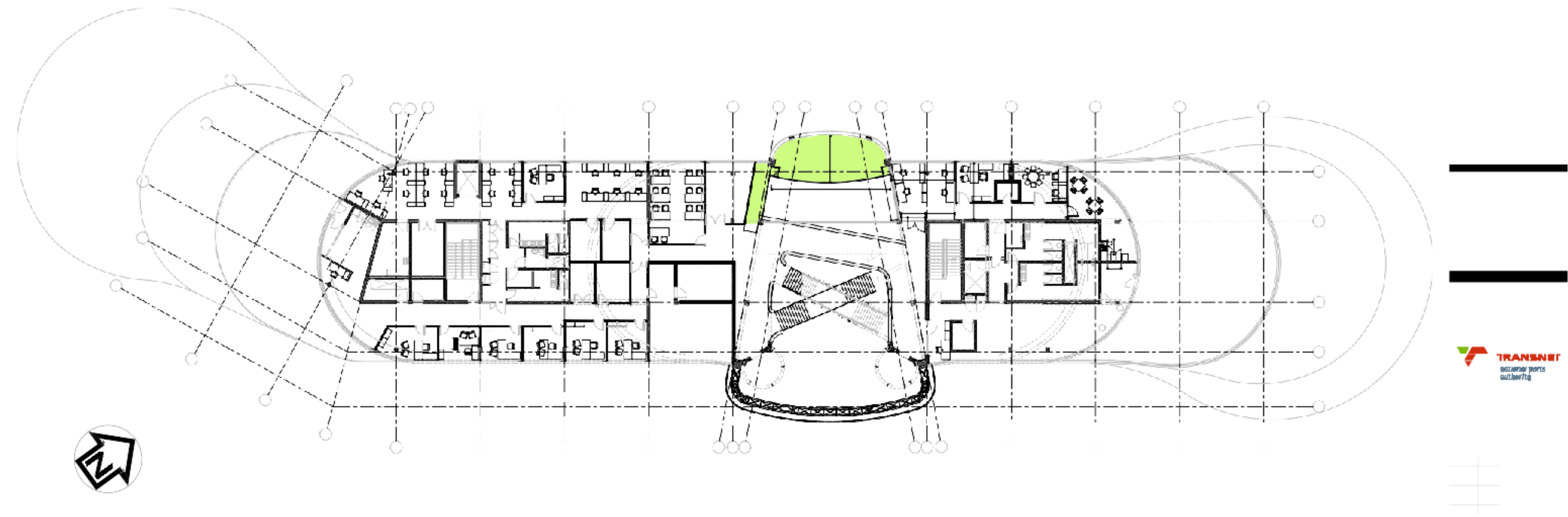
1	ISSUED FOR PROCUREMENT	2023-02-01
2	ISSUED FOR APPROVAL	2012-10-11

No.	DESCRIPTION / REVISIONS	DATE

01 ISSUED FOR PROCUREMENT	2023-02-01
00 ISSUED FOR APPROVAL	2012-10-11

Scale: 1/8" = 1'-0"

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DRAWING TITLE				
THIRD FLOOR				
ATRIUM FLOOR EXTENSION				
DATE				
2012-10-15				
MR. DESIGN CENTRE MANAGER				
SCALE				
AS SHOWN				
DESIGNED BY				
TA				
SIGNATURE				
MR. DEPUTY PROJECT ENGINEER				
DATE				
CHECKED BY				
LDP				
SIGNATURE				
MR. PROJECT ENGINEER				
DATE				
DRAWN BY				
TA				
SIGNATURE				
DATE				
PAPER SIZE				
A0+				
TRANSNET DRW. NO.				
PoN-A0000-006-01				
SHEET				
REV.				
CONSULTANT / CONTRACTOR DRW. NO.				
XHOE0006-1-500-A-LA-0002-01				

DESIGN & DRAWING SIGN OFF



ADDENDUM TO PHASE 1

PHASE 2

BC SCHEDULE			AIR CONDITIONING UNIT SCHEDULE									AIR TERMINAL SCHEDULE			
BC REF.	QUANTITY	UNIT REF.	UNIT REF.	QUANTITY	DESCRIPTION	MODEL	AIR QTY (L/s)	CAPACITY		POWER REQUIREMENTS		GRILLE REF.	QUANTITY	DESCRIPTION	AIR QTY (L/s)
BC-04	1	*FF-AT-05	*FF-AT-05	1	IN-CEILING DUCTED UNIT		312	14	16	220-240/1/50	1.4	RAG-01	2	*600x600 RETURN AIR GRILLE - Ø250 CONNECTION	70
												SLD-04	4	*900 LONG SLOT DIFFUSER - Ø200 CONNECTION	78
OUTDOOR UNIT REFERENCE No. ODU-GF-FF-01															

[illegible][illegible]

PROJECT / AREA / ASSET / SUBJECT

PORT OF NGQURA

DRAWING TITLE

**FIRST FLOOR
HVAC SYSTEM**

FOR NEW GRACE HOUSE

PAPER SIZE A0+	TRANSNET DRW. NO.	SHEET	REV
	CONSULTANT / CONTRACTOR DRW. NO.		



BC SCHEDULE			AIR CONDITIONING UNIT SCHEDULE									AIR TERMINAL SCHEDULE			
BC REF.	QUANTITY	UNIT REF.	UNIT REF.	QUANTITY	DESCRIPTION	MODEL	AIR QTY (L/s)	CAPACITY COOLING (kW)	CAPACITY HEATING (kW)	POWER REQUIREMENTS (V/Ph/Hz)		GRILLE REF.	QUANTITY	DESCRIPTION	AIR QTY (L/s)
BC-03	1	*SF-AT-05					312	14	16	220-240/1/50	1.4				
OUTDOOR UNIT REFERENCE No.			ODU-SF-TF-FP-01												

HARBOUR MASTER		FINANCIAL MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
RISK MANAGER		ENVIRONMENTAL MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
SECURITY MANAGER		PROPERTY MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
CORPORATE AFFAIRS MANAGER		MAINTENANCE MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
MARKETING MANAGER		CHIEF FIRE OFFICER	
SIGNATURE	DATE	SIGNATURE	DATE

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1	ISSUED FOR APPROVAL	11/17/2022
No.	DESCRIPTION / REVISIONS	DATE



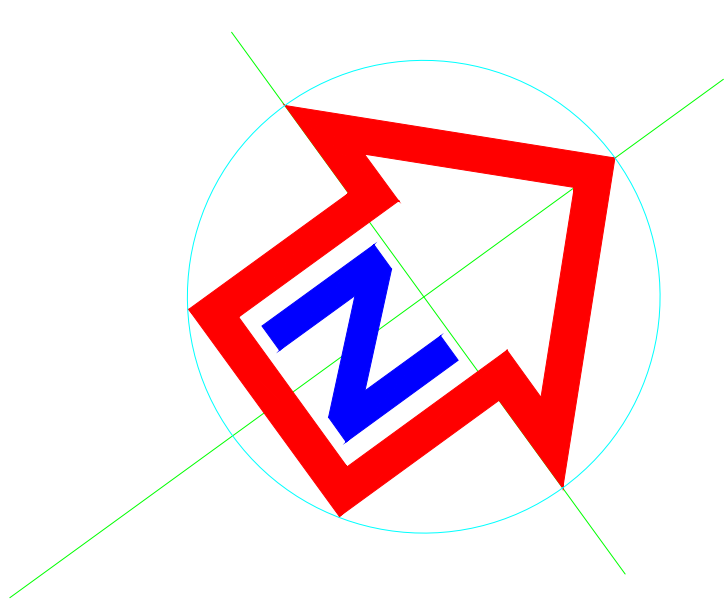
PROJECT / AREA / ASSET / SUBJECT

PORT OF NGQURA

eMENDI BUILDING

DRAWING TITLE		SECOND FLOOR HVAC SYSTEM FOR NEW SPACE USAGE		DESIGN & DRAWING SIGN OFF
DATE	11/17/2022	ENGINEER	RYAN HANKEY	
SCALE	1:100	SIGNATURE		
DESIGNED BY	JH	DATE	11/17/2022	
CHECKED BY	JH	SENIOR ENGINEER ADAM HOFFMAN PE 30190923		
DRAWN BY	JH	SIGNATURE		
CHECKED BY	JH	CLIENT		
CHECKED BY	JH	SIGNATURE		
		DATE	11/17/2022	

PAPER SIZE	TRANSNET DRW. NO.	SHEET	REV.
A0+			
CONSULTANT / CONTRACTOR DRW. NO.			





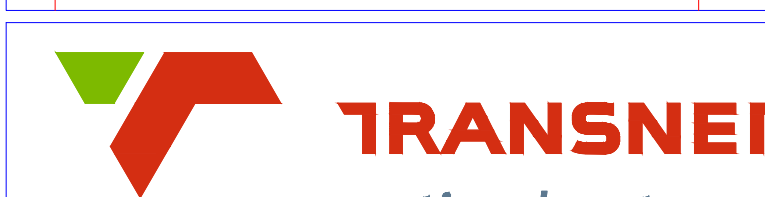
BC SCHEDULE			AIR CONDITIONING UNIT SCHEDULE							AIR TERMINAL SCHEDULE			
BC REF.	QUANTITY	UNIT REF.	UNIT REF.	QUANTITY	DESCRIPTION	MODEL	AIR QTY (L/S)	CAPACITY COOLING (KW) HEATING (KW)	POWER REQUIREMENTS (V/PH/Hz) ABSORBED (KW)	GRILLE REF.	QUANTITY	DESCRIPTION	AIR QT (L/S)
BC-03	1	*TF-AT-04	*TF-AT-04	1	IN-CEILING DUCTED UNIT		312	14 16	220-240/1/50 1.4	RAG-01	2	*600x600 RETURN AIR GRILLE -Ø250 CONNECTION	70
										SLD-04	4	*900 LONG SLOT DIFFUSER - Ø200 CONNECTION	78
OUTDOOR UNIT REFERENCE No.		ODU-SF-TF-FP-01											

- [illegible]

HARBOR MASTER		FINANCIAL MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
RISK MANAGER		ENVIRONMENTAL MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
SECURITY MANAGER		PROPERTY MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
CORPORATE AFFAIRS MANAGER		MAINTENANCE MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
MARKETING MANAGER		CHIEF FIRE OFFICER	
SIGNATURE	DATE	SIGNATURE	DATE

FOR PROCUREMENT

1	ISSUED FOR APPROVAL	11/17
No	DESCRIPTION / REVISIONS	DATE



PROJECT / AREA / ASSET / SUBJECT

PORT OF NGQURA

eMENDI BUILDING

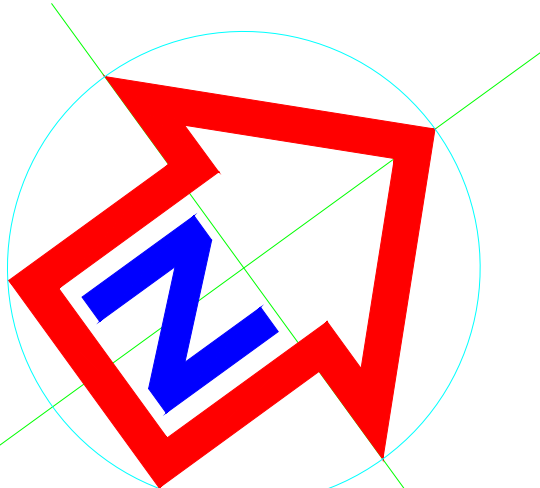
DRAWING TITLE

**THIRD FLOOR
HVAC SYSTEM
FOR NEW SPACE USAGE**

DATE	11/17/2022	ENGINEER RYLE HANKEY	
SCALE	1:100		DATE 11/17/2022
DESIGNED BY	KH	SENIOR ENGINEER ASLAN HAFIZOGLU PR.20190923	
CHECKED BY	AH		DATE 11/17/2022
DRAWN BY	KH	CLIENT	
CHECKED BY	AH	SIGNATURE	DATE

PAPER SIZE	TRANSNET DRW. NO.	SHEET	REV
A0+			

CONSULTANT / CONTRACTOR DRW. NO.



ORIGINAL PHASE 1

ADDENDUM TO PHASE 1

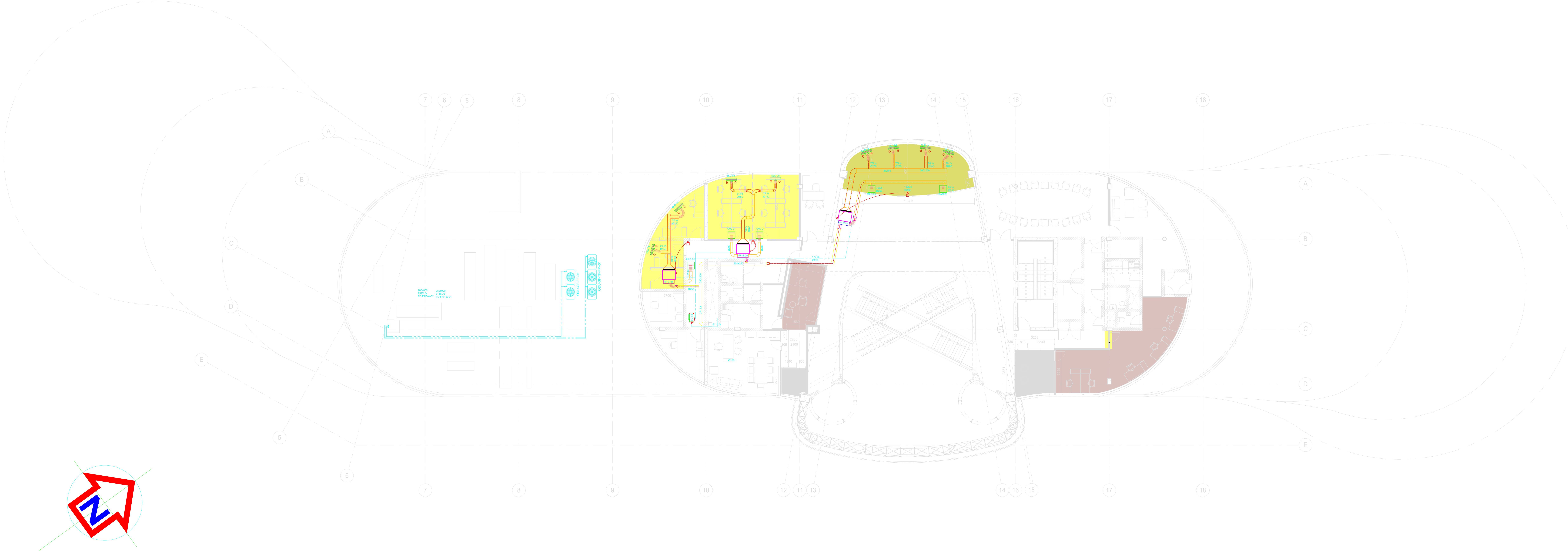
PHASE 2

ELECTRICAL WORK:	
ELECTRICAL SUPPLY TO HVAC EQUIPMENT SHALL BE THROUGH A SUITABLE ISOLATOR/POWER SUPPLY POINT BY ELECTRICAL ENGINEER	
FINAL DISTRIBUTION FROM THE ISOLATOR/POWER SUPPLY POINT, INCLUDING CONTROL PANEL, BOARDS,WIRING, CONTROLLERS ETC, SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.	
ALL ELECTRICAL INSTALLATION WORK UNDERTAKEN BY THE HVAC CONTRACTOR SHALL BE DONE BY A QUALIFIED ELECTRICIAN / MASTER ELECTRICIAN AND A CERTIFICATE OF COMPLIANCE SHALL BE PROVIDED ON COMPLETION OF WORK.	
MECHANICAL WORK:	
AIR-CONDITIONING AND VENTILATION SYSTEM SHALL COMPLY WITH HVAC SPECIFICATION (TPD: 005-1-HVAC). AC OUTDOOR UNITS SHALL BE PROVIDED WITH WATER PROOF ISOLATORS. ALL DRAIN PIPES SHALL BE CONNECTED TO THE NEAREST DRAIN POINT.	
BUILDERS WORK:	
AC CONTRACTOR MUST MARK UP ON SITE PRIOR TO INSTALLATION FOR CORING OF HOLES FOR DRAINAGE, REFRIGERANT PIPES, HVAC DUCT, WALL LOUVER INSTALLATION, FAN INSTALLATION AND ELECTRICAL CONDUIT.	

BC SCHEDULE			AIR CONDITIONING UNIT SCHEDULE									
BC REF.	QUANTITY	UNIT REF.	UNIT REF.	QUANTITY	DESCRIPTION	MODEL	AIR QTY (L/s)	CAPACITY		POWER REQUIREMENTS		
BC-02	1	*FP-E-04	*FP-E-04	1	IN-CEILING DUCTED UNIT		40	9	10	220-240/1/50	0.6	
		*FP-E-05	*FP-E-05	1	IN-CEILING DUCTED UNIT		66	9	10	220-240/1/50	0.6	
		*FP-AT-04	*FP-AT-04	1	IN-CEILING DUCTED UNIT		312	14	16	220-240/1/50	1.4	
OUTDOOR UNIT REFERENCE No.		ODU-SF-TF-FP-01										

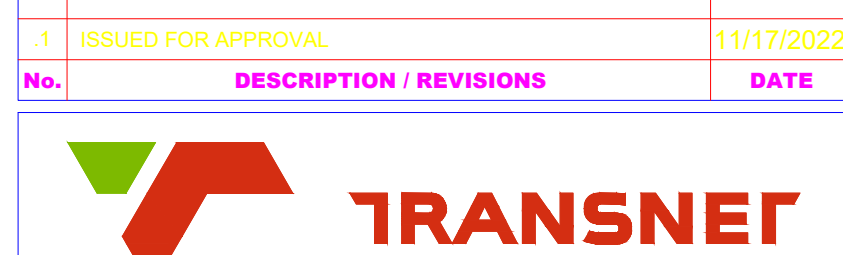
OUTDOOR UNIT SCHEDULE									
UNIT REF.	QUANTITY	DESCRIPTION	MODEL	CAPACITY COOLING (kW)	HEATING (kW)	(V/Ph/Hz)	ABSORBED (kW)		
ODU-GF-FF-01	1	*HEAT RECOVERY OUTDOOR UNIT		50	56	380-415/3/50	14.58		
ODU-SF-TF-FP-01	1	*HEAT RECOVERY OUTDOOR UNIT		73	81.5	380-415/3/50	20.47		

- NOTES:**
- ALL DUCTWORK TO BE MANUFACTURED FROM GALVANISED SHEET METAL AND INSTALLED IN ACCORDANCE WITH SABS 1238 AND SABS 0173. DUCT SIZES INDICATE CLEAR INSIDE DIMENSIONS. ROUND DUCTING TO BE OF THE SPIRAL WOUND TYPE UNLESS INDICATED OTHERWISE.
 - SUPPLY AIR DUCTING, INCLUDING FLEXIBLES, TO BE EXTERNALLY INSULATED WITH 25mm FRK UNLESS OTHERWISE SHOWN. PLENUM BOXES TO BE INTERNALLY INSULATED. EXPOSED SUPPLY AIR DUCTING WITHIN THE CONDITIONED SPACE NEED NOT BE INSULATED UNLESS SPECIFICALLY REQUESTED. VENTILATION DUCTING IS NOT TO BE INSULATED UNLESS SPECIFICALLY REQUESTED. WHERE REQUIRED, INTERNAL INSULATION TO BE 25mm SONG LINER WITH ANTI-EROSION LINER. ALL INSULATION IS TO BE INSTALLED IN ACCORDANCE WITH SABS 1238.
 - FLEXIBLE DUCTING TO HAVE A CLASS 1 FIRE RATING COMPLYING WITH SABS 0177 PART 3, TO BE EUROPLEX OR EQUAL, AND TO BE LESS THAN 1.5m IN LENGTH. ENDS ARE TO BE SEALED AND FIXED WITH JUBILEE TYPE CLAMPS. FLEXIBLE DUCTING SHOWN CONNECTED TO SMALL FANS IS TO BE 1.5m LONG OF THE ACOUSTIC TYPE FOR NOISE REDUCTION.
 - DAMPERS ARE TO BE OF THE OPPOSED BLADE TYPE AND FITTED WITH A MANUAL LOCKING QUADRANT. ROUND DUCT DAMPERS ARE TO BE OF THE UNITEK TYPE WITH LOCKING QUADRANTS.
 - PRIMARY FILTERS FOR FRESH AIR DIRECT FROM THE OUTSIDE ARE TO BE OF THE WP77 WASHABLE PANEL TYPE, 50mm THICK. SECONDARY FILTERS SHALL BE OF SELF-SUPPORTED POCKET FILTERS, HOUSED IN EASILY ACCESSIBLE FILTER FRAMES PROVIDED WITH SEALS BETWEEN THE FILTER AND FRAME. TEMPORARY FILTERS ARE TO BE USED DURING TESTING. A SPARE SET OF FILTERS IS TO BE SUPPLIED AT HANDOVER.
 - ALL GRILLES, DIFFUSERS AND LOUVRES ARE TO BE AS SET OUT IN THE SCHEDULES OR EQUAL AND APPROVED. FRESH AIR GRILLES TO DUCTED HIDEAWAYS ARE TO BE FITTED WITH PLENUM BOXES WHERE SHOWN THAT ARE SUITABLY SIZED TO ACCOMMODATE THE FLEXIBLE DUCT CONNECTION.
 - SOUND AND VIBRATION DEADENING EQUIPMENT IS TO BE PROVIDED WHERE INDICATED. ALL OUTDOOR SPLIT AND VRV UNITS ARE TO BE ISOLATED FROM THE STRUCTURE BY TICO PADS, OR SIMILAR. THOSE MOUNTED ON THE GROUND ARE TO BE BOLTED TO A SUITABLE SIZED (BY STRUCTURAL ENGINEERS) PAVING SLABS AND THOSE MOUNTED ON WALLS ARE TO BE FIXED TO UNISTRUT BRACKETS. SMALL TUBE AND BOX FANS ARE TO BE ISOLATED FROM THE STRUCTURE BY RUBBER MOUNTS AND FROM THE DUCTWORK BY ACOUSTIC FLEXIBLE DUCTING. ALL OTHER FANS ARE TO BE MOUNTED ON SPRING MOUNTS AND ISOLATED FROM THE DUCTWORK BY FLEXIBLE COLLARS.
 - ALL HVAC EQUIPMENT AND DUCTING TO BE HUNG AS HIGH AS POSSIBLE. THE AC CONTRACTOR IS TO LIASE WITH THE OTHER TRADES ON SITE TO CO-ORDINATE WITH THE OTHER SERVICES.
 - CONDENSATE DRAINS TO BE TRAPPED AT AC INDOOR UNITS AND RUN TO NEAREST FOUL SEWER OR CONNECTION POINT PROVIDED BY THE PLUMBER AT A FALL GREATER THAN 1:80. CONDENSATE DRAINS FROM OUTDOOR UNITS TO BE RUN TO NEAREST FULL-BONE PIPING TO BE 40mm PVC WITH INSPECTION POINTS WHERE REQUIRED TO ENABLE ACCESS TO ALL PIPEWORK FOR CLEANING. PIPING TO BE SUPPORTED AT 750mm CENTRES. ALL DRAINS TO BE TESTED PRIOR TO COMMISSIONING THE AIR CONDITIONING UNITS. HEAT PUMP TYPE UNITS ARE TO BE PROVIDED WITH DRAIN PANS FOR THE OUTDOOR UNITS.
 - REFRIGERATION PIPING TO BE RUN AS SHOWN ON CABLE TRAYS SUPPORTED AT 2000mm CENTRES. PIPE INSULATION TO BE ARMAFLEX AF, AT LEAST 13mm THICK. ON BOTH SUCTION AND LIQUID LINES FOR HEAT PUMPS. ALL INSULATION JOINTS TO BE GLOUED AND SEALED. THE CABLE TRAY CARRYING THE REFRIGERATION PIPING IS TO BE FIXED AS HIGH AS POSSIBLE UNDER THE UNDER THE FLOOR SLAB/CeILING VOID. PIPEWORK EXPOSED TO THE ELEMENTS IS TO BE PROTECTED BY GALVANISED STEEL COVERS. UNPROTECTED CONNECTIONS TO THE OUTDOOR UNITS MAY NOT EXCEED 500mm AND MUST BE PROTECTED WITH CANVASS WRAPPING COATED WITH FOSTER SEALFAS 30-36.
 - ALL SUPPORT STEELWORK, INCLUDING HANGER RODS AND BRACKETS MUST BE GALVANISED. STEELWORK EXPOSED TO THE ELEMENTS MUST BE HOT DIP GALVANISED AFTER ALL FABRICATION WORK IS COMPLETE. FASTENERS ARE TO BE GALVANISED AND WHERE EXPOSED TO THE ELEMENTS ARE TO BE STAINLESS STEEL. FIXING SCREWS FOR GRILLES AND LOUVRES ARE TO BE STAINLESS STEEL. ALL DISSIMILAR METALS ARE TO BE GALVANICALLY ISOLATED FROM EACH OTHER BY NYLON SPACERS.
 - ALL EQUIPMENT, DUCTING AND PIPING EXPOSED TO THE ELEMENTS TO BE PAINTED. ALL OUTDOOR UNIT COILS TO BE TREATED AS FOLLOWS: VRV ARE TO BE FACTORY ACRYLIC PRECOATED AND CHORIUM COATED ANNUALLY. OTHER UNITS ARE TO BE FACTORY CHROMATE TREATED. SPLIT UNITS ARE TO BE FACTORY ACRYLIC PRE-TREATED AND CHORIUM COATED ANNUALLY.
 - ALL DOUBLE DOORS TO HAVE A 25mm undercut.
 - NO MORE THAN 2 DUCT JOINTS BETWEEN DUCT SUPPORTS OR A MIN OF 3m BETWEEN DUCT SUPPORTS.



SUPPORTED	
HARBOR MASTER	FINANCIAL MANAGER
SIGNATURE	DATE
RISK MANAGER	ENVIRONMENTAL MANAGER
SIGNATURE	DATE
SECURITY MANAGER	PROPERTY MANAGER
SIGNATURE	DATE
CORPORATE AFFAIRS MANAGER	MAINTENANCE MANAGER
SIGNATURE	DATE
MARKETING MANAGER	CHIEF FIRE OFFICER
SIGNATURE	DATE

FOR PROCUREMENT	
ISSUED FOR APPROVAL	11/17/2022
No.	DESCRIPTION / REVISIONS
	DATE

	
PROJECT / AREA / ASSET / SUBJECT	
PORT OF NGQURA	
EMENDI BUILDING	
DRAWING TITLE	
FORTH FLOOR HVAC SYSTEM FOR NEW SPACE USAGE	
DATE	11/17/2022
SCALE	1:100
DESIGNED BY	AM
CHECKED BY	AM
DRAWN BY	AM
CHECKED BY	AM
PAPER SIZE	A0+
TRANSNET DRW. NO.	
SHEET	REV.
CONSULTANT / CONTRACTOR DRW. NO.	

ELECTRICAL WORK:

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MECHANICAL WORK:

AIR-CONDITIONING AND VENTILATION SYSTEM SHALL COMPLY WITH HVAC SPECIFICATION (TPD: 005-1-HVAC).
AC OUTDOOR UNITS SHALL BE PROVIDED WITH WATER PROOF ISOLATORS.
ALL DRAIN PIPES SHALL BE CONNECTED TO THE NEAREST DRAIN POINT.

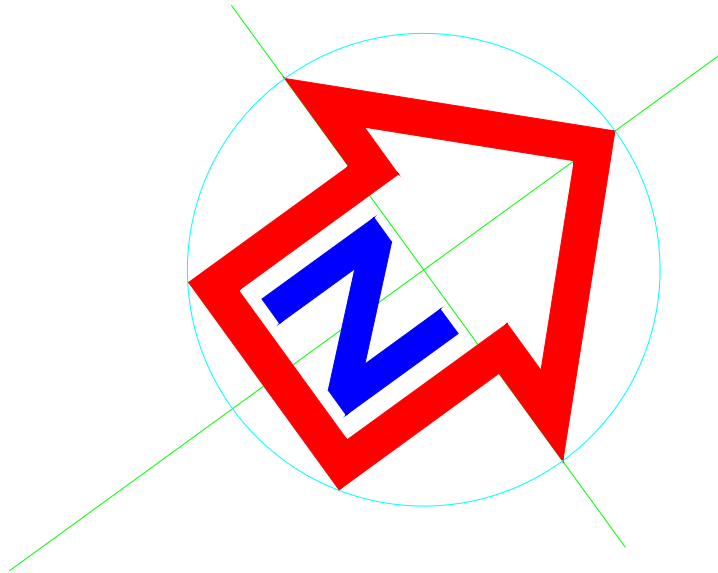
BUILDERS WORK:

AC CONTRACTOR MUST MARK UP ON SITE PRIOR TO INSTALLATION FOR CORING OF HOLES FOR DRAINAGE, REFRIGERANT PIPES, HVAC DUCT, WALL LOUVRE INSTALLATION, FAN INSTALLATION AND ELECTRICAL CONDUIT.

OUTDOOR UNIT SCHEDULE							
UNIT REF.	QUANTITY	DESCRIPTION	MODEL	CAPACITY		POWER REQUIREMENTS	
				COOLING (kW)	HEATING (kW)	(V/Ph/Hz)	ABSORBED (kW)
ODU-G-06	1	*HEAT RECOVERY OUTDOOR UNIT		50	56	380-415/3/50	14.58

NOTES:

- [illegible]



PURPOSED		FINANCIAL MANAGER	
HARBOR MASTER			
SIGNATURE	DATE	SIGNATURE	DATE
RISK MANAGER		ENVIRONMENTAL MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
SECURITY MANAGER		PROPERTY MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
CORPORATE AFFAIRS MANAGER		MAINTENANCE MANAGER	
SIGNATURE	DATE	SIGNATURE	DATE
MARKETING MANAGER		CHIEF FIRE OFFICER	
SIGNATURE	DATE	SIGNATURE	DATE

[illegible]

1	ISSUED FOR APPROVAL	11/17/2022
No.	DESCRIPTION / REVISIONS	DATE



PROJECT / AREA / ASSET / SUBJECT

PORT OF NGQURA

eMENDI BUILDING

DRAWING TITLE

**FIFTH FLOOR
HVAC SYSTEM
FOR NEW SPACE USAGE**

DATE	11/17/2022	ENGINEER KYLE HANNEY	 DATE 11/17/2022 SENIOR ENGINEER ASLAM HADFIELD PR. 20190933	DESIGN & DRAWING SIGN OFF
SCALE	1:100	SIGNATURE		
DESIGNED BY	KOI	CHECKED BY		
CHECKED BY	AH	SIGNATURE		
DRAWN BY	KOI	DATE		
CHECKED BY	AH	CIENT		
		SIGNATURE	DATE	